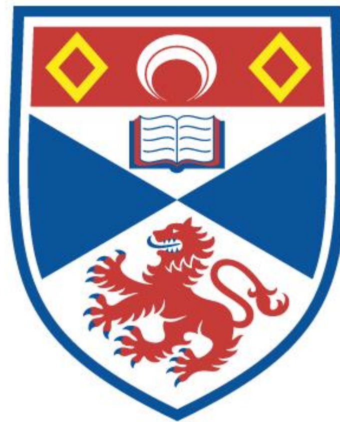
THE PRIMARY PREVENTION OF VIOLENCE IN SECONDARY SCHOOL PUPILS IN THE WEST OF SCOTLAND

Anna Gavine

A Thesis Submitted for the Degree of PhD
at the
University of St Andrews



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Anna Gavine

A thesis submitted for the Degree of PhD
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University of St. Andrews

27/05/14

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I was admitted as a research student in [September, 2010] and as a candidate for the degree of PhD in [Septembe,2010]; the higher study for which this is a record was carried out in the University of St Andrews between [2010] and [2013].

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Abbreviations

ACE – Adverse Childhood Experiences

APA – American Psychological Association

ATV – Attitudes towards violence

BCS – British Crime Survey

UN – United Nations

UNODC - United Nations Office on Drugs and Crime

WHO – World Health Organization

WRVH – World Report on Violence and Health

Abstract

Violence is a leading cause of morbidity and mortality amongst young people (Dahlberg and Krug, 2002). Public health approaches are now being increasingly utilised to reduce the risk of young peoples' involvement in violence (Sethi et al., 2010). One such programme is Medics Against Violence (MAV), which aims to reduce pro-violent attitudes and enhance empathy in secondary school pupils. This thesis aims to investigate whether this approach can be effective in tackling youth violence in secondary school pupils.

A mixed-methods approach was adopted to conduct both an outcome and process evaluation of MAV. Four schools took part in the outcome evaluation, which examined whether there was a change in attitudes towards violence or empathy in pupils receiving the MAV programme. The process evaluation consisted of focus groups with school pupils, and open-ended questionnaires and semi-structured interviews with MAV volunteers.

There was a small but significant reduction in pro-violent attitudes immediately post-intervention. However, this was not sustained at three months and there was no significant increase in empathy scores. Pupils generally demonstrated anti-violent attitudes, although were more likely to support the use of reactive violence. The pupils appeared to enjoy and generally engage well with the programme. In particular, the use of real footage, interviews with those affected by violence and

the Glasgow setting provided a sense of realism for the pupils. Moreover, pupils valued the opportunity to discuss the issues raised by MAV with the volunteers. Volunteers felt engagement was occasionally an issue in the most affluent areas. However, some volunteers adapted the programme to focus on victimisation prevention in the most affluent schools. Further development is therefore needed in terms of establishing who the programme is aimed at (i.e. potential victims or perpetrators), focusing on reactive violence and increasing the sustainability of its effects.

Chapter 1 Introduction

1.1 General introduction

Violence is a preventable but leading cause of death worldwide for people aged 15-44 years (Dahlberg and Krug, 2002). Although it may initially feel to lie under the mandate of the criminal justice system, it is now increasingly acknowledged as a major public health problem (Prothrow-Stith et al., 1997). Indeed, some researchers actually argue that violence behaves like an infectious disease demonstrating a capacity to spread from person to person and show both event clusters and epidemic curves (Fine et al., 2013).

While public health and criminal justice aim to prevent violence from occurring in the first instance they differ in their approaches. Traditionally, the criminal justice system has adopted deterrence approaches to crime, whereas public health utilises behavioural, biomedical and environmental interventions to health problems (Akers et al., 2013). It is being increasingly recognised that criminal justice has not solved the problem of violence and that a public health approach, which has a focus on reducing the impact of the underlying causes of violence is also needed (Prothrow-Stith and Davis, 2010). As public health aims to improve the health and safety of the population, it is argued that public health practitioners can work with the criminal justice system, education and social services to reduce violence (Prothrow-Stith and Davis, 2010). Moreover, the World Health Organisation (WHO) argue that "violence, like a range of other environment-and behaviour-related health problems—including HIV/AIDS, cardiovascular diseases, and diabetes— can largely be predicted and prevented" (Brundtland, 2002, p. 1580).

This thesis will examine the effectiveness of a novel primary prevention initiative entitled Medics Against Violence (MAV), which aims to reduce violence involving Scottish secondary school pupils. MAV sessions are delivered by healthcare professionals to classes of secondary school pupils in the West of Scotland. The sessions aim to prevent violence occurring in the first instance by reducing pro-violent attitudes. As interventions should have a theoretical basis based on research and practice (Schorr and Farrow, 2011) an examination of the literature on current theories of the causes of youth violence and how it can be prevented will first be presented (chapter two). This will be followed by a systematic review on the effectiveness of secondary school-based primary prevention programmes (chapter three). The information presented in these two chapters will then be utilised to help facilitate an understanding of the process involved in MAV.

However, before considering the theoretical or evidential base, it is first necessary to consider the initial step in violence prevention model (see figure 1.1), which recommends that the problem be defined and its magnitude established (Dahlberg and Krug, 2002). This then facilitates the identification of risk and protective factors, which are used to develop an understanding of the aetiology of violence. Using this information, interventions can be developed and evaluated.

Disciplines conceptualise violence in a number of different of ways and this is reflected in the range of definitions of violence. Public health considers itself to be multi-disciplinary and as such, researchers, practitioners and policy-makers within the field can come from a wide range of different disciplines. It is important to understand how violence is defined in different disciplines and the introductory

chapter will therefore begin with an examination of these different definitions. The literature on violence within Scotland will then be examined to provide an understanding of the extent and nature of the problem.

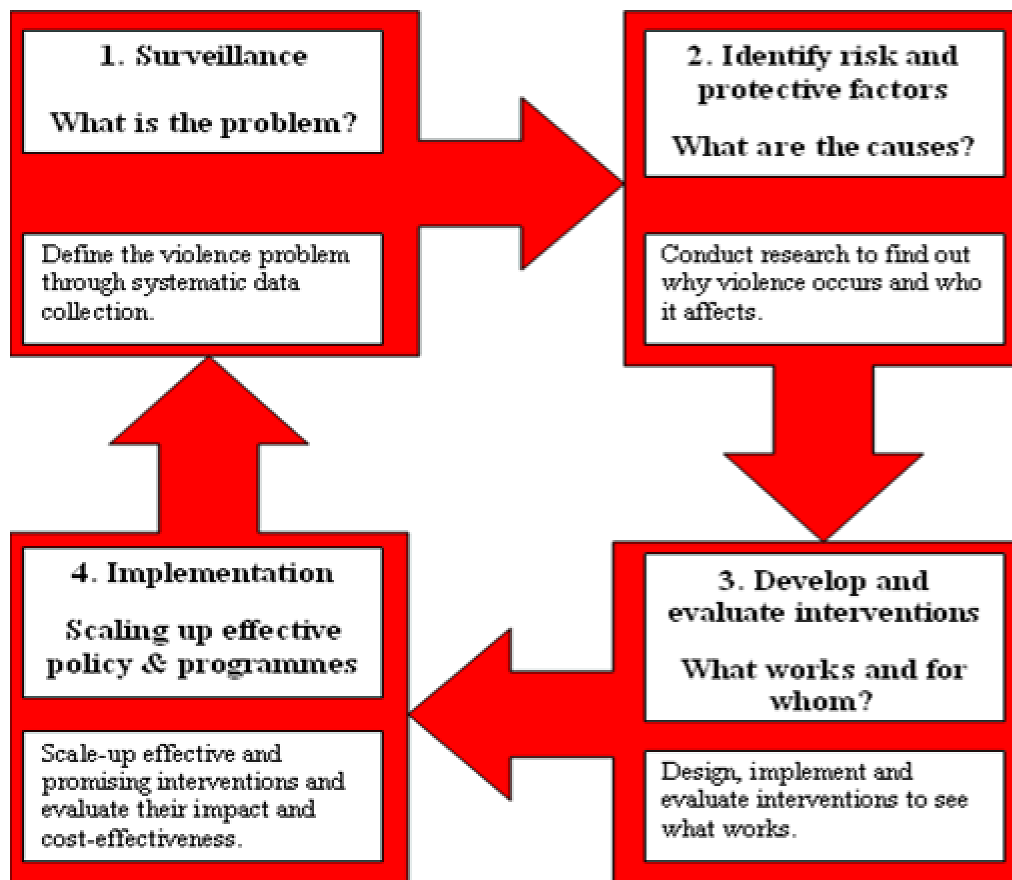

Figure 1.1 The Violence Prevention Model (Dahlberg and Krug, 2002).

1.1.1 Aims and objectives

1.1.1.1 Aims

This thesis aims to investigate whether a primary prevention approach is effective in tackling youth violence in secondary school pupils in the West of Scotland. As this is the first evaluation of MAV it provides initial insights as to whether such a programme is needed in Scottish secondary school pupils, whether it is effective in

changing attitudes towards violence and will seek to incorporate previous empirical research to better understand the processes that underpin why MAV may or may not be successful. This information will then be used to guide the development of MAV.

1.1.1.2 Objectives

In order to achieve the broad aims, five separate objectives are presented, which address the elements of the thesis.

1. To identify and establish the applicability of definitions of violence from the range of disciplines who study violence (chapter 1).
2. To identify the magnitude of youth violence within Scotland and to understand why it occurs by examining theories of the development of violence and how it can be prevented (chapters 1 & 2).
3. To undertake a systematic review to examine whether school-based primary or universal prevention programmes are effective in reducing youth violence (chapter 3).
4. To undertake an outcome evaluation of MAV to assess its effectiveness in changing attitudes towards violence and developing empathy among the school pupils (chapter 5).
5. To conduct a process evaluation with school pupils and MAV volunteers to establish the necessity of MAV within the West of Scotland, and to explore their experiences with the programme and identify any strengths, weakness and areas for development (chapters 6 & 7).

1.2 Definitions of Violence

A uniform definition of violence is necessary to investigate its prevalence and incidence, and monitor the effect of violence prevention programmes. However, what constitutes violence remains highly contested (Stanko, 2007), as each definition of violence emphasises different aspects of motivation, impact and action (Tolan, 2007). As some definitions focus only on the physical aspects of violence, use of this definition may only include acts such as homicide, stabbing, shooting and assault in the calculation of incidence and prevalence rates (Campbell and Schwarz, 1996). Alternatively, other definitions may also include intimidation and this would be reflected in the incidence and prevalence rates (Johnson et al., 1995). Moreover, it is the application of these definitions that leads to social action to resolve the problem (Graham et al., 1985). Examining prevalence and incidence rates can also help elucidate the patterning of violence and thereby help guide violence prevention interventions. For example, as homicide is most common in young men (Dahlberg and Krug, 2002), interventions are often directed at this population. The definition of violence therefore provides guidance of where data should be collected (i.e. hospital records, police intelligence, population-based surveys) and where interventions should be targeted (CDC, 2013).

1.2.1 Search Strategy

In order to establish the most appropriate definition of violence to be utilised for this thesis, a search of the encyclopaedias, handbooks, dictionaries, annual reviews, key texts and journal articles for each of the following disciplines was conducted: criminal justice system, sociology, psychology, criminology,

anthropology, ethics, philosophy, political science and public health. These disciplines were selected because they all give consideration and debate to violence.

1.2.2 Results of search

A variety of definitions were found, both within and between disciplines. What follows is a summary of the definitions and a critique of the relevant issues.

1.2.2.1 Criminal justice system

As discussed previously, violence has traditionally been within the remit of the criminal justice system. It is therefore important to first consider how violence is defined in this field. This is particularly noteworthy in terms of data collection as much of what is recorded in terms of levels of violence, is undertaken by the criminal justice system. Indeed, one of the outcomes used to evaluate the effectiveness of MAV is levels of violent crime which will be collected from police data.

Within the criminal justice system, violence tends to be used as an adjective to describe a crime (i.e. violent felony) or in the context of assault. For example, in the reference book, World of Criminal Justice, violence is defined as:

> *the use of extreme and unwarranted physical force against an individual. Some courts also maintain that threatening physical harm is a violent act. Types of violence are ranked beginning*

> *with assault, which can be a threat to inflict bodily harm or the carrying out of that threat. A violent threat followed up by a violent act is called assault and battery. Aggravated assault is the most serious type of assault; usually it involves the use of some sort of weapon and causes serious bodily harm*. (Gale Group, 2002, ¶1)

What is actually meant by assault, like violence, is often debated. As Lord Justice-Clerk Hope noted "the word assault is one of the most flexible terms" (Hope, 1854, as cited in Jones & Christie, 2003, p.200). However, within Scots Law a more specific working definition is utilised, "an assault is committed when one person makes an attack on another with the intention of effecting the immediate bodily injury of that person or producing the fear of immediate bodily injury in his mind" (Jones and Christiep.200) . Interestingly, although threats do constitute assault, verbal 'attacks' do not.

As the British Crime Survey (BCS) is a key source for obtaining data on the frequency of violence in Britain, including Scotland, it is important to consider how it defines a violent crime: "those where the victim is intentionally stabbed, punched, kicked, pushed, jostled, etc., whether or not there is any injury" (Home Office, 2009, p.23). The BCS then categories violence into four offence types: "wounding", "assault with minor injury", "assault without injury" and "robbery" (p.23). Finally, the BCS categorizes the offence according to the victim-offender relationship, which can be either "domestic violence", "stranger violence" or "acquaintance violence" (p.24). The criminal justice system appears to consider

intent to be a key aspect of a violent act and focuses only on physical violence, except in the case of intimate partner violence, which is defined as “the collective term used to describe domestic violence, sexual assault and stalking” (p.26) and includes acts of emotional or financial abuse.

1.2.2.2 Criminology

Criminology is the source that underpins criminal justice and as such there is a large body of research on violence. Interestingly, in this field, the concept of what constitutes violence varies significantly between researchers. In the Sage Dictionary of Criminology, Stanko (2006) defines violence as involving “any form of behaviour by an individual that intentionally threatens or does cause physical, sexual or psychological harm to others or to him/herself. It is not a phenomenon framed through criminal statute” (p.484). Interestingly, Stanko notes that “most violence is kept away from the purview of the criminal justice system” (p.453) and therefore, many acts of violence will not be included in incidence rates.

However, the Oxford Handbook of Criminology states “The conceptual issue of what acts count as violence does not cause too many difficulties for criminologists in practice *because they usually ignore it*” (Levi et al., 2007, p.706). In a discussion on what constitutes violence, Levi et al. focus on violence recorded in official criminal statistics (i.e. homicide, assault, rape and child abuse), which reflects a focus on physical harm although that does extend beyond interpersonal violence to family violence. Interestingly, Levi et al. (2007) propose that in some instances violence is not planned and instead is a product of situational factors (e.g. the

escalation of a quarrel). This perspective may be particularly relevant to some forms of youth violence, whereby young people are engaging in recreational violence and may not be setting out to cause serious injury (Bannister et al., 2010).

1.2.2.3 Sociology

To date sociological analysis of violence is "driven by social and policy imperatives" (Jackman, 2002, p.387). As this could relate to violence prevention initiatives, the sociological definition warrants further consideration. The Cambridge Dictionary of Sociology defines violence as:

> *the deliberate infliction of bodily violation or harm on one individual human being by another. The forms of violence include hitting, wounding, rape, torture, and, of course, killing. Thus violence is distinguished from non-physical forms of social power, such as coercion or force, ideology, or social control* (Shaw, 2006, ¶1)

This definition is similar to the definition of violence within the criminal justice system as it also focuses on physical injury. Furthermore, it is consistent with the belief that the act must be intentional to be considered violent.

However, an alternative sociological perspective provides a broader definition of violence and highlights the extent that definitions vary, even within disciplines. In the Annual Review of Sociology, Jackman (2002) argues that violence is a "genus of

behaviours, made up of a diverse class of injurious actions, involving a variety of behaviours, injuries, motivations, agents, victims, and observers. The sole thread connecting them is the threat or outcome of injury" (p. 404). Jackman proceeds to define violence as "Actions that inflict, threaten, or cause injury. Actions may be corporal, written, or verbal. Injuries may be corporal, psychological, material, or social" (p. 405). In addition to physical injury, this sociological perspective also includes psychological injury and intentional material and social harm such as economic boycotts and actions that may harm individuals or groups. This may reflect the fact that sociology involves the study of social activity. Jackman argues that this definition "permits both agents and victims to be either identifiable individuals or more amorphous corporate entities" (p.405). This definition enables violence to be considered as something that affects either individuals or society as a whole. Jackman's definition contrasts with that of Shaw (2006) as it is not solely focused on physical harm as an outcome and demonstrates the wider impact of violence.

1.2.2.4 Psychology

As psychology provides a theoretical basis for many prevention interventions (Akers et al., 2010) it is important to examine the definition of violence utilised in this discipline. The American Psychological Association (APA) define violence as a "subtype of aggression, generally used to denote extreme forms of aggression such as murder, rape and assault. All violence is aggression, but many forms of aggression are not violent" (Anderson, 2000, p.163). As the APA define violence as

a sub-type of aggression, how aggression is defined by the APA needs to be considered:

> *Human aggression is behaviour performed by one person (the aggressor) with the intent of harming another person (the victim) who is believed by the aggressor to be motivated to avoid that harm. 'Harm' includes direct physical harm (e.g., verbal insults), direct psychological harm (e.g., verbal insults), and indirect harm (e.g., destroying the victim's property)* (Anderson, p.163) .

The APA's definition of violence is much narrower than that of Jackman's (2002) and is possibly too restrictive to be applicable for MAV's participants. The APA, like the Cambridge Dictionary of Sociology, argues that violence refers only to physical injury. Furthermore, the psychological definition of violence refers to harm inflicted on an individual. This differs from the sociological perspective, which argues that violence can be inflicted on both individuals and groups. The psychological perspective considers violence to be an intentional act, however, this contrasts with the definition offered Levi et al. (2007), who argue that not all violent acts should be considered intentional.

1.2.2.5 Anthropology

The anthropological approach may help us understand violence from different cultural perspectives. However, anthropologists also acknowledge the difficulties

in establishing a uniform definition of violence. In the book *Meanings of Violence: a cross cultural perspective*, Abbink (2000) argues that:

> *in this book we do not claim a uniformity of approach among the authors, but perhaps it can be said that the conception of inter-personal violence underlying the contributions in this book is based on the following four, minimally defining, elements: the 'contested' use of damaging physical force against other humans, with possibly fatal consequences and with purposeful humiliation of other humans. Usually this use of force – or its threat – is pre-emptive and aimed at gaining dominance over others. This is effected by physically and symbolically 'communicating' these intentions and threats to others. Such a description of violence, shows that it is always, by nature, ambiguous interaction* (p. XI) .

Such an approach is again quite broad and consistent with many of the definitions discussed previously, in that it acknowledges the importance of intent in the definition of violence. However, the definition by Abbink (2000) also adds two different perspectives. First, it is the only definition to include the concept of humiliation as a consequence of violence. Secondly, it argues that the aim of violence is to "gain dominance", an aspect that may be particularly relevant to the young men involved in violence in Glasgow (see section 1.3.4).

This difficulty in defining violence is also considered in the *Anthology of Violence*, in which Riches (1986) notes that behaviour that may be perceived as violent within

our society may not be considered violent in others. For instance, in Nigeria there are cultural and social norms that stipulate that men have a right to discipline female behaviour (Adegoke and Oladeji, 2008) and in South Africa physical violence can be considered an acceptable method of resolving conflict within a relationship (Jewkes et al., 2002). However, regardless of whether or not an act is culturally acceptable, Riches also argues that the core purpose of violence is social advancement and is therefore by its nature intentional. This concept of 'social advancement' is consistent with Abbink's (2000) definition and as such may be particularly relevant to MAV's target population.

1.2.2.6 Ethics

In the Encyclopaedia of Ethics, Becker and Becker (1999) argue that violence is "typically inflicted by one person upon another without the other's consent" (¶3). This introduces another component which has not been considered by any of the other disciplines – consent. Whilst some young people choose to engage in recreational violence, it could be argued that as the parts of their brains necessary for calculating risk are not fully developed (Kelley et al., 2004), they do not have the capacity to provide informed consent. In terms of what acts constitute violence, Becker and Becker put forward the following definition:

> *Murder, beating, and burning are clear instances. Harm to minds, psyches, or souls is apprehended as violent by analogy with physical injury and mutilation. While physical damage is*

paradigmatic of violence, it does not follow that psychological damage is of lesser consequence (¶2).

Unlike in many of the other definitions discussed, Becker and Becker (1999) highlight the importance of psychological consequences of violence that can be on a par with the physical harm. Moreover, they note that in some instances of rape or assault it would not even be possible to separate physical and psychological harm.

1.2.2.7 Philosophy

Philosophy offers a range of definitions and perspectives on what defines violence. The Routledge Encyclopaedia of Philosophy acknowledges the difficulty in defining violence; arguing there are two very different politically motivated perspectives on what constitutes violence (Coady, 1998). First legitimists (who tend to be more politically conservative) define violence as the "illegitimate use of force" (Coady, ¶3). The biggest difficulty with this morally loaded definition is reaching a consensus on what actions should be considered "illegitimate" (i.e. police violence, warfare). The structural, more left wing approach, considers violence as "any form of social injustice whether inflicted by individuals or by institutions or by the workings of society at large, and whether or not it involves the deliberate infliction of personal injury by episodes of physical or psychological force" (Coady, ¶4). However, this very broad definition is deemed "confusing" by Coady (¶5) as many people would not consider all forms of social injustice (e.g. discriminatory housing policies) violent. Coady further argues that it would therefore be preferable to use

a more "restrictive" definition than the structural approach and a less "moral" definition than the legitimate approach. As an example, he uses the definition provided by the Oxford English Dictionary, which defines violence as "exercise of physical force so as to inflict injury on or damage to persons or property" (¶6). Coady argues that the benefit of this definition is that it implies that violence is an intentional act, which is a concept that is also explicitly seen in the definitions from sociology, psychology and anthropology. However, a considerable disadvantage of this definition is that it "is arguably too restrictive in excluding psychological violence" (¶6).

A less restrictive philosophical definition is provided by Back (2004), who defines an act as violent in the basic sense if "(1) the attempted action is aggressive (2) the agent is morally responsible for that attempt to cause harm (pain or injury) to the patient" (p.224). Alternatively, an act is defined as being violent in the pejorative sense if:

> *(1)the attempted action is aggressive (2) the agent is morally responsible for that attempt to cause harm (pain or injury) to the patient (3) the agent ought to will to inflict that harm, and (4) the patient should not want to suffer that harm. (i.e., the action unjustly violates the rights of the victim, where 'rights' signifies the morally ideal set of entitlements that the recipient of the action (typically a person) ought to have* (p.225).

Like, the APA definition of violence, Back also considers violence to be a form of aggression, which is defined as “a forceful action, done intentionally by an agent, or a type of action that tends, or intends, to reduce both the freedom or the genetic fitness of those affected by that action” (p.223). Consistent with other definitions discussed, Back’s definition also considers that an act must be intentional to be classified as violent and considers physical harm the main form of violence. Interestingly, Back also considers that the ‘loss of freedom’ or ‘violation of rights’ constitutes violence. This concept could be considered applicable to young people in Glasgow. Violence and fear of violence as a result of rivalries between housing schemes leaves many young people unable to venture into other parts of Glasgow, thus limiting their social mobility (Deuchar, 2009).

1.2.2.8 Political Science

The political perspective offers an alternative stance on how violence relates to human rights and may reflect the views of policy makers so is worthy of further consideration. Scruton (2007) argues that acts of violence need to be justified and “if no justification can be offered then violence is always a violation of rights” (¶2). As the Universal Declaration of Human Rights stipulates that everyone has a right to life, liberty and security of person (UN General Assembly, 1948), violence is arguably a breach of this. Scruton then defines violence as a “property of force. A force is violent if it ‘violates’, i.e. if it breaks and destroys that to which it is applied” (¶1). In the Oxford Dictionary of Politics it is noted that the concept of force being utilised to exert physical harm seems to be accepted as the standard definition of violence amongst political scientists (Bufacchi, 2009).

However, Bufacchi (2009) maintains that this focus on force is not sufficient for three reasons. First, it only refers to physical violence and not psychological. Secondly, it pertains only to humans as victims of violence. Thirdly, it assumes that violence is a direct act between a victim and perpetrator. According to Bufacchi, a more accurate definition would be "violence is the direct or indirect physical attack, injury, or psychological abuse of a person or animal, or the direct or indirect destruction or damage of property or potential property" (¶3). This broadens the definition to include not only direct and structural violence but also violence directed at animals or property. Structural violence includes acts such as repression and economic sanctions. This may be particularly relevant to political scientists and is obviously less applicable to the acts committed by MAV's target population. However, the concept of direct violence can be viewed as relevant to this group.

1.2.2.9 Public Health

In 1996 the WHO declared that violence was a major public health issue and subsequently put forward the following definition:

> *The intentional use of physical force or power, threatened or actual, against oneself, another person, or against a group or community, that either results in or has a high likelihood of resulting in injury, death, psychological harm, maldevelopment or deprivation* (WHO, 1996, p. 2-3).

The focus of public health is on dealing with conditions and problems that affect health, as reflected in this definition. Health is defined by the WHO as "a state of complete physical, mental and social well-being and not merely the absence of disease or infirmity" (WHO, 1946). The WHO definition of violence not only includes psychological injury as well as physical injury and death, but also includes acts that result in maldevelopment or deprivation. The inclusion of the word "power" broadens the definition of violence beyond physical injury to include acts of neglect and all types of physical, sexual and psychological abuse as well as suicide and self-abuse (Dahlberg and Krug, 2002). This broad definition is similar to those offered within philosophy (Coady, 1998), political science (Bufacchi, 2009), ethics (Becker and Becker, 1998) and sociology (Jackman, 2002).

The WHO, like the majority of other disciplines, considers intentionality as a key tenet of the definition of violence. The WHO definition emphasises that violence is an intentional act and can therefore be distinguished from accidental injury or harm (Rutherford et al., 2007). This is particularly important when we consider cultural differences in perceptions of what constitutes injury. In some cultures the meaning of "injury" includes attempts to harm or manipulate others, whereas in other cultures, "injury" simply means physical harm (Flannery et al., 2007). Furthermore, in some cultures some behaviour such as hitting a spouse may be culturally acceptable (Dahlberg and Krug, 2002). This therefore enables the definition to encapsulate behaviours that may be considered acceptable cultural practices, but are nonetheless violent acts that have serious health consequences for the individuals involved.

As the definition provided by the WHO is wide-arching, the World Report on Violence and Health (WRVH) developed a typology to broadly divide violence into three categories. These are then further divided to include more specific forms of violence (Dahlberg and Krug, 2002):

- Self-directed violence, which includes acts such as suicide, suicidal thoughts, attempted suicide and self-abuse.

- Interpersonal violence, which is divided into two sub-categories:
  - Family and intimate partner violence, which includes acts of child abuse, intimate partner violence and abuse of the elderly.
  - Community violence, which usually occurs out with the home between strangers or people who know each other. It includes sexual violence by strangers, random acts of violence and violence in institutional settings, such as schools, workplaces and prisons.

- Collective violence, which is divided into three sub-categories:
  - Social violence, which occurs in an attempt to push forward social agenda e.g. terrorist attacks.
  - Political violence, which includes war, violence perpetrated by states or violent political conflict between states.
  - Economic violence, which is carried out by groups who desire economic gain and may also result in denying individuals access to essential services.

If the WHO definition is to be utilised, many different types of data from a wide range of sources are needed to establish the prevalence of violence. The WHO have compiled a list of the sources of data and this includes mortality data, incidence of physical and mental illness, legislative records, police records and evaluating self-reported attitudes towards violence, cultural beliefs and experiences of violence. Furthermore, as this definition encompasses a wide range of acts (e.g. homicides, suicide, denying access to services, etc.) different strategies are required in violence prevention and this is reflected in the diverse nature of violence prevention programmes (WHO, 2009a).

1.2.3 Discussion of definitions of violence

It is evident that the definition of violence is a contentious issue and what defines violence can vary within and across disciplines. Almost all the definitions discussed argue that an act has to be intentional and cause physical harm for it to be considered violent. However, public health, criminology and sociology also include psychological injury and maltreatment in their definitions of violence. Philosophy and political science argue that a definition of violence should include loss of human rights and anthropology considers humiliation and an attempt to obtain social dominance as violent acts. Combined together these definitions would produce a very broad definition of violence and this highlights the difficulties we have in defining violence and the implications this has for policy and practice (Rutherford et al., 2007).

However, for the purpose of this thesis, the definition that will be utilised is that provided by the WHO. This definition reflects aspects of all the definitions discussed in this chapter and as such encompasses all acts that are applicable to MAV's target population (e.g. homicide, non-fatal assault). The typology then enables us to separate these acts from those that may be less relevant (i.e. terrorism, denying access to essential services etc.). Furthermore, as MAV are attempting to adopt a public health approach to violence it is logical to utilise this definition. Indeed, the public health approach to tackling adverse health and social outcomes has been commended for its ability to describe problems, which can then be utilised to identify risk and resilience factors (Prothrow-Stith and Davis, 2010).

1.3 Youth violence

Violence disproportionately involves young people (Prothrow-Stith and Davis, 2010) and as such *youth violence* is now considered to be a specific form of interpersonal, community violence amongst young people aged 15-29 years (Dahlberg and Krug, 2002, p. 6). This section will first detail the epidemiology of violence involving young people at a global and national level. Secondly, it will then consider how violence impacts on the lives of young people and discuss the association with health risk behaviours. Finally, it will describe the current problem of youth violence within the West of Scotland.

1.3.1 Epidemiology of youth violence

Mortality data indicates that youth violence is a leading cause of death in young men aged 15-29 years (WHO, 2011). The United Nations Office on Drugs and Crime

(UNODC) report a global homicide rate of 21.2 per 100,000 among this population, with the rate in women of the same age being considerably lower at 4.0 per 100,000 (UNODC, 2011). It is important to note that while the public health definition of violence would necessitate a consideration of levels of psychological violence in young people, it was not possible to obtain official data on this. This indicates that the criminal justice approach to violence is still influencing the types of data being collected.

Youth violence is consistently associated with socio-economic disadvantage and is representative of inequalities in health within our society (Sethi et al. 2010). In addition to differences in homicide rates between countries (i.e. higher rates in low- and middle-income countries compared to high-income countries; Dahlberg and Krug, 2002) rates can also vary considerably within countries. For instance, Bellis et al. (2008) reported that individuals living in areas with high levels of deprivation were more than six times more likely to be admitted to hospital as a consequence of assault. The association between violence and deprivation has also been demonstrated in the United States of America (Cubbin et al., 2000), Brazil (Caicedo et al., 2010), Russia (Chenet et al., 1998) and Scotland where death rates due to assault are 31.9 times higher in the most deprived areas, compared to the most affluent areas (Leyland & Dundas, 2010).

1.3.2 Impact of violence on young people

The consequences of violence are far-reaching. Beyond the extreme outcome of death, violence is also associated with non-fatal injuries, illness, disability and

reduced quality of life (Dahlberg and Krug, 2002). Violence also has considerable social impacts for young people in terms of decreased academic achievement and reduced employment opportunities (Prothrow-Stith and Davis, 2010). Moreover, violence not only impacts on its victims, but also the health and well-being of their families, friends and the wider community. For instance, within deprived inner-city areas, the majority of children will have been exposed to, or been victim of some form of community violence, which can result in anxiety and negatively impact developmental trajectories (Margolin and Gordis, 2000). Moreover, parents within inner-city areas have also reported experiencing high levels anxiety regarding their own safety and that of their children in response to violence (Weir et al., 2006). Fear of violence both by parents and young people can have wider health consequences in terms of decreased physical activity (Prothrow-Stith and Davis, 2010).

Early exposure to violence has also been associated with the later development of chronic conditions and engaging in health risk behaviours (Felitti et al., 1998). The Adverse Childhood Experience (ACE) study, a large-scale longitudinal study, assessed the effect of childhood abuse and household dysfunction on a large number of health outcomes from adolescence to adulthood (Dube et al., 2003). The authors reported that exposure to violence as a child is associated with health risk behaviours such as multiple sexual partners, alcoholism and tobacco consumption. Furthermore, young people exposed to violence were at increased risk of developing several of the leading causes of death in adults: ischaemic heart disease, chronic lung disease, liver disease and cancer (Felitti et al., 1998).

1.3.3 Violence and health risk behaviours

In addition to early exposure to violence being a risk factor for later involvement in health risk behaviours, engagement in violence is also associated with health risk behaviours (Dahlberg and Krug, 2002). Alcohol in particular is associated with youth violence and is estimated to be responsible for 26% of male homicides globally (WHO, 2006). Non-fatal violence is also associated with alcohol, with a Canadian study of Accident and Emergency departments reporting that 42% of patients with violent injuries had high blood alcohol levels (MacDonald et al., 1999). Similarly, the BCS also reported that in 40% of violent incidents, the victim believed that the perpetrator was under the influence of alcohol (Budd et al., 2003).

Alcohol is hypothesised to be associated with violence through a number of mechanisms outlined by Graham et al. (1998). First, alcohol may inhibit the part of the brain that normally prevents aggression. Secondly, alcohol impairs cognitive functioning (i.e. assessment of risk, emotional control, self-awareness) which in addition to potentially increasing aggressive responding, may put an individual at risk of victimisation. Thirdly, consumption of alcohol often occurs in crowded settings, which may act as a stimulus for violent behaviour. Finally, in some cultures people believe that alcohol will increase aggression and therefore being intoxicated can act as an excuse for violent behaviour.

Illicit drug use is also strongly associated with violence, with those involved being at higher risk of victimisation or perpetration (Atkinson et al., 2009). For instance,

Hughes et al. (2008) reported that young European tourists were three times as likely to get involved in fighting following cocaine use.

1.3.4 Violence in the West of Scotland

Although considerably lower than the global average homicide rate, Scotland maintains one of the highest homicide rates in Western Europe (Eurostat, 2012) and has the highest police-recorded total assault rate in the world (Heiskanen, 2010). More specifically to young people, the homicide rate for young men aged 16 to 20 years in Scotland has varied between 3.5 and 8.2 homicides per 100,000 population over the last ten years and between 4.4 and 11.8 homicides per 100,000 population in young men aged 21 to 30 years (Scottish Government, 2012). The rates are considerably lower in young women, with a rate of between 0.6 and 2.5 homicides per 100,000 population aged 16-20 years and 0.6 and 1.7 per 100, 000 population aged 21-30 years.

The Scottish Government statistics also demonstrate that homicide rates are highest in the Greater Glasgow area (Scottish Government, 2012). Since the 1930s the West of Scotland, and in particular Glasgow, has had a reputation for violence associated with territorial based gangs consisting of young men (Davies, 1998). This longstanding association was cemented by the publication of the novel *No Mean City* (McArthur and Long, 1935), which told the story of the razor gangs who populated the Gorbals area of Glasgow. The gangs that were prevalent at this time were based upon territorial and sectarian divides, and were viewed as fighting gangs rather than as criminal gangs akin to those in London (Davies, 2007). Such

fighting, tended to be carried out by men aged 17 to 21 years from socio-economically deprived areas and could provide them with a sense of self-worth and enhanced self-esteem (Davies, 1998).

As we will see, this issue of territoriality and associated violence is still very much an issue for young people in Glasgow and the West of Scotland (Kintrea et al., 2008, Deuchar, 2009, Bannister et al., 2010). Territoriality can be defined as 'a social system through which control is claimed by one group over a defined geographical area' (Kintrea et al., 2008, p.4) and can result in violence between the groups. Interestingly, Holligan and Deuchar (2009) reported that while sectarian bigotry may be present in the context of the rivalry between Rangers and Celtic football clubs, known as the Old-Firm, it is the territoriality and not the sectarianism that currently fuels violence amongst young people.

This territoriality can lead to the formation of groups or 'gangs' of young people. Within the media, the term 'gang' conjures up connotations of American street gangs and organised crime (Bannister et al., 2010). This is considerably different to the 'gang' involvement of young people in Glasgow, which have little (if any) ties to organised crime (Kintrea et al., 2011). As 'gangs' can refer to a range of group formations including 'peer group', 'street-based group', 'delinquent youth group' and 'organised criminal group' there is a lack of agreement of what defines a gang, with many UK-based researchers even being reluctant to use the term (Goldson, 2011).

To further understand territoriality and problematic youth groups in Glasgow and Britain more generally, Kintrea et al. (2011) conducted an exploratory qualitative study with young people, local police, community workers, teachers and residents workers. Using this data, Kintrea et al. identified three categories of behaviour. First, groups of young people who socialised in public areas, but had no territorial affiliations. Secondly, groups of young people with a strong territorial affiliation who were often referred to as gangs by participants. However, Kintrea et al. note that they are better described as territorial groups. Thirdly, organised 'gangs' who were associated with criminality and neighbourhood-based drug markets. More specifically to Glasgow, Kintrea et al. reported that territorial groups had an "aggressive, even violent presence" (p.61) and were associated with antisocial behaviour and weapon carrying but were not directly associated with criminal firms.

Bannister et al. (2010) further explored youth-gang activity within Scotland through qualitative research with agency workers and young people who were associated with such behaviours. They found that although some people referred to the groups as 'gangs' many young people from the West of Scotland referred to the groups in terms of the areas or housing schemes to which they belonged. Such groups were predominantly male and tended to be small during the week but would increase to over 30 at the weekend. These groups were characterised by Bannister et al. as "fluid, messy, informal friendship networks that got together regularly, but not in any formal capacity" (p. 32). Moreover, it was found that within the West of Scotland, territorial fighting took place between groups to protect housing schemes, friends and the individuals themselves. Territorial based

fighting between groups of young people has even been called 'recreational' because of the thrill it can give to those participating in it (Kintrea et al., 2008). However, Deuchar (2009) noted that territoriality has wider implications in terms of confining young people to their housings schemes and restricting their social mobility (regardless of whether they are in a gang or not).

In order to establish the extent of such street gangs or territory based groups in Glasgow, community police officers and analysts mapped gang territories and membership (VRU, 2009a). These young people then subsequently became the focus of Glasgow's Community Initiative to Reduce Violence (CIRV). This process identified 55 named gangs, with between 600-700 members aged 14-18 years in east Glasgow and 21 named gangs with approximately 400 members aged 15-19 years in north Glasgow (VRU, 2009a). As so many young people in Glasgow are involved in gang-related activities, it is important to understand why. Deuchar (2010) argues that young people living in deprived communities are marginalised by the authorities and wider society. This can result in feelings of social exclusion and young people then group together to provide a sense of identity and belonging. Furthermore, involvement in such groups can boost young peoples' social capital, which refers to the "features of social organisation networks, norms, and social trust that facilitate coordination and cooperation for mutual benefit" (Putnam, 1995, p.67). Social capital can be divided into bonding and bridging social capital. Bonding social capital brings together people who are alike (e.g. age, socio-economic status) whereas bridging social capital brings together people from different social groups (Putnam, 2002). Kintrea et al. (2008) note that bonding social capital can provide social support in adverse circumstances (i.e. socio-

economic deprivation, dysfunctional family); however, it can result in inward-looking behaviour and limit "wider geographical and social engagement" (p.12). Consequently, bonding social capital can strengthen territorial attachments, which are an important feature of many street gangs within Glasgow. Indeed, in their qualitative study with young people from deprived areas of Glasgow, Deuchar and Holligan (2010) reported that gangs provided some young people with positive forms of social bonding, which may have compensated for the lack of social capital obtained from their home lives. Bridging social capital, by contrast, can be seen as more beneficial as it leads to the formation of a range of social relationships from different communities and can enhance social mobility (Kintrea et al., 2008).

Bannister et al. (2010) also identified that knife-carrying was associated with territorial based groups (although not amongst all members), particularly when leaving their own housing scheme. Additionally, some young people who were not affiliated with a gang carried knives to engage in serious non-group violence. Deuchar (2010) also reported that some of the young men in his qualitative study admitted to carrying knives or other weapons such as golf clubs, bricks and some even made their own weapons. However, Bannister et al. (2010) noted that not all young people carried knives intended to use them and instead viewed them as a form of self-protection and is consistent with findings by Deuchar (2009).

1.3.4.1 Violence prevention in Glasgow

In response to the high levels of youth violence in Scotland (and in particular Glasgow) the Violence Reduction Unit (VRU) was formed. The VRU adopts a public

health approach to violence and works with partner agencies with the aim of reducing violence through societal and attitudinal change. In conjunction with other agencies, the VRU have developed a number of violence prevention programmes such as CIRV (see VRU, 2009a), which aimed to give young people an alternative to violence and help enhance employability. In addition to working with those already engaged in youth violence, the VRU also works in partnership with other organisations that are focused on the primary prevention of violence, such as MAV.

1.3.5 Conclusion

This section highlights the impact that violence has on the health and well-being of young people at a global and Scottish level. The West of Scotland in particular, has a problem with youth violence and knife-carrying, which is generally associated with territory-based groups or 'gangs'. This not only impacts on those directly involved, but also the wider community who can feel confined to their housing schemes due to fear of violence (Deuchar, 2009). Indeed, violence is now a recognised public health problem, and efforts are being made in Scotland to address it. However, it is increasingly being acknowledged that interventions should have a theoretical basis (Schorr and Farrow, 2011). The next chapter will therefore examine theories of violence and then utilise this information to better understand how primary preventions can work in relation to violence.

Chapter 2 Primary prevention of youth violence

2.1 Introduction

Behavioural and social science theories provide a useful framework for developing public health interventions (Jarlais et al., 2004). Indeed, evidence suggests that the most successful interventions have a theoretical base (Glanz and Bishop, 2010). Furthermore, the first steps in the public health approach to violence involve understanding the causes of violence and then subsequently developing interventions (Dahlberg and Krug, 2002, CDC, 2013). More specifically, with regard to youth violence, Mercy et al. (2002) argue that more research is needed to understand the causes of youth violence in order to facilitate the development of an effective response. The current best evidence for the prevention of youth violence supports the use of primary prevention interventions in the form of social development programmes (Mercy et al., 2002, WHO, 2009b, Sethi et al., 2010).

The evidence suggests that social development programmes are most effective when delivered in early childhood (Mercy et al., 2002, WHO, 2009b) and as such there is now a wealth of early years prevention programmes. However, it is imperative that adolescents are not neglected from the violence prevention process as adolescence is a time of considerable brain development, particularly in terms of response inhibition and the evaluation of risk and rewards (Steinberg, 2005). Moreover, it is also the age when young people begin more serious involvement with violence (Office of the Surgeon General, 2001). The emphasis on developing early years programmes, rather than developing programmes for adolescents may be reflective of an issue that impacts on adolescent health more

generally, whereby adolescents tend to get grouped with either younger children or young adults in health statistics (Currie et al., 2012). However, as they have different health needs, researchers and policy makers need to consider adolescents as an important and distinct group.

The first part of this chapter will include a literature review of the current theories of violence that have a social development basis and as such may be modifiable by primary prevention programmes. The second part of this chapter will then examine the literature on prevention science to provide a theoretical understanding of how primary prevention programmes targeted at adolescents may work.

2.2 Theories of Violence

Current research has examined the risk factors, correlates and theories of violence and aggression. It is important to note that a considerable proportion of the literature investigates delinquency and aggression, and not specifically violence (Farrington, 1998). However, as aggression can develop into violence this evidence is still worth considering (Loeber and Hay, 1997, Brendgen et al., 2001). This chapter will group together the evidence regarding risk factors, correlates and theories of violence and aggression that have a social development background. First, the evidence regarding psychological factors will be discussed. Secondly, the evidence for the role of social factors in the development of violence will be considered. Finally, it will discuss how these factors interact and can be applied to two models of violence (the ecological model and the cycle of violence).

2.2.1 Search Strategy

A literature review was conducted to identify the current theories of violence. Three separate searches were conducted to locate literature on psychological factors, social factors and biological factors using the following search terms:

- psychology OR psychological theory OR psychological factor AND violence OR aggression OR delinquency
- social OR social theory OR social factor OR environment OR environmental factor AND violence OR aggression OR delinquency
- develop OR development AND violence OR aggression OR delinquency

The following databases were used for the search: Psycinfo, Medline, CINAHL and Google Scholar. Reference lists were also searched to identify any other relevant studies.

2.2.2 Theories identified by a review of the literature review

Theories were included if they had an established evidence base (i.e. numerous studies by different authors) and were relevant to social development of violence. The initial intention had been to only include papers that specifically examined the development of youth violence as a form of community violence (see Dahlberg and Krug, 2002). However, at times it was relevant to also include studies examining intimate partner violence and child maltreatment as they can influence the development of youth violence.

2.2.2.1 Psychological factors involved in violence

Research in psychology has proposed a number of causes of violence including social learning, social information processing factors, developmental trajectories and self-esteem. Each of these theories will be discussed in turn.

2.2.2.1.1 Social Learning Theory

Social learning theory proposes that observational learning is central to the development process and children learn behaviours through the observation of models (Bandura, 1977). Bandura (1978) argues that violence is learned directly or indirectly through family role models and this behaviour is reinforced during childhood and continues through adolescence into adulthood as a method of conflict resolution or a coping method. However, it has been noted that behaviour is not merely learned through observation; it also depends upon attention, retention, the physical capacity to carry out the behaviour and motivational and reinforcing factors (Mihalic & Elliot, 1997).

Using social learning theory, Foshee et al. (1999) hypothesised that adolescents exposed to family violence will have more positive expectations about the outcomes of using violence, fewer negative expectations about using violence, accept the use of violence under more circumstances, have a more aggressive response to conflict and have fewer constructive ways of resolving conflict. The authors reported that dating violence was associated with exposure to family violence and was mediated by the variables of acceptance of dating violence and aggressive conflict style response in both males and females. In males the

perpetration of violence was also driven by positive outcome expectations of violence. This evidence demonstrates how social learning theory mediates the relationship between childhood exposure to violence and violence perpetration or victimization in adolescence.

However, it is important to consider whether exposure to family violence is predictive of violent behaviour in other settings and not just further family violence. Hotaling et al. (1989) examined this using survey data and reported an association between exposure to violence in the home and violence towards peers. In order to fully understand whether exposure to violence as a child predicts later involvement in violent behaviour, longitudinal studies are needed. For instance, the Rochester Youth Development Study, investigated the development of crime and delinquency in over 1000 adolescents who were followed-up to early adulthood (Ireland and Smith, 2009). The study reported that those witnessing intimate partner violence were significantly more likely to commit a violent crime in adolescence (OR = 1.65) even after controlling for concurrent child abuse. Interestingly this effect was only significant in early adulthood when the perpetrator had witnessed severe intimate partner violence as a child.

The evidence suggests that exposure to violence as a child may indeed be predictive of later involvement in violence. Social learning theory provides a plausible explanation for the transmission of violence as exposure to violence demonstrates to the child that the perpetrator obtains their desired rewards using violence. The child subsequently comes to expect this will be the outcome of violence (Hoffman and Edwards, 2004). Social learning theory has been used as

the basis for school-based violence prevention programmes, for instance, the Students for Peace Project (Kelder et al., 1996). However, cohort and cross-sectional evaluations reported no difference in aggressive behaviour and fighting between the control and intervention group (Orpinas et al., 2000).

2.2.2.1.2 Social Information Processing Factors

An alternative explanation for the association between early exposure to violence and development of violent behaviour are social information processing factors. Dodge, et al. (1990) argue that social information processing factors (i.e. how a child processes and interprets social cues) are involved in the development of violence. In a longitudinal study assessing the effects of abuse in 5-year-old children, Dodge et al. reported that aggressive behaviour was significantly increased in children that been physically harmed. Harmed children were significantly less attentive to relevant social cues, more biased toward attributing hostile intent and less likely to generate competent solutions to interpersonal problems. Additionally, social processing variables significantly predicted later aggression. Dodge et al. concluded that early physical harm altered the child's patterns of processing social information which can lead to the development of deviant misconceptions and result in the development of aggressive behaviour.

The association between social information factors and exposure to violence was further investigated in adolescents incarcerated for serious and violent offences (Shahinfar et al., 2001). Exposure to severe community violence was significantly associated with social information processing deficits. However, the pattern of

such deficits depended on whether the participant had witnessed or been a victim of violence. Victimisation of violence was predictive of approval of aggression, hostile attributional bias and hostile social goals. Whereas, witnessing aggression predicted expectations that violence would lead to positive outcomes.

However, a prospective cohort study examining the effects of childhood exposure to violence on the development of child conduct problems reported only modest associations between child abuse and later conduct problems (Dodge et al., 1995). The study also reported associations between child abuse, social information processing problems and conduct problems but do caution that social information processing factors are not the sole cause of conduct problems.

This evidence suggests that social information processing factors may be one of several mechanisms for the mediation between exposure to violence and later development of conduct problems. Such mediators are an appropriate target for youth violence prevention programmes in adolescents as although it may not be possible to change an individual's circumstances, it may be possible to alter their response (Dahlberg and Potter, 2001).

2.2.2.1.3 Developmental Trajectory Model of Aggression

An alternative proposal is that aggression is inherent and that we learn to control it through normal socialization processes (Tremblay, 2000). In a longitudinal study, Nagin and Tremblay (1999) followed 1000 Canadian males from Kindergarten to 18 years and collected data from a variety of sources, including:

teacher ratings, self-reported delinquency scales and juvenile court records. From this data they produced developmental trajectory models for aggression, opposition, and hyperactivity, which demonstrated that as the boys got older they generally became less aggressive, oppositional and hyperactive. However, oppositional and aggressive adolescents were also oppositional and aggressive children. These results depicted a chronic aggression trajectory, which led to physical violence and the most serious delinquent acts in adolescence. Similar results were also reported in a multi-site longitudinal study, which examined childhood physical aggression and adolescent offending in both males and females (Broidy et al., 2003). In all five sites childhood aggression was associated with an increased risk of violent offending in adolescence in boys. However, this relationship was inconsistent in girls, and may be explained by the low risk of violent delinquency in females.

This evidence indicates that patterns of aggression remain relatively stable in so far as the small subsets of children that are aggressive in childhood remain aggressive into adolescence. Nagin and Tremblay (1999) argue that this goes against the popular belief that boys become more aggressive as they enter adolescence. According to their study, it is the minority that follow a chronic aggression trajectory as they do not learn to regulate their physically aggressive reactions. The common belief that boys become more aggressive can be explained by an increase in seriousness, whereby, an aggressive act by an adolescent would have much greater consequence than that of an infant (Tremblay, 2000). If early aggression is indeed predictive of later violent offences, such children would perhaps be an appropriate target group for secondary prevention programmes.

2.2.2.1.4 Self-esteem

The role of self-esteem in violent behaviour is somewhat controversial, with some research suggesting that low self-esteem predicts violence (e.g. Gilligan, 1999). Conversely, other researchers argue that high self-esteem predicts violence (e.g. Baumeister et al., 2006). As many youth violence prevention programmes aim to improve self-esteem, it is important to understand the role it plays in the development of violence.

The forensic psychiatrist, John Gilligan (1999) argues that ultimately shame, low self-esteem and humiliation are the root cause of all violence. From work with prison inmates, Gilligan found that violence was triggered by disrespect and that inmates would rather harm their bodies than lose face. However, it is important to note that not everyone who is shamed acts violently and Gilligan argues that there are preconditions to this. First, violent men are deeply and chronically ashamed over matters so trivial that their triviality makes such matters even worse. Secondly, such men hide behind a defensive mask of machismo, self-satisfaction and bravado. Most (non-violent) people have non-violent means available to protect their self-esteem; however, Gilligan argues that those who become violent do not. Thirdly, if the individual is humiliated in a setting where violence would not allow the individual to accomplish their goal, violence may not result. Finally, Gilligan argues that most non-violent people are prevented from engaging in serious violence as they possess capacities for guilt and empathy, which will not permit engagement in lethal violence.

Donnellan et al. (2005) examined the association between self-esteem and delinquency including violence in adolescents (n=292) and undergraduate college students (n=3143). For the adolescents outcome measures included teacher reported self-esteem, self-reported delinquency and self-esteem. Self-esteem was found to be consistently negatively correlated with delinquency including physical fighting. Interestingly, when the authors controlled for supportive parenting and academic achievement, the relation between self-esteem and delinquency remained significant. Within the undergraduate student group low self-esteem was correlated with total aggression and with the subscales of physical aggression, anger and hostility. Although the effect sizes reported were small to moderate, this research does provide some evidence for an association between violence and low self-esteem throughout adolescence. As self-esteem decreases throughout adolescence and does not increase until adulthood (Robins and Trzesniewski, 2005), this could contribute to the higher levels of violence seen in this age group.

It is evident that the relationship between self-esteem and violence is not clear cut. A systematic review examining the relationship in adults and adolescents reported that 12 of the 19 studies identified suggested that low self-esteem was associated with violence (Walker and Bright, 2009). Only two studies found an association between high self-esteem and violence whereas the others found no association. As a result, Walker and Bright proposed a cognitive model, which in essence argues that violence is an attempt to protect the self from further humiliation and physical violence allows some self-esteem to be maintained by gaining physical respect from the victim. Consequently, Walker and Bright argue that the goal of therapy should be to develop the skills necessary to gain personal respect instead

of physical respect and this concept can be utilised by violence prevention programmes.

Baumeister et al. (1996) dispute the traditional view that low self-esteem causes violence and go so far as to argue that this view is "so widely and uncritically accepted that it is often casually asserted to the absence of evidence and even in the presence of apparently contrary evidence" (p. 6). For instance, Baumesiter et al. maintain that the authors of such papers describe the participants as arrogant and egotistical but then argue that they had low self-esteem. Baumesiter et al. define the term self-esteem as a "favourable evaluation of oneself" (p.5) and argue that although this has some positive connotations it can also refer to arrogance, narcissism and egotism. Moreover, these self-evaluations may be valid or unfounded. To help avoid confusion Baumesiter et al. choose to use the term egotism to mean both favourable appraisals of the self and the motivated preference for such appraisals, whether they are founded or not. Baumeister et al. hypothesise that violence is more likely to be carried out by an individual with high self-esteem when their favourable self-view is questioned or judged (i.e. an ego threat). The individual will then aggress against the source of the threat. Furthermore, individuals with high self-esteem will believe that they are more likely to win a fight. They argue that individuals with high self-esteem are not immune to insults and threats; rather that high self-esteem will increase the likelihood that an individual will take offence. However, Baumeister et al. do acknowledge that the majority of individuals with high self-esteem are not violent and other moderating factors influencing the stability of self-esteem are involved,

including: certainty of the self-appraisal, stability of self- appraisals and evaluative dependency.

In a follow-up paper Bushman and Baumeister (1998) argue that self-esteem can be sub-categorised into stable self-esteem (i.e. not changed by threats to self-esteem) and inflated self-esteem (i.e. unfounded, grandiose views of the self, akin to narcissism). Indeed, narcissism has been shown to be associated with hostility (Raskin et al., 1991) and aggression (Wink, 1991). Bushman and Baumeister argue that those with inflated self-esteem will be more prone to encountering criticism and will be the most intolerant. They note that such criticism represents a threat to the ego and the authors hypothesise that this will result in aggression. To test this hypothesis Bushman and Baumeister examined whether ego threat combined with narcissism would predict aggression, and if self-esteem levels directly predicted aggression. Undergraduate students (n=266) were first asked to complete the Rosenberg self-esteem scale and narcissistic personality inventory. The students were then asked to write an essay on abortion, which would be marked by a "partner". In actuality, students were randomly given positive comments or negative comments, which represented an ego threat. Aggressive behaviour in response to the comments was then measured by asking the participant and their partner to push down a button and whoever was quicker was allowed to inflict noise at a duration and intensity of their choice.

It was found that ego threat was positively correlated with an increase in aggressive behaviour; however, when the partner was not the evaluator there was no increase in aggressive behaviour. Regression analysis identified that there was

a positive relationship between narcissism and aggression and there was an interaction between narcissism and ego threat. This confirmed the hypothesis and indicated that individuals who scored highly in narcissism were exceptionally aggressive. There was no significant effect between self-esteem (low or high) and aggression, indicating that self-esteem (as measured by the Rosenberg scale) did not have a direct link to aggression. While this does not provide support for a direct relationship between aggression and self-esteem, it also suggests that there is no relationship between low self-esteem and violence as has been previously suggested (see Gilligan, 1999). The study, however, is limited as the measure of aggression may not accurately predict aggressive behaviour in a non-experimental setting. Furthermore, self-esteem was measured at a mass testing session several weeks prior to the experiment, whereas narcissism was measured immediately before the experiment. These limitations could potentially explain why there was no correlation between self-esteem and narcissism. Alternatively, it may be the case that narcissism should be considered distinct from self-esteem and applies to a subset of individuals who have highly favourable, unfounded views of themselves. Subsequently narcissism may predispose individuals to aggressive behaviour when their favourable self-evaluations are challenged.

Salmivalli (2001) expanded the work by Bushman and Baumeister (1998) and hypothesised that some individuals have unhealthy/false self-esteem, whereby the individual has underlying insecurities and to compensate for this they create “make-believe” self-esteem. This employs a defensive refusal to believe anything negative about oneself. Salmivalli makes the case that self-esteem should not be considered a spectrum from low to high, but rather as healthy or unhealthy.

Unhealthy self-esteem can then be separated into those who have a negative view of the self and those who have narcissistic view of the self that cannot take criticism (i.e. threatened self-esteem).

In order to examine the relationship between threatened self-esteem, humiliation and violence, Walker (2005) developed the Maudsley Violence Questionnaire (MVQ). Factor analysis of the MVQ identified *machismo* to be a primary subscale of the MVQ, which strongly predicted violent delinquency in men. Machismo relates to the stereotypical expectations of men, whereby violence and aggression are viewed as being desirable as they are associated with strength and assertiveness, whereas men who do not fight or back down will be viewed as less of a man (Walker). Walker argues that the machismo subscale has some commonality with the reactive violence subscale of the Attitudes Towards Violence Scale (Funk et al., 2003) which is being utilised as part of the evaluation of MAV.

Walker and Gudjonsson (2006) utilised the MVQ in a study with school students (aged 16-19 years) in London (n=785). Significant differences were reported between males and females for machismo, acceptance of violence and self-reported delinquency. Regression analysis identified that high machismo was the biggest predictive factor of violence in males. However, self-esteem was unrelated to violence and aggression in males and females. The authors argue that this lack of association between self-esteem and violence could be due to difficulties in measuring self-esteem. For instance, the self-esteem measures used in this study (and the studies discussed previously) utilise self-report data. These measures may simply indicate how a person wishes to be seen by others and would not be

able to distinguish between false self-esteem and high self-esteem. Other difficulties in measuring self-esteem include social desirability and in the case of narcissism, defensively denying any weakness which would result in falsely high self-esteem.

Such methodological issues may explain why the role of self-esteem in violence in not yet clear. Nevertheless, what can be surmised from the research on self-esteem is that it is how individuals manage and respond to criticism that is important. Therefore, despite the enhancement of self-esteem being viewed by some as a "cure for a broad variety of personal and social problems" (Bushman and Baumesiter, 1998, p. 219) there is no current theoretical basis supporting the use of programmes designed to enhance self-esteem. It may instead be more constructive to help individuals acquire the skills to manage criticism peacefully.

2.2.2.2 Social Theories

Rates of violence vary significantly between countries and even between areas in the same town or country (Dahlberg and Krug 2002). The society in which individuals live can greatly influence involvement in violence, with those from the most deprived areas at greatest risk of being both a perpetrator and victim of violence (Hsieh and Pugh, 1993). Theories and research from sociology, anthropology and criminology including strain theory and subcultural theory try to help explain the association between deprivation and violence and will be discussed in turn.

2.2.2.2.1 Strain Theory

Initially developed by Merton (1938), strain theory is based on Emile Durkheim's concept of anomie, which literally means lack of social norms. According to Slattery (2003), Durkheim believed that the collapse of traditional norms, moral values and breakdown of social control, brought on by consumerism and capitalism, ultimately resulted in a "state of dysregulation". Merton developed the concept of anomie into the initial strain theory, which claims that in certain phases of social structure development circumstances generate the belief that infringement of social codes is normal behaviour. Integral to this are two elements. The first is the presence of culturally defined goals, purposes and interests within social groups. The second is social structure which regulates and governs acceptable methods of achieving these goals. Methods which specific individuals could utilise to more easily obtain these goals are not permitted within the social structure (e.g. theft).

Merton (1938) argues that equilibrium of social structure and culture leads to an integrated, stable and progressive society. Within society the majority of people do conform to the cultural goals and obtain them in legitimate ways; however, some individuals do not possess legitimate means to obtain such goals and may engage in deviant behaviour. Merton proposes that these individuals suffer a mental conflict as they have a moral obligation to use legitimate methods to obtain the goal but can only succeed using illegitimate methods. One way of dealing with this mental conflict without using illegitimate methods, is for an individual 'drop out' (Merton, p. 678) of society and renounce both the goals and social structure. However, not all individuals who cannot access their goals turn to criminal

behaviour or renounce society. Indeed, Merton argues that deviant behaviour is not simply due to lack of opportunity or rigid class structure, but instead it is fuelled by cultural values that emphasise pecuniary success for all members of society. In reality obtainment of such success is restricted with a considerable proportion of the population prevented from achieving this success legitimately.

Despite being a dominant theory for criminal behaviour until the 1960s, strain theory lost favour in the 1970s when social learning theory grew in prominence (Agnew, 1992). However, Agnew argues that strain theory does have a central role to play but only if it is revised utilising research on stress, aggression, emotions and the urban 'underclass'. Merton's theory proposed that strain was solely a result of certain individuals being blocked from achieving culturally defined goals (mainly pecuniary success). Agnew's General Strain Theory (GST) elaborates on Merton's theory and consists of three central arguments. First, consistent with Merton's (1938) theory is the failure to achieve positively valued goals. This has been revised to not only include money as a goal but also other outcomes of importance to adolescents (i.e. intelligence, athletic ability and attractiveness). Secondly, strain can be the result of the removal of positively valued stimuli from the individual. For instance, delinquency may result if the individual attempts to prevent the loss of the positive stimuli or obtain substitute stimuli. Alternatively, individuals may manage the negative affect induced by the loss of positive stimuli by engaging in illicit behaviour (e.g. drug taking). Finally, strain can be the result of negative stimuli (e.g. child abuse, neglect, victimization and negative school experience. Agnew argues that these experiences can act as a major source of

strain and some adolescents are unable to legally escape from this noxious stimulus.

The major limitation of strain theory is its failure to explain why some individuals who are under strain use legitimate means to resolve strain but others resort to illegitimate means (e.g. delinquency, violence and drug use). It is therefore important to understand what predicts the use of delinquent methods as this information can be utilised by violence prevention programmes. Agnew (1992) argues that there are many adaptations an individual can make to strain but these may not be applicable to everyone.

- *Initial goals/values/identities of the individual*. If these are of high importance and the individual has few alternative goals the strain will have a greater impact.
- *Individual coping resources*. This includes traits such as intelligence, problem-solving skills, self-efficacy and self-esteem. These would enable an individual to cope with strain using non-delinquent measures.
- *Conventional social support*. This includes informational, instrumental and emotional support. Adolescents with conventional social support are more able cope with strain using non-delinquent measures.
- *Constraints to delinquent coping*. This includes individual's social control, the costs and benefits of engaging in delinquent coping and the possession of illegitimate means necessary for delinquent behaviour.
- *Strong cultural emphasis on monetary goals/status*. It can be more difficult for individuals from deprived areas to minimize the importance of these goals.

- *Social environment and norms*. This will influence an individual's beliefs regarding what behaviour is acceptable.
- *Disposition to delinquency*. For example, the individual's temperament, prior learning history, the individual's beliefs regarding the appropriate response to provocation, who the individual attributes their adversity to and association with delinquent peers.

Furthermore, Agnew (1992) argues that strain can result in a range of different emotions including, depression, fear and anger. These will also condition how an individual responds to adversity. However, Agnew argues that anger is the most relevant to delinquency and violence as it indicates the individual blames others for their adversity and seeks revenge.

Mazerolle et al. (2000) investigated whether anger mediates the association factor between strain and delinquency in suburban high school students (n=263). The participants completed questionnaires which comprised of general strain measures (i.e. removal of positive stimuli, presentation of negative stimuli), anger levels, social bond (i.e. attachment to parents and school and commitment to conventional activities), interaction with delinquent peers and family and delinquent behaviour in the form of assault, gang fighting, vandalism and drug use. It was found that strain and anger had a significant effect on violent behaviour. Interestingly, regression modelling indicated that strain mediated the effect of anger on violent behaviour and anger did not mediate strain, as hypothesised. The authors argue that this may be a consequence of the development of anger in young people who have had more exposure to strain and deviant affiliations. There

was no significant association between strain and school related deviance or drug use. The results are limited as the sample is from a middle/upper class area and it is plausible these adolescents may experience less strain. However, the study provides some evidence for an association between strain and delinquency.

A larger study by Hollist et al. (2009) also investigated the role that that anger plays in mediating strain on delinquency. The authors argued that child maltreatment as defined by Brezina (1998, p.73) as "acts intended to inflict physical or psychological harm, and that reflect a lack of concern for the adolescent's well-being, sense of self and social competence" is a major source of strain in adolescents. Hollist, et al. analysed data on adolescent maltreatment, negative emotions (anger, anxiety and depression) and delinquency (including violence) from the National Survey of Children (n=2000). It should be noted that this study is limited as it only considers maltreatment as a form of strain and does not examine goal blockage or removal of positive stimuli. Nevertheless, the authors reported that maltreatment significantly increased delinquency, as did negative emotions. When negative emotions were controlled for there was a reduction in the effect of maltreatment on delinquency and consistent with GST, the emotion that had the biggest effect was anger. However, negative emotions did not completely mitigate the effects of strain on delinquency as maltreatment continued to exert a significant effect after controlling for negative emotions and individual and family characteristics. Therefore, although this provides some support for Agnew's (1992) GST, there must also be other mechanisms not yet identified that also mediate the effect of strain on delinquency.

Further evidence regarding the role of anger as a mediating factor is provided by Brezina et al. (2001) who used data from the Youth in Transition (YIT) study, which comprises a national sample of 10th grade male public high school students (n=1886). The authors reported that school-level anger had a significant effect on conflict with peers, suggesting that a student was more likely to engage in fights and arguments if attending a school with a relatively angry student population. However, school anger did not exert a significant effect on aggressive behaviour and therefore, increased conflict with peers may in fact be a manifestation of the subcultural values of the school.

The studies discussed previously (Hollist, et al., 2009; Mazerolle, et al., 2000) investigated the relationship between strain, anger and violence in populations with low to moderate levels of strain. Baron (2004) argued that in order to effectively investigate this relationship, a population under severe strain needs to be studied (e.g. homeless youths). Baron hypothesised that street youth who experience more strain (e.g. physical abuse, sexual abuse, emotional abuse, property victimization, robbery victimization, violence, homelessness, unemployment, deprivation and dissatisfaction) will have higher levels of anger. This strain and anger will subsequently be positively related to crime in the form of violence, robbery and drug use. Data was collected by interviewing street youth (n=400) on their experience of strain and criminal involvement. Two forms of strain (violent victimization and emotional abuse) were found to significantly predict anger but other forms of strain did not. Consistent with other research (Hollist et al., 2009, Mazerolle et al., 2000) anger was significantly associated with criminal behaviour, in particular violence. Baron also examined whether self-

esteem was associated with crime and reported that high self-esteem was associated with increased levels of crime. Although this supports GST it is plausible that this evidence is limited by confounders such as school failure and unemployment.

Savolainen (2000) develops Merton's theory into two independent causal arguments; strain theory and institutional anomie theory (IAT). The majority of empirical evidence has focused on strain theory and largely neglected IAT, which assumes that the level of crime in a social unit depends on a balance between elements of culture and social structure. According to Merton's (1938) theory, social structure refers to the opportunities people use to obtain cultural goals. Therefore, the more unequal a society is, the less chance sections of the population have to obtain these goals legitimately and rates of offending become higher. Indeed, recent data from the US has shown a match between trends in inequalities and homicide with both rising through the early 1990s before declining and then rising again from 2005 (Wilkinson and Pickett, 2010).

The impact poverty has on crime can be reduced by non-economic values such as religion, family and politics. Savolainen (2000) hypothesises that economic inequality will have a positive effect on homicide rate and this will be strongest in nations where the economy dominates the institutional balance of power. Using WHO datasets, the study reported that economic inequality is a strong predictor of homicide rate but only in nations where welfare spending was low. Conversely, in nations where there was a high economic inequality but welfare spending was high, homicide rates were significantly lower. Savolainen suggests that nations that

do have high levels of income inequality can be immune from the detrimental effects of income inequality if they are able to invest highly in welfare spending.

Levels of violence also vary significantly between communities in the same country (Dahlberg and Krug, 2002; Bellis et al., 2008). Agnew (1999) argues that community characteristics can affect levels of strain by affecting the likelihood of residents failing to achieve positively valued goals, losing positive stimuli and experiencing negative or aversive stimuli. This strain can increase the anger levels of the residents, and neighbourhoods with more strained residents will have a higher probability of interactions leading to explosive and potentially violent situations. Community strain is of particular relevance to MAV's participants as many of them reside in deprived areas. However, this strain also highlights the need for additional interventions (beyond education approaches such as MAV) delivered at a community level.

Warner and Fowler (2003) investigated whether neighbourhood characteristics indicative of disadvantage were associated with increased strain and whether strain mediates the effects of neighbourhood characteristics on violence. The authors analysed US census data and conducted phone interviews of a random sample of residents (n=2309) with varying levels of socioeconomic deprivation. Strain in the form of loss of positively valued stimuli and presentation of negative stimuli was measured by asking respondents whether they had received verbal threats or insults, felt cheated by someone or been harassed by the police. The scores were averaged to provide a mean level of strain in each neighbourhood. Levels of violence were measured by asking respondents whether they had

witnessed or heard about violent behaviour in the neighbourhood in the past 6 months, with an average score being calculated for each block. The authors were also interested in whether higher levels of informal social control and social support could moderate the effect of strain on violence. The study reported that disadvantage and low residential stability were associated with increased neighbourhood levels of strain. What is more, Werner and Fowler reported that in areas with low social support, strain was significantly associated with increased levels of violence. However, it did not have a significant effect when levels of social support were high. Interestingly, informal social control did not significantly moderate the effect of strain on levels of violence as was hypothesised. Although the self-report scores of violence may not accurately measure violence levels, these results do provide support for an association between disadvantage and neighbourhood strain. Furthermore, these results indicate the high levels of social support may help contain violence in strained neighbourhoods. This therefore provides theoretical support for community based interventions violence prevention programmes which aim to improve social support in deprived areas.

2.2.2.2.2 Subcultural Theory

Anthropological and sociological approaches to violence both posit that there is a subculture that is conducive to violent behaviour. Subculture can be defined as " a large set of people who share a defining trait, associate with one another, are members of institutions associated with their defining trait, adhere to particular value and take part in a common way of life" (Fischer, 1995, p.544). Subcultural theory has most frequently been studied in relation to crime. Indeed, Fischer notes

that in America, crime, particularly violent crime and more specifically homicide, is positively correlated with city size. However, Fischer argues that that it is social disorganisation and not city size that mediates the association between crime and urbanism. It should also be noted that this association between cities and higher crime rates could be a result of confounders (e.g. socioeconomic status, higher proportion of ethnic minorities). Nevertheless, subcultural theory maintains that larger communities facilitate the coming together of victims, criminals and their clients (i.e. people purchasing drugs).

More specifically to violence, Wolfgang and Ferracutti (1967) argued the normative behavioural systems of certain groups support and encourage violence. Vigil (2003) notes that these social norms demonstrate to gang members how and when to manage real or imagined slights and threats. These threats can take the form of hostile stares, walking in other gang territories or actually seeking enemy gang members to attack. The gang member must retaliate with violence or face being disrespected, which results in their self-image being affected. This concept of disrespect and threatened self-image was also an important concept in the self-esteem theories of violence (2.2.2.1.4).

Contributing to this subculture is the fact that in America, ethnic minorities tend to live in areas that are rundown, crowded and spatially separate (e.g. on the other side of the railway, ring-road etc.). This apparent divide can separate ethnic minorities from the main culture of the city and prevent integration (Vigil, 2003). Furthermore, due to the overcrowding, space is limited and therefore becomes more valuable, which can result in territorial issues.

Within areas with high rates of crime, Vigil (2003) argues that there is a lack of control over the young people. Many families are single parent families, who work long hours and are unable to afford childcare. Furthermore, schools can struggle with ethnic minorities due to cultural and language differences. Consequently, young people, in particular those who are under no control from families or school, become socialised on the streets instead of at home or at school. This results in the development of a street identity, whereby the young person takes on the attitudes and beliefs of the street. Indeed, following ethnographic work in urban communities, Anderson (2000) describes the "code of the streets" which refers to informal rules that govern behaviour and the use of violence in certain communities. Anderson notes that respect is "at the heart of the code" (p.33) and following it becomes necessary for maintaining respect and the avoidance of trouble in public. While there is a theoretical basis for subcultural theory, actual empirical evidence is lacking. Indeed, many people living in areas that supposedly have a subculture of violence do not engage in violence and as such the patterning of violence could be a result of situational, demographic and ecological factors.

2.2.3 Models of violence

This literature review has identified the considerable number of psychological and social factors proposed to be involved in the development of violent behaviour. However, the current evidence does not strongly support one theory, which indicates that violence may result as an interaction between psychological and social factors. The next part of this review will discuss how the psychological and

social factors relate to two models of violence. First, the cycle of violence and secondly, the ecological model of violence.

2.2.3.1 Cycle of Violence

The cycle of violence model is based upon evidence from social learning theory and social information processing factors (Dodge et al., 1990). It proposes that being a victim of child maltreatment, puts an individual at risk of later involvement in violence; either as a victim or perpetrator of violence (WHO, 2007). Child maltreatment is defined in the World Report on Violence and Health (Mercy et al., 2002, p. 59) as:

> All forms of physical and/or emotional ill-treatment, sexual abuse, neglect or negligent treatment or commercial or other exploitation, resulting in actual or potential harm to the child's health, survival, development or dignity in the context of a relationship of responsibility, trust or power.

Widom (1989a p.251) argues that "the idea that violence begets violence has become firmly established in the minds of professionals and the general public alike". It is for this reason that this phenomenon is referred to as *the cycle of violence* (see Figure 2.1). Indeed, the cycle of interpersonal violence has been proposed to occur in numerous ways (WHO, 2007):

- from victim, to further victim of violence at home or in the community;

- from victim to child abuser in the home (i.e. a maltreated child, become a child abuser);
- from victim to perpetrator of violence against an intimate partner in the home;
- from victim to perpetrator of violence in the community, often as an antisocial offender

The association between child abuse and subsequent victimisation has been reported by a number of studies. For instance, a cross-sectional study conducted in an area of high socio-economic deprivation, reported that women who had been severely beaten under the age of 16 had an odds ratio of 3.58 of suffering domestic abuse as an adult (Coid et al., 2001). This effect has also been found in less socio-economically deprived populations. For instance, Moeller et al. (1993) reported that the likelihood of abuse as an adult was exponentially related to the number of abusive episodes suffered as a child (i.e. 9.4% of women suffering one form of child abuse and 32.4% of women suffering 3 forms of child abuse reported adult physical abuse).

The relationship between childhood exposure to violence and later use of violence has also been examined. For instance, in a survey of adolescents living in a community with high levels of violent crime, experiencing and witnessing violence was the strongest predictor for the use of violence in adolescence (DuRant et al., 1994). Similar findings have been reported by many studies (Dodge et al., 1990, Rivera and Widom, 1990, Song et al., 1998, Werkerle and Wolfe, 1998,) and support the concept of the intergenerational transmission of violence.

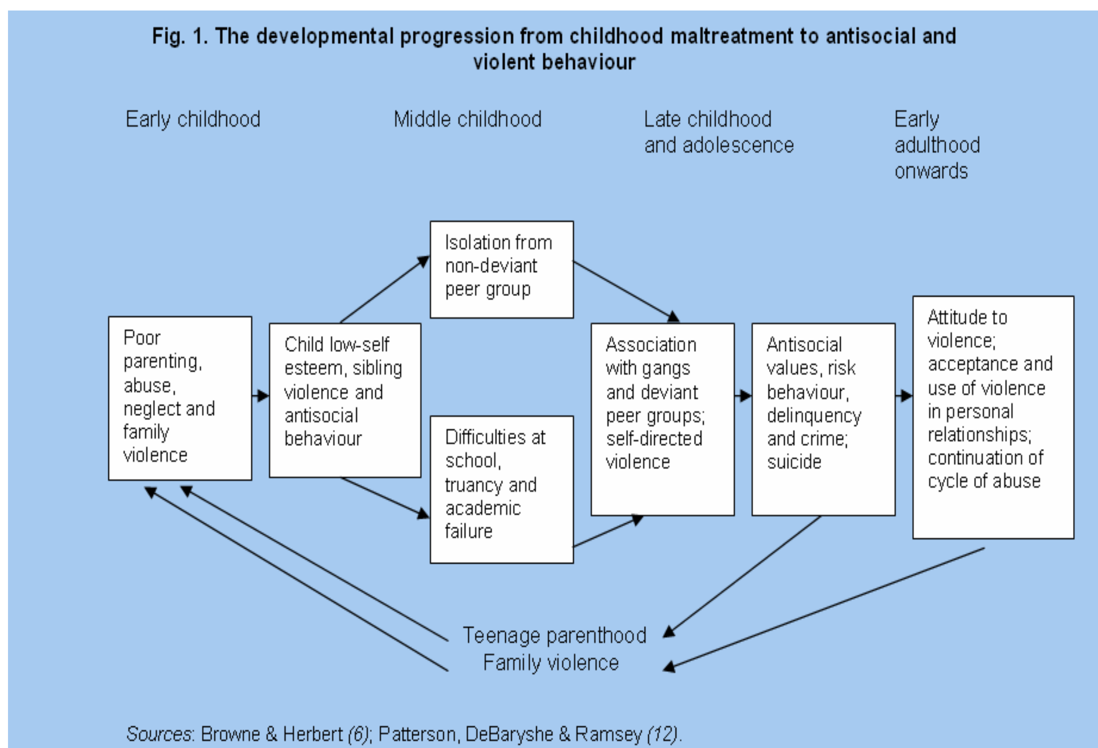

Figure 2.1 Intergenerational transmission of violence (Taken from WHO, 2007, p. 9; Originally adapted from Browne & Herbert; Patterson, DeBarshye & Ramsey, 1989).

Child maltreatment is a common public health problem. The ACE study reported a prevalence of 11.1% of psychological abuse, 10.8% of physical abuse and 22% of sexual abuse among the cohort of 17,000 people (Felitti et al., 1998). However, MacMillan et al. (1997) utilised a longer questionnaire which contained some milder forms of abuse such as spanking, and reported the prevalence of childhood physical abuse as 31.2% in men and 21.2% in women. Furthermore, a study in the UK reported that 25% of young adults had experienced at least one violent incident (including "smack on the bottom") and 7% reported being seriously

abused as a child (May-Chahal and Cawson, 2005). Further still, a study in Finnish children reported that 71.9% of 15 year olds experienced mild violence (i.e. pushing, hair pulling or slapping) at least once (Sariola and Uutela, 1992). It should be acknowledged that cultural differences may influence the differences in rates between countries. Nevertheless, mild violence was prevalent at the same level amongst all socioeconomic groups but serious physical abuse was significantly more common in families with unemployed or retired parents. If child maltreatment is indeed a risk factor for violence, it puts a significant number of individuals at increased risk of being involved in violence.

However, it is important to note that the majority of victims of child maltreatment do not become violent adults, demonstrating that many abused children are able to develop some form of resilience (DuRant et al., 1994, WHO, 2007, Widom, 1989b). Indeed, Falshaw et al. (1996) go as far as to argue that delinquency may even precede victimization. Another consideration is that confounding risk factors for child maltreatment for example, socioeconomic status and gender are the same as those for violence perpetration. However, even when this is controlled for, maltreated children still maintain an increased risk of being involved in violent offending (Dodge et al., 1990, DuRant et al., 1994).

2.2.3.2 Ecological Model of Violence

In the field of public health, the WHO and CDC propose an ecological model of violence (Dahlberg and Krug, 2002, CDC, 2013). This is based upon the model initially proposed by developmental psychologist Urie Bronfenbrenner (1994) to

explain how different aspects of an individual's environment interact to influence child development. More specifically, Bronfenbrenner argues that humans (in particular children) develop through complex interactions involving the "biopsychological human organism" (p.38) and the people, objects and symbols of their environment. Bronfenbrenner goes as far as to argue that such interactions can alter gene expression and thus affect phenotype (see section 2.2.4).

Bronfenbrenner (1994) argues that in order to influence development, these interactions must occur frequently over an extended period of time and also occur at different levels which can be thought of as a "set of nested structures, each inside the other like a set of Russian dolls" (p.39). Each of the proposed five different levels (or structures) of the ecological model are based on empirical investigation and analysis:

- *Microsystems*. This refers to the one-to one interactions experienced by the developing person. These reactions can occur in the family setting, school, peer group and at work.
- *Mesosystems*. This refers to the interactions between two or more places that include the developing person. For example the relations between home and school.
- *Exosystems*. This refers to the interaction between two settings, one of which does not contain the developing person. For example, the effect that a parent's work has on their relationship with the developing child.

- *Macrosystems*. This is the effect that a culture or subculture (e.g. beliefs, opportunities, customs) can have on microsystems, mesosystems and exosystems.
- *Chronosystems*. This refers to the impact of time, not only on the developing individual but also on the environment in which they live. For instance, place of residence and employment.

Fraser (1996) adopts an ecological perspective and argues that in order for children to acquire a broad range of social and cognitive skills, they require role models in a range of social settings including home, school and work. If they do not develop such skills and are in situations where they are unable to cope, violence can ensue.

Fraser proposes a number of environments where behaviour is developed. First, at an individual level, neuropathology can limit a child's ability to learn social skills. Secondly, in the home setting, a child can experience inconsistent, coercive, harsh parenting, which may lead the child to engage in aggressive behaviour as they perceive it to be rewarding. Thirdly, at the peer group level, from about the age of six years, children who are proactively aggressive (i.e. non-defensive use of aggression believed by the aggressor to be socially effective) tend to be rejected by the peers. This leads to isolation and prevents learning social skills from more competent peers and results in the continued use of aggression in an attempt to solve problems. At the school level experiences with teachers can affect social skills development (i.e. lack of acknowledgment and reward from teachers). Finally at a neighbourhood level the "social and economic infrastructure" (p.350) can limit

opportunities and can result in illicit activities and violence being used for social control and protection.

The WHO have adapted the ecological model (see Bronfenbrenner, 1994) and applied it to violence (Dahlberg and Krug, 2002). Figure 2.2 illustrates how the 4 levels of an individual's "environment" interact and lead to the development of violence in this ecological model of violence.

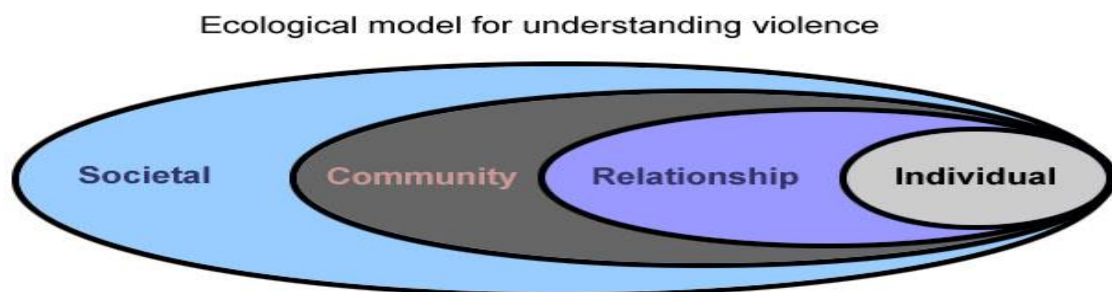

Figure 2.2 Ecological model of violence (Dahlberg and Krug, 2002).

With regards to the WHO ecological model of violence, the individual level consists of biological factors, personal history factors that influence behaviour (e.g. previous abuse), educational attainment and impulsivity (Dahlberg and Krug, 2002). The relationship level consists of proximal relations with family, intimate partners and peers that can be conducive to violence. For example, living with an offender increases the number of opportunities for abuse. The community level is the context in which social relationships occur (e.g. schools, neighbourhoods, workplaces). Communities where there are high levels of unemployment, social isolation, poverty and a heterogeneous population are at risk of high levels of violence (Dahlberg and Krug, 2002.). Finally, the societal level consists of factors in

wider society, which increase the likelihood of violence. This can include high levels of social or economic inequality, cultural norms that are accepting of violence, political conflict, patriarchy and educational factors.

The ecological model highlights the complexity of the problem, whereby a multitude of factors including family processes, childhood peer relations, poverty and school experiences interact (Fraser, 1996). Indeed, all the factors discussed could arguably have a role in the ecological model of violence. This highlights the need for complex interventions in the prevention of violence. Such interventions, have several interacting components and may target a number of groups and organisational levels (Craig et al., 2008).

2.2.4 Discussion on causes of violence

This literature review identified the considerable number of psychological and social factors proposed to be involved in the development of violent behaviour. However, it is important to note that there is also a growing evidence base concerning the biological factors associated with violence. For example, low autonomic arousal (Raine, 2002), deficiency of the monoamine oxidase A gene (Brunner et al., 1993, Capsi et al., 2002, Meyer-Lindenberg et al., 2006), perinatal complications (Farrington, 1998, Kandel and Mednick, 1991) and pre-natal exposure to nicotine (Brennen et al., 1999) and alcohol (Sood et al., 2001) have all been associated with youth violence and aggresion although these studies are no means conclusive.

There is also evidence for an interaction between biological and enviromental factors, in the form of epigenetics. Epigenetics refers to the interaction between genes and environment (Henikoff and Matke, 1997), which can be passed down through generations (Feinberg, 2007). More specifically to violence, it is hypothesised that early adverse experiences (i.e. child abuse) can alter the development of the hypothalamic-pituitary-adrenal (HPA) axis (Weaver et al., 2004) and subsequently damage the hippocampus (Swaab et al., 2005). As the hippocampus is involved in fear conditioning (Phillips and LeDoux, 1992) and memory (McEwen, 1999) damage could lead to cognition problems, which could arguably have an impact on behaviour. Clearly, this is an important area that needs further study in relation to violence and aggression, however, as it would not be amendable by primary prevention programmes aimed at adolescents it will not be considered further here.

The following logic model was developed following the review of the literature to illustrate the interaction between deprivation and adverse childhood experiences and the psychological, social and biological factors discussed in this chapter (see Figure 2.3). It is important to note that many adolescents exposed to deprivation and adverse childhood experiences do not engage in youth violence, thereby demonstrating resiliency (Masten and Coatsworth, 1998). It is the concept of resiliency that is now the basis of many youth violence prevention programmes and will be discussed in the next section.

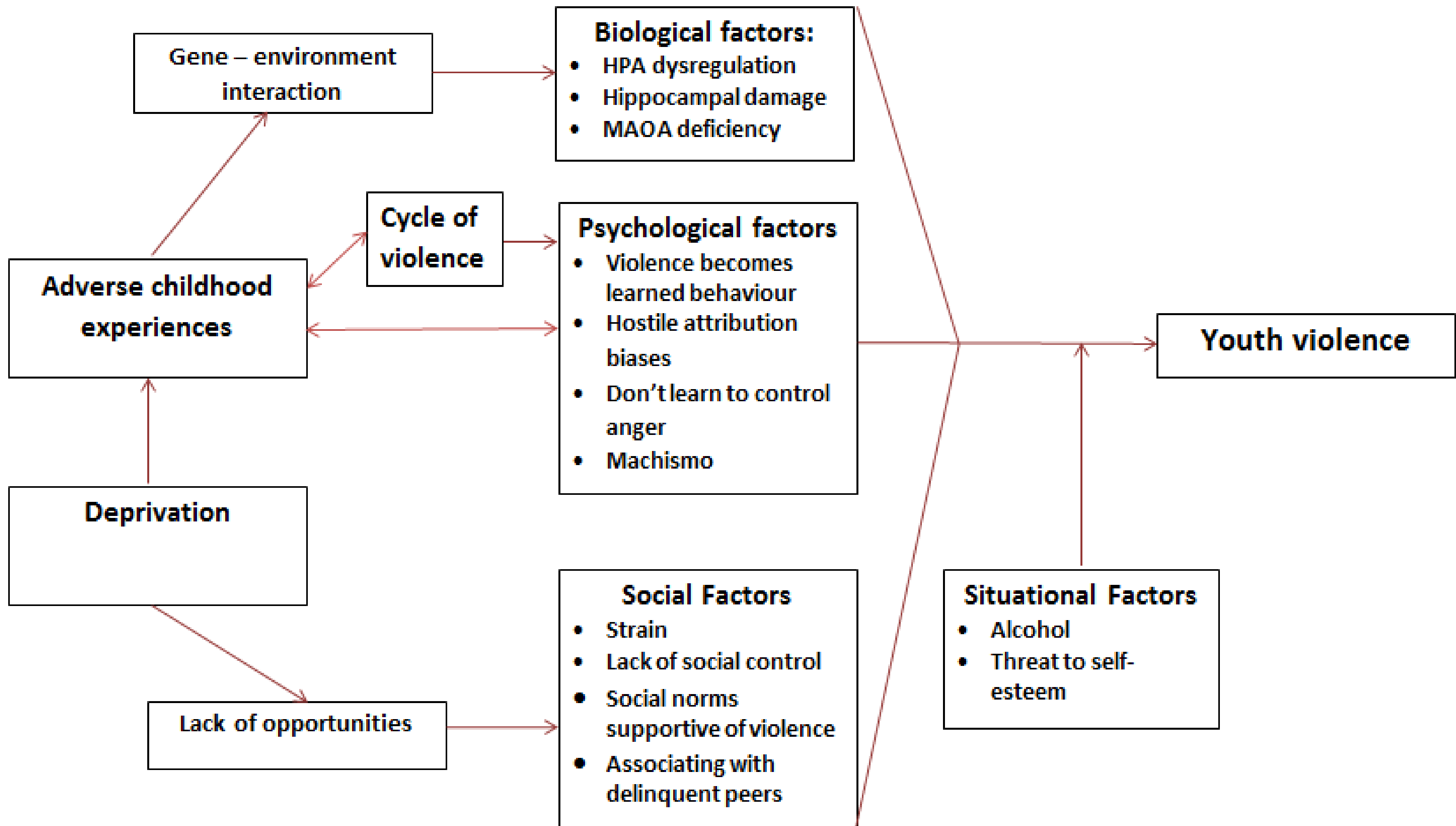

Figure 2.3 Logic model illustrating the role of deprivation and adverse childhood experiences in the development of violence

2.3 Prevention of youth violence

This section will first discuss the different levels of prevention from both the public health and criminal justice perspective. As this thesis is examining the primary prevention of youth violence, a closer examination of the literature on primary prevention will then be presented. The theoretical basis around primary prevention programmes that aim to reduce violence and the role schools play in implementing such programmes will also be discussed.

2.3.1. Levels of prevention

2.3.1.1 Levels of prevention of violence within public health

The notion of prevention within the field of public health has been around since 1854 when physician, John Snow attributed the Cholera outbreak to a water pump in London and consequently removed its handle to prevent others from drinking from it and thus prevent new cases of cholera (Snow, 1855). In general, the public health approach to any adverse health outcome aims to "provide the maximum benefit for the largest number of people" (Dahlberg and Krug, 2002, p.3) and emphasises collective, preventative action. Public health has traditionally distinguished between primary, secondary and tertiary prevention to reduce incidence, prevalence and impact of diseases respectively (Orbell, 2000). Prothrow-Stith et al. (2010) adapted this framework and applied it to the prevention of violence:

- *Upfront/Primary prevention* focuses on interventions that aim to prevent symptoms (i.e. violence) from happening in the first place, for example positive social and emotional development, parenting skills, mentoring,

social connections in communities, quality education (including universal school-based violence prevention strategies).

- *In the thick/Secondary prevention* focuses on responses to symptoms or risks that already exist and as such are determined by the presence of risk factor, for example, mental health services, family support services and street outreach.
- *Aftermath/Tertiary prevention* focuses on long-term responses to deal with consequences of violence and to decrease the chance it will happen again (mental health services, successful re-entry).

Alternatively, prevention may be classified according to three levels of intervention recipient (Gordon, 1983):

- *Universal initiatives* are considered to be beneficial for everybody and as such are delivered to the general public. In the context of violence prevention this could include a violence prevention curricula delivered to all children within a geographical area or community.
- *Selective interventions* are delivered to subgroups of the population (e.g. based on age, gender, and occupation) who are at greater than average risk of a condition, for instance family support programmes for single parents.
- *Indicated initiatives* are aimed at those with a risk factor or condition that places them at high risk of the condition and as such would be targeted at those already involved in violent behaviour.

This three tiered approach (Gordon, 1983) has gained support in violence prevention, with Dahlberg and Krug (2002) noting that researchers are now utilising this definition of prevention. However, within the framework for violence prevention adapted by Prothrow-Stith et al. (2010), the authors do refer to universal school-based interventions as being a form of primary prevention, indicating some cross-over between the two terms. Universal school-based programmes have previously been defined as "programmes delivered to all children in a given school or grade not only to those who had already manifested violent or aggressive behaviour or risk factors for these behaviours" (Hahn et al., 2007, p. S117). It could be argued that such programmes could be conceived as selective as they are delivered to young people who are at higher risk of involvement of violence due to their age. Furthermore, such programmes tend to be implemented in areas of higher socioeconomic deprivation, which also indicates that the pupils are at higher risk of involvement. Nevertheless, the fact that pupils are not singled out on the basis of individual risk factors and instead are treated at group level (i.e. their school) means that this thesis will consider school-based interventions that target entire schools or year groups to be universal.

2.3.1.2 Levels of violence prevention within criminal justice

The criminal justice approach thinks in terms of root causes and opportunity reduction and also considers prevention approaches at three levels: primary, secondary and tertiary (Akers et al., 2013):

- *Primary prevention (before the event)*: seeks to address the social, economic and environmental conditions that can lead to crime and as such aims to

prevent individuals or groups from ever considering deviant behaviour (e.g. increasing educational opportunities).

- *Secondary prevention (during the event)*: aims to reduce involvement by those who are at risk of engaging in violent or criminal behaviour (e.g. by associating with gangs).
- *Tertiary prevention (after the event)*: aims to prevent further violence or crime from occurring by reintegration or re-socialisation of those involved back into the community.

The criminal justice approach to prevention is similar to the traditional public health framework (Orbell, 2000) and to the version adapted for violence (Prothrow-Stith et al., 2010). Akers et al. (2013) note that while the different levels of intervention within criminal justice do not overlap, the lines can be blurry and the same is probably true within public health. Indeed, this is reflective of the potential difficulty in distinguishing between universal and selective interventions (2.3.1.1).

2.3.2 Primary prevention of violence

Primary prevention by its very nature takes a proactive approach and is aimed at populations (Cohen and Chehimi, 2010). However, population-based approaches have been criticised as while they may be able to produce considerable effects at a population level they may only confer little benefit to the individual, in what has been dubbed the *prevention paradox* (Rose, 1981). Nevertheless, it is the

population-based approach that is able to lead to long-term changes in health risk behaviours (Cohen and Chehimi, 2010). Such approaches aim to reduce engagement in the underlying causes of adverse health outcome (e.g. smoking, diet, alcohol consumption prior to driving) and can lead to longer-term changes in social norms regarding what behaviours are socially acceptable (Rose, 2001). Cohen and Swift (1999) detail the different levels of change needed for the prevention of an adverse health outcome in the *spectrum of prevention* (see Figure 2.4)

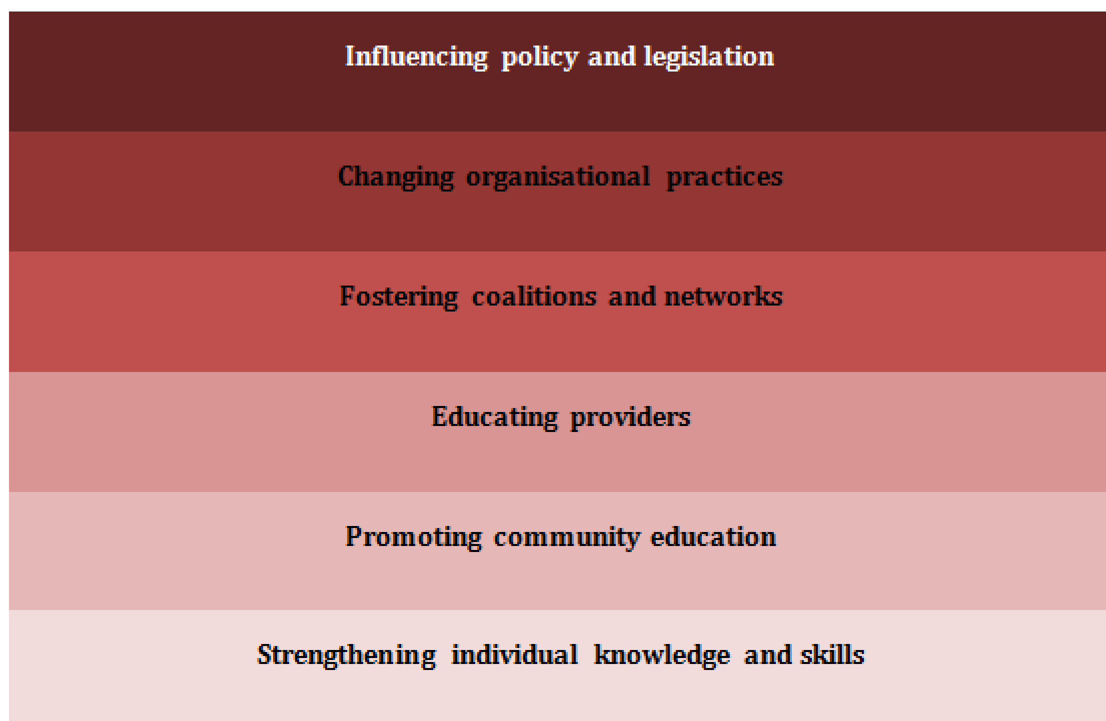

Figure 2.4 The spectrum of prevention (Cohen and Swift, 1999).

The first level of the spectrum *strengthening individual knowledge and skills*, involves providing information (i.e. through health communications or advice from healthcare professionals) that can facilitate avoidance of health risk behaviours.

Secondly, promoting community education (e.g. mass media campaigns) is delivered to population groups and in addition to providing individuals with information also acts to change behavioural norms and can develop support for policy change. Thirdly, educating providers (e.g. healthcare professionals, teachers) enables them to provide prevention advice and also use their professional voice to help implement policy change. Fostering coalitions and networks involves different groups within the community who are all working towards the same goal, collaborating to increase the impact of their efforts. Changing organisational practices, involves organisations (e.g. schools, hospitals, workplaces) adopting new practices which promote an individual's health and also change behavioural norms within the organisation. Finally, influencing policy and legislation involves changes in law to help protect and promote health and this can lead to the largest improvements in health (Cohen and Swift, 1999).

While primary prevention initiatives can act at any of the levels, the spectrum of prevention demonstrates that when initiatives act at multiple levels there is a greater potential for change (Cohen and Swift, 1999). As these six levels of broad societal change are central to the prevention of disease, primary prevention initiatives need to take a multi-faceted approach addressing individual and environmental factors that affect communities (Cohen and Chehimi, 2010). Indeed, preventative approaches that have incorporated multiple levels of the spectrum have been successful in reducing a wide range of health-risk behaviours, which has resulted in decreased morbidity and mortality and has also changed the social norms associated with these behaviours. For example, the implementation of

smoke-free legislation which banned smoking in public places in Scotland was associated with a 17% reduction in hospital admissions for acute coronary syndrome (Pell et al., 2008). Additionally, it decreased the perception of acceptability of smoking even amongst smokers and thus was associated with higher intention to quit (Pell et al., 2008). These positive outcomes indicate that normative beliefs can act as a mechanism between legislation and behaviour change (Brown et al., 2009). Similarly, legislation requiring use of seatbelts by all passengers and stipulating a blood-alcohol limit for drivers that has been used in conjunction with mass-media campaigns has been associated with a reduction in such behaviours and subsequent reductions in fatalities and hospital admissions (Jochelson, 2006).

In addition to reducing morbidity and mortality, prevention efforts can also reduce government spending in terms of health and social care. This is particularly important at a time when the National Health Service (NHS) is already under increasing pressures from a growing elderly population (Cracknell, 2010). Indeed, the Home Office estimates that violence costs the NHS in England and Wales £2.9 billion per year, a figure that is comparable to other major public health issues such as smoking and physical inactivity (Bellis et al., 2012). Furthermore, the same report estimated the total social and economic costs (which include aspects such as costs to criminal justice system and loss of output) at £26.9 billion per year. Preventing violence is therefore not only important in terms of improving health and wellbeing, but also in terms of reducing the financial costs to society (see also Harvey et al., 2013).

Interventions for the primary prevention of violence can also be broadly grouped into direct and indirect approaches (Sethi et al., 2010). First, direct approaches aim to prevent violence by altering the environment in which violence occurs, including: enhancing legislation on buying and carrying knives, knife amnesties, problem-orientated policing and the use of safe drinking vessels (Sethi et al., 2010). Secondly, indirect approaches aim to reduce the influence of risk factors and develop the protective factors that affect whether a young person will become involved in violence, including: parenting programmes, life and social skills training and programmes designed to change social norms supportive of violence (Sethi et al., 2010).

The current evidence is strongest for interventions that target children early in childhood. For instance, parenting programmes have been shown to be effective in reducing child maltreatment and subsequent early aggression (WHO, 2009c) and therefore interrupt the cycle of violence (WHO, 2007). However, theoretical and empirical evidence suggests that other indirect violence prevention approaches, such as social development programmes that aim to develop protective factors and therefore enhance resiliency may be effective in the reduction of risk-taking behaviour including youth violence (Resnick, 2000). The theoretical basis of such programmes will be discussed now be considered

2.3.3 Theoretical basis of social development programmes that aim to develop protective factors

Although much of the research on the development of violence focuses on risk factors, protective factors are emerging as an important factor in mitigating against violence development as they mediate the effect of exposure to risk factors (Arthur et al., 2002). For instance, the Pittsburgh Youth study reported that prevalence of persistent serious delinquency increased as the number of risk factors increased (Stouthamer-Loeber et al., 2002). Conversely, as the number of protective factors increased the prevalence of persistent serious delinquency decreased. In essence, the risk and protective factors were able to balance each other in reducing risk of persistent serious delinquency.

Protective factors have been studied within the field of developmental psychopathology as an important factor in the development of resilience (Garmezy et al., 1984, Masten et al., 1990). Resilience refers to a young person's competence in culturally defined developmental tasks (i.e. school performance, peer relationship) despite significant challenges (e.g. poverty, exposure to trauma) to development (Masten and Coatsworth, 1998). Resiliency and vulnerability (i.e. risk factors for a negative outcome) should not necessarily be considered to be on the same continuum, as resilience refers more to the capacity for effective functioning and ability to avoid negative outcomes (e.g. health risk behaviours) and focuses on strengths rather than deficits (Luthar et al., 2000, Fergus and Zimmerman, 2005).

Protective factors have been identified as one explanation for the development of resilience in some young people (Hawkins et al., 1992, Newcomb and Felix-Ortiz,

1992, Jessor et al., 1995). Although the majority of research on protective factors has been conducted in regard to antisocial behaviour more generally and not specifically violence, it is argued that developing protective factors can decrease the risk of engagement in violent behaviour (Office of the Surgeon General (US), 2001, Farrington, 2007). Furthermore, as it is often not easy or indeed possible to change risk factors for violence (i.e. living in poverty), enhancing a young person's capacity to manage such risk factors is an important area for violence prevention (Dahlberg and Potter, 2001).

A number of potential protective factors have been identified and can be broadly divided into different domains: individual (e.g. spirituality, positive social skills, higher intelligence, positive self-concept), family (e.g. parental connectedness, family cohesion), school (e.g. positive attitude towards school), peer group (e.g. friendship networks) and community (Resnick et al., 1997, Blum, 1998, Rersnick, 2000, Sieving et al., 2001). Like the risk factors in the ecological model of violence (Dahlberg and Krug, 2002), there is an interaction between protective factors (Resnick, 2000). For instance, a positive attitude towards school may result in increased school attendance, which in turn may help develop social skills.

Resnick et al. (2004) conducted a longitudinal study to examine impact of risk factors, protective factors and engagement violent behaviour. The study reported that high levels of the following characteristics at baseline were associated with lower levels of violence at one year follow-up:

- perceived school connectedness
- high connectedness with adults outside the family

- perceived parental expectations of school performance
- connectedness to family
- shared activities with parents
- ability to discuss problems with parents
- religiosity
- grade-point average

This study highlights the importance of connectedness to family, school and even other in the prevention of violence. Such connectedness may result in higher levels of supervision and exposure to norms, values and expectations that refute involvement in high risk behaviours.

The report by the Office of the Surgeon General (US) on Youth Violence (2001) stated that the evidence for an association between protective factors and violence was limited. Partly, as the majority of research considered antisocial behaviour more generally and not violence specifically. However, the report did identify protective factors in the individual and school domain (Office of the Surgeon General [US], 2001). First, at the individual level, an intolerant attitude toward deviance, including violent behaviour, was reported to be the strongest predictor for not engaging in violence. Indeed, this is what the Medics Against Violence programme aims to develop. Secondly, at the individual level, positive social orientation, which indicates that a young person has adopted traditional values and norms, was reported to have a small effect as a protective factor against antisocial behaviour by young people more generally. At the school level, commitment to school was also found to reduce the risk of youth violence. Indeed,

the protective nature of a commitment to school relates to the adoption of the goals and values of such an institution (and society more generally) whereby engaging in violence would put their achievements at risk.

To further investigate the role of protective factors, a CDC Expert Panel on Protective Factors for Youth Violence Perpetration was convened (Hall et al, 2012a). The group argued that previous uses of the term *protective factors* have been ambiguous and have further sub-categorised the term into "direct protective" and "buffering protective" factors. The panel then utilised four longitudinal studies (Bernat et al., 2012, Herrenkohl et al., 2012, Henry et al., 2012, Pardini et al., 2012) to examine direct and buffering protective factors. Each of the studies utilised a similar approach to analysis and examined the same variable domains: individual (e.g. depression, ADHD, academic achievement, religious observance, attitude toward delinquency) family (e.g. socioeconomic status, maltreatment, family involvement) school (e.g. repeated grade), peer (e.g. peer delinquency, relationship with peers) and community (e.g. neighbourhood poverty and crime). They identified that 12% of the variables detailed exerted only protective effects, 23% exerted only risk effects and 18% of the variables exerted both protective and risk effects at both ends of the variable's distribution (e.g. low and high academic achievement, attention problems and peer delinquency; Hall et al., 2012b). However, the risk and protective effects of each variable are not consistent across all studies and varied with age. For instance Pardini et al. (2012) reported having a negative attitude towards delinquency and low peer delinquency acted as direct protective factors. Similary, Bernat et al. (2012) reported that low peer delinquency was a direct protective factor in 18 year olds. However, the same

study, reported that low emotional distress, high educational aspirations and high grade-point average all had a significant protective effect on violence at age 14 years. Low peer delinquency was also reported to be directly protective against violence by Henry et al. (2012), as was good study skills and family involvement. Whereas Herrenkohl et al. (2012) reported that peer pro-social behaviour, school attachment, refusal skills, low risk-taking behaviour had significant direct protective effects.

It is important to note that these studies (Bernat et al., 2012, Herrenkohl et al., 2012, Henry et al., 2012; Pardini et al., 2012,) were originally designed mainly to examine risk factors and as such may not have identified all relevant protective factors and more research is needed in this area. Despite this, these studies suggest that pro-social skills and attitudes, school attachment, academic achievement and having non-delinquent peers can be protective against violence and may be an appropriate target for interventions that aim to reduce violence by social skills development.

2.3.3.1 Social development model

Protective and risk factors are integral to the social development model (Catalano et al., 1996), which integrates control theory and social learning theory and emphasises the importance of bonds with pro-social family, school and peers (Hawkins et al., 1992). The model proposes that antisocial and pro-social behaviour can be predicted by the presence of risk and protective factors (Catalano et al., 1996) and that interventions which aim to enhance protective factors can reduce the effects of risk factors and result in positive outcomes instead of health-

risk behaviours (Hawkins et al., 1999). Consequently, the social development model underpins indirect violence prevention programmes which target knowledge, skills and attitudes to reduce engagement in violence (Farrell, 2001) and can be delivered as social development programmes.

Such programmes are believed to enhance protective factors for violence by developing pro-social skills (e.g. problem-solving, anger management, stress and emotions management, and empathy), which can be defined "as competence in peer interactions and friendships and interpersonal conflict resolution skills" (Grossman et al., 1997, p.1606). These act as protective factors by enabling young people to develop and maintain healthy relationships and providing them with skills to deal with conflict and solve problems without violence (WHO, 2009b). This may also be supplemented with concurrent sessions for parents as a positive relationship with parents is also a protective factor against violence and a negative child-parent relationship plays a role in the expression of violent behaviour (Thornton et al., 2000). Moreover, positive relationships with other adults also has the potential to act as a protective factor against violence (Thornton et al., 2000, Office of the Surgeon General (US), 2001). Social development programmes may, therefore, also include a mentoring element, which pairs at-risk young people with a volunteer who will provide support, understanding, experience and advice (Roberts et al., 2004). It is believed such relationships may help develop interpersonal skills and help young people cope with and further avoid a high-risk lifestyle (Mihalic et al., 2004).

Programmes that have been successful in developing pro-social skills and attitudes have also been shown to be effective in reducing beliefs supportive of aggression and violent behaviour (Shapiro et al., 2002, Flay et al., 2004b, Sethi et al., 2010). Such programmes may also aim to challenge culturally held beliefs that violence is an acceptable method to resolve conflict (Champion and Durant, 2001) and help young people develop attitudes intolerant of violence (one of the strongest potential protective factors), which may result in disapproval of violence and reduced risk of involvement in violent activities, or with peers involved in delinquent or violent activities. Developing such intolerant attitudes to prevent future involvement in violence is the main aim of MAV and the theoretical basis for this will now be discussed.

2.3.3.1.1 Developing attitudes intolerant to violence

Attitudes represent an individual's evaluation of any aspect of their world (e.g. a behaviour, object or another person) and have been shown to influence behaviour (Ajzen and Fishbein, 1977), particularly when strong, accessible and well established (Ajzen, 2001). However, it should be noted that the association between attitudes and behaviour is not consistent and attitudes do not always predict behaviour (Armitage and Christian, 2003) and therefore behaviour is not simply dependent on attitudes. Indeed, attitudes are only one component of the theory of planned behaviour, which proposes that an individual's actions are determined by their intentions and perceived behavioural control (Ajzen, 1991). Intentions are influenced by attitudes towards the behaviour, subjective norms

(i.e. perceived beliefs of others) and perceptions of behavioural control (see Figure 1).

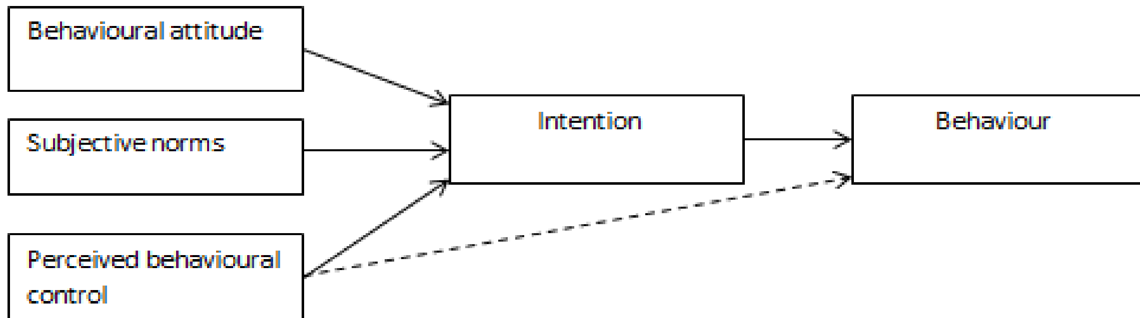

Figure 2.5 Theory of Planned Behaviour. Adapted from Ajzen (1991)

According to the theory of planned behaviour, the more positive the individuals' attitudes are towards a particular behaviour (e.g. knife-carrying, fighting, alcohol consumption), the more likely the behaviour is to occur. As attitudes towards violence are considered to mediate the translation of aggressive thoughts into violent behaviour they are therefore a risk factor for violence (Borum, 2000, Ikeda et al., 2001, Goldberg et al., 2010). It has, therefore, been argued that violence prevention programmes should have an emphasis on attitudinal change (Vernberg et al., 1999) and as such modifying positive attitudes towards violence is a valid approach for violence prevention programmes (Funk et al., 2003a) such as MAV.

Similarly, the more supportive subjective norms are towards the behaviour and the greater the perceived behavioural control is, the more likely the behaviour is to occur. However, the theory also acknowledges that the degree of influence of attitudes, subjective norms and perceived behavioural control will vary between

situations and individuals (Ajzen, 1991). Support for the theory of planned behaviour has been reported in a meta-analysis (Armitage and Conner, 2001) and has also been reported to predict a range of health-risk behaviours such as binge-drinking (Norman and Conner, 2006), ecstasy use (Orbell et al., 2001) and smoking (Higgins and Conner, 2003). More specifically to violence, the theory of planned behaviour provided modest support for abusive behaviour by men towards their female partners (Tolman et al., 1996); however, it has not been studied in the context of youth violence.

While attitudes can at times influence behaviour, it is important to note that attitudes, particularly strong attitudes, are resistant to change (Ajzen, 2001). However, individuals may alter their attitudes to be more like those of the people they identify with (Baron et al., 2006). For instance, Terry and Hogg (1996) reported that intention to wear sunscreen by young Australian adults was influenced by the perceived norms of groups that participants identified with. Furthermore, engagement in health risk behaviours can be influenced by the misperceptions of others within the social group. Perkins et al. (1999) reported that students misperceived their peer norms by over-estimating how often they thought the average student consumed alcohol, smoked or used drugs such as marijuana, cocaine and amphetamines, which may promote actual engagement in such behaviours. Consequently, interventions that have aimed to correct these misperceptions and reduce student alcohol consumption have shown some success (Perkins, 2002). Prothrow-Stith and Davis (2010) note that if violence is expected by the media, community, school and peers, there is a greater chance it

will occur. Therefore violence prevention programmes must account for social norms.

Indeed, social norms approaches have shown some success in reducing violent behaviour by adolescents (Swaim and Kelly, 2008) and also in attitudes towards violence (Katz et al., 2011). Both these programmes involved senior students demonstrating pro-social behaviour and attitudes intolerant of violence, in an attempt to influence the behaviour of the more junior pupils. New social norms develop when enough individuals choose to change their current behaviour (Cohen and Chehimi, 2010). While MAV hope to change school-wide norms that may be supportive of violence, by reducing pupils' pro-violent attitudes through demonstration of the impact of violence on victims and offenders and portrayal of their anti-violent attitudes, it is important to note that there is no peer group component to the programme. As individuals are more likely to change their attitudes to people they identify strongly with (Baron et al., 2006), this may impact the effectiveness of the programme.

2.3.4 Role of schools in violence prevention

As schools provide one of the primary contexts for social development, they offer an opportune setting for violence prevention programmes in adolescents (Farrell, 2001). Furthermore, as the majority of the population in Western countries attend school, a large number of children and adolescents can be accessed at the same time with relative ease (Hahn et al., 2007). It is noted that not all young people will attend school and indeed young people who are involved in violence are more

likely to have dropped out of school (Ellickson et al., 1997), however, these groups of young people would instead be the target of secondary or tertiary interventions as appropriate.

2.4 Conclusion

Violence is a multi-faceted problem with psychological, social and biological components. While it is associated with deprivation and adverse childhood experiences, the evidence suggests that some young people demonstrate resiliency to these risk factors. Protective factors have been identified as important in the development of resilience (Garmezy et al., 1984, Masten et al., 1990) and along with risk factors are integral to the social development model (Catalano et al., 1996). The model is the basis of many indirect primary prevention programmes, which aim to reduce violence by developing pro-social skills and attitudes intolerant to violence. Indeed, strengthening individual skills and knowledge is the first step on the continuum of prevention proposed by Cohen and Swift (1999). However, Cohen and Swift note the potential for change is greatest when interventions act at multiple levels. Whilst violence prevention programmes such as MAV aim to enhance an individual's knowledge, it is acknowledged that normative change at all other levels of the spectrum is required to create widespread societal change (Cohen and Chehimi, 2010) and address the wider social determinants of violence.

Nevertheless, the current evidence supports the use of interventions which aim to prevent violent behavioural patterns from developing in the first instance

(Dahlberg and Potter, 2002, Sethi et al., 2010). Schools are ideally placed to deliver such programmes as they can access a large proportion of the adolescent population (Naidoo and Wills, 2009). Additionally, it enables the programme to be delivered in one of adolescents' primary contexts for social development (Farrell, 2001). As the main focus of this thesis is an evaluation of a school-based primary prevention programme, a systematic review was conducted to further explore the effectiveness of such interventions. The evidence gathered from this review will then be utilised to provide a better understanding as to why (or why not) MAV is successful and how it can be developed further.

Chapter 3 Systematic review of school-based primary prevention interventions

3.1 Introduction

Systematic reviews collate all the empirical evidence that can be used to answer a specific question (Green et al., 2011). As they utilise systematic methods with a pre-specified eligibility criteria and search strategy, they reduce bias and as such provide more reliable findings than would be obtained from a literature review (Green et al.). The objective of this systematic review is to evaluate the effectiveness of universal school-based programmes aimed at the primary prevention of violence in secondary school-aged (11-18 years) young people. The results of this review will be used to better understand the processes behind whether or not MAV is successful in reducing pro-violent attitudes and will help guide the development of MAV.

3.2 Methods

The methodology for this review follows the guidance detailed by the Cochrane Collaboration (Higgins and Green, 2011).

3.2.1 Eligibility criteria

3.2.1.1 Types of studies included in this review

Although randomised controlled trials (RCTs) are less likely to be affected by bias and as such provide the most reliable evidence, they may not be the most appropriate research design for every scenario (Evans, 2003). Due to the multi-

faceted nature of violence, complex prevention interventions are necessary. The complexity within such interventions can refer to the presence of several interacting programme components, flexibility of the programme delivery, the range of outcomes, the number of groups and behaviours (Craig et al., 2008). Moreover, evaluations of complex interventions give rise to methodological difficulties above and beyond that of any successful evaluation. Such interventions, by their nature are less standardised (Hawe et al., 2004) and often do not, or cannot use individuals as the unit of randomisation (Rychetnik et al., 2002). Furthermore, differences in pre-existing contextual factors (i.e. location, timing, skill-level of practitioners) may also contribute to differences in results (Hawe et al., 2004).

As RCTs may not be possible in the context of school-based violence prevention due to ethical and feasibility issues (e.g. contamination between groups of pupils within the same school), a number of potentially important studies may be omitted by restricting the review to RCTs. This review will therefore include the following study types in addition to RCTs as recommended by the Campbell Collaboration (Shadish and Myers, 2004) and the Cochrane Collaboration (Reeves et al., 2011):

- Randomised design: cluster-randomised trials, cross-over trials and quasi-randomised trials in which participants were allocated to a treatment or control group using methods that are not truly random (e.g. date of birth).
- Quasi-experimental: interrupted time series design (with at least three time points before and after the intervention) and non-equivalent comparison group design (i.e. controlled before-and-after studies) whereby participants

are allocated to either the treatment or control group using non-random methods.

3.2.1.2 Types of participants

Children and adolescents aged between 11 and 18 in full-time secondary or middle school (or international equivalent) education.

3.2.1.3 Types of interventions

Any universal school-based intervention that aims to reduce non-fatal violent injury, homicide, weapons possession, aggressive behaviour or pro-violent attitudes in young people aged 11 to 18 years will be included. As this is an evaluation of universal primary prevention programmes, and as such the majority of participants would not yet be significantly involved in violence, it was expected that many of the studies would use predictors of later violence (e.g. attitudes towards violence; Borum, 2000, Ikeda et al., 2001, Goldberg et al., 2010) as primary outcome measures.

Interventions delivered in elementary or primary schools will be excluded. School-community interventions will be included if there is a specific school-based element that targets violence prevention. The primary control comparison will be a control “intervention” (i.e. no treatment, standard practice or waiting list control).

Interventions targeting other forms of violence involving young people (i.e. dating violence and structural violence) will be excluded as they are considered sufficiently different from youth violence to warrant distinct interventions and a separate review. Additionally interventions delivered to young people exposed to/involved in political violence will also be excluded as this is a form of collective violence.

Tertiary violence prevention programmes (e.g. cognitive behavioural therapy) targeting young people already involved in violence will also be excluded as they would not be considered universal prevention programmes. Similarly, interventions targeting young people with pre-existing mental illness (e.g. oppositional defiant disorder) that put them at increased risk of violence will be excluded.

3.2.1.4 Types of outcome measures

Primary outcomes:

- Non-fatal assaults/violent injuries as perpetrator or victimization (e.g. stabbings, shootings)
- Homicides
- Weapon possession
- Incarceration due to violence
- Aggression
- Attitudes towards violence
- Non-physical aggression

- Adverse effects

Outcome data will be obtained from:

- Hospital records
- Police records
- School records
- Self-report using standardised tests.

Secondary outcomes:

- Risk-taking behaviour (e.g. alcohol consumption, delinquency)
- Pro-social skills (e.g. empathy)
- Conflict resolution skills

Outcome data will be obtained from:

- School records
- Self-report using standardised tests.

3.2.2 Search methods for identification of studies

3.2.2.1 Electronic Searches

The searches were first conducted in 2011 and updated in April 2013. The search was limited to studies from 2002 onwards as the World Health Report on Violence and Health (Krug et al., 2002) was published in 2002, and signalled a change in direction in tackling violence with an increased emphasis on prevention. The search was also restricted to English language papers.

The following databases were searched:

- EMBASE
- Medline
- PsycINFO
- CINAHL
- Education Resources Information Centre (ERIC)
- Applied Social Sciences Index and Abstracts (ASSIA)
- Web of Knowledge
- Cochrane Central Register of Controlled Trials (CENTRAL)
- Social, Psychological, Educational and Criminal Trials Register of the Campbell Collaboration
- CrimDoc

3.2.2.2 Searching other resources

To ensure no relevant studies were left out, the reference lists of relevant systematic reviews (i.e. Hahn et al., 2007, Mytton et al., 2009) and all retrieved articles were reviewed. Any studies that potentially met the inclusion criteria were identified and retrieved.

Additionally, the following grey literature was searched:

- World Health Organization: Violence Prevention Evidence Base and Resources http://www.preventviolence.info/
- The World Bank. www.worldbank.org

- Centre for Disease Control: Violence Prevention. http://www.cdc.gov/violenceprevention/
- National Criminal Justice Reference System
- CrimDoc

3.2.2.3 Search strategy

The searches were based on the strategy detailed below and were amended as necessary for each databases. The specific search strategies are detailed in Appendix 1.

- Intervention keywords: "programme" or "intervention" or "prevention" or "diversionary" or "reduction" or "initiative" or "education" or "population-based"

- AND Outcome keywords: "violence" or "youth violence" or "interpersonal violence" or "aggression" or "challenging behaviour" or "offend" or "fight" or "weapons" or "knife" or "firearms" or "gun"

- AND Target population keywords: "under 18s" or "youth" or "adolescents" or "teen" or "school" or "community" or "gangs"

3.2.3 Data collection and analysis

3.2.3.1 Study Selection

The references from the electronic databases were imported into Endnote reference management software and screened using the following process. First, all duplicate studies were removed. Secondly, all studies that were clearly irrelevant based on their title were removed. Thirdly, abstracts were examined and studies were excluded on the basis of topic, intervention, study design, population, date and setting. The full texts of all remaining articles were retrieved and using the same criteria, any ineligible studies were removed. Studies identified in the search of the grey literature were also retrieved and again, any ineligible studies were removed.

3.2.3.2 Data extraction and management

There was no blinding of the names of journals, authors, the institutions or results when data was being extracted. The following data was extracted from each study into an Excel spreadsheet:

- Study design: aim of study, description of study, risk of bias assessment (detailed below).
- Participants: numbers, attrition, demographics, school year of pupils.
- Intervention: components of intervention, duration, programme delivery.
- Outcomes: outcomes assessed, data collected, scales used, follow-up period.

3.2.3.3 Risk of bias in individual studies

Risk of bias for each study was assessed using the Effective Public Health Practice Project's quality assessment tool for quantitative studies (http://www.city.hamilton.on.ca/phcs/EPHPP/), which was developed for use in all areas of public health. This tool has been recommended for use in systematic reviews of complex interventions and can be applied to RCTs and non-RCTS (Jackson and Waters, 2005).

The tool enables users to grade the study as weak, moderate or strong across the following domains.

- Selection bias:
    - to which extent individuals selected to participate in the study were representative of the target population
    - percentage of selected individuals that agreed to participate
- Study design:
    - description of study design
    - randomization methods
- Confounders:
    - identification of important differences (e.g. race, sex, SES) prior to intervention
    - percentage of confounders controlled for
- Blinding:
    - assessors' knowledge of which group participants were allocated to
    - participants' awareness of research question
- Data collection methods:

    - validity of data collection tools
    - reliability of data collection tools
- Withdrawals and drop-outs:
    - reporting of numbers and reasons of withdrawals and drop-outs
    - percentage of participants completing the study
- Intervention integrity:
    - percentage of participants receiving the allocated intervention
    - consistency of the intervention
    - possibility of contamination with unintended intervention
- Analyses
    - unit of allocation (i.e. school, class, community, individual)
    - unit of analysis (i.e. school, class, community, individual)
    - appropriateness of statistical methods
    - analysis performed by intention-to-treat or restricted to the participants who received the actual intervention

The ratings in each domain were based upon the criteria stipulated in the accompanying guidance for the quality assessment tool (http://www.ephpp.ca/PDF/QADictionary_dec2009.pdf). A global rating is then calculated based on the following criteria:

1. Strong: no weak ratings
2. Moderate: one weak rating
3. Weak: two or more weak ratings

3.2.3.4 Assessment of heterogeneity

Previous systematic reviews on youth violence prevention had identified considerable heterogeneity between studies (see Limbos et al., 2007). Due to the inclusion of NRTs and the nature of the interventions included in the current systematic review, variation in study design and intervention had been expected. The initial intention was to group studies according to homogeneity of populations, interventions, study design and outcomes. These groups would then have been assessed for heterogeneity by examining a Forrest plot. However, the studies identified in the current review were considerably heterogeneous in terms of populations, interventions, study design and outcomes. Furthermore, different self-report scales and follow-up times were used to measure individual outcomes. This meant it was not possible to even create small sub-groups of studies and as such no further examination of heterogeneity was conducted.

3.2.3.5 Data Synthesis

When there is homogeneity between groups of studies, it is recommended that meta-analysis should be considered (Deeks et al., 2011). However, in the case that there is considerable variation between studies (i.e. participants, outcomes, study design, interventions), a meta-analysis would be misleading (Deeks et al., 2011) and a narrative synthesis of the studies is recommended instead (Petticrew and Roberts, 2006). A narrative synthesis reports the main characteristics of included studies (i.e. intervention, study design, population and outcome measures), study quality and results of each study.

3.3 Results

3.3.1 Results of the search

The study selection process is presented in the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA; Moher et al., 2009) flow diagram (see Figure 3.1). Reasons for exclusions of studies included: conduction of study in an elementary school; lack of control group; outcomes that did not measure violence, aggression or attitudes towards violence and the study population consisted of adolescents with pre-existing mental health problems or previous offenders. Due to the considerable heterogeneity between studies, a narrative review was conducted.

3.3.1.1 Study Characteristics

The 13 included studies are described in Table 3.1, which provides detail on the population, intervention (I), control (C), outcomes, study design and context.

3.3.1.2 Results and risk of bias from individual studies

Data on sample-size, recruitment rate, follow-up rate and study results from each included study is described in table 3.2. The table also provides information on strength of the evidence (graded using the Effective Public Health Practice Project's tool detailed in section 3.3.1.7).

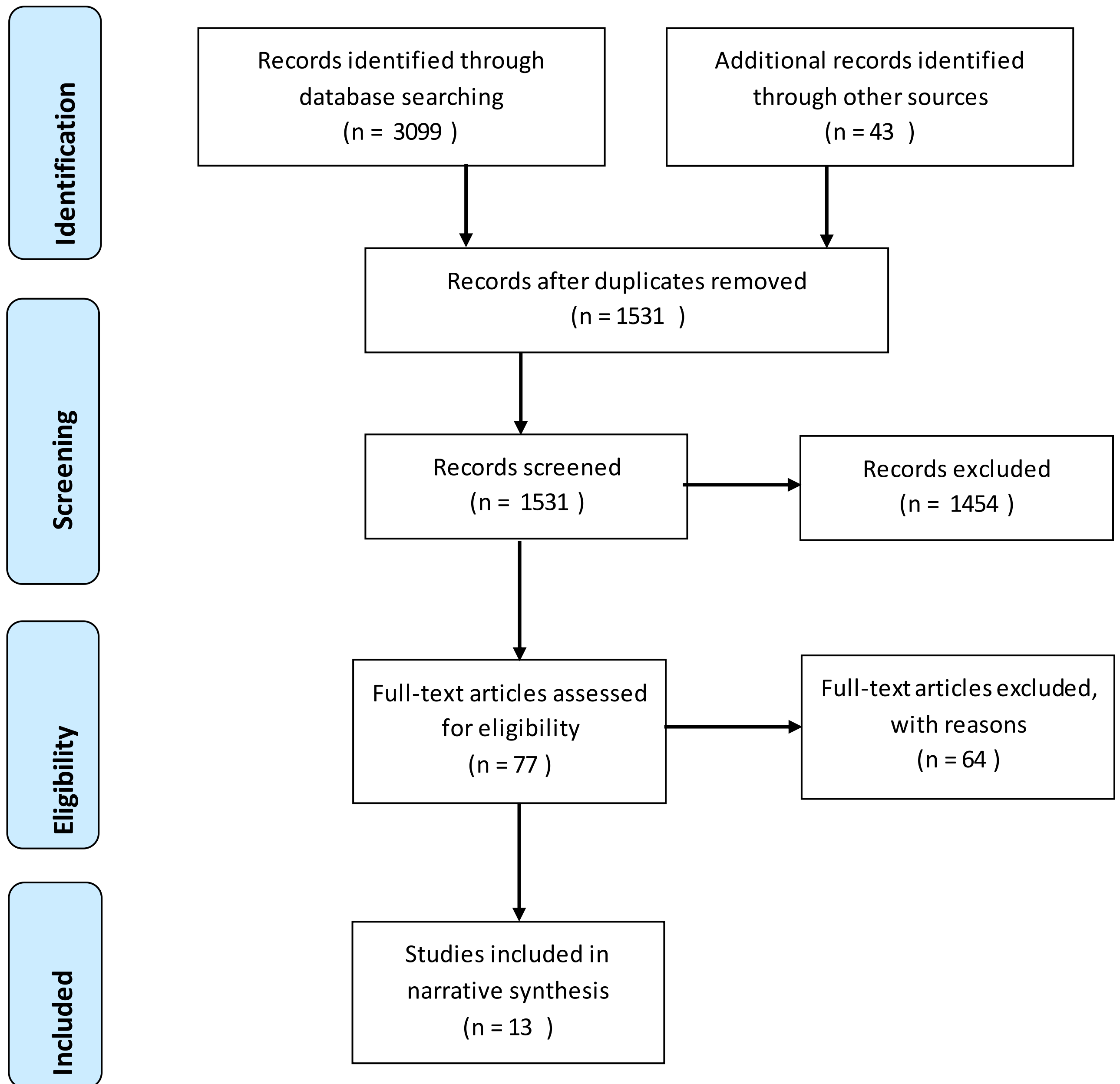

Figure 3.1 PRISMA diagram detailing study selection process

Table 3.1 Descriptive summary of included studies

Source	Population	Study design	Intervention	Outcome assessment and data collection
Botvin et al. (2006b), US	6th grade students in New York in a largely socioeconomically disadvantaged area.	Cluster-randomised controlled design. 20 intervention and 21 control schools	I: *Life Skills Training.* An interactive 15 session social development programme delivered by teachers, which included decision making, conflict resolution and anger management training. C: Standard NYC health curriculum	Self-report questionnaires on verbal and physical aggression, fighting, and delinquency conducted before and 3 months after intervention
Buckley et al. (2010), Australia	Year 9 pupils in a socioeconomically disadvantaged, urban area of Southeast Queensland	Quasi-experimental cluster-controlled design. Not-randomised as the five schools stated preference for I or C groups.	I: *Skills for Preventing Injury in Youth.* An 8 session social development programme that aimed to reduce risk taking behaviour and increase protective behaviour towards peers. Scenario-based sessions were delivered by teachers. C: Standard curriculum	Self-report questionnaires on frequency of risk-taking behaviour, which included measures on violence and alcohol consumption performed at baseline and at 2 weeks post-intervention.
Chauveron et al. (2012), US	6th-8th grade pupils in New York City in socioeconomically deprived areas with ethnically diverse student bodies.	Quasi-experimental cluster-controlled design in 24 schools which was a random subset of 160 schools who received the programme. 2	I: *The Leadership Programme's Violence Prevention Project.* A 12 session social development programme, which incorporates arts-based	Questionnaires that included scales on normative beliefs about aggression, conflict resolution and peer support were

		intervention classes and 2 control classes were randomly assigned to each school. Due to teacher preferences randomisation was not always possible and closely matched schools were used for controls.	projects to develop pro-social skills (i.e. conflict management, communication and problem skills) associated with violence prevention and uses a social norms approach to alter classroom norms about violence and aggression. C: Standard Curriculum.	completed at baseline and at the end of the intervention.
Farrell et al. (2003a) US	6th -8th grade school pupils in a rural setting	Quasi-experimental cluster- controlled design. Not-randomised as 5 schools were assigned to intervention on group on the willingness of the principle to take part and 4 schools acted as controls.	I: *Responding in Peaceful Pathways* (RIPP). A 2 year social development programme for the 6th and 7th grade, which also utilised a social norms approach. Prevention facilitators teach knowledge, skills and attitudes to promote school wide norms for non-violence. Pupils learn problem-solving skills for violence prevention through experiential and didactic activities. C: Standard curriculum	Self-report questionnaires on frequency of aggression, victimization, delinquency and use of nonviolent approaches to resolving conflict. Attitudes supporting violence and non-violence measured combining the Belief's Supporting Aggression scale and Attitude Toward Conflict scale. Measured at pre-test, two mid-point assessments and at 4-month and 9-month follow-ups.

Farrell et al. (2003b) US	7th grade pupils, in Richmond Virginia in a socioeconomically disadvantaged area. Predominantly African-American student body.	Cluster-randomised design. 10 registration classes from two schools were randomly assigned the intervention and 11 assigned to the control condition	I: RIPP social development. A 12 session programme focusing on conflict resolution and relationship skills to reduce involvement in violence through a social norms approach. C: Standard curriculum. N.B control and intervention pupils both received the 6th grade *RIPP* programme which focuses more on managing risk of violence.	Self-report questionnaire on frequency of violence, non-physical aggression, and aggression and scales measuring attitudes supporting violence and non-violence. Disciplinary violations for violence from school records. Measured at baseline, end of programme and at 6 and 12 months post-intervention.
Flay et al. (2004)US	5th-8th grade pupils in Chicago with a predominantly African-American student body.	Part of *Aban Aya Youth Project.* Randomised-block design. Eligible Chicago schools n=141) were stratified into 4 quartiles of risk (based on aspects such as truancy, family income levels) and 2 high-risk quartile inner-city schools, 1 middle risk quartile inner city school and 1 middle risk near suburban schools were	I1: *Social Development Curriculum*. A culturally sensitive social development programme that consisted of 15-21 lessons over 4 years which aimed to develop pro-social skills (e.g. conflict resolution, empathy, problem-solving) to help avoid violence prevention and other forms of delinquency. I2: SDC plus the School/Community	Self-report questionnaire on involvement in violence, delinquency, and substance misuse collected at baseline and at end of 5th, 6th,7th and 8th grade.

		randomly assigned to one of three intervention groups.	intervention (SCI) which included a parent support programme and focused on developing school-community partnerships C: Health Enhancement Curriculum (HEC) which taught some pro-social skills (e.g. problem solving) but focused on nutrition and physical activity.	
Katz et al. (2011), US	9th – 12th grade pupils in a Midwestern state.	Controlled before and after design with one control school and one intervention school.	I: *Mentors in Violence Prevention (MVP)* aims to change social norms on the acceptance of abuse and violence and encourage pupils to respond to such behaviours delivered by student mentors. C: Standard curriculum	Perceptions of wrongfulness survey, which assesses attitudes towards violence in different situations.
Kliewer et al. (2011), US	7th grade pupils in an urban setting in the south-eastern United States with predominantly African-American study body.	Cluster-randomised design. 5th grade classes from three schools were randomly allocated to the intervention (6 classes), enhanced intervention (6 classes) or the control (5 classes).	I: Social development programme which uses expressive writing to reduce aggressive behaviour by regulating emotions around stressful conditions. The standard intervention (IS) involves 30 minutes of writing for 3-4 days on a stressful event. In the	Self-report questionnaire on frequency of aggressive behaviour and emotional control. Self-report data on victimisation and exposure to violence acted as moderators. Teachers rated students

			enhanced condition (IE) students were also given the option to write stories, poetry and songs and rap about violence and share this with the rest of the class. C: Non-emotional control writing	on Achenbach's validated Aggressive Behaviour subscale and emotional regulation checklist. Measures were completed at baseline and 2 and 6 month follow-up.
Shetgiri et al. (2011), US	9th grade students in an urban California school with predominantly Latino student body.	Randomised-controlled design. Students from one school randomly allocated to intervention or control group through dice rolling.	I: 28 sessions based on an pre-existing social-development school-based violence and substance abuse prevention programme, delivered by a clinical social worker and aims to improve resilience by focusing on anger management, conflict resolution, communication skills and exposure to violence. C: Standard curriculum	Self-report data on frequency of fighting, involvement with police and connectedness to family, school, peers and community collected using subscales of questionnaire (e.g. AddHealth). Measured at baseline and at 4 and 8 month follow-up
Simon et al. (2008), US	6th grade students from 37 schools from four socioeconomically disadvantaged communities.	Part of Multisite Violence Prevention Project (MVPP). Cluster-randomised controlled design. Schools within each community assigned to universal	IU: 20 session GREAT social development programme which uses experiential learning, group activities and didactic learning to develop problem-solving skills and awareness of non-violent	Pupils completed questionnaires assessing individual norms for aggression, beliefs supporting violence and non-violence, self-efficacy

		intervention (IU), selective intervention (IS), combined intervention (IC) or control.	alternatives to reduce engagement in violence. Delivered by trained facilitators. IS: 15 week family intervention for students identified as aggressive. IC: Both the universal and selective programme C: Standard curriculum.	for non-violent responses. Social skills were assessed by teacher ratings of problem behaviours and adaptive skills. Measured at baseline, end of intervention year and one and two years follow-up.
Simon et al. (2009), USA	6th grade students from 37 schools from four socioeconomically disadvantaged communities.	Part of MVPP. Cluster-randomised controlled design. Schools within each community assigned to IU (n=9), IS (n=10), IC, (n=9) or control (n=9).	IU: 20 session GREAT social development programme, which uses experiential learning, group activities and didactic learning to develop problem-solving skills and awareness of non-violent alternatives to reduce engagement in violence. Delivered by trained facilitators. IS: 15 week family intervention for students identified as aggressive. IC: Both the universal and selective programme C: Standard curriculum.	Self-reported aggressive behaviour and victimisation questionnaires. Pupils also completed questionnaires on a subscale measuring aggressive norms within school and perceived school safety.
Swaim and Kelly (2008), US	7th and 8th grade pupils from 6	Cluster-randomised controlled design. 3	I: *Resolve It, Solve It* programme, which utilises a	Self-reported violent behaviour, victimisation

	schools from five communities across the USA with predominantly white student bodies.	communities randomly assigned to the intervention and two communities to the control condition.	social norms approach and is delivered over a year by high school students trained in conflict resolution and anger management, who developed anti-violence campaign materials (e.g. posters, adverts), acted as peer role models and delivered presentations in schools and communities around alternatives to violence. C: No intervention	and perceived school safety and attitudes towards to violence measured by questionnaires at baseline, mid-intervention and post-intervention.
Van Schoiack-Edstorm et al. (2002), US and Canada	6th-8th grade pupils from 5 schools across cities in US and Canada that represent a range of ethnic backgrounds and socioeconomic status.	Quasi-experimental cluster-controlled design. Intervention and control conditions were assigned to different classes in each school except one school which only had intervention classes. Assignment not allocated randomly due to teacher preferences.	I: *Second Steps* social development programme which utilises a social norms approach and aims to aims to establish non-aggressive norms and provide opportunities to practice positive solutions to social problems through role-play during lessons and skill application opportunities throughout the school day. Although it is a 2 year programme, pupils received either year 1 or 2 of the programme. C: Standard curriculum	Attitudes towards aggression evaluated using an aggression endorsement scale and pro-social skills evaluated using a perceived social difficulty scale. Years 1 and 2 of the programme were evaluated separately and data was collected at baseline and at the end of the semester.

Table 3.2 Results and risk of bias from individual studies

Source	Strength of Evidence	Sample size	Recruitment rate	Follow-up rate	Findings
Botvin et al. (2006), US	Moderate	I: 2374 C: 2484 T: 4858	Data not available	Data not avaliable	Generalised estimating equations analysis examined effect of intervention and reported the intervention significantly reduced physical aggression in last month (OR = 0.5, CI = 0.374 - 0.71), delinquency in last year (OR=0.537, CI = 0.36 – 0.8), frequent verbal aggression in past month (OR = 0.503, CI = 0.36 - 1.46), frequent physical aggression in past month (OR = 0.614, CI = 0.44 – 0.85), frequent fighting in past year (OR =0.559, CI = 0.40 – 0.79) and frequent delinquency in past year (OR = 0.540, CI = 0.32 – 0.91). Results were more pronounced in students who had attended at least half the programme.
Buckley et al. (2010), Australia	Weak	I: 360 C: 180 T: 540	I: 72% C: 41% T: 58% N.B. issue with obtaining parental consent in control group	I: 91% C: 84% T: 89%	At baseline the intervention group had significantly higher scores for risk-taking behaviour; however this was controlled for in an ANCOVA. Mean change scores risk-taking behaviour were significantly different between I (-0.46) and C (0.18) groups, with intervention participants having significantly greater positive change.
Chauveron et al. (2012), US	Weak	I: 1668 C: 1585 T: 3264	Data not available	I: 79% C: 80% T:79%	At baseline the intervention group had significantly worse attitudes and behaviours towards violence. Intervention pupils had a

					significantly slower (or no) increase in the following beliefs compared to controls: peer support (γ_{110} = 0.13), normative beliefs about aggression (γ_{110} = -0.07), verbally aggressive conflict resolution strategies (γ_{110} = -0.13), physically aggressive conflict resolution strategies (γ_{110} = -0.21) and antisocial conflict resolution strategies (γ_{110} = -0.10). At post-test intervention students were significantly less likely to avoid conflict using pro-social verbal skills (t = 2.96) or avoidant conflict resolution strategies (t = 2.48).
Farrell et al. (2003a), US	Moderate	I: 655 C: 685 T: 1340	I: 90% C: 85% T: 88%	I: 61% C: 60% T: 60%	Pupils in the intervention groups had significant improvements in the following domains compared to the control schools: Approval of violent behaviour (*d* = 0.13), victimization (*d* = 0.14), peer provocation (*d* = 0.11) were reported at midpoint 2. Approval of non-violence (*d* = 0.19), approval of violent behaviour (*d* = 0.12), delinquent behaviour frequency (*d* = 0.11) at the 4 month follow-up. Approval of non-violence (*d* = 0.14), aggressive behaviour frequency (*d* = 0.17) at the 9 month follow-up.
Farrell et al. (2003b), US	Moderate	I: 239 C: 237 T: 476	90%	T: 62%. Attrition rates not significantly different	Boys from the intervention group had significantly lower rates of nonphysical aggression (*d* = 0.37), attitudes more supportive of non-violence (*d* = 0.27) at 6 months but this

				between groups	was not maintained. Rates of disciplinary violations were significantly lower in the intervention group at 12 months (risk ratio = 2.1). There were no other significant effects.
Flay et al. (2004a), US	Moderate	HEC = 372 SDC = 417 SCI = 366 T: 668	93%	51% at end of 8th grade	Boys receiving SDC had a significantly lower rate of increase in violence compared to the controls (*d* = 0.31) and substance abuse (*d* = 0.42). Boys receiving the combined intervention had a significantly lower rate of increase in delinquency (*d* =0.32) compared to the SDC pupils. Boys receiving the combined intervention had a significantly lower rate of increase in violence (*d* = 0.41), provoking behaviour (*d* = 0.41), delinquency (*d* = 0.61) and substance abuse (*d* = 0.45). There were no significant effects reported for girls.
Katz et al. (2011), US	Moderate	I: 894 C: 850 T: 1744	Data not available	I: 89% C: 91% T: 90%	Pupils in the intervention had significantly higher mean scores in perceived wrongfulness of aggressive behaviour (4.42) compared to the control school (3.37).
Kliewer et al. (2011), USA	Moderate	IS: 105 IE: 78 C: 69 T: 258	77%	IS: 89% IE: 84% C: 86% T: 87%	At 2 months there was significant reduction in teacher ratings of aggression/emotional control in the intervention group compared to controls: IS vs. C (*d* = -0.48) and IE vs. C (*d* = -0.31). Participants with higher exposure to violence showed larger reductions. This was not sustained at 6 months. There were no significant reductions in self-reported physical aggression.

Shetgiri et al. (2011), US	Moderate	I: 53 C: 55 T: 108	72%	I: 76% C: 87% T: 80%	No significant effect on fighting, involvement with police, drug abuse or connectedness at 4 or 8 month follow-up. Students in the intervention group had a significantly lower grade point average at 8 month follow-up (0.6 points) and reported higher rates of skipping school (43% vs. 21%).
Simon et al. (2008), USA	Moderate for teacher assessed outcomes (teachers not blinded) and strong for self-report outcomes	IU: 1451 IS: 1502 IC: 1343 C: 1329 T: 5625	76%	IU: 60% IS: 67% IC: 60% C: 65% T: 63%	Results from this study focus on effects of universal programme. At the end of the intervention year, students at UI schools had significantly higher levels of attitudes supportive of aggression (*d* = 0.11) and individual norms for non-violent behaviour (*d* = 0.10). Boys also had significantly higher levels for self-efficacy for non-violent responses (*d* = 0.16). There were no significant universal intervention effects on growth curve trajectories. Intervention effects were moderated by baseline risk of students, with those most at risk of violence benefiting more.
Simon et al. (2009), USA	Moderate for teacher assessed outcomes (teachers not blinded) and strong for self-report outcomes	IU: 1451 IS: 1502 IC: 1343 C: 1329 T: 5625	76%	IU: 60% IS: 67% IC: 60% C: 65% T: 63%	At the end of the intervention year UI students reported significantly higher levels of self-report aggression (*d* = 0.09) and school norms for aggression (*d* = 0.13). Over the course of the study victimisation significantly decreased in UI schools (*d* = -0.04) and had relatively slower decreases in teacher-rated aggression (*d* = 0.06). No other significant effects were found.
Swaim and Kelly	Moderate	I: 712 C: 780	70%	T: 87% Details not	There was a significant increase in violent intentions in the control group compared to the

(2008), USA		T: 1492		available on retention by group	intervention group (slope = 0.328 vs. slope = 0.047). There was a faster rate of decline in physical assault against people in the intervention group (slope = -0.208 vs. slope = -0.015) and verbal victimisation (slope = -0.21 vs. slope = -0.055). Perceived physical safety in the control schools significantly decreased compared to the intervention schools (slope = -0.159 vs. slope = -0.009).
Van Schoiack-Edstorm et al. (2002), USA and Canada	Weak	Year 1: 387 Year 2: 327 T:714	Data not available	Data not available	Year 1 Analysis. Control pupils had a significant increase in endorsement of social exclusion from pre to post-test (t = -2.5) whereas year one intervention pupils remained relatively constant overtime. There were no other significant differences between the control and intervention groups. Year 2 analysis. Intervention pupils had significant reductions in endorsement of physical aggression (t = 6.23), verbal derogation (t = 8.12) and social exclusion (t= 5.03) compared to control pupils.

3.3.2. Narrative Synthesis

3.3.2.1 Intervention details: integrity, context and population

Two specific types of intervention were identified. First, social development programmes, which aimed to develop pro-social skills (e.g. anger management, conflict resolution, empathy, problem-solving, communication and decision-making skills). Secondly, social norms programmes which aimed to promote school wide norms for non-violence. Four studies utilised stand-alone social development programmes (Botvin et al., 2006a, Buckley et al., 2010, Kliewer et al., 2011, Shetgiri et al., 2011), four studies combined social development programmes with social norms approaches (Chauveron et al., 2012, Farrell et al., 2003a, Farrell et al., 2003b, Van-Schoiack-Edstorm et al.,2002), three studies had an additional intervention strand which combined a social development programme with family sessions (Flay et al., 2004, Simon et al., 2008, Simon et al., 2009) and two studies utilised only a social norms approach (Swaim and Kelly, 2008, Katz et al., 2011).

There was considerable variation in the duration of the social development programmes, ranging from four sessions (Kliewer et al., 2011) to programmes delivered over four years (Flay et al., 2004). Programme delivery also varied between studies with the majority of programmes being delivered by teachers. However, two social development programmes (evaluated in four studies) used trained facilitators (Farrell et al., 2003a, Farrell et al., 2003b, Simon et al., 2008, Simon et al., 2009) and the social norms programmes utilised senior students (Swaim and Kelly, 2008, Katz et al., 2011). The majority of social development programmes utilised a combination of scenario-based, didactic and experiential

activities designed to develop pro-social skills to prevent violence. However, one programme utilised expressive writing which aimed to reduce aggressive behaviour by enhancing emotional control (Kliewer et al., 2011). Another incorporated arts-based projects to develop pro-social skills (Chauveron et al., 2012). The social norms approaches also varied considerably. *Resolve It, Solve It* utilised senior students to develop media campaigns to promote anti-violence social norms (Swaim and Kelly, 2008), whereas *Mentors in Violence Prevention* involved senior students taking on a leadership role and facilitating mentoring sessions with younger students (Katz et al.).

The majority of studies were carried out in middle schools (pupils aged 12-14 years), with only three studies implemented in a high school setting (Buckley et al., 2010, Shetgiri et al., 2011, Katz et al., 2011). All studies were conducted in the US, with the exception of *Skills for Preventing Injury in Youth (*Buckley et al., 2010) which was conducted in Australia and the *Second Steps* programme (Van Schoiack-Edstrom et al., 2002) which was conducted in the US and Canada. The schools tended to be located in urban settings, with high levels of socioeconomic deprivation, with only two studies set in rural communities (Farrell et al., 2003a, Swaim and Kelly, 2008).

3.3.2.2 Study design and risk of bias

All studies utilised a cluster-controlled design, with exception of Shetgiri et al. (2011), who conducted a RCT with pupils from one school. The clusters were either at the school level or a class level. Eight studies assigned conditions at the

school level (Botvin et al., 2006, Buckley et al., 2010, Farrell et al., 2003a, Flay et al., 2004, Simon et al., 2008, Simon et al., 2009, Swaim and Kelly, 2008), which helps to reduce the risk of contamination (i.e. control students being exposed to the intervention) that could potentially bias the results. The other four cluster-controlled studies assigned conditions at a class level, whereby classes within schools were assigned to either control intervention conditions. Although this may reduce differences in baseline characteristics (e.g. socioeconomic status) it does have a higher risk of contamination (Chauveron et al., 2012, Farrell et al., 2003b, Kliewer et al., 2011, Van Schoiack-Edstorm et al., 2002).

In eight studies conditions were randomly allocated; however random allocation was not possible in five studies. First, Farrell et al. (2003a) allocated the intervention to the schools most willing to participate in the intervention. Secondly, Buckley et al. (2006), Chauveron et al. (2012) and Van Schoiack-Edstorm et al. (2002) had to take teacher preference into account as some teachers were not willing to be allocated the control group. Finally, Katz et al. (2011) identified a matched-control for a school already willing to take part in the study.

Attrition in the studies was generally low, with only Flay et al. (2004) reporting an attrition rate of below 60%. However, data on follow-up was not available for two studies (Botvin et al., 2006, Van Schoiack-Edstorm et al., 2002). Specific data on follow-up by control and intervention group was not available for one study (Swaim and Kelly, 2008); however, the total follow-up rate was provided. Data on recruitment rate was not available for four studies (Botvin et al., 2006, Chauveron

et al., 2012, Katz et al., 2011, Schoiack-Edstorm et al., 2002). There were no other issues with missing data.

Two studies (Simon et al., 2008, Simon et al., 2009) were graded as strong using the Effective Public Health Project's tool for assessment of quantitative studies and had a low risk of bias. However, it should be noted that the teacher assessed outcomes in these studies were evaluated separately and graded as moderate as the teachers were not blind to the intervention status of the pupils, which could increase the risk of detection bias. Nine studies (Botvin et al., 2006, Farrell et al., 2003a, Farrell et al., 2003b, Flay et al., 2004, Katz et al., 2011, Kliewer et al., 2011, Shetgiri et al., 2011, Swaim and Kelly, 2008) were graded as moderate meaning they had a weak score in one domain of the assessment tool but were otherwise not at high risk of bias. Three studies were graded as weak. First, the study by Buckley et al. (2010) was at high risk of selection bias as less than 60% of individuals agreed to participate, the schools stated a preference for the intervention, and the intervention participants had significantly higher scores at baseline. The study by Chauveron et al. (2012) is also at high risk of selection bias as some schools did not agree to randomisation resulting in some teachers choosing the intervention for the 'best' classes as a reward, whereas other teachers felt it should be delivered to the 'worst classes'. This resulted in significant differences between the groups at baseline. Finally, Van Schoiack-Edstorm et al. (2002) also had to take teacher preference into account regarding allocation. These studies are therefore, at high risk of bias and their findings should be interpreted with caution.

3.3.2.3 Outcomes

All studies measured outcomes using questionnaires completed by pupils. Farrell et al. (2003b) also included disciplinary violations for violence from school records as an outcome measure. Three studies included teacher ratings of aggressive behaviour using a validated scale (Kliewer et al., 2011, Simon et al., 2008, Simon et al., 2009). Follow-up time varied considerably from immediately after the intervention to two year follow-up. The studies examined the effects of the interventions on a range of outcomes using different validated scales.

3.3.2.3.1 Impacts on violent behaviour

Five studies examined the impact on the frequency of perpetration of physical violence using self-report questionnaires; however, there were differences in how violent behaviour was measured. For instance, two studies reported improvements in self-reported violent behaviour. First, Botvin et al. (2006) reported that the intervention group were about half as likely to be involved in frequent fighting (odds ratio = 0.56, CI = 0.40 – 0.79) in the follow-up period of six months. Secondly, Flay et al. (2004) reported a significantly reduced rate of increase in physical violence compared to the control groups (d = 0.31). In addition, Farrell et al. (2003b) reported an improvement in school disciplinary violations for violent behaviour (RR = 2.1). However, Buckley et al. (2010) and Shetgiri et al. (2011) reported no significant effect on physical violence. It should be noted that the study by Buckley et al. was graded weak. Interestingly, positive outcomes were not associated with programme duration. While the study by Buckley et al. was the shortest of all the programmes examining violent behaviour

(eight sessions), the programme by Shetgiri et al. was actually the longest (28 sessions).

3.3.2.3.2 Impacts on physical aggression

Five studies examined the impact on self-reported physical aggression. Two studies reported a significant reduction in self-reported physical aggression in intervention pupils compared to control pupils. First, Botvin et al. (2006) reported that pupils in the intervention group reported decreased frequent aggression (OR = 0.61, CI = 0.44 – 0.85) at 3-month follow-up. Secondly, Farrell et al. (2003a) reported a small decrease in aggressive behaviour (d = 0.17) at 9-month follow-up. In addition, Kliewer et al. (2011) reported a significant reduction in teacher ratings of aggression compared to controls (d = -0.48; Kliewer et al.2011). Conversely, while Farrell et al. (2003b) did report a reduction in violations for violent behaviour, there was no significant decrease in self-reported aggression. Furthermore, Simon et al. (2009) reported a small but significant increase in self-reported physical aggression in the intervention group (d = 0.09) and slower decreases in teacher-rated aggression (d = 0.06).

3.3.2.3.3 Impact on non-physical aggression

Only two studies examined the impact of the intervention on non-physical aggression. Botvin et al. (2006) reported a significant decrease in verbal aggression compared to controls (OR = 0.5, CI = 0.37 - 0.71). Interestingly, Farrell et al. (2003b) reported that intervention pupils had significantly lower rates of

non-physical aggression compared to controls (*d* = 0.37); despite no significant effect on physical violence.

3.3.2.3.4 Impact on delinquent behaviour

Four studies examined the impact on delinquent behaviour. Two studies reported a significant decrease in delinquency. Botvin et al. (2006) reported positive effects with intervention pupils engaging in less delinquent behaviour at 6-month follow-up (OR = 0.54, CI = 0.36 – 0.8). Farrell et al. (2003a) also reported a small improvement in frequency of delinquency compared to controls (*d* = 0.11). Moreover, Flay et al. (2004) reported a considerably greater reduced rate of delinquency compared to controls (*d* = 0.61). However, Farrell et al. (2003b) did not report any significant effects on delinquency. This is interesting as although this programme also had no effect on violent behaviour it was associated a significantly moderate positive effect on non-physical aggression (Farrell et al. 2003b).

3.3.2.3.5 Impact on victimisation

Three studies examined the impact on self-reported victimisation. Two studies reported a significant decrease in victimisation. First, in addition to small improvements in physical aggression and delinquency, Farrell et al. (2003a) reported a small decrease at the midpoint of the intervention compared to controls (*d* = 0.14); however, this was not sustained at 4- or 9-month follow-up. Interestingly, while Simon et al. (2009) reported that the GREAT programme was

associated with increased physical aggression in universal intervention pupils, victimisation in the universal intervention students actually decreased slightly over the course of the study (d = -0.04). Conversely, Kliewer et al. (2011) reported no significant effect on victimisation.

3.3.2.3.6 Impact on school safety

Only two studies examined the impact on perceived school safety. Swaim and Kelly (2008) reported that although perceived school safety declined in both control and intervention schools, the rate of decline was higher in the control schools (control slope = -0.159 vs. intervention slope = -0.009). Interestingly, although the GREAT programme was associated with a small but significant decrease in self-report victimisation, Simon et al. (2009) did not report any significant effects on perceived school safety.

3.3.2.3.7 Impact on attitudes and beliefs towards violence

Seven studies examined the impact on attitudes and beliefs towards violence using a range of scales and measures, producing mixed results. First, Farrell et al. (2003a) reported that compared to control pupils, intervention pupils had small but significant improvements in approval of violent behaviour (d = 0.13) at midpoint two, which was maintained at the 4-month follow-up. They also found that intervention pupils had significantly more approval of non-violence at 4-month (d = 0.19) and 9-month follow-up (d = 0.14) compared to control pupils. However, Farrell et al. (2003b) reported that only boys had significant

improvements in attitudes supportive of non-violence (*d* = 0.27) at 6 months but this was not maintained at 12 months.

Katz et al. (2011) reported that intervention pupils had significantly (*p* = <.001) higher mean scores in perceived wrongfulness of aggressive behaviour (4.42) compared to the control pupils (3.37). Similarly, Van-Schoiack-Edstorm et al. (2002) who also evaluated a social norms approach combined with a social development programme, reported that after two years, intervention pupils had significant reductions in pro-aggressive attitudes compared to controls (*t* = 6.23, *p* = <.001). *The Leadership Programme's Violence Prevention Project,* which also combined a social norms approach with a social development programme, reported positive effects in terms of intervention pupils having a significantly slower increase in normative beliefs about aggression compared to controls (Chauveron et al., 2012). However, it should be noted that at baseline, intervention students had significantly worse attitudes and behaviours towards violence and this studied was graded weak due to the high level of selection bias. The *Resolove It, Solve It* programme which only utilised a social norms approach, reported a higher rate of decline in violent intentions in males in the intervention group compared to controls, but not females (Swaim and Kelly, 2008).

Conversely, Simon et al. (2008) reported that universal intervention pupils had significantly higher levels of goals and strategies supportive of aggression (*d* = 0.11) and individual norms for non-violent behaviour (*d* = 0.10). Further analysis indicated that universal intervention students also reported higher school norms

for aggression (Simon et al., 2009). Interestingly Simon et al. reported that boys receiving the universal intervention did had a significantly higher self-efficacy for non-violent responses (*d* = 0.16).

3.3.2.3.8 Adverse effects

In addition to the adverse effects on attitudes towards violence identified by Simon et al. (2008, 2009), Shetgiri et al., (2011) identified that the pupils receiving the social development programme had a significantly lower grade point average at eight month follow-up (0.6 points) and reported higher rates of unauthorised absence from school (43% versus 21%). It should be noted that this study was one of the longest programmes with 28 sessions.

3.3.2.4 Risk of bias across studies

As all studies except the Australian study by Buckley et al. (2010) were conducted in the US, there is a considerable risk of location bias, and the studies may not generalise to the UK or other countries. As the effects reported in the studies were either small or clearly identified as having no effect or a negative effect, there is less risk of outcome reporting bias.

3.4 Discussion

3.4.1 Summary of evidence

The systematic review identified 13 studies that met the inclusion criteria. While a meta-analysis was not possible due to heterogeneity between studies, this review indicates that school-based primary prevention interventions may have a small effect on reducing violent behaviour, physical aggression, non-physical aggression and pro-violent and aggressive attitudes. The direction of change for each outcome is detailed table 3.3.

As identified in the current systematic review, programmes for the primary prevention of violence often utilise a social development component to develop protective factors against violence. Whilst this approach is supported in the theoretical literature (see 2.3.3.1) and did demonstrate some success in the current review, the studies with this review that demonstrated the most success in reducing pro-violent and pro-aggressive attitudes (Chauveron et al., 2012, Katz et al., 2011, Swaim and Kelly, 2008, Van-Schoiack-Edstorm et al., 2002) utilised a social norms component in conjunction with social development programmes. The use of social norms approaches is also supported by the theoretical literature in social psychology (see 2.3.3.1.1). In particular, the theory of planned behaviour (Ajzen, 1991) places considerable emphasis on social norms as predictive of behaviour (Naidoo and Wills, 2009). Perceived social pressure can be very powerful in influencing individuals to behave in a manner that they believe is consistent with other people think (Naidoo and Wills). Secondary school age pupils in particular, are significantly influenced by peers to engage in other

adverse health behaviours (e.g. underage alcohol consumption; Wood et al., 2004) and as such social norms based approaches may be particularly effective in this group. Indeed, Prothrow-Stith and Davis (2010), argue that that as social norms are such powerful determinants of behaviour, violence prevention programmes must consider them. The results from this review are consistent with the spectrum of prevention, which highlights the need for both the development of individual skills and knowledge, and a change in social norms, to facilitate healthy behaviour (Cohen and Chehimi, 2010). Figure 3.2 illustrates how social development programmes can be combined with social norms approaches to reduce violence in school pupils using a logic model.

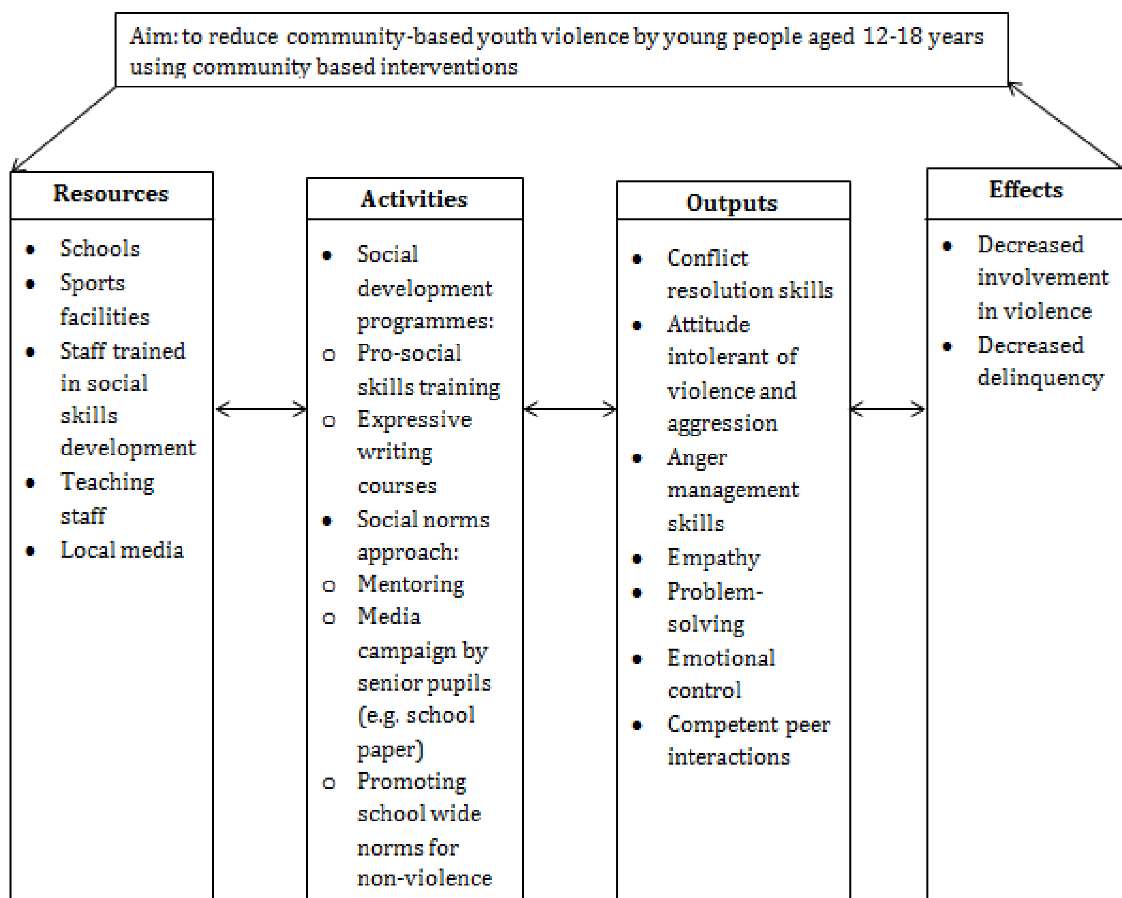

Figure 3.2 Logic model of school-based primary prevention programmes

Table 3.3 Summary of direction of outcome

	Study quality	Physical Aggression	Non-physical Aggression	Violent Behaviour	Risk taking behaviour	Conflict resolution skills	Victimisation	Attitudes towards violence	Pro-social skills
Botvin et al., 2006.	Moderate								
Buckley et al., 2010	Weak								
Chauveron et al., 2012	Weak								
Farrell et al., 2003a	Strong								
Farrell et al., 2003b	Moderate		*					*	
Flay et al., 2004.	Moderate			*	*				
Katz et al., 2011	Moderate								
Kliewer et al., 2011	Moderate								
Shetgiri et al., 2011	Moderate								
Simon et al., 2008	Moderate								
Simon et al., 2009	Strong						**		
Swaim and Kelly (2008)	Moderate	***						*	
Van Schoiack-Edstorm et al., 2002	Weak								

*Males only, ** Relational victimisation only, no effect on overt victimisation, *** females only

Key: = outcome not measured = positive outcome effect = no significant effect = negative outcome effect

3.4.2 Limitations

3.4.2.1 Quality of the evidence

Simon et al. (2008, 2009) were graded strong on all aspects with the exception of teacher completed data. The rest of the studies were graded as either moderate or weak in terms of risk of bias, indicating that study quality was generally poor. Randomisation resulting in selection bias was a considerable issue in three of the studies (Chauveron et al., 2012, Buckley et al., 2010, Van Schoiack-Edstorm et al., 2002) and consequently they were graded weak. Another two studies used assignment methods that were not truly random but were at considerable less risk of selection bias (Farrell et al., 2003a, Katz et al., 2011). The fact that some schools were only willing to take part if they received the intervention and would not act as a control group highlights the difficulty of randomisation of complex interventions.

All studies utilised self-report data in the form of questionnaires, which can have issues with reliability. However, as the majority of participants are not yet involved with the level of violence requiring the attention of healthcare providers or the criminal justice system, official rates would not detect any significant change in the short follow-up periods used by most of the studies. Furthermore, as teachers are aware of allocation status of participants, teacher-rated data would be susceptible to bias.

3.4.2.2 Limitations of the review process

As the review only included articles in English there is a risk of language bias, particularly as some articles in another languages (namely German and Spanish) were excluded. Furthermore, there is considerable location bias as twelve of the thirteen studies were conducted in the US and the remaining study was conducted in Australia. It therefore needs to be considered whether these results can be generalised to developing countries or even indeed European countries. Moreover, this highlights a need for more research in violence prevention outside the US.

The review was limited to only include articles published after 2002, as following the publication of the World Report on Violence and Health (Krug et al., 2002) there was a focus on primary prevention of violence. However, it is feasible that potentially important studies would have been conducted before this time and as such omitted from the review.

Finally, due to the heterogeneity in outcome measures, study design and intervention type a meta-analysis was not appropriate. Instead, the results were presented as a narrative synthesis, which is unable to provide a combined effect size and thus provide a quantitative summary of the data.

3.5 Conclusions

In conclusion, studies examining the impact of school-based violence prevention interventions which use social development programmes or social norms

approaches demonstrated a small effect on reducing violent behaviour, physical aggression, pro-violent attitudes and delinquency. The effects were greatest when social norms approaches were combined with social development programmes. Due to the apparent importance of social norms and individual skills and knowledge (i.e. protective factors), it is therefore advocated that future violence primary prevention programmes utilise both social norms and social development components.

However, it is important to note that these findings, although promising, were not consistent across studies. Indeed, a number of studies (particularly those that only had a social development component) reported no significant effect on some of the outcomes and Simon et al. (2008, 2009) reported that the intervention had a slightly negative effect on attitudes towards violence. It is, therefore, essential that due to the increasing prevalence of such interventions, thorough evaluation is conducted to ensure that programmes do not have detrimental effects on young people. This information can then be utilised to help further refine the interventions.

Furthermore, research is needed in European and low- and middle-income countries to establish whether such interventions would have a positive effect in different settings. This is particularly important as violence prevention programmes may be culturally or contextually dependent. For instance, the Aban Aya youth project (Flay et al., 2004) was developed around the African-American culture and such a programme would not be applicable outwith this context. Due

to the considerable issue of violence within Scotland, there is a need for research around violence prevention within a Scottish context. The evaluation of MAV, which is detailed in the subsequent chapters, is one such example of this.

Chapter 4 Methodology and Research Design

4.1 Rationale for evaluation of Medics Against Violence

Whilst this PhD always sought to investigate the prevention of violence using a school-based approach, the initial focus was the under-16s component of Glasgow's Community Initiative to Reduce Violence (CIRV). This had involved the evaluation of a secondary school-based programme entitled Community Education Link to Sports (CELTS), which combined sports sessions with a social development programme designed to increase pro-social skills. However, unfortunately due to funding reasons CELTS (and other planned programmes delivered by CIRV for under 16s) were cancelled. However, at this time Medics Against Violence (MAV), who work in partnership with the Violence Reduction Unit, had received funding from the Scottish Government and other charitable donors, were regularly delivering school visits.

MAV originally began in 2008 and was founded by Scottish surgeons who were frequently treating young people with violent injuries. Like smoking related harms, these surgeons believed that violence was a preventable problem and they could play a role in this. Whilst any healthcare professional who treats patients with violent injuries can volunteer with MAV, the vast majority of voulunteers are doctors or dentists. This may reflect the fact the programme is principally advertised to these groups. The founders' decision to develop a school-based programme was based on literature supporting the use of school-based violence prevention programmes and because healthcare professionals delivering a school-

based programme represented a new approach in violence prevention (see Goodall et al., 2010). Whilst MAV aim to reduce attitudes towards violence and develop empathy, they do not have an explicit theoretical basis. However, as the theory of planned behaviour (Ajzen, 1991) proposes that attitudes influence behaviour, this could be applied to MAV. Additionally, the social development model proposes that developing pro-social skills and attitudes such as empathy can protect against engagement in antisocial behaviour (Catalano et al., 1996) and as such underpins MAV's approach. As MAV is a novel programme, the founders recognised the need for evaluation and whilst they originally collected data from pupils in the form of questionnaires, they felt an independent evaluation would be beneficial to provide feedback to funders and help develop the programme. Consequently, this became the focus of the PhD.

4.2 Design and Settings

4.2.1 Mixed-methods research

This study utilises a mixed-methods approach to evaluate the MAV programme. Mixed-methods is defined as the "class of research where the researcher mixes or combines quantitative and qualitative research techniques, methods, approaches, concepts or language into a single study" (Johnson and Onwuegbuzie, 2004, p.17). This enables a pragmatic approach to this study by utilising the research methods that best answer the question of interest (Johnson and Onwuegbuzie, 2004). Although quantitative methods are important in helping establish whether an intervention has been successful in changing the outcome of interest, the positivist

underpinnings means the scientific method is adopted and as such only phenomena that can be observed are included in the study (Bryman, 2003). Creswell et al. (2006) argue against this reductionist approach and note that combining quantitative research with qualitative research is of importance in health intervention trials as it can document the need for an intervention, understand the impact of the intervention of participants, identify factors that may influence the outcome of the trial and assess implementation of procedures.

The use of both qualitative and quantitative methods enables measurement of effectiveness in terms of outcomes and provides an understanding of the processes involved in the success or failure of an intervention (Creswell, 2006). For instance, the use of qualitative data can explore whether failure is a result of the concept of the intervention or parts of the intervention, contextual problems, poor implementation or issues with evaluation process (Rychetnik et al., 2002). The use of qualitative data in this manner has been utilised by the Centre for Disease Control's *Blueprints for Violence Prevention Initiative* , which in addition to identifying difficulties in the intervention, also used qualitative data to identify successful components (Mihalic and Irwin, 2003).

This study will therefore consist of a quantitative outcome evaluation to establish if MAV is effective in changing attitudes towards violence and a qualitative process evaluation. The process evaluation will be used to provide an understanding of the setting of the intervention, explore the implementation and help further understand the results of the outcome evaluation (see Oakley et al., 2006). Mixed-

methods designs can either prioritise quantitative or qualitative data, or give each form of data equal priority. This study will utilise the concurrent triangulation design, detailed in Creswell's (2006) typology of mixed–methods designs. Such a design gives quantitative and qualitative data equal priority with both being collected concurrently. The data is then analysed separately before being integrated to help provide deeper understanding of research findings.

4.2.2 Setting

All five schools in the Greater Glasgow area that requested the Medics Against Violence programme between 2011 and 2012 were invited to take part in the study. The five schools, which were from different urban communities across the West of Scotland, all agreed to take part. However, due to school inspections and lack of time, one school (School A) declined to take part in the qualitative components but did complete the quantitative components. School E received the programme as part of a public health day during which the students received a number of other related sessions. As this would have posed a threat to internal validity of the questionnaire data collected from these pupils, only qualitative data exploring pupil experiences with MAV was collected.

4.2.3 Study design and threats to internal validity

Due to difficulties in recruiting control schools an uncontrolled before-and-after design was employed. Although such studies are at risk of threats to internal validity (Slack and Draugalis, 2001) they can provide preliminary evidence for

intervention effectiveness over the short-term (Robson et al., 2001). In order to minimise threats to internal validity a number of considerations were made for specific threats, where possible. First, to reduce the risk of history threat (i.e. circumstances whereby participants are subject to an additional event that can influence their post-test scores; Dimitrov and Rumrill, 2003), only schools with no other violence prevention programmes completed the quantitative measures. As School E also received sessions on gangs and alcohol they did not take-part in this component. Discussions with teaching staff also established that there were no potentially significant events (e.g. stabbings in the school or surrounding area) that may influence results. Secondly, as the study does have a longitudinal component there is a risk of maturation threat, whereby the participants' characteristics (e.g. biological, psychological) change independently to the intervention during the study (Dimitrov and Rumrill, 2003). Research indicates that attitudes would become slightly more pro-violent during adolescence (Shapiro, 1998) which may result in a more conservative estimate of programme effect. However, only a small change in attitudes towards violence (ATV) would be expected within this three month follow-up period. The maturation effect can also refer boredom or fatigue experienced by participants (Kirk, 2007). Thirdly, ATV were measured using the same self-report questionnaire at all the time points to reduce instrumentation threat, which refers to change in scores being the result of a change in the measurement tool, for example, a different questionnaire being utilised at different time points (Trochim, 2006). However, it is acknowledged that this does increase the risk of testing threats, whereby changes in scores are a result of repeated testing (i.e. the participants learn the correct answers) and not the intervention

(Slack and Draugalis, 2001). Finally, as this was a universal intervention delivered to entire classes, participants were not selected on the basis of extreme scores reducing the risk of regression to the mean.

4.2.4 Reliability and validity in qualitative research

Within the health field, qualitative research has been criticised for being 'unscientific' as it can be strongly subject to researcher bias and it is not reproducible (Mays and Pope, 1995). However, qualitative research, which has traditionally taken a more interpretative stance, recognises the importance of the researcher's own experiences and perceptions of the subject matter, and the social context in which they occur, in better understanding participants' views (Snape and Spencer, 2003). Moreover, it is acknowledged, that while traditional tests of reliability and validity are of use with quantitative data, there are still methods that can be utilised to enhance the rigour of qualitative research (Ritchie and Lewis, 2003). Indeed, Seale and Silverman (1997) argue that rigour and validity are necessary in qualitative health research otherwise "methodological anarchy" (p. 380) can ensue. Rigour within qualitative research can be improved by the following features: transparency, validity, reliability, and ensuring the work is comparative and reflexive (Green and Thorogood, 2009).

4.2.4.1 Transparency

This study has attempted to maintain transparency by detailing the purposive sampling strategy (see table 4.5) and providing an account of the stages of analysis in developing the final classifications, categories and descriptive items.

4.2.4.2 Validity

The validity of the research refers to the level of precision of the results and while it traditionally was a concern of quantitative research, it is now "widely recognised that it is an equally significant issue for qualitative research" (Lewis and Ritchie, 2003, p.273). A number of approaches, detailed by Green and Thorogood (2009), were utilised to enhance validity. First, the data was examined for any disconfirming evidence on any emergent themes and any deviant cases that were identified are presented alongside the more normative response. Secondly, to provide an indication on how frequently certain viewpoints were held, an indication of the typicality (e.g. minority or majority of participants) or counts of events will be presented. Inclusion of this information helps protect against anecdotalism; a commonly held concern about the use of qualitative data (Seale and Silverman, 1997). Thirdly, validity can also be enhanced by respondent validation, which in this study took the form of reliability checks (Green and Thorogood, 2009), whereby healthcare professionals were invited to read their transcripts to check that the quotes represented their views. Participants were then given the opportunity to make corrections or additions if necessary.

Additionally, Johnson (1997) suggests validity can be enhanced by extended fieldwork, meaning that time should be spent studying participants in their setting. In order to get a better understanding of how the sessions were conducted and how pupils interacted during the sessions, MAV sessions were observed in each participatory school. This further enabled me to put the participants' responses into context.

4.2.4.3 Reliability

Within scientific research, reliability refers to the replicability of the results, in terms of whether another study using similar methods would generate the same findings (Lewis and Ritchie, 2003). Within qualitative research reliability can be considered as to whether a similar piece of research would identify similar themes. However, as each researcher brings their own interests, knowledge and approach to the analysis such replication may not be possible (Green and Thorogood, 2009). Nevertheless, reliability may be improved by discussing coding with colleagues and including raw data to allow readers to draw their own conclusions (Green and Thorogood, 2009). As such, the initial conceptual framework in this study was discussed with the supervisor and verbatim quotes will be used in the results section to illustrate how themes were developed.

4.2.4.4 Comparativeness

Green and Thorogood (2009) note that "comparison is what drives qualitative analysis" (p. 222). As the Framework analysis method was utilised, cases were compared to develop themes, during the coding process and then in the development of the exploratory accounts. Furthermore, the findings of the study are also compared with the results from related published studies as a method of enhancing rigour (Green and Thorogood, 2009).

4.2.4.5 Reflexivity

Reflexivity refers to the way in which the researcher and the research process itself influence the data (Mays and Pope, 2000). This can include aspects such as any potential biases and preconceptions the researcher may have and also characteristics of the researcher. Although it is not possible to remove the effect of the researcher, it is important that such effects should still be assessed and documented (Malterud, 2001). With regards to this study, my preconceptions on the causes of youth violence and effectiveness of school-based primary prevention interventions are framed by the evidence discussed in the literature review of theories of violence (chapter 2) and the systematic review (chapter 3). The influence of my own personal characteristics on the data collection process will be discussed in section 8.3.3.

4.2.5 Ethical approval

This study was granted approval by the University of St. Andrews, School of Medicine, Ethics Committee (see Appendix 2).

4.3 Programme implementation and delivery.

The MAV programme is delivered by Scottish healthcare professionals (i.e. maxillofacial surgeons, Accident and Emergency doctors, nurses) who come into contact with the consequences of violence through their work. Healthcare professionals are recruited to MAV using email and poster advertising campaigns within hospitals and recruitment evenings. All volunteers are invited to attend a training session at the Royal College of Surgeons, Glasgow. This familiarises volunteers with the lesson plan and helps ensure consistency in session delivery. Additionally, new volunteers should attend their first session with a more experienced volunteer.

MAV deliver a fifty minute session as part of the personal and social education (PSE) curriculum. During the session the pupils are shown an 18 minute film entitled *Your Choice* which demonstrates the physical and psychological consequences of violence to the victims, offenders and their family. As exposure to media violence can desensitise young people and lead to aggressive behaviour, the film does not focus on graphic images and instead utilises interviews of individuals whose lives have been affected by violence (i.e. a young man who has been paralysed, a mother whose son was murdered and a young man who is

incarcerated for murder). A discussion is then held around the issues raised in the video in regard to victimisation and perpetration of violence. Finally, the pupils consider strategies of how to stay safe when they are out socialising or in the evenings.

In addition to reducing pro-violent attitudes (the primary outcome) the programme also aims to enhance empathy (the secondary outcome) through demonstration and discussion of the impact of violence to victims and their families. Empathy is a socio-emotional skill which is critical to young peoples' social development (Neace and Muñoz, 2012). Previous research has shown an association with lack of empathy and aggression (Cohen and Strayer, 1996) and adolescent violence (Sams and Truscott, 2004). As higher levels of empathy provide some resilience against violence, a number of violence prevention programmes have aimed to develop this skill in young people (Howard et al., 1999, Mytton et al., 2006, Neace and Muñoz, 2012).

4.4 Participants

4.4.1 School pupils

The target year group for the programme is secondary year two (S2), however, due to the sensitive nature of some of the issues discussed in the programme, schools were allowed to choose the year group for which it would be most appropriate. Schools A, C, D and E delivered the programme to S2 pupils and school B delivered the programme to S5 pupils. Those schools that delivered the session to S2 pupils

implemented the session at the end of the school year with the majority of pupils being 13.5 or 14 years. School B implemented the session at the start of the school year with the pupils being aged between 15 and 16 years. Four schools had a higher than national average level of socioeconomic deprivation as measured by percentage of students registered for free school meals in the academic year 2011/12 (Scottish average = 15.4%; Education Scotland, 2013), while school B had considerably lower levels of socioeconomic deprivation). As PSE classes are not streamed (or tracked) by academic achievement, the range of abilities should be approximately equal between classes within schools. The school and sample characteristics are presented in table 4.1.

All pupils from PSE classes receiving MAV in Schools A,B,C and D were invited to take part in the quantitative component of the study. Parental consent was obtained using opt-out consent procedures and opt-in consent was obtained from pupils (Appendices 3.1 – 3.3). Permission from parents was sought prior to pupils' involvement in focus groups (Appendix 3.4). As the aim was to conduct two focus groups of approximately 6 pupils and it was anticipated that parental consent would not be provided for all pupils, teachers from schools B, C,D, and E were asked to identify approximately 16-20 pupils with a range of academic abilities to take part in. All pupils who had parental permission were then invited to take part in the focus groups and were provided with an information sheet (Appendix 3.5) before completing a consent form (Appendix 3.6).

Two parents from school C declined to allow their child to complete the questionnaires and five pupils from school B did not complete the baseline questionnaire or consent form. Additionally, a number of teachers forgot to distribute the baseline questionnaires and as such these classes did not complete baseline measurements and were excluded from the study. This resulted in a total of 472 participants at baseline (boys = 264) detailed in table 4.1. The loss of classes was greatest in school C, where over half did not receive the baseline questionnaire.

Table 4.1 School and Questionnaire Sample Characteristics

	School A	School B	School C	School D	School E
School Characteristics					
School year	S2	S5	S2	S2	S2
% on free school meals	38.1	5.9	19.3	25.4	39.9
Number of pupils in year receiving MAV	109	290	195	120	133
Questionnaire sample					
No. of pupils completing baseline	89 (82%)	219 (76%)	74 (38%)	90 (75%)	N/A
Gender (% boys)	43	53	55	69	N/A

Ideally pupils would have been followed up individually. However, due to confidentiality issues this would have required a mechanism whereby each school would have had to nominate a member of staff who was not the class teacher to hold a separate list of pupils and identifier numbers and distribute the

questionnaires to each pupil. Unfortunately, schools felt this was too much of a burden and as such was not possible. Instead, all pupils who completed the baseline questionnaire were then asked to complete the questionnaire (without any features that could identify participants) following the MAV session (time 2; see table 4.2) and again at three months follow-up (time 3; see table 4.3).

Table 4.2 Completion of questionnaire at time 2

	School A	**School B**	**School C**	**School D**
Number of pupils at Time 1	89	219	74	90
Number of pupils at Time 2	71	217	58	78
% follow-up at time 2	79.8%	99%	78.4%	86.7%

Table 4.3 Completion of questionnaire at time 3

	School A	**School B**	**School C**	**School D**
Number of pupils at Time 2	71	217	58	78
Number of pupils at Time 3	45	212	66	66
% follow-up at time 3	50.6%	96.8%	89.2%	73.3%

Due to timetabling issues, only seven pupils were available to take part in focus groups at school E and all pupils in school B who consented to take part in focus groups attended at the same time. The number and gender of pupils taking part in focus groups is detailed in table 4.4.

Table 4.4 Focus Group Characteristics

	School A	School B	School C	School D	School E
Total no. of pupils participating	N/A	12	17	12	6
No. of pupils by group (no. boys)	N/A	1 x 12 (5)	1 x 6 (3) 1 x 5 (0) 1 x 6 (0)	1 x 6 (6) 1 x 6 (5)	1 x 6 (4)

4.4.1.1 Pupil data storage procedures

To ensure participants could not be identified all completed consent forms and questionnaires were stored separately in a locked cabinet in the School of Medicine. Anonymous data from questionnaires was transferred onto a password protected computer. Focus groups were recorded with a digital recorder. All recordings were anonymised and transferred to a password protected computer before being transcribed on the same computer. Recordings were then deleted from the digital recorder.

4.4.2 School teachers

The lead PSE teacher from each school was asked to take part in a semi-structured interview and to also ask two other PSE teachers who had also been present at the MAV session to participate. Unfortunately, only Schools B and C agreed to take part in this component. Teachers at School A declined to take part due to lack of time as a result of examinations and school inspection. Teachers at School D declined to take part as they were working to rule and refused to take part in any additional work. Finally, teachers at School E declined to take part as a result of lack of time

due to examinations. The lead PSE teacher at School C agreed to take part although no other teachers had time. The lead PSE teacher and two others at School B agreed to take part; however, due to staffing availabilities a group interview was conducted instead of individual interviews.

Therefore, due to the lack of participants, inconsistencies in the interview methods and a considerable amount of social desirability bias portrayed by the participants, the teacher interviews have been excluded from the study.

4.4.3 MAV volunteers

Any healthcare professional who has experience working with young people who have sustained violent injuries can volunteer with MAV. Currently, 136 trained healthcare professionals from the Greater Glasgow area have registered with MAV; however, not all have managed to attend a school visit. The majority of volunteers are doctors or dentists, with a small number of nurses and paramedics.

All healthcare professionals who had either attended a MAV school visit or a training session were invited via an email to take part in an online questionnaire (using Survey Monkey), which resulted in 61 respondents. Prior to completing the online questionnaire participants were asked to read information pertaining to the study before completing an online consent form.

For the semi-structured interviews a purposive sample of the MAV volunteers was utilised to include volunteers from a range of specialities who were regularly

delivering sessions (at least two per year). MAV were therefore asked to provide a list of healthcare professionals from each of the different specialities currently regularly volunteering with MAV. All 15 of the healthcare professionals identified were invited to take part in the interview via an email using the address held by MAV. Eleven healthcare professionals responded and agreed to take part and the only speciality not represented is cardio-thoracic surgery. Additionally, one other participant, who is a forensic pathologist and regularly delivers session, was identified during the interview process by other participants. As this speciality had been omitted from the list provided by MAV, this healthcare professional was invited to participate and subsequently agreed. Prior to taking part in the study participants were sent an information sheet and consent form for completion (Appendix 4). Speciality, grade and gender of each participant is detailed in table 4.5.

4.4.3.1 Healthcare professionals data storage procedures

All data from survey monkey was anonymous and was extracted into a spread sheet on a password protected computer. Interviews were recorded with a digital recorder. All recordings were anonymised and transferred to a password protected computer before being transcribed on the same computer. Recordings were then deleted from the digital recorder.

4.5 Measures

4.5.1 Quantitative data

The questionnaires completed by pupils consisted of two scales measuring the primary outcome of attitudes towards violence (ATV) and the secondary outcome of empathy. Additionally, police data on violent crimes between 2006 and 2012 was also examined.

Table 4.5 Speciality, grade and gender of healthcare worker volunteers taking part in interviews

Healthcare worker	Speciality	Grade	Gender
A	Oral Medicine	Specialist Registrar	Female
B	Anaesthetics	Consultant	Male
C	General Surgery	Specialist Registrar	Female
D	Ear, Nose and Throat (ENT) Surgery	Consultant	Male
E	Psychiatry	Consultant	Female
F	Oral Surgery	Consultant	Male
G	Paediatric Dentistry	Specialist Registrar	Male
H	Anaesthetics	Consultant	Female
I	Oral Medicine	Consultant	Male
J	Accident and Emergency (A & E)	Consultant	Male
K	Orthopaedics	Consultant	Female
L	Forensic Pathology	Consultant	Female

4.5.1.1 Attitudes towards violence

As the programme aimed to reduce pro-violent attitudes, the primary outcome measure was ATV. As attitudes cannot be directly observed, questionnaires are commonly utilised to measure attitudes (Ajzen and Fishbein, 1977). To help minimise the risk of social desirability bias, questionnaires were anonymous and participants were informed that teachers would not look at them. An adapted version of the *Attitudes Towards Violence* (child) scale (Funk et al., 2003) was used (Appendix 5.1). As the scale was originally developed in the US, it was amended for use in a Scottish context and gun was replaced with knife, to reflect the high prevalence of knife crime in Scotland (see Leyland, 2006).

The ATV scale is a validated 16-item scale, with ten items labelled "culture of violence" and six items labelled "reactive violence". Culture of violence statements measure identification with violence as a valued activity (e.g. item 6 "I'd feel safer with a knife" or item 14 "People who use knives get respect") and reactive violence statements measure justification of the use of violence as a response to actual or perceived threats (e.g. item 4 "If a person hits you, you should hit back" or item 12 "It's ok to beat up a person for bad-mouthing me or my family"). Each item has four response choices (no, maybe, probably, yes) that add up to a total score representative of pro-violent attitudes. Reverse-scoring is used for four of the items (3, 5, 9, 10). The scale used was designed for use in 4th to 6th grade pupils (age 10 -12 years). Although there is an adolescent version of the ATV scale (Funk et al., 1999) for use in pupils aged 13 to 18 years, following discussions with

teachers it was felt that the child version of the scale would be more appropriate due to the reading levels of some participants.

4.5.1.2 Empathy

As MAV also aims to enhance empathy, as a protective factor against violence (Hoffman et al., 2011), a measure of empathy was included to investigate whether there was any change from baseline following the session and at three month follow-up. Empathy was measured using the Children's Empathetic Attitudes Questionnaire (CEAQ), which is a validated, self-report measure for empathetic attitudes (Funk et al., 2008; see Appendix 5.2). Each of the sixteen items asks young people how they feel in different situations and has three response choices (yes, maybe, no). The scale was originally developed in the US for use in 5th-7th grade students and was at an appropriate reading level for the study participants.

4.5.1.3 Violent Crimes

To provide a more objective measure of effectiveness, police data on levels of violent offences were examined using one test school (School A) and three control schools that were matched for size and levels of deprivation (using percentage of students receiving free school meals). School A was used for this purpose as it first received the MAV programme in August 2009 and this allowed a three year follow-up period.

Data was obtained for following violent crimes:

- Murder
- Attempted murder

- Serious assault
- Common assault
- Robbery
- Police assault
- Knife carrying
- Offensive weapon carrying

Based on advice from a Violence Reduction Unit analyst, numbers of violent crimes where either the victim or perpetrator was aged 12-18 years in the three years prior to the implementation of MAV (August 15th 2006 –August 14th 2009 and three years' post-implementation (Aug 15th 2009 – Aug 14th 2012), within a two kilometre radius of the schools were calculated. Using a two kilometre radius was favoured over using the school catchment area, as many of the catchment areas overlapped.

4.5.2 Qualitative data

The design and analysis of the qualitative components was carried out with an interpretative approach, which aims to provide an "understanding of the world from the point of view of the participants" (Green and Thorogood, 2009, p.14). This approach will first help develop an understanding of how both the school pupils and healthcare professionals perceive youth violence and from this establish whether there is need for an intervention such as MAV. Secondly, an interpretative approach will allow an understanding of how the healthcare professionals and pupils view the sessions, what they feel are successful components and why the

feel they should volunteer. Finally, this approach will enable exploration of the pupils' understanding of the session. As this study has adopted a concurrent triangulation form of mixed-methods approach, the findings from the interviews and focus groups will be discussed alongside results from the quantitative study to help provide further understanding of the quantitative component of the study. Similarly, the quantitative data will be used to help better understand the qualitative data.

4.5.2.1 Focus groups with pupils

Focus groups with pupils receiving the session were conducted to provide an in-depth understanding of the pupils' experiences with the session, experiences of youth violence, perceptions of why young people get involved with violence and how they felt the programme could be improved. Of particular interest was how they engaged with the MAV volunteers, whether the session caused any emotional upset and whether they felt the programme provided enough information. Focus groups were selected for this purpose as they allow participants to present their own views and experiences, reflect on what other participants have said and refine their own responses, which increases the richness of the data (Finch and Lewis, 2003). Importantly, focus groups also provide a social context which can allow insights into normative influences and collective and individual identities (Finch and Lewis, 2003). This is of particular interest when exploring an issue like violence as it is influenced by social norms (Dahlberg and Krug, 2002). Moreover, focus groups are useful for capturing data from adolescents who may be reluctant

to express opinions or feel under pressure to answer in a certain way in a one-to-one interview (Peterson-Sweeney, 2005).

The focus group were facilitated by a moderator (AG) and consisted of pupils from the same classes. Groups were conducted in the school classrooms so as to provide a natural environment to help facilitate discussion. Each session lasted one period (fifty minutes) and was based on a topic guide (see Appendix 6.1). Each of the sessions included the following stages based upon recommendations from Finch and Lewis (2003):

1. *Scene setting and ground rules*. This included an introduction to the researcher (AG) and an explanation of what the session would entail. Participants were then reassured that everything said would be kept confidential and were informed of what would happen to the recordings and transcriptions. The researcher then stressed that there were no right or wrong answers and encouraged participants to say what they felt. Participants were also asked to respect what others were saying and not to talk over each other.

2. *Individual introductions*. Although the participants were all familiar to each other, this allowed the researcher to create an *aide-memoire* to help with transcription.

3. *The opening topic*. The researcher started off the discussion by asking the participants if they felt youth violence was an issue that affected them, before moving on to reasons why they felt young people got involved in violence.

4. *Discussion*. Participants then discussed reasons for involvement in youth violence and the researcher then guided the participants to discuss their experiences with the MAV session.

5. *Ending the session*. The final topic was on improvement of MAV and once this had been discussed the researcher asked participants if there was anything else they had not had a chance to say. The recorder was then turned off and participants had the chance to ask the researcher any questions about the study. Confidentially was reassured again before ending the session.

The recordings were then transcribed verbatim by the researcher. Due to similarities in voices it was not always possible to distinguish between individual participants.

4.5.2.2 Open-ended questionnaire with MAV volunteers

The purpose of the open-ended questionnaire was to examine how often MAV volunteers attended school visits, reasons for not being able to attend visits,

reasons for involvement in MAV and how visits could be improved (see Appendix 7). The use of the online questionnaire allowed all volunteers to have the opportunity to provide feedback. Online questionnaires were favoured over postal questionnaires as healthcare workers often change clinical setting and email address provides are more reliable means of contact. Furthermore, all healthcare professionals are computer literate and have access to computers through work. In January 2012 all MAV members were invited via email to complete the questionnaire, which was hosted on the SurveyMonkey website. To increase the response rate, volunteers who had not taken part received a second email invitation in January 2013. To minimise social desirability bias all questionnaires were anonymous.

4.5.2.3 Semi-structured interviews with MAV volunteers

Semi-structured interviews with MAV volunteers were conducted in order to gain an in-depth understanding of experiences delivering MAV sessions, reasons for involvement, experiences of youth violence through work, thoughts on how MAV could be improved and perceptions of healthcare professionals' role in violence prevention. A topic guide was developed to cover these issues (Appendix 6.2). Semi-structured interviews were utilised as they ensure all relevant aspects are addressed but also allow both interviewer and participant to explore further issues if appropriate (Monninkhof et al., 2004) thus maintaining the depth of data that can be generated using unstructured interviews (Legard et al., 2003).

Interviews were conducted over the phone and were digitally recorded. Telephone interviews were used in preference to face-to-face interviews as they provided better access to healthcare workers who were working in busy hospital environments. This allowed the interview time and date to be changed at short notice in response to clinical commitments and also meant an appropriate interview room in the hospital did not need to be located as participants were often at home when the interview took place. Although telephone interviews do provide ease of access, they do lack social cues and therefore body language and eye contact cannot be used as an extra source of information and may also decrease the spontaneity of responses (Opdenakker, 2006).

Each interview lasted 30 - 60 minutes was based upon recommendations from Legard et al. (2003):

1. *Arrival*. As these interviews were conducted over the phone this was limited to ensuring the correct person was on the phone and introductions.

2. *Introducing the research*. The purpose of the research was explained and participants were reassured that the recordings and transcripts would be kept confidential.

3. *Beginning the interview*. The topics to be covered were explained and the participant was first asked about their reasons for involvement in MAV.

Some contextual information regarding the participant's speciality and extent of involvement in MAV was also obtained at this stage.

4. *During the interview*. Each of the main topics was explored with a series of follow-up questions to allow each subject to examined in-depth.

5. *Ending the interview*. The final topic considered how MAV could be developed further and this was signalled to the participant. The participants then had an opportunity to discuss any issues that had not been covered.

6. *After the interview*. Participants were then given the opportunity to ask any questions about the research or MAV.

Recordings were then transcribed verbatim by the researcher. All participants agreed to read their transcripts and were satisfied they had been interpreted correctly.

4.6 Analysis

4.6.1 Quantitative data

4.6.1.2 Dealing with missing data

Teachers were asked to instruct pupils to check their questionnaires to ensure they had not missed any questions, except in instances where they did not want to

answer a certain question. However, despite careful administration some pupils inadvertently missed questions out or may have chosen not to answer the question. Missing items subsequently lead to an underestimation of an individual's total score for the scale (Downey and King, 1998). Although all participants with missing data could have been excluded from the study (e.g. using listwise deletion), this can result in reduced power (Roth et al., 1999) and bias results (Schafer and Graham, 2002). It is therefore recommended that participants with missing data are not simply excluded and instead a method to replace the missing data should be identified (Downey and King, 1998).

However, much of the literature on missing data is focused on situations when an entire measurement has not been completed, rather than an item on a scale measuring the same construct (Roth et al., 1999). Items on a scale are often highly related and as such the mean value of completed items can be used to impute missing items to allow the total score to be calculated (Roth et al., 1999). In an examination of different methods for dealing with missing items in a Quality of Life scale, Fairclough and Cella (1996) reported that when internal consistency was acceptable (i.e. Cronbach alpha > 0.7) and the proportion of missing items was less than 3%, participant-specific data (i.e. using the participant's mean score for each scale to replace missing items) provided the most accurate imputation of the participant's total score. Furthermore, Shrive et al.(2006) compared mean person imputation with multiple imputation, single regression, overall mean, participant's preceding response and a random selection of values to deal with missing items in a depression scale. When missing data was less than 10%, mean person imputation

produced a Kappa statistic of 0.873 indicating near perfect agreement and was superior to all other methods except multiple imputation (Kappa = 0.893). The authors concluded that mean person imputation is an appropriate method for dealing with missing data. Moreover, Roth et al. (1999) reported that mean person imputation was superior to regression imputation, mean item imputation and hot deck imputation. As the percentage of non-response for each item varied between 0.1% and 1.1%, mean person values for the ATV and empathy scales were imputed for the relevant missing items.

It should also be noted that as not all participants completed the follow-up questionnaires (see tables 4.2 and 4.3), these participants also represent missing data. However, as participants were not followed up individually and the analysis is subsequently carried out at the group level, the missing data was not replaced and this could potentially bias the results. Additionally, several PSE teachers reported removing questionnaires that had been left blank or had been defaced. Whilst this number was minimal, teachers were unable to provide specific details on the number of questionnaires removed. As defacing or non-completion of questionnaires may reflect poor academic performance or low bonding to school, which is associated with youth violence (Hawkins et al., 2000), it is plausible that pupils with the highest pro-violent scores may have been omitted from the analysis. This may subsequently result in an underestimation of mean ATV scores.

4.6.1.2 Data analysis

Data analysis was conducted using Statistical Package for the Social Sciences v. 21 (IBM Corp, 2012). As it was not possible to follow-up participants individually a repeated measures analysis of variance was not feasible. Instead a one-way ANOVA was used to establish if there were significant mean differences in the ATV scale score, the two sub-scale scores of culture of violence and reactionary violence, and empathy scale score between the three time points. Significant mean differences were defined using a .05 level of statistical analysis. One-way ANOVA was then used to explore whether there was a difference in scores between the four schools at each of the three time points. Post-hoc tests were used to examine whether there were any differences in means between groups. When Levene's test was non-significant (indicating homogeneity of variance) a Tukey post-hoc test was utilised as it provides good control over the type 1 error rate and has greater power than Scheffe's procedure (Field, 2009). However, in the case that Levene's test was significant (indicating heterogeneity of variance); Welch's F was reported from the ANOVA instead as this provides a more robust measure and a Games-Howell post-hoc test was utilised instead of the Tukey post-hoc test (Field, 2009). The differences in mean scores between male and female participants at each of the time points were examined using a t-test if the data was parametric or a Mann-Whitney test if the data violated the required assumptions.

4.6.2 Qualitative data analysis

Qualitative data was primarily analysed using the Framework method. Framework was developed by the National Centre for Social Research and uses a thematic

framework to classify and organise data in terms of themes and concepts (Ritchie et al., 2003). Although it is an iterative process, such an approach can be classified into two key stages: "managing the data" and "making sense of the data" (Ritchie et al., 2003, p.219). The stages of analysis conducted for this thesis will now be discussed.

Following verbatim transcription (by AG) all interview and focus group transcripts and questionnaires were read and recurrent themes and issues were identified. These were then used to produce conceptual frameworks with themes and subthemes, which are detailed in sections 6.1 and 7.1. NVIVO software (QSR International's Nvivo qualitative data analysis software 9) was utilised to apply the conceptual framework to index the themes and sub-themes in all transcripts. The indexing process was then used to guide the development of thematic charts (detailed in sections 6.1 and 7.1), which brought together data on similar themes by detailing all participant or focus group descriptions of the relevant sub-themes. The charting process enables data on each theme to be compared and to establish whether there are relationships between codes (Green and Thorogood, 2009).

Descriptive analysis was then undertaken to further understand each sub-topic on the thematic chart. This first involved identifying all elements from the thematic chart and then categorising the descriptive data accordingly. Categories were then assigned to classifications. Finally, the results of the pupil focus groups, and

healthcare professional interviews and online questionnaires were integrated with the quantitative data to provide a better understanding of the questionnaire results. Where appropriate themes identified are discussed in the context of the current literature.

Chapter 5 Outcome Evaluation

5.1 Introduction

This chapter will present the results of the outcome evaluation of MAV. Outcome evaluations measure how successful (or not) a programme has been in achieving its desired effects (Oxford Health Alliance, 2013) and are recommended for use in the evaluation of complex interventions in conjunction with a process evaluation, which then provides understanding as to why the programme succeeded or failed (Craig et al., 2008). In terms of MAV, this involved investigating whether there was a change in the primary outcome of ATV and the secondary outcome of empathy (see sections 4.4.1.1 and 4.4.2.2). This chapter will first discuss ATV scores in terms of tests of statistical assumptions, changes in mean ATV (and the sub-scale) scores over time and then investigate whether there is a difference in scores between schools and by gender. Empathy scores will then be discussed in the same manner.

5.2 ATV

The ATV scale has a minimum value of 16 and maximum value of 64. Higher scores indicate more pro-violent attitudes. The culture of violence subscale has a minimum value of 10 and maximum value of 40 and the reactive violence subscale has a minimum value of 6 and maximum value of 24. Internal consistency was acceptable in the present study. The total ATVC scale demonstrated good reliability (Cronbach alpha = 0.81) and the subscales of culture of violence (Cronbach alpha = 0.70) and reactive violence demonstrated acceptable reliability (Cronbach alpha = 0.77).

5.2.1 Assumptions for ATV

Parametric tests (including ANOVA) are considered reliable under the following assumptions: data is normally distributed, homogeneity of variance and independence (Field, 2009). Each of these assumptions will now be discussed in turn.

5.2.1.1 Normality

Normally distributed data appears as a symmetrical bell-shaped curve and as such has a skew value of 0 and a kurtosis value of 0 (Field, 2009). Positive skew values indicate too many low scores in the distribution and negative skew values indicate too many high scores; whereas positive values of kurtosis represent a pointy and heavy tailed distribution and negative values of kurtosis represent a flat and light-tailed distribution (Field, 2009). In addition to examining skew and kurtosis, the Kolmogorow-Smirnov test can test for normality by comparing the sample scores to a normally distributed set of scores with the same and standard deviation as the sample (Field, 2009). If this test demonstrates that the sample is significantly different from the normally distributed set of scores, this indicates the sample is not normally distributed. However, large samples can give rise to significant results even when there are only small deviations from normality (Field, 2009). For sample sizes greater than 300, a skewness value larger than 2.0 and kurtosis value larger than 7 are considered a substantial departure from normality and the level at which null hypothesis for normality should be rejected (Kim, 2013).

Within this sample normality in the ATV scale was significantly non-normal at all time points as determined by the Kolmogorov-Smirnov test (T1 = .089, p = <.001; T2 = .1.05, <0.001; T3 = 0.98, <.001). However, as skewness at T1 =1.19, at T2 =1.23 and at T3 = 1.16; and kurtosis at T1= 2.37, T2 = 1.95 and T3 = 1.99 this would not be considered a substantial departure from normality for a sample size over of 300 (Kim, 2013). As ANOVA is robust to moderate departures in normality (Kim, 2013), it is an appropriate test for this data. However, as parametric tests comparing two means can be biased when the assumption of normality is not met, the Mann-Whitney test is recommended instead (Field, 2009) and will be utilised when comparing scores in gender.

5.2.1.2 Homogeneity

Homogeneity of variance indicates that the variance of the outcome variable (i.e. the spread of scores) should be the same in each group being compared. Levene's test can establish whether the variances in the groups are equal and if significant indicates that the assumption of homogeneity has been violated (Field, 2009). Within this sample, Levene's test was non-significant (p = >.05), indicating homogeneity of variance when examining changes in reactive violence over time, mean ATV (and sub-scale scores) between schools at T1 and T2, mean ATV between gender at T2, culture of violence between gender at T1, and reactive violence between gender at T1, T2 and T3. Levene's test was significant for all other groups of data, indicating the assumption of homogeneity of variance had been violated.

5.2.1.3 Independence

The assumption of independence assumes that the samples are independent of each other and the behaviour of one participant does not influence the behaviour of another (Field, 2009). Although the participants were unable to confer with each other whilst completing the questionnaires, the participants are the same at each time point and are therefore not independent when being compared at each of the three time points. It would therefore have been preferable to conduct a repeated measures ANOVA, which can account for within participant variability (Field, 2009). However, as pupils were not followed up individually due to confidentiality issues (see 4.3.1), a repeated measures ANOVA was not possible. While it is acknowledged there is an issue with independence within this sample, following discussions with a bioinformatican and a statistician, it was decided that there was no alternative to a one-way ANOVA when comparing the sample over the three different time points.

5.2.2 Changes in mean ATV score over time

A one-way ANOVA with time and mean ATV was conducted. There was a significant difference in mean ATV score over time [Welch's $F(2,824) = 16.71$, $p =$.<001]. Figure 5.1 illustrates the change in mean ATV score and its two sub-scales (culture of violence and reactive violence). A Games-Howell post-hoc test revealed that mean ATV was statistically significantly lower at T2 (M= 25.86, SD=7.18, $p =$ .001) compared to T1 (M = 27.71, SD = 6.91). Mean ATV at T3 (M = 28.94, SD =

8.38) was significantly higher than mean ATV at T2 (p = .001). However, mean ATV at T3 (M = 28.94, SD = 8.38) was not significantly different to T1 (p = .055).

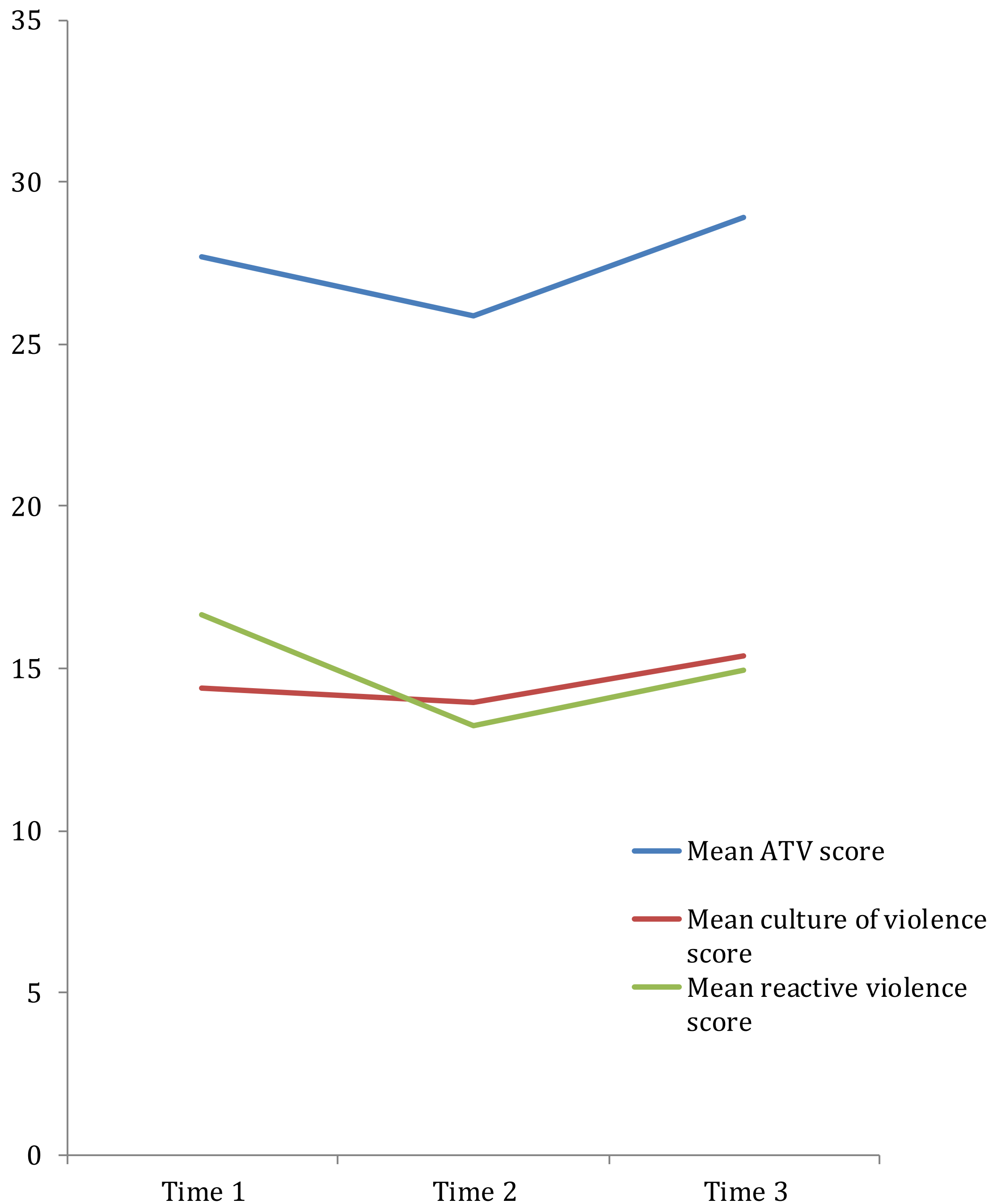

Figure 5.1 Mean ATV score, culture of violence score and reactive violence score at the three time points.

5.2.2.1 Changes in mean culture of violence sub-scale score over time

A one-way ANOVA with time and mean culture of violence was conducted. There was a significant difference in mean culture of violence [Welch's $F(2,813) = 9.923$, $p = .001$]. A Games-Howell post-hoc test identified a statistically significant increase in mean culture of violence score from T1 (M = 14.41, SD = 3.89, $p = .005$) to T3 (M = 15.41, SD = 5.19). There was a significant increase in mean scores from T2 (M = 13.96, SD = 3.93, $p = .001$) to T3. However, there was no significant difference between T1 and T2 ($p = .195$).

5.2.2.2 Changes in mean reactive violence sub-scale score over time

A one-way ANOVA with time and mean reactive violence was conducted. There was a significant difference in mean reactive violence [$F(2,1282) = 16.63$, $p = .001$]. A Tukey post-hoc test identified a significant decrease in reactive violence scores from T1 (M = 14.68, SD = 4.43) to T2 (M = 13.25, SD = 4.64, $p = .001$). There was a significant increase in mean score from T2 to T3 (M = 14.96, SD = 4.75, $p = .001$). However, there was no significant increase in mean reactive violence scores between T1 and T3 ($p = .64$).

5.2.3 Differences in ATV scores between school across time

The descriptive statistics for ATV and sub-scales by school at the three different time points are detailed in table 5.1.

5.2.3.1 Time 1

At T1 there was a significant difference in mean ATV scores between schools as determined by one-way ANOVA [$F(3, 468) = 9.60$, $p = .001$]. School A had the highest mean ATV score followed by school D, School C and School B. A Tukey post-hoc test identified that school A had significantly higher mean scores than school B ($p = .001$) but there was no statistical difference with School C ($p = .18$) and School D ($p = .85$). School B also had significantly lower scores than school D ($p = .001$) but there was no difference with School C ($p = .17$). There was no statistical difference between School C and School D at T1 ($p = .59$).

Table 5.1 Mean scores for ATV and sub-scales over time by school across time

Time	Scale	School A		School B		School C		School D	
		M	SD	M	SD	M	SD	M	SD
1	ATV	30.06	6.19	26.05	6.73	27.99	6.65	29.24	7.31
	Culture	15.13	4.10	14.08	3.73	14.31	3.50	14.64	4.29
	Reactive	16.35	3.92	13.25	3.99	15.12	4.67	16.12	4.66
2	ATV	28.87	7.15	23.55	5.49	28.78	7.75	27.38	8.70
	Culture	14.82	4.08	13.36	3.28	14.53	4.10	14.44	4.99
	Reactive	15.66	4.80	11.36	3.30	15.83	5.01	14.40	5.13
3	ATV	31.11	7.63	28.63	8.87	27.15	6.78	30.22	8.37
	Culture	16.78	4.94	15.47	5.38	13.78	3.71	15.90	5.70
	Reactive	15.98	4.46	14.56	5.01	14.74	4.55	15.77	4.12

There was no significant difference in mean culture of violence scores between schools as determined by one-way ANOVA [$F(3, 468) = 1.69$, $p = .17$]. However, there was a significant difference between schools in reactive violence as

determined by one way ANOVA [F (3, 468) = 16.73, p = .001] with School B having the lowest mean score, followed by school C, School D and School A.

5.2.3.2 Time 2

At T2 there was a significant difference in mean ATV scores between schools [Welch's F(3, 137.64) = 18.36, p = .001]. A Games-Howell post-hoc test identified that School B had significantly lower scores than School A (p = .001), School C (p = .001) and School D (p = .002). There were no other significant differences between schools in terms of mean ATV. There was however, a significant difference in culture of violence between schools at T2, Welch's F(3, 420) = 3.68, p = .012. However, a Games-Howell post-hoc test identified that the only significant difference was between School A and School B (p = .04). There was significant difference in reactive violence at T2 [Welch's F(3,135.36) = 30.75, p = .001]. A post-hoc Games-Howell test indicated that school B had significantly lower mean reactive violence scores than school A (p = .001), School C (p = .001) and school D (p = .001). There were no other significant differences between schools.

5.2.3.3 Time 3

There was a significant difference between schools in mean ATV score at T3 [F(3, 385) = 2.65, p = .049]. Pupils in school A had the highest mean score (M = 31.11, SD = 7.63), followed by school D (M = 30.22, SD = 8.36), School B (28.63, SD = 8.87) and school C (M = 27.15, SD = 6.78). However, a post-hoc Tukey test found no significant differences between schools. There was a significant difference in culture of violence at T3 between schools as determined by one way ANOVA [F(3,

385) = 3.48, p = .016]. A Tukey post-hoc test identified that there was a significant difference between culture of violence scores at school A and school C (p = .014). There were no other significant differences between schools. There was no significant difference at T3 in reactive violence between schools as determined by one-way ANOVA [F(3, 385) = 1.90, p = .13].

5.2.4 Differences in mean ATV score between male and female pupils across time

The descriptive statistics for ATV and sub-scales by gender at the three different time points are detailed in table 5.2. A Mann-Whitney test identified that median scores at T1 were significantly higher in males for ATV (U = 19421.00, z = -5.57, p = .001), the culture of violence subscale (U = 21475.00, z = -4.19, p = .001) and the reactive violence subscale (U = 19875.00, z = -5.26, p = .001). At T2 a Mann-Whitney test identified that males scored significantly higher on ATV (U = 17979.50, z = -2.76, p = .006) and the reactive violence subscale (U = 17667.00, z = -3.02, p = .003). However, no such difference was found for the culture of violence subscale. Finally, at T3 Males had significantly higher median scores for ATV (U = 13768.50, z = -4.36, p = .001), the culture of violence subscale (U =14345.50, z = -3.84, p = .001) and the reactive violence sub-scale (U = 14039.50, z = -4.11, p = .001).

Table 5.2 Mean scores for ATV and sub-scales over time by gender across time

Time	Scale	Male		Female	
		Median	Range	Median	Range
1	ATV	28.00	48.00	25.00	36.00
	Culture	14.00	30.00	13.00	21.00
	Reactive	15.00	21.00	13.00	21.00
2	ATV	26.00	42.00	23.00	33.00
	Culture	13.00	30.00	13.00	18.00
	Reactive	13.00	21.00	12.00	20.00
3	ATV	29.00	48.00	26.00	39.00
	Culture	15.00	30.00	13.00	24.00
	Reactive	15.73	21.00	13.00	20.00

5.3 Empathy

The CEAQ scale had a maximum value of 48 and a minimum value of 16. Higher scores indicate more empathetic attitudes. The scale demonstrated good reliability in the present study (Cronbach alpha = 0.85).

5.3.1 Assumptions

Within this sample normality in the empathy scale was significantly non-normal at all time points as determined by the Kolmogorov-Smirnov test (T1 = .083, p = <.001; T2 = .076, <0.001; T3 = 0.073, <.001). However, as skewness was -.46 at T1,

at -.39 T2 and -.31 at T3; and kurtosis was -.36 at T1, -.45 at T2, and = -.012 at T3, this would not be considered a substantial departure from normality for a sample size over of 300 (Kim, 2013). As ANOVA is robust to moderate departures in normality (Kim, 2013), it is an appropriate test for this data. However, a Mann-Whitney test will be used when comparing two means (i.e. gender) due to the departure from normality.

Within this sample, Levene's test was non-significant (p = >.05), indicating homogeneity of variance when examining changes in mean empathy score over time, mean score between schools at T2, and mean score between gender at T2 and T3. Levene's test was significant for all other groups of data.

5.3.3 Changes in mean empathy score over time

A one-way ANOVA with time and empathy was conducted. There was a significant difference in mean empathy score over time [$F(2,1282)$ = 3.91, p = .02]. A Tukey post-hoc test identified a statistically significant decrease in empathy score between T2 (M = 31.55, SD = 6.36, p = 0.025) and T3 (M = 30.44, SD = 6.02). However, there were no significant differences between T1 (M = 31.37, SD = 5.85) and T2 or T3.

5.3.4 Differences in mean empathy score between schools across time

The descriptive statistics for mean empathy score by school at the three different time points are detailed in table 5.3. A one-way ANOVA with schools and mean empathy was conducted at each of the three time points. There was no significant difference between schools at T1 [Welch's $F(3, 184.22) = 1.53$, $p = .21$], T2 [$F(3, 420) = 2.22$, $p = .085$] or T3 [Welch's $F(3, 125.48) = 1.93$, $p = .13$].

Table 5.3 Empathy score by school across time

Time	School A		School B		School C		School D	
	M	SD	M	SD	M	SD	M	SD
1	30.13	6.29	31.52	5.31	31.95	6.14	31.77	6.34
2	30.49	6.37	32.25	5.90	31.59	6.62	30.54	7.22
3	29.35	6.30	30.87	6.01	31.07	4.93	29.16	6.67

5.3.5 Differences in mean empathy scores between male and female pupils across time

The descriptive statistics for median empathy score by gender at the three different time points are detailed in table 5.4. A Mann-Whitney test compared median empathy scores between male and female pupils at each of three time points. Male pupils had significantly lower median empathy scores at T1 (U =15673.00, $z = -8.11$, $p = .001$), T2 (U =12984.00, $z = -6.88$, $p = .001$) and T3 (U =11522.50, $z = -6.42$, $p = .001$).

Table 5.4 Empathy score by gender across time

Time	Male		Female	
	Median	Range	Median	Range
1	30.00	29.00	34.58	27.00
2	30.00	30.00	35.00	28.00
3	29.00	30.00	33.00	29.00

5.4 Levels of violent crime

Police data was obtained for violent offences three years pre-intervention and three years post-intervention (see table 5.5), within a 2 kilometre (km) radius of school A and three matched controlled schools (F, G, H). Violent offences included: murder, attempted murder, serious assault, common assault, robbery, police assaults, knife carrying and offensive weapon carrying where the victim or perpetrator is aged 12-18 at the time of the incident.

The data suggests that there was a drop in violent crime in all areas from 2006-2009 and 2009 – 2012. However, whether this can be attributed to MAV cannot be proven by this data for the following reasons. First, analysis identified that the 2km radius around school G included routes to Celtic park and encroaches into the city centre, which may account for higher figures in this area. Furthermore, the 2km radius around schools A, G and H also encompasses other schools not included in the analysis. Secondly, schools G and H currently have campus police officers, whereas A and F do not.

Table 5.5 Levels of violent offences pre- and post-intervention.

School	Distance from school	2006- 2009	2009-2012
School A	0-500m	118	63
	500-1000m	198	156
	1000-1500m	121	104
	1500-2000m	221	183
School F	0-500m	140	67
	500-1000m	85	54
	1000-1500m	118	67
	1500-2000m	151	83
School G	0-500m	107	59
	500-1000m	247	144
	1000-1500m	359	202
	1500-2000m	533	330
School H	0-500m	27	43
	500-1000m	107	67
	1000-1500m	177	91
	1500-2000m	332	260

Thirdly, the areas around schools G and H were heavily targeted by CIRV, whereas the areas around A and F would not have had received the same level of intervention. Finally, the areas around schools F, G and H are currently being redeveloped (i.e. demolition of high rise flats and improvement works related to the Commonwealth games). Due to the substantial influence of these confounders,

it would not be possible to draw any conclusions regarding the effectiveness of MAV and as such no further statistical analysis was conducted.

5.5 Discussion

This outcome evaluation aimed to assess the effectiveness of MAV through measures of ATV and empathy, and routinely collected police data pertaining to violent offences. School pupils from schools A, B, C and D completed the scales in the PSE class the week before the intervention, in the same class immediately after the intervention and at three months follow-up. There was a small but significant decrease in mean ATV score at a group level immediately after the programme; however, this was not sustained at T3, where a small but significant increase in mean ATV occurred. A similar pattern was found in the sub-scales, with mean culture of violence increasing significantly between T2 and T3, however, the decrease between T1 and T2 was non-significant. There was also a small but significant increase in mean reactive violence between T2 and T3 and a small but significant decrease between T1 and T3. This indicates that although MAV may have a small immediate effect on pro-violent attitudes as measured by the ATV scale, this is not maintained at three months.

The increase in score may be explained by the suggestion that young people may become slightly more pro-violent during adolescence (Shapiro, 1998). Furthermore, this may also be indicative of the difficulties in producing a sustained

attitudinal change (Ajzen, 2001), particularly following a one-off intervention session. However, it should be emphasised that as the baseline scores for ATV were low, this represents a floor effect, whereby a large proportion of the participants score near the lower limit of the scale (Hessling et al., 2004) and may explain why there was no significant change in culture of violence scores between T1 and T2, and why there was only a small (significant) change in mean total ATV scores.

There was a significant difference in ATV scores between the schools at baseline. School A had the highest mean score; followed by school D, school C and then school B. This reflects exactly the deprivation levels of the schools as measured by the proportion of pupils receiving free school meals. It is important to note here that due to teacher requests, pupils in school B receiving MAV were aged between 15 and 16 years, whereas in the other schools pupils were aged between 13.5 and 14 years. As pro-violent attitudes increase during adolescence (Shapiro, 1998) and as such it might have been expected to find higher mean scores in this group. However, as this was not the case, the findings from this study may be the result of deprivation – suggesting deprivation plays a more significant role than age.

Perhaps unsurprisingly, male pupils had significantly higher baseline median ATV scores than female pupils. This was also identified in the reactive violence and culture of violence sub-scales. Indeed, males are significantly more likely to

become either a victim or perpetrator of youth violence both at a global (Mercy et al., 2002, Sethi et al., 2010) and a national level (Scottish Government, 2012) and have been found to be more directly aggressive than girls (Bjorkqvist et al., 1992). However, male pupils did demonstrate a small but significant reduction in mean ATV score between T1 and T2, whereas female pupils only had a very small and insignificant decrease between T1 and T2. Both males and females had significant increases in mean ATV from T2 to T3. These results suggest that MAV has an immediate impact on male pupils in terms of reducing pro-violent attitudes, although this effect is not sustained over a short timescale.

There was no significant difference in empathy scores between T1 and T2, however, there was a small but significant decrease in empathy between T2 and T3. There were no significant differences in empathy scores at any time points between schools, suggesting that empathy level in this population is not associated with socio-economic deprivation or age. Female pupils did have significantly higher empathy scores compared to male pupils at all three time points, although these did remain largely unchanged. Indeed, this finding of higher levels of empathy in adolescent females has been consistently demonstrated in the literature (Rose and Rudolph, 2006, Lam et al., 2012), however, as empathy is associated with violence (Sams and Truscott, 2004), it is perhaps not unexpected female participants demonstrated lower mean ATV scores.

Unfortunately due to considerable confounding factors it was not possible to draw any conclusions from the police data and as such this will not be addressed any further in this section and instead will be discussed in the following limitations section.

5.5.1 Limitations

This outcome evaluation has a number of limitations that need to be considered. First, with regards to the police data, there were a considerable number of confounders (e.g. proximity of schools to the city centre or Celtic park, the presence of campus police officers in some schools, involvement of CIRV). Therefore, while the figures show a decrease in violent crime in all areas from 2006-2009 and 2009 – 2012, no conclusion can be made regarding the MAV had an effect on levels of violent crime.

Secondly, an uncontrolled before-and-after study was utilised due to difficulties in recruiting control schools, which increases the threat to internal validity and as such increases the risk of bias within the study (Higgins et al., 2011). Therefore the results need to be interpreted with caution. As a control group would also experience the threats to validity (see section 4.1.3), any difference between the groups at post-test could more reliably be attributed to the treatment effect (Trochim, 2006). Thirdly, this is the first time the validated ATV scale (Funk et al., 2003) and Children's Empathetic Attitudes Questionnaire (Funk et al., 2008) have been used in Scottish school children; due to differences in weapon prevalence

between Scotland and the USA, the scale was adapted to reflect this. While both scales demonstrated acceptable internal consistency in this study, the adapted version of the ATV scale has not been validated, nor have the scales been validated for use in this population. Therefore, there is a risk that the scales lack sensitivity which can lead to failure to detect changes in these constructs. Moreover, the low baseline scores indicate a floor effect, which may indicate that the scales were not able to detect a change in ATV. Alternatively, it may indicate that pupils had negative attitudes towards violence at baseline.

The study also suffered from missing data issues. A small number of participants omitted one or more item in the questionnaire and as such mean person values were imputed to allow the total score to be calculated. Whist this is superior to listwise deletion (Roth et al., 1999, Schafer and Graham, 2002), which could increase the risk of bias by excluding cases with potentially higher ATV score, there is still a risk of error.

Finally, as it was not possible to follow-up the participants individually due to confidentiality issues and the burden this would have placed on the school, a repeated measure ANOVA was not possible and a one-way ANOVA was conducted instead. The ANOVA was therefore not able to account for within participant variability and as the groups were not independent this violates the assumption of independence, and can result in too many large and (and too many small) F ratios,

which can increase the risk of a type one error (Kenny and Judd, 1986). However, when non-independence is the same within each of the levels and between levels (i.e. the level of independence does not change after independence) as is the case in this study, there is less risk of bias (Kenny and Judd, 1986), indicating that the most appropriate statistical test was used.

5.5.2 Conclusion

In conclusion, pupils had low mean ATV scores at baseline, which may indicate lack of sensitivity in the scale or may be reflective of pre-existing negative attitudes towards violence in the pupils receiving MAV. While there was a small but significant decrease in mean ATV between T1 and T2, this effect was not sustained at T3, where a small but significant increase in mean ATV was identified. This decrease in score was more pronounced in school B (least deprived) and in male participants. There was no significant increase in empathy scores over time. However, due to the limitations (see section 5.6.1), it is difficult to draw any firm conclusions from these results. Further research in the form of a randomised controlled trial or cluster randomised controlled trial using appropriate validated scales would help decrease threats to internal validity and provide evidence as to whether any changes in outcome can be attributed to MAV. Moreover, due to the difficulties in producing sustained attitudinal change (Ajzen, 2001), the use of other outcomes, appropriate to an educational intervention such as MAV, should be considered. This could include changes in behaviour (e.g. strategies for staying

safe, knife-carrying) and knowledge of the risks associated with violence (Naidoo and Wills, 2009).

Chapter 6 Process Evaluation school pupils

6.1 Process of analysis

As process evaluations seek to establish whether a programme is reaching the target group (Naidoo and Wills, 2009), the first purpose of the focus groups was to identify whether young people felt youth violence was a problem that affected them. These perceptions were then compared with the literature on youth violence to investigate any similarities or differences. In addition, focus groups explored pupils' experiences of the MAV session, their knowledge, attitudes and behaviours towards violence, how they felt MAV could be improved and other methods for preventing youth violence. The analysis followed the two stage procedure for Framework analysis (Ritchie et al., 2003). The framework approach to thematic analysis can be broadly divided into two stages: managing the data and understanding the data (Ritchie et al., 2003). The steps involved at each stage are detailed below to illustrate how the final categorisation was developed.

6.1.1 Managing the data

Following verbatim transcription all transcripts were read and recurrent themes and issues were identified by comparing cases. Due to the relative homogeneity between focus group members, focus groups were analysed at the group level, whereby the data produced by the group is the unit of analysis (Ritchie et al., 2003). This also allows for an appreciation of the immediate context in which different comments are made (Ritchie et al., 2003). These were then used to produce a conceptual framework with five main themes which had a number of

sub-themes (see Appendix 8.1). The conceptual framework was then applied to index all themes and sub-themes in the transcripts using NVIVO software (QSR International's Nvivo qualitative data analysis software 9). The indexing process enabled cases to be compared and data on similar themes was then brought together using six thematic (see Appendix 9.1 for an example thematic chart), which detailed all participant descriptions of the relevant sub-themes:

- Experience of youth violence (awareness of youth violence, demographics, perceptions of reasons for involvement in youth violence, perceptions of why young people join gangs, connection to alcohol and drugs, perceptions of why young people carry knives).

- Experience of MAV session (age-appropriateness, shock or upset at session, perceptions of volunteers, structure of session, engagement and understanding of session content).

- Knowledge and attitudes (attitudes towards violence, consequences and impact on victims' life, consequences and impact on family's life, consequences and impact on offender's life, awareness of dangers and perceptions of safety).

- Violent and anti-violence related behaviours (strategies to stay safe, never involved in violence, mediation, behaviour change).

- Development of MAV/further school-based programmes (sessions attended by individuals with different perspectives on violence, programme for younger years, structure of session, desire for more information, other school-based violence prevention events).

- Other methods for violence prevention (sentencing, activities for young people, don't think violence is preventable, role of surveillance).

6.1.2 Understanding the data

Descriptive analysis was then undertaken to further understand each sub-topic on the thematic chart. Following the approach detailed by Ritchie et al. (2003), this first involved identifying all descriptive data on a particular phenomenon from the thematic charts, and then sorting all this descriptive data into categories within a descriptive chart (see Appendix 10.1 for an example descriptive chart). These categories were then grouped into classifications, which represented a higher level of abstraction and are presented in Appendix 11.1

Explanatory accounts were then developed to further understand the data generated by the focus groups. As this study adopted a concurrent triangulation mixed-methods design, items from the ATV scale were examined in the context of the themes identified by the focus groups to provide further understanding of the results. Additionally, the empirical literature was examined to look for differences and similarities in findings between this study and other studies.

6.2 Results

The classifications, categories and descriptive items identified in the descriptive analysis are detailed in Appendix 11.1. Explanatory accounts of the categories will then be discussed utilising verbatim quotes where appropriate. Linkages between sets of phenomena and deviant cases will also be described and reference will be made to empirical literature where relevant.

6.2.1 Explanatory accounts

Explanatory accounts for each of the descriptive items in the categories detailed in Appendix 11.1 will now be presented. These accounts were generated using approaches described by Ritchie et al. (2003) and primarily involved using explicit reasons and accounts, whereby the "recurrence, range and diversity of explanations given by the participants themselves will be presented" (p.253). Additionally, explanations will be sought by inferring an underlying logic when there are repeated instances of co-occurrence of two or more categories or descriptive items. Finally, the data from this study will be examined in the context of other empirical studies, to ascertain any similarities /consistencies.

6.2.1.1 Experiences of youth violence

Participants had varying levels of experience with youth violence. While the majority were conscious of the problem within the West of Scotland, a minority had been more personally affected, either directly or through family members and peers.

6.2.1.1.1 Awareness of youth violence in their lives

None of the young people who took part in the focus admitted to being personally involved in the perpetration of youth violence, however, this could potentially be the result of recruitment bias, whereby the teachers selected the best-behaved pupils. Moreover, it is plausible that the young people most involved in the perpetration of violence are less likely to be in school. Nevertheless, all groups were aware of youth violence and analysis identified the following themes.

Awareness of violence in own neighbourhood. All groups, with the exception of the group from the most affluent school (School B), were aware of violence in their local area:

> CM5: *There's maybe umm quite a bit more here umm than you would find in other parts of the country and stuff ehm it can be quite horrible sometimes and sometimes it is like really bad* (group 1, School C).

One female pupil (group 3, school C) described an incident where she saw a boy who had been stabbed lying on the ground near her father's flat. Some groups felt their areas were worse than other parts of the city or the country and named particular hot-spots that they felt were particularly dangerous.

Awareness of violence in Glasgow city centre. The group from school B perceived violence to be a problem in the centre of Glasgow, rather than in their local area and this was something that frightened them:

> BF1: *just feel really unsafe in town at night just the people I think it's really scary* (group 1, School B).

School E also felt violence was a problem in the centre at the weekend due to the heavy police presence; however, the other schools were very much focused on violence being a problem in the area that they lived in.

Believe there is a problem with weapon carrying. Several groups felt weapon carrying, in particular knives, was an issue in their neighbourhood and all groups felt that knife carrying was an issue in Glasgow more widely:

> CM5: *there are in some parts of Glasgow and round about different places ehm it just means that eh knife crime rate just goes up and up and up cause people just don't listen they keep doing it* (group 1, School C).

The groups did not discuss whether their peers were involved in weapon carrying, however, two pupils (group 2, School C) had family members who had been

involved with weapons. Moreover, one pupil (group 1, School E) described being hit with a metal pole when walking home one night. Indeed, a group from School D believed that some people in their neighbourhood would use anything (e.g. golf clubs) as a weapon.

Aware of violence at school. Less commonly, groups were aware of violence taking part in or around their school. One group from School C described several fist-fights that had taken place while they had been at school and a group from School D perceived that their school was targeted by boys from other areas.

Scheme-fighting. Several groups spoke about the fighting that went on between groups of young people from rival housing schemes. Some of the groups referred to these groups as gangs, whereas one group thought they did not constitute a gang:

> CF5*: it's not always gangs it's just that obviously take Penilee for example Penilee's not like a gang like you get like the young ones and that it's just like people that like hang around together and defend*
> CF4*: there isn't that much gang fighting nowadays*
> CF5*: uhuh you just like defend your scheme's name* (group 2, School C).

This group believed that young people were fighting to defend their scheme's honour as "*that's how a scheme works*" (CF4, group 2 School C) and legitimise involvement in violence. The territorial based fighting identified by these pupils is consistent with research on youth groups and territoriality by Bannister et al. (2010) and Kintrea et al. (2011) who identified the presence of violent and aggressive territorial groups in Glasgow (see 1.3.4). Whilst this group (group 2, School C) did not believe territorial groups constituted gangs, other groups did refer to groups of young people who engaged in territorial based fighting as gangs. Thus the concept of a gang is as confused amongst the pupils as it is in the literature.

Peers involved in violence. Several groups were aware of peers who had been involved in violence, including boys who had been attacked or stabbed in housing schemes near them. One participant also had a friend who had been beaten to death, interestingly there was debate within the group as to whether this counted as violence as it did not involve knives:

> CF1: *it's horrible my friend died through like through violence 4*
>
> CF2: *4 weeks tomorrow*
>
> CF1: *4weeks tomorrow* (simultaneously)
>
> I: *that's terrible, I'm really sorry to hear that.*
>
> CF2: *I know I think it's horrible*

CF: *It's disgusting*

CF: *it wasn't exactly violence but*

CF2: *it was violence he got punched*

CF1: *it was violence he got punched to death*

CF: *yeah I know I'm talking about knives and that*

CF: *oh*

CF2: *it's the same thing* (group 3, School C).

Personally been victimised. Only one participant had ever been a victim of violence. The incident happened when he walking through his housing scheme after Guy Fawkes night:

> EM: *I was just getting chased you know right I thought it was my mate cause he found like a pole thing but he just whacked me right in the leg and I was like turned around and thought it was my mate and then it wisnae and I turned back around and he was just running for me and I was like what so I just started running* (group 1, School E).

6.2.1.1.2 Feelings towards youth violence in Glasgow

Anxiety associated with violence. Several groups discussed feeling scared of violence and at times felt quite vulnerable when they were out at night, particularly around people who had been drinking alcohol or taking drugs:

> DF4: *it isnae really good cause like they just walk about and that and you don't know what they could dae* (group 2, school D).

Fear of going out at night by young people not involved in violence was also identified by Deuchar (2009) and can result in decreased social mobility for these young people (Deuchar, 2009, Ralphs et al., 2009).

Negative feelings towards violence. The majority of groups demonstrated negative feelings toward violence and those involved in violence:

> DM3: *why do psychos wannae dae that? it's like I think*
>
> DF4: *it's sick how they can just stab people* (group 2, School D).

The group (group 3, School C) that had a peer who had recently died as a consequence of violence were particularly passionate in their strongly negative views towards violence, frequently using words such as "horrible" and "disgusting".

6.2.1.1.3 Demographics of those involved in violence

Violence worse in specific areas. The groups perceived violence to be worse in certain areas and listed areas they thought particularly violent. These tended to be deprived areas, although interestingly, only the group from the most affluent school (school B) explicitly acknowledged the association between deprivation and violence:

> BM: *it doesn't really happen around [name of area] cause its quite a affluent area but it does happen in other places in Glasgow* (group 1, School B).

Age of initiation into violence. The groups consistently felt it tended to be teenagers who were involved in violence; however, a minority of groups felt younger children were also involved:

> CF4*: because there is wee ones I know ranning aboot like that n' that*
>
> CM2*: equals first year [pause] they're crazy man*
>
> CF4*: no like P7s n that I know primary kids that do it* (group 2, School C).

These groups thought that younger children wanted to copy the older teenagers. This is consistent with the findings by Kintera et al. (2011) who reported that

although the main age for involvement in territoriality related fighting in Glasgow was between 13 and 17 years, children aged 11 to 13 years displayed imitative behaviour. Such involvement in fighting may be seen as representing a transition into adulthood.

Girls' involvement in violence. A minority of groups believed that some girls were involved in youth violence, however, this was limited to fighting other girls and often involved 'slagging' (i.e. verbal insults). Only one group were aware of girls taking part in scheme fights. This is consistent with Batchelor's (2011) findings from a qualitative study on young women's involvement in street gangs, whereby many girls engaged more in hair-pulling and slapping with a smaller minority did taking part in fighting amongst boys.

6.2.1.2 Perceptions of why young people are involved in youth violence

The focus groups all discussed a range of reasons as to why they believed other young people engaged in fighting, knife-carrying, gangs, and also discussed the association between youth violence and alcohol and drugs.

6.2.1.2.1 Reasons for fighting

The groups identified a range of reasons as to why they believed other young people became involved in fighting.

Peer pressure. Several groups identified peer pressure as being a strong motivator for involvement in violence. Epidemiological studies have identified that as association with delinquent peers can act as a risk factor for youth violence (Pardini et al., 2012, Herrenkohl et al., 2012, Bernat et al., 2012). Peer pressure arises as a result of adolescents' need to affiliate with a group and conform to their group norms; as such adolescents who perceive peer pressure to be high and have a high conformity disposition are more likely to engage in antisocial behaviour, including under-age drinking and smoking (Brown et al., 1986). Indeed, Esbensen (2004) notes that the influence of peers is consistently associated with research on gang involvement and violent offending more generally.

Violence perceived as cool by young people. All groups, with the exception of the most affluent school (school B) and group 1 in school D, believed young people were involved in violence because they thought it was 'cool':

> CF1: *it's just like when you're smoking you think you look cool they think carrying about and being in like carrying a knife and being in a gang's cool and it's no it's disgusting it's not attractive* (group 3, School C).

The desire to look 'cool' in front of peers has been identified as a motivation for engagement in other health risk-behaviours such as underage alcohol consumption (Kloep et al., 2001) and smoking (Brady et al., 2008). However, it should be noted that although these young people perceived that other young

people felt violence was cool, they did not share these views and instead expressed negative feelings towards it.

Family pressures to take-part in violence. Several groups also felt that families played a role in the development of violence and felt that those involved in youth violence had been 'brought up to be like that'. Indeed, Deuchar (2009) noted that some parents of interviewees encouraged involvement in youth violence.

Wanting to act tough. Groups consistently felt young people got involved with youth violence because they wanted to be perceived as 'hard' or' act the big wan' as this would give them respect from other young men. Walker and Bright (2009) propose that violence allows individuals, who do not have the skills necessary to develop personal respect, to maintain self-esteem by gaining respect from the victim. Furthermore, due to social norms within certain housing schemes, young men must respond to threats with violence or else face being disrespected (Vigil, 2003). This concept of wanting to be perceived as tough also relates to the concept of machismo whereby men who act violently or aggressively are perceived to be more of a man (Walker, 2001) and, may reflect their perceptions of masculinity (Bannister and Fraser, 2008).

Defending their scheme. As detailed in 6.2.1.2.1, the pupils were aware of other young people involved in scheme-fighting and became involved in youth violence in order to defend their housing scheme:

> CF4: *they don't fight for a reason they just fight for like*

CF5: *for their scheme* (group 2, School C).

This need for territorial groups to defend their housing scheme was also identified in a qualitative study by Deuchar (2009). Moreover, Kintrea et al. (2011) argued that as young people feel a strong sense of belonging to their housing schemes and indeed feel the schemes belong to them, they feel the need to fight to defend it. Kintrea et al. suggest that such strong place-identities and the associated friendships may be a result of lack of opportunities to leave the area and additionally may provide family and social structure.

Excitement of violence. Less commonly, groups identified that young people were involved in violence for the thrill of it or for 'the buzz' as they described it. Similarly, group 1, School E felt it was the result of an 'adrenaline rush' induced by alcohol. This concept of 'the buzz' was also identified by Deuchar (2009), who reported that young people in his qualitative study described feeling a mixture of excitement and fear when fighting. Batchelor (2011) also identified excitement as one of the key motivations for taking part in violence in her qualitative study with young women in prison. The thrill and pleasure gained from engagement of violence has led to the development of the term "recreational violence" (Bannister et al., 2010), whereby territorial violence is a form of leisure activity.

Association with football. Only a minority of groups, which were both mixed-sex discussed the association between football and youth violence. This was attributed to the rivalry between Rangers and Celtic, referred to as the Old Firm. However, pupils also perceived that the alcohol consumption associated with football matches contributed to the problem. Only one group discussed the association between football, religion and sectarianism and felt it was a phenomenon other people were involved in and they did not feel it was an issue in their (Catholic) school. Violence and sectarianism related to the Old Firm is long-standing and well documented in the media (McVeigh, 2011), however, this group of young people did not associate with it.

6.2.1.2.2 Reasons for being in a gang

Protection. Groups consistently thought one of the main reasons for joining a gang was for the perceived safety they offered:

> DM3*: they think that if they're in a gang maybe they think they won't get harmed by anyone else they think they'd be protected*
>
> DM6*: aye they'd be like safer*
>
> DM*: mhm*
>
> DM2*: hide behind their gang members*
>
> DF4: *but if they'll be scared of them naebady will try to bully them or anything* (group 2, School D).

In addition to using violence to protect their own schemes, the pupils felt that other young people joined gangs to be protected. This desire for promoting personal safety was also identified by Bannister and Fraser (2008) in a qualitative study of young people in a deprived area of Glasgow. However, one group (group 3, School C) believed that while gang members think the gang's 'got their back', they would abandon other members in the event of any trouble.

Desire to feel part of something. One group (group 3, School C) believed that many young people joined gangs to 'feel part of something' and be accepted and concluded once somebody had joined a gang they became their family. As young people involved in violence are more likely to experience familial conflict (Herrenkohl et al., 2012), the gang can act as alternative to family. This desire to feel part of something is consistent with findings by Bannister et al. (2010) who reported that young people in their study reported a sense of belonging in being part of a gang. Similarly, Deuchar (2009) notes that gangs provide members with a form of social bonding. Being part of such a gang can also enhance status, as was noted by Patrick (1974) following his seminal ethnographic study in which he undertook covert participant observation to study a Glasgow gang. Whilst such an approach does have ethical issues and involved only one gang which was studied in the 1960s, Patrick's findings on the status associated with belonging to a gang are still relevant today.

Unable to leave gang. Groups also consistently acknowledged the difficulties young people faced trying leave gangs for fear of violence. One group believed this difficulty in leaving highlighted a lack of genuine care on the part of the members:

> CF2: *if they were family see if you actually choose to leave that gang they would be there for you no matter what they're not they want to kill you if you try and leave the gang*" (group 3, School C).

This difficulty in leaving gangs was also identified by Kintrea et al. (2011), who reported that the only way to leave a gang was to join the army or move to a different area.

6.2.1.2.3 Reasons for carrying a knife

A number of the groups felt that knife-carrying had become a vicious circle and identified reasons for knife-carrying:

Protection. Groups consistently felt self-protection was a main reason for carrying a knife, particularly when young people were venturing into rival schemes as it meant they would not be attacked. However, some groups perceived knife-carrying to be a vicious circle:

> BM2: *It's sort of a problem that makes itself worse like if erm people are carrying knives then other people will want to carry*

> *knives to protect themselves it just gets worse and worse I suppose* (group 1, school B).

This need for protection was also identified by Bannister et al. (2010) as a motivating factor for carrying knives, particularly when venturing into another housing scheme. Interestingly, several participants identified that some people carried knives solely as deterrent and would be too scared to use them.

Respect gained from knife-carrying. Again the groups thought other young people carried knives to gain the respect of peers:

> DM2: *they think they're cool and everybodys like looks up to them just cause they've got a weapon* (group 1, School D).

Similarly, Bannister et al.(2010) reported that some young people felt that carrying knives meant others were fearful of you and you developed a reputation. Again the groups in this study felt negatively towards knife-carrying and perceived young people that carried knives to be showing off.

6.2.1.2.4 Association with alcohol and drugs

Focus groups consistently associated alcohol with violence, both in terms of their own experience and what they saw in the MAV film. Less commonly, some young people made an association with drugs and violence. In particular, pupils associated drunkenness and violence with football, nightclubs and boredom as a

result of lack of activities for younger teenagers. Groups considered that alcohol could result in violence for a number of reasons.

Lack of control associated with alcohol. Group 1, School B thought that alcohol consumption could result in a lack of control over behaviour:

> BM10: *it's just when people start drinking they can't really control themselves and just can't really prevent it* (group 1, School B),

Similarly, group1, School E felt that alcohol caused a 'rush of adrenaline' that made people want to take part in fighting. Indeed, it is reported that alcohol may contribute to violence impairing cognitive functioning in terms of self-awareness, emotional control and risk assessment (Graham et al., 1998).

Increased aggression. One group (group 1, School E) felt that alcohol caused an increase in aggression levels, which could result in violence. Again, this concept has some support in the literature and may be the result of lower levels of inhibition (Ito et al., 1996). Alternatively, in some cultures there is an expectation that alcohol results in aggressive behaviour, which may therefore encourage and legitimise aggressive behaviour following alcohol consumption (Ito et al.).

Recreational drug use and youth violence. Some groups thought that some young people took recreational drugs like marijuana before they go and have a 'gang-fight'; however, they perceived this to be less prevalent than alcohol use. This is consistent with the findings by Bannister et al. (2010), which identified that although some young people involved in youth violence took recreational drugs such as cannabis and ecstasy, this was less prevalent than alcohol use.

Violence and heroin addicts. One group associated violence with heroin addicts attempting to get money or getting young people to hold their drugs. The group felt very negatively towards intravenous drug users, referring to them as "junkies". Again, Bannister et al. (2010) reported that the young people in their study felt very negatively towards heroin addicts as they also believed they stole to fuel their habit.

6.2.1.3 Experiences with MAV session

Each group appeared to enjoy the session and reported having taken in some of the key messages. The next section details the results of the analysis which examined pupils' experiences of the sessions, perceptions of volunteers, logistics, age-appropriateness, engagement, understanding of session, and to ascertain whether there had been any unintended consequences (i.e. feeling very upset or stressed at session).

6.2.1.3.1 Perceptions of volunteers

Provision of realistic information from volunteers. Groups consistently felt that healthcare professionals' experience with violence enabled them to provide accurate information:

> BM7: *I think talking to the doctors helped as well cause like they've seen casualties first-hand what can happen to someone if they're stabbed or someone's carrying a knife so it's kinda good to see their perspective on it cause they've actually seen first-hand how it happens and what happens* (group 1, School B).

Participants considered the volunteers to be a reliable source of information and also believed that the healthcare professionals would not lie to them. As a result, pupils perceived the information provided to them was truthful as well as accurate. This desire to be "told it like it is" consistent with findings from an evaluation of teen pregnancy programme (Witte, 1997), whereby adolescents expressed a desire to be informed of the consequences of unprotected sex using a realistic approach.

Healthcare providers made session more meaningful. A commonly expressed view was that the healthcare professionals' experience with violence made the session more meaningful than if it had been delivered by their class teacher:

> I: What did you think of that [the healthcare professionals delivering the session]? Would you rather it was delivered by your own teacher?
>
> FB5: *nah*
>
> FB4: *it wouldn't have meant anything at all*
>
> FB5: *aye cause we're so used to hearing it all from normal teachers its like they say it mostly every day* (group 2, School C)

Desire to lean about volunteers' experiences of youth violence and gain advice. The majority of groups enjoyed being able to talk to the healthcare professionals and valued the opportunity to ask questions. Although healthcare professionals may be perceived as authority figures by adolescents, these groups of young people were keen to receive information from them. Interestingly, a study of American adolescents reported that adolescents felt their healthcare providers should discuss a wide range of topics such as drugs, sexually transmitted diseases, alcohol and violence with them (Ackard and Neumark-Sztainer, 2001); however, a much smaller proportion reported that their healthcare provider actually did so.

6.2.1.3.2 Engagement and understanding of session

Relevance of session. Groups consistently felt strongly that the combination of CCTV footage, interviews, pictures of injuries and hearing the healthcare professionals' experience provided a sense of realism:

> EM2*: cause some like things like they can make it up but that was actual footage and it actually happened so we can kinda relate to it* (group 1, School E)

Moreover, the Glasgow setting helped increase the relevance of the film, particularly for school B, where the pupils had less experience of violence:

> BM4: *the fact that they tell you what happens like in Glasgow like cause it's like where we're from it's like more realistic you don't realise things like that happen until they show the pictures and things like that and they showed us like told us stories of what had happened in like the sort of town* (group 1, School B).

In addition to the realistic nature of the footage, participants also acknowledged that the Glasgow setting made it more applicable to them as it increased their awareness of what was happening in their town. Indeed, the use of 'authentic voices' (i.e. a victim) and localised stories have been recommended for use in health communications to enhance effectiveness (Dorfman, 2010)

Confusion at video. A minority of participants in two groups (group 1, School C and group 1, School E) expressed some confusion at what parts of the film were real and or acted. For instance, there was confusion as to whether the boy in the wheelchair was acting and whether the acted section of the film was real. A minority of participants also stated that there was not enough information about

how violence affected the families (i.e. the offender's family and the boy in the wheel chair).

Reflections on session. Groups consistently appeared to have considered the session afterwards in terms of the consequences of violence, and some had also spoken to their friends about it:

> CM1: *yeah like me and my friends we spoke about it we like one of them was like yeah that was a bit gruesome but it was telling you more like what violence can do and all that* (group 1, School C).

Although MAV hypothesise that making young people aware of the consequences of violence will decrease their involvement, some evidence suggests that despite being aware of risks from certain behaviours, adolescents continue to engage in health-risk behaviours (Greene et al., 2000). It is proposed that this may be a result of believing other adolescents engage in the same behaviour and thus avoid thinking about known risks (Gerrard et al., 1996). Encouraging young people to reflect upon such risks in a peer group setting, may therefore be an appropriate target for intervention.

6.2.1.3.3 Feelings experienced during session

Shocked by session. Despite having an awareness of youth violence, the groups were shocked at the levels and consequences of violence as depicted by the CCTV footage and images of injuries in the film:

> DM5: *you see like a lot more goes on than you actually think and then like I was shocked when you saw like the people that were getting stabbed cause a gang fights* (group 1, School D)

Other participants were also shocked at the severity of the injuries and felt they demonstrated the "harsh reality" and "gave you a fright". The evidence supporting the use of interventions that use fear to encourage behaviour change, is mixed (Petrosino et al., 2003, Witte, 1992). Witte and Allen (2000) argue that if a threat is perceived to be serious and relevant, individuals will take action to avoid their fear. Thus if perceived efficacy regarding the ability to control the threat is high, individuals will take action to reduce the risk of the threat. Conversely, if self-efficacy is low and individuals are unable to control their behaviour they may instead try to reduce the fear using tactics such as denial, perceived manipulation or minimization. Therefore, any intervention that aims to highlight the consequences of health-risk behaviours also needs to demonstrate strategies, which the target population can realistically utilise to avoid engaging in the specified health-risk behaviour. Indeed a meta-analysis (see Witte and Allen, 2000) of such interventions identified fear appeals as being most effective when portraying strong severity and susceptibility messages, and were accompanied by

strong efficacy messages. According to the participants' response MAV does appear to convey a strong severity and susceptibility message; however, it is unclear whether all volunteers provide strong efficacy messages. Moreover, Bannister et al. (2010) caution that the ability for standalone educational programmes to produce behaviour change is limited in the context of a long-standing gang culture and instead longer term interventions that are implemented in a family and neighbourhood setting are necessary.

Feelings of upset at session. A minority of groups described feeling upset while watching the film. In particular one girl admitted crying at the part where it described a boy who had been stabbed crying for his mother. Some groups were also upset that people who had "done nothing to deserve it" got attacked. However, the participants who described feelings of upset still felt it was the "right thing" to be shown.

Graphic nature of film. There was differing opinions within groups in regarding the more graphic images (i.e. pictures of injuries, CCTV footage). Some participants felt some of the images were "disgusting", "hideous" and were concerned that people who were squeamish would not like watching it. However, other group members did not think the film was too gruesome. Groups tended to conclude that as the film "showed you what would happen" it was appropriate to see. One group member (group 1, School C) acknowledged it was helpful if volunteers allowed pupils to wait outside during the film if necessary.

Age-appropriateness. All groups (except school B, who received the programme in S5) felt they were receiving the programme at an appropriate time as they believed other young people their age were now starting getting involved in fighting and socialising in the evening. Bannister et al. (2010) reported that the transition from primary to secondary school was associated with increased involvement in gang-related violence as it brings young people from different territories together. There was debate within the groups as to whether younger pupils (i.e. S1) should be shown the film. Many group members stated that younger pupils would be upset by it or wouldn't understand it, however, a minority of group members felt it should be shown to first years as they try and copy the older pupils. This notion of imitative behaviour in early adolescents in Glasgow, was identified by Kintrea et al. (2011). Interestingly, the group from school B strongly believed they should have received the session earlier or received an adapted version:

> BM12: *I think it's like really important that although we got it in like 5th year I think you should start doing it to younger people so they're more aware cause they don't really realise the consequences I don't think so if they were made aware like what could happen to people after they're being violent to them*
> BF1: *I think that especially nowadays how young people start drinking a lot younger so they need to be more careful when they're like going and where they're going and who they're with* (group 1, School B).

6.2.1.3.4 Organisation of session

Length of session. Groups differed on whether they felt the session was long enough. The majority of groups identified that they did not have enough time to discuss the questions fully or have an opportunity to talk to the volunteers. Indeed, one group reported that by the time they got set-up and watched the video, they did not have any time for a discussion. However, less commonly, participants within groups thought the session was long enough. It should be noted that the pupils' experiences may be dependent on whether time was "wasted" at the start of the session.

Class sizes. Although engagement appeared to be generally good amongst the groups, group 1 school C, attended a session which consisted of two classes and felt it was too noisy as some pupils were giggling during the video and talked to their friends during the group discussion. There was mixed opinion within other groups regarding group size, with a minority of participants suggesting that they would prefer to have the session in bigger groups to allow discussion with more of their friends. Conversely, other group members believed this might contribute to a lack of attention and that small classes were preferable:

> DF4: *it'd be better like if we had it in the hall with all the second years put together*
>
> DM: *ah*
>
> DM2: *nah*

DF4: *and like it was bigger*

DF3: *no because then you wouldn't have been watching* (group 2, School D).

6.2.1.4 Understanding of issues around violence

Focus groups were consistently able to demonstrate an awareness of the impact of violence on both victims and offenders,

6.2.1.4.1 Impact on victim's life

Awareness of physical consequences (e.g. paralysis, scarring). All groups had an awareness of the physical consequences of violence during the discussions. Participants frequently mentioned the boy in the wheelchair:

DM2: *like the wee guy just got stabbed in the neck and couldnae walk any more*
DM1: *I think it eh when that guy got paralysed I think it's ruined his life and it's ruined eh*
DM2: *and then he cannae do anything now he cannae move or anything he cannae get a pee*
DF4: *cannae feed himself or that* (group 2,School D).

Groups were also aware that violence could result in death and that there was no

safe place to get stabbed. As this issue is explored during the MAV session, this indicates the pupils' have retained some of the information from the session and have an awareness of the physical consequences of violence and impact that it can have on an individuals' life.

Awareness of psychological consequences. Groups tended to focus less on the long-term psychological consequences of violence for the victim. In addition to the psychological impact of paralysis or permanent scarring, one participant in group 2, school C felt that it could result in victims being "scared to go certain ways". This reduced awareness of the psychological consequences may reflect MAV's focus on the physical consequences of violence.

6.2.1.4.2 Impact on offender's life

Believe life is ruined by being in jail. Groups were consistently able to describe the impact on the offender's life:

> CF1*: you're virtually you're taking your life away from you as well as someone else because you could get the jail* (group3, School C).

Indeed, groups found it interesting to hear the offenders' perspectives as they felt it showed them the consequences of using a knife.

Guilt. Less commonly, groups felt the offender would suffer from guilt afterwards

and felt it would always be on their mind:

> CF2: and you'll feel so guilty
>
> CF3: and you'll feel the guilt you're like
>
> CF1: and guarantee yourself you're like what have I done
>
> (group 3, School C),

6.2.1.4.3 Impact on family's life

Awareness of the effect on the victim's family. A commonly identified theme was the suffering of families because of violence, particularly if the victim had been murdered. Several pupils made reference to Judith Scott's interview in the video, indicating that they had retained this information. Groups also discussed the impact on the family of boy in the wheelchair and were aware that his girlfriend now had to do everything for him. Some participants felt violence was particularly unfair on the families as they may not have done anything to hurt the offender but they suffer anyway. Indeed, Dahlberg and Krug (2002) acknowledge the considerable impact of violence on families in the *World Report.*

Awareness of the impact on offender's family. A minority of groups acknowledged the impact on the offender's family, in terms of disappointment in their actions and their absence whilst in jail:

CF1: *nah they do need to take the family into consideration cause they don't know how that person's feeling like their family would feel the exact same if it was the opposite way around their family's probably hurting anyhow cause they're getting put in jail*

CF3: *their families probably disappointed*

CF1: *mmhmm*

CF3: *that their child's done that* (group 3, School C).

6.2.1.5 Attitudes towards violence

As the primary outcome measure was change in pro-violent attitudes towards violence, the qualitative analysis also sought to identify displays of pro-violent and anti-violent attitudes during the focus groups. Groups displayed a range of anti-violence attitudes and a smaller number of pro-violent attitudes.

6.2.1.5.1 Anti-violent attitudes

As discussed (see section 6.2.1.1.2) some groups had very negative feelings towards youth violence, perceiving it to be disgusting. A number of other anti-violence attitudes were identified in the analysis.

Negative perceptions of knife-carrying. Several groups discussed knife carrying and believed it was wrong to carry knives:

EM2: *aye cause walking about with a knife isnae really the proper thing to dae you should just kinda leave it* (group 1, School E).

Moreover, group members recognised that carrying knives for protection (rather than with intent to use) was still dangerous not only to others but also to themselves.

Sense of unfairness for innocent victims. Several groups demonstrated particularly strong attitudes regarding the unfairness of attacks on individuals who were not involved in scheme or gang-fighting and as such had "done nothing to deserve it".

Negative feelings towards those engaging in youth violence. No groups felt positively towards perpetrators of violence and commonly demonstrated negative feelings towards young people who perpetrated violence:

DF4: *it* [the film] *showed you how sad people are as well to do it*
DM2: *like people hit folk for no reason just cause they walk by and look at them wrang*
DM1: *say he's ugly and then* [laughs]
I: *you said it can show you how sad people are what do you mean by that?*
DF4: *like they could stab people for nae reason and walk about wi knives*

DM2: *and act the big wan* (group 2, School D).

Negative feelings towards those involved gangs. Overall, groups demonstrated negative attitudes towards other young people involved in gangs:

CF1: *they'll be it people will be scared of them but the truth is people aren't scared of them people just laugh at them* (group 1, School C).

However, it should be noted that one participant in group 1, School E was "not too sure" whether gangs were a bad or a good thing.

Awareness that they can choose not to engage in youth violence. Less commonly, groups believed the film demonstrated that they had a choice in whether they became involved in violence as it showed what would happen if they "turned the wrong way". Indeed, an emphasis on choices is reported to be an effective way of engaging with adolescents (Hanna et al., 1999, Lloyd et al., 2009) and may be valid approach to delivering MAV sessions.

6.2.1.5.2 Pro-violent attitudes

Justify fighting if someone bad-mouths their mum. One group (school E) discussed instances when they felt violence was acceptable and perceived it be a justifiable response if their mother was criticised:

EM3: *I think if you have tae if you have tae like if somebody said something about your mam that's when you have to fight*

EM: [interjects] *like if somebody said something about your mam*

EM:*I think that's when you have to fight tae for*

EM: *just think the world's a big place*

EM3: *just tae just tae don't use weapons just start fighting or batter them and just* (group 1, School E).

Within this group participants distinguished between fighting and using weapons, the latter of which they felt was not justified. However, one of the female participants felt strongly that any form of physical violence was not an appropriate response.

Justify violence for self-defence. A minority of focus group members believed it was appropriate to utilise violence for self-defence despite demonstrating anti-violent attitudes more generally. This may indicate that some pupils feel violence is more acceptable in response to victimisation, and is an area MAV could specifically focus on during sessions in the future.

6.2.1.6 Avoiding violence

Focus groups discussed issues which related to a theme of avoiding violence, in particular increased awareness of dangers and strategies for staying safe. This may reflect the focus that some MAV volunteers place on safety.

6.2.1.6.1 Awareness of dangers

Awareness of risks of carrying knives. Several groups demonstrated an awareness of the risks of carrying knives, in terms of the damage they could do to others and also the risk to themselves. For instance, it was indicated that you could accidently injure yourself or have the knife used against you as illustrated here:

> CM1: *yeah there's a problem because they think they're protecting theirselfs but they're really endangering other people's lives when like somebody attacks them they're gonnae react in a bad way*
> CM5: *there are in some parts of Glasgow and round about different places ehm it just means that eh knife crime rate just goes up and up and up cause people just don't listen they keep doing it.*
> I: *mmm*
> CM6: *you're more likely to lose your life if you carry a knife than you are if you don't* (group 1, School C).

Moreover, participants demonstrated an awareness of the implications of using a knife:

> DM3: *the video was actually quite life changing once you've seen what can happen when a fight starts like and it shows you it showed you what would happen if you had tae use a knife it can*

> *end up getting you in jail and it'd ruin the rest of your life* (group 2, School D).

One participant (group 2, School D) mentioned he had been given a knife from his uncle for "going into the forest" and had now stopped using it. Groups generally displayed negative attitudes against knife-carrying and some participants explicitly stated that they "already knew not to carry knives".

Increased awareness of dangers to self when out. Groups consistently described feeling more aware of the risks of victimisation, particularly knife crime, when they were out at night:

> BM1: *But you're more aware of people like anybody could be carrying a knife.*
>
> I: *mmhmm*
>
> BM: *I agree with eh* [BM1] *before I wouldn't have been as like wary but know I'm kinda like making sure that like I don't make eye contact with people because you've got no idea who could have a knife on them or anything* (group 1, School B).

Groups also reported taking such risks more seriously due to an increase in awareness of the impact of violence. Moreover, a minority of groups identified that they were at greater risk of violence if they had consumed alcohol.

Feelings of safety following session. There were differing opinions within several groups regarding whether the session made them feel more or less safe. A participant in group 1, School B noted that the session could result in feelings of fear:

> BM9: *Could have a negative affect though if you start getting scared of people* (group 1, School B).

However, the rest of the group felt that an increase in awareness did not necessarily lead to fear or paranoia:

> BM1: *I wouldn't say I was exactly paranoid just more wary more careful of who I talk to or look at in Glasgow* (group 1, School B).

Similarly, within two other groups a minority of participant described feeling frightened of violence when they were out:

> CF4: *like when you got to a football game like cause it frightened me like something could happen like even if you're just going to a football game with friends* (group 3, School C).

While the majority of group members did not report feeling anxious following the session, a minority did feel more fearful. This highlights a need for a balance to be struck between increasing awareness and not causing anxiety in pupils.

6.2.1.6.2 Strategies for safety

The strategies discussed by focus groups reflect what was discussed in the MAV sessions, however, such an approach means MAV effectively treats the symptoms of violence and not the causes and could be considered inconsistent with primary prevention.

Exercise caution when interacting with people. Several groups noted that as it is not possible to know who is carrying knives, it was important to be careful how they interact with unfamiliar people when out in the evening. This could involve avoiding making eye contact with people they did not know and not making offensive comments:

> BM10: *I'm kinda like making sure that like I don't make eye contact with people because you've got no idea who could have a knife on them or anything* (group 1, School B).

> EM2: *you should just really keep yourself to yourself if you're if you've no got anything nice to say then don't say it at all* (group 1, School E).

While such strategies may help reduce the risk of victimisation, it is important that they are not taken to the extreme, with pupils becoming fearful of interacting with new people.

Stay with friends. The majority of groups felt they would be safer if they remained with their friends when out in the evening and avoid walking around on their own. This was felt to be particularly important if venturing into another housing scheme. Indeed, a qualitative study of young people exposed to community violence also identified 'travelling with others' as a strategy utilised to increase personal safety (Teitelman et al., 2010).

Back away from anyone with a knife. Several groups mentioned that they would "back-off" off and try and run away if they were threatened with a knife:

> EM3: *I wouldnae fight if anybody had a knife on them I would run*
> EM2: *I think so would everybody* (group 1, School E)

While a minority of groups members stated they would use violence as form of self-defence, this did not extend to instances where the perpetrator had a knife. This may indicate that although participants may be willing to get into a fist-fight, they are aware of the dangers of knives.

Stay sober. One group member identified not getting drunk as a strategy for staying safe. However, more commonly, groups stated they would avoid people who looked drunk.

Avoiding potentially unsafe areas. A minority of groups reported that they remained in their own housing scheme or avoided areas they perceived to be unsafe such as where "junkies" or gangs congregated:

> DM3: *there's been a couple situations where it's*[the session] *made me stop and think like where if I go tae an unsafe area like it's made me stop and think like if I should go up there or not*
> DM2: *you could go a different way to go there underground*
> (group 2, School D).

This necessity of having to stay in their scheme and avoiding certain areas was also identified by Deuchar (2009), and can restrict young people's opportunities to take part in recreational activities.

Avoiding getting angry. One group member described his attempts to control his anger following the session:

> DM3: *I've started behaving more cause like usually I would get angry too easily but see now after watching that like sometimes*

getting angry too easily can like really affect you (group 2, School C).

Although other participants did discuss avoiding inciting anger in other people by not intentionally causing offence, this is the only participant that described trying to control their own anger.

6.2.1.7 Development of MAV programme

Groups expressed a desire for further information and discussed ways, in which the programme could be expanded.

6.2.1.7.1 Involvement of others affected by violence

Hearing experiences of a victim of violence. Just under half of the groups felt it would be useful to have a victim of violence attend the session and share their experiences. Although a small number of the healthcare professionals had also been victims of violence, they did not go into much detail regarding this during the session and pupils were keen to learn more about their personal experiences. Moreover, it may be more appropriate to have a victim who is closer to the pupils' age as this would provide an alternative perspective. There is currently a lack of evidence on whether such an approach would be successful, however, it is something that could be upsetting for the victim and if considered, would need to be managed with caution.

Hearing experiences of an ex-offender. Less commonly groups expressed a desire to hear the perspective of an ex-gang member. One group felt that this could also be useful for those already involved with gangs:

> CF1: *like if we got somebody fae like that was in a gang and maybe he's changed their life around or something to come in and tell us like this is what I've done like even if even though you are in a gang you shouldn't start it but even if you are in a gang you shouldn't start it and you choose to leave this is what ya can do like with yourself* (group 3, School C).

However, there was debate in group 2 School D, with some participants believing this would be a good idea whereas others felt this could be "scary". Ex-gang members did take part in the CIRV (VRU, 2009b) call-in sessions, which are delivered in the sheriff court to young people already involved in youth violence and involve a number of speakers including accident and emergency doctors and parents whose children have been victims of violence (Donnelly and Tombs, 2008). During these sessions the ex-gang members share their experiences of life in prison and the impact this had on their families, however, there is currently no evidence as to how effective this component is in reducing pro-violent attitudes and/or encouraging behaviour change.

Sessions by police. A minority of groups discussed whether police should be involved in similar violence prevention programmes. While some group members (group 2, School D) explicitly stated they would value learning about the police's

experience with youth violence, others were not supportive of this as they felt negatively towards the police. Moreover, one group (School E) felt it would be more appropriate for the police to utilise their role to engage with young people already involved in knife carrying and help them understand the consequences. As many adolescents perceive police officers as authority figures this can result in negative perceptions towards them. However, the evaluation of the use of campus cops in Scottish secondary schools identified that most pupils enjoyed the contact with the campus police officers, although some pupils continued to have negative perceptions of other police officers (Black et al., 2010). Involvement of a police officer would offer an alternative perspective in the MAV session. Moreover, their involvement would then constitute a multi-disciplinary approach to the prevention of violence, as recommended by Dahlberg and Krug (2002).

6.2.1.7.2 Desire for more information

Although some groups felt the level of information was sufficient, others expressed a desire for information on the following topics.

Desire to learn about first-aid. Group 1, School D wanted to learn about first-aid, in order to respond to somebody who had been stabbed.

Desire for information on global prevalence of youth violence. Group2, School D expressed a desire to learn about the problem of violence in other cities and countries and how it compares to the problem in Glasgow.

Need to know how respond to an attack. Group 1, School E felt it would be helpful to learn how to react if you were getting chased or threatened.

6.2.1.7.3 Session duration

Would like more sessions/time. The majority of group members expressed a desire for either a longer session or a follow-up session, to allow further discussion with the healthcare professionals:

> CM6: *more cause it would explain like maybe if so that there is time to talk and stuff you cut it into two weeks*.
>
> CM1: *yeah like*
>
> CM6: *Like one session is the video next session is talking about the video* (group 1, School C).

It should be noted that a minority of group members felt the duration of the session was sufficient to deliver the level of information provided. However, the desire by the majority of pupils for multiple sessions may indicate a need for more than just a one-off session. Indeed, it is difficult for one-off sessions to result in sustained behavioural changes (Harrison et al.,2006) and as such MAV could consider working with schools to develop follow-up materials.

Receive session annually. Less commonly, groups felt the session should be repeated annually to help remind them of the messages. Group 1 school B referred

to a film on firework safety that they had been shown annually, which they found effective in reinforcing the key messages. Another suggestion was to watch an increasingly intense film on an annual basis:

CF: *like every year like a video that can be like more intense*

CF2: *just to more like remind you* (group 3, School C).

This also highlights the need for more sustained intervention. Moreover, in addition to MAV, there is also a need for a whole-school approach to violence prevention. Such approaches are proposed to be more effective than stand-alone programmes in reducing health risk behaviours in secondary school pupils (Bond et al., 2004).

6.2.1.8 Other methods to reduce youth violence

Groups also discussed other methods beyond MAV, that they felt could be utilised to help reduce youth violence.

6.2.1.8.1 School-based activities

Would like drama sessions. Several groups expressed a desire for drama sessions on youth violence either as part of their drama classes or observing external actors. Theatre-based sessions have been used as components of health-risk behaviour interventions for adolescents, for example the *Safe Dates* dating violence

prevention programme, which demonstrated a reduction in physical and sexual violence perpetration and victimisation (Foshee et al., 2004). However, as there were a number of components to this study, it is difficult to extrapolate the effectiveness of the theatre component in particular.

Would like dedicated violence prevention time. A minority of groups recommended that their school implemented a week or day dedicated to violence prevention. In addition to learning about youth violence, participants felt it could be a time to emphasise considerate behaviour to other pupils. This could help develop school wide norms that are not supportive of violence and is consistent with a social norms approach, which has demonstrated success in violence prevention (see Prothrow-Stith and Davis, 2010, Swaim and Kelly, 2008).

6.2.1.8.2 Role of criminal justice system

Believe need tougher sentencing. Groups consistently felt that sentencing for perpetrators of violence was not sufficient and that the jail period should be longer, with a minority feeling the death penalty should be utilised for those convicted of murder:

> DM1: *eh like make harder sentences like erm longer jail terms because eh if somebody stabs somebody they might no they could only get three years or something like that it should be longer.*

DM6: *they should bring back the death sentence* (group 2, school D).

Role of surveillance. Several groups felt a need for increased surveillance either in the form of CCTV and increased police presence on the streets, particularly around nightclubs, which they associated with violence:

DM2: *I think like during night times like when all the drunks get outae clubs n that and when they've got knives I think police should stand there like every nightclub* (group 1, school D).

This desire for increased police presence by some group members contrasts with the views of other group members, who felt negatively towards the police.

6.2.1.8.3 Activities

Activities for young people in the evening. Several groups believed that a lack of recreational activities in the evening resulted in underage drinking and violence. As such they felt more facilities were needed for young people to deter young involvement in violence. Indeed, diversionary activities (e.g. football) can provide an alternative to antisocial behaviour by reducing boredom and unsupervised leisure time and can also enhance pro-social skills (Morris et al., 2003). Such an

approach has been utilised in Glasgow by CIRV (VRU, 2009a) and has become a means of engaging young people involved in violence (Deuchar, 2013).

6.3 Discussion

Young people were aware of and had been exposed to violence within their local areas, with the exception of pupils from school B who were only aware of violence in the centre of Glasgow. While group members consistently identified peers that were both perpetrators and victims of violence, only a small minority of participants had been directly involved in violence. Indeed, group members generally displayed anti-violent attitudes such as believing knife-carrying was wrong, concern for innocent victims and negatively describing those involved in youth violence (e.g. as 'sad'). However, a minority felt violence was acceptable in response to provocation (e.g. if their mother was bad-mouthed or they were threatened). This was consistent with findings from the questionnaire. At all three time points mean scores for items examining positive attitudes towards a culture of violence (e.g. "it's a good idea to hang out with people in gangs" or "people who use knives get respect") were low. As the scores were low at baseline this represents a floor effect and may explain why there was no significant change in culture of violence scores between T1 and T2, while there was a small (significant) change in mean total ATV scores. The questionnaire items that explored support for reactive violence (e.g. "it's okay to beat-up somebody for bad-mouthing me or family" or "if a person hits you, you should hit them back"), had higher mean scores at all three time points. Although there was a small but significant immediate

decrease in mean reactive violence scores. The data from both the questionnaires and the focus groups therefore suggests that while pupils are generally not supportive of violence, they may be supportive of reactive violence. Consequently, it may be appropriate for MAV to consider developing strategies for dealing with reactive violence.

Although pupils did not admit to any involvement in the perpetration of violence, they did discuss why they felt other young people were involved in violence. Groups attributed some of the fighting as a result of the need to defend their scheme or 'scheme-fighting' (see Deuchar, 2009, Bannister et al., 2010, Kintrea et al., 2011). Although some groups did refer to 'gang-fighting' this was used to describe fighting between schemes and not organised criminal activity, which is similar to the patterns of 'gangs' or 'territorial based groups' described by Kintrea et al. (2011). For pupils that lived in areas where this was prevalent, this could result in anxiety and also has the potential to limit their social mobility (Deuchar, 2009). Indeed at baseline, 40.9% of pupils answered yes to the item "I'm afraid of getting stabbed". Interestingly this rate was not lower at school B, although this may reflect their anxieties of being in the centre of Glasgow rather in their own neighbourhood.

Groups felt that in addition to defending their schemes, the main reasons for engagement in youth violence included: peer pressure; violence being perceived as 'cool' by other young people; family pressures (i.e. father or brother also involved); wanting to act tough to gain respect; and getting a 'buzz' (i.e. finding violence

exciting). Despite the long-standing association between football and violence within Glasgow (McVeigh, 2011), this issue was only discussed by a minority of groups. Both the data from groups and questionnaires indicated that these young people generally felt negatively towards gangs and knife-carrying. However, they believed other young people joined gangs in order to feel part of something and gain protection. Moreover, groups identified that it was difficult for young people to leave gangs due to fear of victimisation, an issue also identified in the literature (Bannister et al., 2010). Similarly, they thought a feeling of protection motivated other young people to carry knives.

Consistent with current evidence (Kintrea et al., 2011, Bannister et al., 2010) group members believed engagement in violence began in early secondary school and continued through teenage years, with younger children keen to copy the older teenagers, possibly indicating that violence may represent a transition into adulthood. Indeed, participants from schools C, D and E (S2) felt they were receiving the programme at the appropriate age, whereas pupils from school B (S5) thought they also should have received the programme in early secondary school. However, the majority of participants felt it would not be appropriate for pupils in S1 or younger. While groups had an awareness of violence, they were shocked at the level and consequences of violence. In order to be potentially effective, fear appeals first need to make the threat appear serious and relevant (Witte and Allen, 2000). Indeed, pupils reported that the use of real CCTV footage, the Glasgow setting, interviews with real victims and offenders, and images of

injuries helped make the session more relevant and provided a sense of realism and increased their awareness of the risks of youth violence

However, as this is a universal programme, MAV should not cause undue upset to pupils. Although a minority of group members expressed feelings of upset at some of the cases presented in the film, and found some of the images graphic, they still maintained it was appropriate to watch the film. While it is important for young people to be aware of the risks of violence, it would not be appropriate to cause unnecessary anxiety. Focus group participants described feeling more aware of the risks to themselves when they were out in the evening in terms of victimisation but the majority of participants did not describe feeling less safe following the session and they reported using strategies for staying safe (e.g. staying with friends, avoiding unsafe areas).

Participants generally appeared to enjoy the MAV session and were able to discuss and reflect upon it two weeks later in the focus group, indicating they had retained the concepts covered in the MAV session. In particiular, groups discussed the impact of victims and offenders and made references to the cases in the film. Despite no apparent empathy increase in empathy scores in the questionnaire, groups demonstrated empathetic attidues towards victims during the focus groups, which may be indicative of a lack of sensitivity in the scale utilised.

In particular, groups enjoyed being able to hear the healthcare professionals' experiences and have the opportunity to engage with them. Pupils also felt

strongly that volunteers' experiences made the session more meaningful than if their PSE teacher had delivered it. However, some participants felt there was not enough time to discuss the questions with volunteers, partly due to time being wasted at the start of the session. As such groups were keen to either have a longer session or have two sessions. A minority of group members also felt it would have been beneficial to have police involvement in violence prevention sessions. Other focus groups expressed a desire to have a victim of violence attend the session to share their experiences and less commonly, a perpetrator of violence. A desire to learn relevant first-aid was also expressed and a trauma first responders cource is currently being devloped by MAV.

In addition to school-based violence prevention efforts, groups identified the need for upstream influences that need to be considerd. In particular, groups felt lack of activities contributed to engagement in underage drinking and violence, they believed an increase in recreational opportunities was necessary to reduce violence. Sport in particular has been shown to improve social skills and reduce delinquent behaviour (Deuchar, 2009) and has been utilised to engage with young people involved in youth violence (Deuchar, 2013).

While this study provided an understanding of young peoples' awareness of youth violence and experiences with MAV there are a number of limitations that need to be addressed. First, although teachers were asked to invite a range of pupils, in terms of abilities and behaviour to participate in the focus groups, most of the pupils were not involved in the perpetration of violence and it is plausible that the

teachers did not select potentially more disruptive pupils. As such, the pupils taking part may not be representative of their year group. It would therefore be of interest to repeat the focus groups with participants who were known to be involved in youth violence. Secondly, due to timing issues the pupils in group B were all placed in the same focus group, which resulted in one larger group of 12 pupils, which meant some pupils had less opportunity to speak out. Finally, the pupils may have percieved me as an authority figure, which may have led them to be more conservative in their opinions of MAV or involvement in youth violence. A further consideration of reflexivity in the research process is detailed in section 8.3.3.

6.3.1 Summary of chapter

This chapter reported the qualitative findings from focus groups with pupils who received the MAV programme. Data was analysed thematically using the Framework method (Ritchie et al., 2003). The results demonstrated that while these young people were not currently involved in perpetration of violence, they were aware of violence in their neighbourhoods and in the centre of Glasgow. Moreover, the majority of pupils consistently displayed anti-violent attitudes, with a minority reporting that reactive violence was justifiable. These views were reflected in the questionnaire results and as such, it should be considered whether it would be appropriate to place greater emphasis on reactive violence. Nevertheless, groups generally appeared to engage well with sessions and demonstrated an awareness of the risks associated with youth violence and knife-carrying. The principal limitation identified by groups, was a lack of time to discuss

the issues raised with the healthcare professionals. A number of other themes regarding logistics and content were also identified and recommendations for development in this area will be detailed in chapter 8.

Chapter 7 Process evaluation healthcare professionals

7.1 Process of analysis

A process evaluation utilising online questionnaires and semi-structured interviews with MAV volunteers was conducted to identify whether volunteers felt they were reaching the target group, their perceptions of youth violence, experiences delivering sessions, difficulties or concerns with programme, perceptions of success, whether they felt the training was sufficient and how MAV could be improved and developed. The analysis followed the procedure for Framework analysis (Ritchie et al., 2003; see section 4.5.2).

7.1.1 Managing the data

Following verbatim transcription all transcripts and questionnaires were read and recurrent themes and issues were identified. As the semi-structured interviews went into much greater depth than the questionnaires, the majority of the data is taken from them. These were used to produce a conceptual framework with five main themes which had a number of subthemes (see Appendix 8.2). The conceptual framework was then applied to index all themes and sub-themes in the transcripts using NVIVO software (QSR International's Nvivo qualitative data analysis software 9). Again, cases were compared during the coding process to help refine emerging themes (see section 4.1.4.2). Following the indexing process, six thematic charts were then developed (see Appendix 9.2 for an example thematic chart), which detailed all participant descriptions of the relevant sub-themes:

- Reasons for involvement with MAV (experience of youth violence at work, personal experience of youth violence, benefits of preventing youth violence, concern for own children and personal development).

- Perceptions of youth violence (consequences of youth violence, demographics, environmental/cultural influences, familial influences, connection to alcohol and drugs).

- Experiences delivering session (structure of session, role of teachers and other staff in session, difficulties with session, perceived engagement with session, adaptability).

- Strengths and development of MAV (perceptions of success, weakness of programme, strengths of programme, developing programme, feedback and logistical improvements).

- Training and preparation (experience of training, feelings of preparedness prior to session, anxiety in delivering sessions, improving training).

- Participation (limits of participation, logistical improvements, incentives for participation, increasing participation, role of doctors in violence prevention, participation in public health)

7.1.2 Understanding the data

Descriptive analysis, using the approach detailed in section 6.1.2 was then undertaken to further understand each sub-topic on the six thematic charts (see Appendix 10.2 for an example descriptive chart). These categories were then grouped into classifications, and are presented in Appendix 11.2. Explanatory accounts were then developed to further understand participants' experiences of youth violence and MAV. Triangulation of the questionnaires and interviews was conducted to enable a greater understanding of the themes (see 4.1.4.2). Deviant cases were also identified and analysed to try and provide an explanation for the non-normative response. Finally, to further develop explanations the empirical literature was examined to assess whether any of the concepts elicited by this study were convergent with the findings from other published studies (Ritchie et al., 2003).

7.2 Results

The classifications, categories and descriptive items identified in the descriptive analysis are detailed in Appendix 11.2. Explanatory accounts of the categories will then be discussed utilising verbatim quotes where appropriate.

7.2.1. Explanatory accounts

The explanatory accounts were generated with the approaches described by Ritchie et al. (2003). This primarily involved utilising explicit reasons and accounts. In the case of repeated co-occurrence of two or more categories or descriptive items, explanations were sought by inferring an underlying logic.

7.2.1.1 Youth violence at work

7.2.1.1.1 Experiences of youth violence

All volunteers regularly experienced youth violence through their jobs. The nature of the violence experienced varied by speciality and is detailed below.

Deals with a large number of young people injured by violence. Those working in acute specialities such as emergency medicine, anaesthetics and general surgery saw the most incidents of violence, particularly at the weekend. For instance, an anaesthetist describes his experiences of violence at work:

> "*we get huge amounts of violence in when I'm on-call on a Saturday morning usually most of the morning and most of the day doing trauma cases which are almost always violence and alcohol related*" (Participant B, interview)

The high prevalence of violence at weekends reported by this anaesthetist is reflected in emergency department data, which identified that violent related injuries peak at the weekend (Bellis et al., 2008).

Treatment limited to dealing with injury. Those in the acute services also found the treatment they provided was limited to managing the injury and not addressing the underlying causes of violence:

> "*you often seen in the young men which is sort of a random type of attack with really no particular significant consequence you patched them up and off they went the next day*" (Participant C, interview).

This is consistent with a study by Wright and Kariya (1997) that investigated the incidence of assault within a Greater Glasgow Accident and Emergency department. The authors reported that the majority of patients with violent injuries had relatively minor injuries (e.g. lacerations and haematomas) and consequently 63% were discharged directly from Accident and Emergency.

Deals with psychological consequences of violence. Two of the healthcare professionals dealt primarily with the psychological consequences of violence as their roles as a consultant in oral medicine and psychiatrist:

> "*as a psychiatrist I get to deal with the you know the ripples there after the peripheral people the families that are affected and the lives you know whether it's post traumatic stress disorder you know whether it's depression whether it's children growing up without a father or whatever*" (Participant E, interview)

Treats a small number of children with violent injuries. The one healthcare professional that specifically looked after children occasionally saw violent injuries in this age group:

"*I had experience of being in accident and emergency and seeing you know teenagers coming in having been involved in interpersonal violence and such like so in my current position I also deal with children who have not fortunately huge numbers but there are children who come in who have traumatised their teeth because of being involved with violence*" (Participant G, interview).

Those in the acute specialities felt they usually saw young people from the age of 13 upwards to 20. This is akin to empirical evidence which indicates that onset of serious violence begins from age 12 years and peaks at approximately 17 years (Office of the Surgeon General (US), 2001).

Involvement of older men. The minority of healthcare professionals working in acute settings also looked after men aged between 30 and 60 who were involved in violence. However, those that worked with the chronic consequences of violence (psychiatry and oral medicine) had many patients who were in their 40s.

Experienced higher rates of violence in West of Scotland. Healthcare professionals felt they dealt with much higher levels of violence when working in the West of Scotland, as was the case for this participant who describes her experiences working in general surgery:

"I haven't actually seen that kind of level of violence anywhere else in Scotland and now I actually work in Edinburgh and I certainly don't see the same kinda levels in Edinburgh"
(Participant C, interview)

Indeed, the homicide statistics provided by the Scottish government (which is the most reliable proxy for overall incidence) demonstrate that the West of Scotland has the highest proportion of homicide (Scottish Government, 2012)

Homicide an unintended consequence of violence. A small number of healthcare professionals noted that from their experience, they believed that homicides involving young people were often not intended. For instance, this participant describes her experiences working in pathology:

"I have done you know literally dozens and dozens of post-mortem examinations of people who have died as a result of violence and anecdotally I would say that most of it is [sighs] or a let's say a lot of it is probably an unintended consequence there is a weapon to hand whether it's the knife they're carrying or whether […] *they can punch and kick it's because you always have your feet and hands"* (Participant L, interview).

The pathologist felt that due to the patterning of many of the injuries (i.e. stab wounds in the groin or in the shoulder) the perpetrator did not intend to fatally

injure the victim and had just got caught up in the moment. Similarly, in their qualitative work with young people, Bannister et al. (2010) noted that lethal injuries between territorial groups were rarely intentional.

7.2.1.1.2 Feelings when dealing with youth violence

Healthcare professionals described mixed emotions when dealing with youth violence, with several participants suffering from psychological distress when managing such cases

Emotional burden of violence. The repetitive nature of patients with violent injuries was identified as being emotionally draining. This was the case for participant A, who describes her experience working in Emergency Medicine:

> *"you get tired of seeing it night after night after night really it wares you down"* (Participant A, interview)

This impact may have important implications for role fulfilment as it reflects the exhaustion component of burnout, which impacts on job performance and health (Maslach et al., 2001). Indeed, Accident and Emergency doctors within the UK have been shown to have high levels of psychological distress, which in part can be attributable to traumatic caseloads (Burbeck et al., 2002).

Stress of treating knife wounds. A minority of participants identified the actual processes of treating knife wounds as being particularly stressful due to the complexity of some injuries and difficulties in wound healing:

> "*it's very physically quite difficult and very stressful and then you suddenly find yourself thinking y'know I don't want to cause this patient any harm by me doing my job*" (Participant B, interview)

Facial injuries, in particular facial fractures can cause specific difficulties for anaesthetists (i.e. participant B) in terms of airway management (Amin et al., 2002). Complex tasks, such as difficult airway management and fear of harming patients (Nyssen and Hansez, 2008) are documented risk factors for stress in anaesthetists and is evident in this participant.

Excitement when treating violent injuries

Conversely, a minority of participants (all of which were female surgeons) described initially feeling excited when treating violent injuries as it provided them with an opportunity to go to theatre:

> "*as a junior doctor I think it's quite exciting really seeing that sort of stuff y'know and it is a bit exciting and you know you get to go to theatre and that's good too but I think it's as I kinda get*

older and now have a little boy I think oh man it isn't that exciting" (Participant C, interview)

Despite feeling initially excited, the surgeons now identified feeling upset at the impact of violence on the young people's lives and the waste of resources.

Concern at the wider impact of violence on families. A commonly held view was the considerable impact that youth violence had on families of both victims and offenders, and the subsequent difficulties of supporting distraught families. Indeed, exposure to violence in early life is associated with adverse health outcomes in later life (Felitti et al., 1998). Conversely, Medic C was more concerned that the families did not seem bothered by the injuries:

> *"the thing I probably found most alarming about it was there wasn't there didn't really seem to be an awful lot of concern among the families"* (Participant C, interview).

This lack of concern among families may be reflective of ineffective parenting and lack of parental supervision, which can all act as risk factors for youth violence (Buka and Earls, 1993, Dahlberg, 1998).

Concern at long-term impact. Participants consistently experienced feelings of concern at the impact of violence on the victims' lives and to a lesser extent the impact on the offenders' lives:

> "*one person getting killed or one person having their life altered out of all recognition because they serve a lengthy jail sentence*" (participant H, interview).

Indeed, the concern for the lasting effects of violence was a commonly cited reason for volunteering with MAV.

Frustration at the pointless nature of violence. A minority of participants expressed frustration at having to manage cases of youth violence as they believed nobody gains anything from it, and as such it is a pointless act. For instance, this participant describes violence as:

> *"not only is it a waste of time for us it's such a waste of [pause] yeah for them really"* (participant C, interview).

This illustrates this participant's frustration at having to use her time to treat violence and also the waste of a young person's life.

Perceptions that violence related injuries are self-inflicted. A less commonly held belief was that many young people who attend hospital with violent injuries were responsible for their injuries either through alcohol or recreational fighting. The participants who believed this also admitted to feeling guilty for having this belief:

> "*it's a terrible moral kinda thing to say but it does pray on your mind that people who have done nothing wrong end up very ill and we haven't got the time to care for them because we're dealing with people who have just drunk too much*" (Participant A, interview).

Although there are no current studies investigating healthcare professionals' attitudes towards patients with violent injuries, a study of New Zealand emergency department staff reported that most staff felt negatively towards intoxicated patients, viewing their problems as self-inflicted and an unnecessary burden on the hospital (Gunasekara et al., 2011). Similarly, studies of emergency department staffs' attitudes towards deliberate self-harm has shown that some staff feel negatively towards such patients as they felt they were in control of behaviour (Mackay and Barrowclough, 2005). Together, this suggests that some healthcare professionals may feel violent injuries are self-inflicted and therefore feel negatively towards such patients as it they may believe treating violence is a waste of resources and resent the fact it is taking time away from other patients .

7.2.1.2 Motivations for participation in MAV

Healthcare professionals' reasons for participation could be broadly divided into two categories: 1. the desire to prevent violence and, 2. for personal development. Some of the reasons for motivation are also described in the volunteer function inventory (VFI) constructed by Clary et al. (1998), which consists of six motivational functions of

volunteering. In order to gain a better appreciation of the most commonly cited reasons for volunteering with MAV, a count of the reasons as they relate to the VFI is presented in table 7.2.

Table 7.1 Volunteer Function Inventory and number of volunteers

Function	Description	Number of interview participants	Number of questionnaire participants
Values	The opportunity to express altruistic and humanitarian concern for others	12	45
Understanding	The opportunity for new learning experiences and to develop new knowledge and skills	6	2
Social	The opportunity to develop social relationships or take part in an activity viewed as important by others	2	1
Career	The opportunity to develop career benefits by either preparing for a new career or maintaining skills relevant to current career	0	2
Protective	Allows the individual to reduce negative feelings (e.g. guilt over being more fortunate than others) or personal problems	2	0
Enhancement	The opportunity to develop psychologically and feel better about self	2	7

The data indicates that the majority of participants volunteered with MAV out of concern for the young people involved in violence and hoped that by volunteering, they could reduce violence. Interestingly, a considerably higher number of interview participants also identified the opportunity to develop new skills and learn from the pupils as a motivation for volunteering. Although this may simply be a consequence of the fact that the interviews were able to generate a much larger volume of data, it should be noted that those taking part in the interviews were the most regular volunteers with MAV. The notion that they believed they were also gaining skills from the sessions may therefore explain why they volunteered on a more regular basis.

Only a very small number of participants were motivated to take part in MAV for social reasons and this may indicate that participants get little social benefit out of MAV which could be a result of delivering sessions on an individual basis or due to a lack of events for volunteers. Interestingly, only two participants described volunteering as a means to enhance their career (e.g. through continued professional development credits), however, the majority of interview participants felt that although they did not volunteer for career reasons, participation in other members could be improved by awarding CPD credits. Volunteering to reduce negative feelings (i.e. protective) was only apparent in two interview participants who both experienced youth violence growing up. Finally, a minority of participants described that MAV enabled them to feel better about themselves, in terms of wanting to feel like they were doing something positive. More detailed

explanations of participants' motivation for participation in MAV will now be discussed.

7.2.1.2.1 Preventing violence

Participants discussed a number of reasons in relation to preventing violence.

Reducing violence related workload.

All healthcare professionals were strongly motivated to help reduce their violence-related workload and reduce violence related harm:

> "*have seen devastating consequences of knife crime working in Emergency Medicine, in this role often feel like I'm mopping up the effects of problems in society, so keen to be involved in trying to address these problems*" (Participant 19, questionnaire).

A number of healthcare professionals had a variety of additional reasons for wanting to prevent violence, through their involvement in MAV.

Personally impacted by violence. A minority of interview participants described having been personally been affected by violence when growing up, either as a victim, family member of a victim or had personally been involved in fighting. These early experiences were a motivating factor for volunteering as participants believed they had greater understanding of how young people felt about violence, for example this participant describes her experiences growing-up:

"I did grow up in a very you know deprived housing estate surrounded by chaos and violence and ehm so I experienced that as a teenager I know what it was like to you know kind of live and run you know not run with the gang but be in the periphery"

(Participant E, interview)

This participant notes that her experiences of growing up on a deprived council estate enable a better understanding of the appeal of violence to young people and what it is like to live in that environment. Indeed, a personal identity with those who are suffering has been identified as a motivation for volunteering (Hwang et al., 2005).

Wanting own children to be safe. A less common reason for volunteering was a concern for their own children's safety:

"*I'm a mum of a boy and I worry about him going out*"

(Participant K, interview)

These participants hoped that volunteering with MAV may help create a safer world for their children. However, it is interesting that in this context the participants do not discuss changing the social determinants of violence to create a safer environment for their children.

Concern for innocent victims. Interview participants recurrently expressed a belief that a number of victims were innocent and had been unlucky in terms of being in

the wrong place at the wrong time. These participants therefore wanted to help prevent more innocent young people being victimised:

> *"a lot of people aren't innocent but there are innocent people that get caught up in it and end up having their lives kinda ruined because of it you know because it's stops them getting jobs it stops them getting* […]*what they want in life because they're stigmatised with facial scarring*" (Participant F, interview)

In this quote, the participant expresses his concerns for others. Indeed, personal values related to altruistic and humanitarian concerns are one of the motivational functions for volunteerism (Clary et al., 1998). Interestingly, this contrasts with a less commonly held belief that violence-related injuries are self-inflicted (see 7.2.1.1.2).

Approval of prevention approach. A number of volunteers were attracted to MAV because of the emphasis on prevention, which they felt was a novel approach to tackling violence:

> "*Interested in getting at the roots of the violence problem in Glasgow and making our streets safer. Tired of patching up young people with no hope of improving situation"* (Participant 18, questionnaire).

> *"it's really that we're obviously not getting through with anything that we're doing at the moment when MAV started and I heard about it I thought that's a great idea it's just get them young and hopefully change the culture"* (Participant K, interview).

Participant 18 indicates that she was tired of simply dealing with the consequences of violence and wanted to take action to try and prevent injuries. Similarly, Participant K felt that current prevention measures have been ineffective and MAV offered a new approach to violence prevention. This theme of prevention is also reflective of the understanding function for volunteerism (Clary et al., 1998).

7.2.1.2.2 Personal development

Healthcare professionals were also attracted to MAV to enhance their own personal development and felt volunteering facilitated this in a number of ways:

Doing something different. Less commonly, participants stated that a reason for their participation was the opportunity to do something different from normal clinical work and take on a different role:

> *"it's a little bit different from what we usually do a little bit of education I'll give it a go"* (Participant H, interview).

The opportunity to develop new skills and knowledge is also reflected in the VFI, under the understanding function of volunteering (Clary et al., 1998).

Find sessions stimulating. Many participants enjoyed taking part in the sessions as they found working with the young people stimulating as they were able to learn from their experiences of violence as:

> *"also personally trying to do something that was just different for me so another avenue just to give me a bit of personal development more intellectual I suppose stimulation"*
> (Participant L, interview)

Again the opportunity to develop new knowledge from others is an aspect of the understanding function of the VFI (Clary et al., 1998).

Working as a multidisciplinary team. Less commonly, participants (particularly those from specialities such as pathology and as such were more isolated in their clinical role) felt volunteering allowed them to work as part of a multi-disciplinary team. It also provided a social aspect, which they enjoyed and benefited from. The opportunity to engage with peers and take part in something valued by others is representative of the social function of the VFI (Clary et al., 1998) and is reflected in this participant's experience with MAV:

> “*it’s very much a camaraderie all sort of working towards the same goal and because we’re all volunteers we all feel part of a team*” (Participant F, interview).

Giving something back to the community. Some participants, particularly those from more deprived backgrounds felt they had a duty to do something for the communities they came from:

> “*I’m very fortunate in that you know I was only ever supported in my aspirations to do medicine* […] *you know I think I’m exactly the sort of person who ought to give something back*”
> (Participant E, interview)

This participant indicates that she was only able to escape deprivation and have a career in medicine due to support from her family and feels a duty to help others in similar situations. Wanting to give something back to the community is representative of the value function of volunteering (Clary et al., 1998). However, this participant later describes her feelings of guilt at the death of two family members as a result of violence and this may also indicate a protective motivation, whereby she is trying to reduce her feelings of guilt over being more fortunate than others.

7.2.1.3 Perceived impact of violence

As healthcare professionals provided the pupils with information regarding the consequences of violence during the session, it was important to understand what they perceived the impact of violence to be in terms of the health consequences, and the impact on victims, offenders and their families.

7.2.1.3.1 Health consequences

The health consequences reported by participants can be broadly divided into physical and mental health outcomes.

Impact on victim's physical health. Participants consistently spoke of the risk of injury or death. When discussing injury types, participants mainly spoke of ones encountered through their speciality. For instance, the orthopaedic surgeon discussed the inoperable damage that can be done to tendons in the hand. The general surgeon discussed the damage that can be done to the intestines and maxilla-facial surgeons discussed the damage to teeth and facial scarring. Finally, the forensic pathologist discussed which locations a stab injury can result in death as some are from areas that many people would not expect (e.g. the shoulder or top of leg).

Impact on victim's mental health. Only a minority of participants also discussed the lasting impact violence can have on a victim's mental health in terms of post-traumatic stress disorder, anxiety and depression. This link between violence and poor mental health is highlighted in the World Report on Violence and Health

(Krug et al., 2002). An interview participant, who was a psychiatrist, noted that it could be difficult for volunteers without a mental health background to discuss the psychological consequences of violence with the school pupils:

> "*maybe some of my colleagues are you know slightly exposed because they know nothing about mental health but that's not a medics against violence issue that's just you know the world at large that's the NHS*" (Participant E, interview).

Participant E feels there is a lack of consideration about mental health issues by other MAV volunteers and society in general. Indeed, negative attitudes and stigma towards people with mental illness is a persistent problem (Schomerus et al., 2012) and leads to discrimination by friends, family, employers and worryingly some mental health professionals (Corker et al., 2013). The lack of consideration of the psychological effects of violence by other participants and the lack of content on mental health issues in the MAV programme, may reflect society's attitude towards mental health. Developing the MAV programme to include a greater emphasis on mental health issues could therefore act as a platform to develop pupils' awareness of mental health issues specific to violence and more generally.

7.2.1.3.2 Impact on victims' lives

Participants also discussed what they perceived were the long-term consequences on victims' lives and provided the pupils with this information.

Stigma. This was particularly mentioned by the maxilla-facial surgeons who believed that young people who had facial scarring could end-up being stigmatised for the rest of their lives:

> *"end up having their lives kinda ruined because of it you know because it's stops them getting jobs it stops them getting you know eh you know what they want in life because they're stigmatised with facial scarring"* (Participant F, interview)

Indeed, young people with scarring have reported feeling stigmatised and concerned that others would judge them for being involved in criminal activity (Brown et al., 2008).

Reduced life opportunities. Interview participants reported the difficulties victims of violence can face when trying to find employment or start relationships either through stigmatism from scarring or as a consequence of an injury (e.g. from having tendons in hand severed, chronic pain).

7.2.1.3.4 Impact on offenders' lives

Participants also discussed the impact that violence had on the offender's life in terms of jail sentences and mental health.

Wasting life serving a jail sentence. A minority of participants acknowledged that there were often two lives wasted in a murder as illustrated by this quote:

> "*I've seen too many teenagers eh in the mortuary as a consequence of that very often there'll be another teenager or more than one locked up in in prison as a result of it as well*" (Participant L, interview)

Furthermore, in addition to spending a significant time in prisons, those convicted of violent acts also have reduced opportunities, particularly in terms of employment, with those with a criminal record having poorer employment prospects (Pager et al., 2009).

Risk of committing a serious act of violence by carrying a knife. A less commonly held belief was that many young people carry knives without intending to use them:

> "*if you're just unlucky and you stab somebody and they die you know you're the guy who's going to jail for murder and you're not actually any different from all the other teenagers who put a knife in their pocket and went out that night*" (Participant H, interview).

This participant feels that often the perpetrator may not have intended to use their knife to kill or seriously harm anybody and serious acts of violence were an 'unlucky' consequence of going out with a knife. This is consistent with findings

from a study by Bannister et al. (2010), which identified that although some young people carried knives for protection, they did not always intend to use the knife.

Effect on offender's mental health. A minority of participants also discussed the enduring consequences that committing an act of violence can have on an offender's mental health, in regard of coming to terms with what they had done. The psychiatrist in particular saw many such cases:

> *"it's not just the victims I see I also will see down the line gang members who've found themselves in their 30s and 40s and just do not know how to adjust to life but know they have to and you know the kind of fall-out from that sort of life who are now rudderless and have no idea what to do with themselves"*
> (Participant E, interview)

Participant E stressed that she makes this point to the school pupils, and noted that some of the pupils often expressed surprise at the fact she treats perpetrators of violence.

7.2.1.4 Perception of causes of youth violence

What participants perceived to be the causes of youth violence influenced the messages they delivered in the sessions. Participants widely believed that violence was a multi-factorial problem:

"*to look at violent crime and youth violence in isolation is impossible because it's all part of alcohol drugs social deprivation and you can't you can't look at it in isolation because so much of it comes from these other factors as well*" (Participant D, interview)

Descriptive analysis identified three broad categories that participants believed contributed to youth violence: alcohol and drugs, individual factors and environmental factors.

7.2.1.4.1 Alcohol and drugs

Participants consistently associated violence with alcohol use and many also associated it with drug abuse. Alcohol use in particular is strongly associated with violence (World Health Organization, 2010, Budd et al., 2003) and is a problem within the target age-group with 10% of Scottish 13 year olds, 29% of 15 year-old boys and 25% of 15 year-old girls reporting that they drink alcohol at least once a week (Currie et al., 2012). Participants believed alcohol contributed to violence in different ways.

Lack of control after drinking. Participants believed that alcohol consumption resulted in a lack of control of anger, which could lead to violence:

"*that comes back to the ones who had been drinking and who weren't able to control their anger*" (Participant A, interview).

This participant's experience is consistent with the evidence which suggests that alcohol consumption may affect the part of the brain responsible for aggression inhibition and impairs cognitive functioning in terms of assessment of risk, emotional control, self-awareness (Graham et al., 1998).

Culture of alcohol use. Participants perceived Scotland to have a culture of alcohol use whereby getting drunk and behaving inappropriately was legitimised as illustrated by this quote:

> "*it was just an accepted part of life just that violence drink and the unravelling of life because of that*" (Participant C, interview).

This concept of a culture of alcohol and violence was identified in the Scottish Social Attitudes survey (Ormston and Webster, 2008), which reported that 67% of respondents felt that drinking alcohol was a major part of Scottish life and this was indicative of a Scottish drinking culture. It is argued that in some cultures normal social rules do not apply during periods of intoxication, as the alcohol and not the individual is considered to be the cause of violence (Graham et al., 1998). This lack of blame on the individual can therefore legitimise violence in some social groups if alcohol has been consumed.

7.2.1.4.2 Individual factors

A number of themes regarding individual factors for involvement in violence were also identified.

Thrill of violence. Participants who had experienced youth violence growing up expressed an understanding of appeal of violence to teenagers:

> "*I don't think everybody appreciates that it's that it's really quite thrilling there's a certain attraction and thrill to that you know that I can understand why 13 14 15 year olds for all that it might look crazy within the vicinity of violence there's something terribly exciting about it*" (Participant E, interview)

This participant describes the excitement she experienced being on the periphery of violence as a teenager and understands the attraction to violence. Indeed, Howard (2011) argues that the quest for excitement can motivate violence as it results in a high state of arousal, which is pleasurable to certain individuals. The thrill or 'buzz' that violence gives some individuals was also described by the young people in Deuchar's (2009) qualitative work.

Lack of awareness of consequences. Participants consistently felt that young people had a lack of awareness of the damage they could inflict by carrying a knife and did not intend to cause serious harm:

> "*I think a lot of these youngsters that are you know playing around with knifes and machettes and all the rest of it haven't a clue about the damage that they can do and the ease with which people can lose their lives*" (Participant J, interview).

These perceptions about the inability of some young people to calculate risk are supported by research which suggests that the parts of the brain (i.e. the amygdala, hypothalamus, prefrontal cortex) required for decision making, emotional regulation, behavioural inhibition and calculating outcomes of behaviour are still developing during adolescence and may help explain why adolescents are more likely to be involved in risk-taking behaviour (Kelley et al., 2004). While participants did not consider the theoretical basis for a programme such as MAV, some participants appeared to believe that if they informed young people of the consequences of violence, this could reduce their involvement in violence. However, as behaviour is determined in a large part by the social context in which it occurs, simply providing information may not be sufficient to result in behaviour change (Naidoo and Wills, 2009). Indeed, as Naidoo and Wills note, individuals continue to smoke and engage in unprotected sex despite having knowledge of the risks of such behaviours.

Bravado. Participants from more deprived backgrounds considered there was an element of bravado that young people put on:

> "*it's massive bravado you know these guys are from a background where if you don't stick your head above the parapet and curse and swear at everyone in the room then you're a nobody*" (Participant I, interview).

This participant thought it was necessary for young people to act in a violent manner in order to succeed in their local area. The need for young people to display bravado has also been documented in literature as a necessary adaptation to surviving and living in a hostile environment, such as many of the housing-schemes in which victims and perpetrators of interpersonal violence are living (Gomez et al., 2004). Indeed, this need for bravado and looking 'big' in front of their peers was documented by Deuchar (2009) in a qualitative study of young people living in Glasgow.

7.2.1.4.3 Environmental factors

Participants felt violence was a multi-factorial problem and discussed a range of factors to which young people were exposed that may be involved in the development of violent behaviour. Participants consistently associated violence with the well-documented association between violence and socio-economic deprivation (Leyland and Dundas, 2010, Bellis et al., 2008, Hsieh and Pugh, 1993) and acknowledged this association was a consequence of a number of factors. The themes identified highlight the need for prevention programmes in the environment in which violence occurs.

Lack of opportunities. Participants perceived that lack of opportunities, particularly in the form of employment, in deprived communities contributed significantly to involvement in violence:

> "*you do see the rubbishness of life y'know the rubbishness of their lives and you think well you know what have you got going for you really*" (Participant C, interview)

> "*I think a lot of that stems from generations that have had no employment prospects no sense of community the communities are just they're desolate there's nothing to do*" (Participant A, interview).

Both employment and having a stable relationship are protective against involvement in crime (including violence), however, in certain areas young people do not have the education, life skills and employment prospects necessary to maintain a job or relationship (Dahlberg and Potter, 2001). Furthermore, the issues of territoriality in the West of Scotland (see section 1.3.4) can result in young people being confined to their housing scheme due to fear of violence, which limits their social mobility (Deuchar, 2009).

Normality of violence. Participants recurrently identified that within certain communities carrying a knife and gang-fighting was viewed as normal and acceptable behaviour:

> *"their attitude to violence is incredibly casual that it just happens and you get slashed and you get pudged and that's just part of life like walking and talking and it is difficult to get the message*

over to these people they don't see anything wrong with slashing when if they've annoyed you" (Participant D, interview).

"*some parts of the city that would almost be seen as normal for a fourteen year old boy to pick up a knife when he's going out and other parts of the city that would be seen as absolutely horrendous*" (Participant J, interview).

This notion may partly be explained by subcultural theory, in which social norms in certain areas of society dictate that young people need to respond to threats with violence to avoid being disrespected (Vigil, 2003). This highlights a need for a normative approach to prevention, whereby interventions are delivered within the social context in which the behaviour occurs (Bannister et al., 2010). As MAV currently is only delivered in a school setting this may potentially limit its effectiveness.

Culture of violence. A commonly expressed view by participants was the presence of a culture of violence within some communities, which inevitability led to involvement in violence by adolescents:

"the society these kids live in it's just so engrained them by the time by the time they are teenagers" (Participant L, interview).

This perception of a culture of violence may also be explained by subcultural theory. For instance, Vigil (2003) argues that the limited space in housing estates can result in territorial issues and due to the higher number of single-parent families, there can be a lack of control over young people. Alternatively, strain theory posits that in certain parts of society where culturally defined goals cannot be achieved using legitimate means, the breaking of social codes is viewed as normal behaviour (Merton, 1938). Indeed, this was identified by participant F, who had personally experienced growing up in a deprived area:

> "*they often come from deprived backgrounds they have all these issues that come with that you know the they haven't got anything and they want stuff that other people have got and they use everything they can to try and get it*" (Participant F, interview).

Again this highlights the considerable role socio-economic deprivation plays in the development of violence.

Territoriality. Participants believed it was harder for young people from deprived areas to avoid violence as the prevalence of gangs who would fight for their 'schemes' (i.e. neighbourhood) was much higher. One participant also highlighted why he believed young people felt they had to defend their area:

> "*you see people saying things like oh this is my street and I'm defending it and you think that actually the bottom line is you've just got a dull life and you're*

trying to pretend you're a mercenary for the street" (Participant B, interview).

Indeed, some territorial based groups are so prominent in some areas that they define the housing scheme and it can therefore become very difficult to avoid the associated violence (Deuchar, 2009).

Cycle of violence. A minority of participants also spoke of the cycle of violence (see Widom, 1989b), whereby young people who previously experienced violence and aggression by parents and other adults are now committing violent acts:

> *"you could see his notes from having been a child that had been neglected [...] he'd come in with something involving violence [...] and you kinda oh there's the start of his violent spell that y'know in in a few years time oh he'll be the thirteen year old that's stabbed and in another ten years it'll be somebody else who's had a bigger stabbing"* (Participant C, interview).

The cycle of violence has received considerable attention in the literature and demonstrates an association between childhood exposure to violence and later perpetration of violence in the home or the in the community, or indeed further victimisation of violence (WHO, 2007).

Lack of positive role models. A small number of participants considered the lack of positive role models, in particular father figures, to be involved in the development

of violence. This concept is also supported in the literature on youth violence, for instance Dahlberg and Potter (2001) acknowledge the need for positive role models, particularly to offset the impact of living in poverty and experiences of maltreatment.

The themes identified in this section highlight the need for prevention programmes in the environment in which violence occurs. In particular, programmes that utilise youth workers can be an effective means of engaging with young people in their communities. For instance, the Glasgow CIRV project utilised peer mentors (many of whom were ex-offenders) to provide support to young people actively involved in gangs and act as a positive adult role model (VRU, 2009a). Similarly, the Cure Violence project has successfully used culturally appropriate youth workers to act as mentors for young people at risk violence (Cure Violence, 2014). In addition to preventing violent behaviour, this approach aims have long lasting change by change groups norms supportive of violence.

7.2.1.5 Experiences delivering sessions

Overall, participants enjoyed delivering the sessions. The descriptive analysis identified six categories that allowed further exploration of how the sessions were delivered and identified successful and unsuccessful aspects of the programme. The categories identified were interactions with pupils, messages delivered, class sizes, logistics, content and experiences with teachers and campus cops.

7.2.1.5.1 Interactions with pupils

The following themes describe how the healthcare professionals perceived they interacted with the pupils.

Avoiding lecturing. Several participants stressed how important they felt it was to avoid lecturing the pupils, and to talk at their "level":

> "*I always think simple things like you know if you're doing the groups I get down on my knees and try and simple things like try and speak to them at eye level try and not you know do a lecturing*" (Participant E, interview).

Poor communication in the form of lecturing or giving patronising advice by adults in authority (i.e. doctors, teachers) to young people can leave the young person feeling not respected (Drury, 2003) and they therefore may not be receptive to the session. Communication techniques such as putting yourself at the same level as the young person and avoiding talking down, as identified by Participant E, are recommended to help reassure young people they are being respected and help improve communication (Lloyd et al., 2009). The recommendation of such techniques is something that could be incorporated into the MAV volunteer training.

Relating to pupils. To a lesser extent, participants felt they were able to relate to pupils and that was a vital part of helping the pupils listen and take on-board key

messages. Interestingly, this theme was more prevalent among participants from a deprived background. For instance, Participant I felt having experience with young people and understanding their "banter" was crucial for a good session. This is consistent with strategies for relating to adolescents detailed by Hanna et al. (1999) which recommend having a sense of humour and being able to laugh at yourself enable young people to view healthcare professionals as real people and subsequently develop trust.

Perceptions of socio-economic class. Two of the participants from deprived backgrounds stressed they did not want to be perceived as middle class doctors. Participant I liked to provide pupils with his personal background so they didn't view him as "*just a highly educated individual"*. Conversely, Participant E did not discuss her personal experiences but did acknowledge that the participants will view her as a middle class doctor:

> "*in some ways I kinda smile because these kids will look me and just think och you know [laughs] you know middle class doctor what would she know sort of thing and I sit there thinking oh I know more than you think you*" (Participant E, interview).

Informing pupils of personal background may indeed be a useful strategy for engagement and could be included in MAV volunteer training. Hanna et al. (1999) also recommend emphasising commonalities and avoiding being seen as symbol

of authority to enable young people to view healthcare professionals as real people, which can help young people relate.

Involvement of younger healthcare workers. There was disagreement between some participants as to whether younger healthcare professionals were the most appropriate volunteers. Participant C (a registrar) wondered whether the session would be better delivered from younger doctors as they would be able to relate to the pupils more:

> *"especially somebody like myself who's relatively junior as first year reg being able to say this is what life is like when you are a junior doctor and hopefully they can slightly more relate to me but I don't know if whether they really can I mean I think I'm quite you know young at thirties rather than a fifty year old consultant but I suspect if you're 13 then being 32 is not young"* (Participant C, interview).

In addition, Participant A (a registrar) and Participant J (a consultant) believed it would be positive to have younger medics involved to help increase volunteer numbers and that it would also be beneficial for their training. However, Participant H (a consultant) thought the session was better delivered from senior healthcare professionals:

> “*makes it a bit more robust maybe gives it a wee bit more gravitas than if you have very junior medics doing it*” (Participant H, interview).

Despite potentially making the session more “robust” it is important that senior healthcare professionals avoid taking on an expert stance and asserting their credentials before trying to relate to the young people using the techniques detailed by Hanna et al. (1999). This will help prevent the pupils perceiving the healthcare professionals as authority figures and subsequently distancing themselves.

Enable young people to speak to medics. A minority of participants felt that many of the young people did not have any opportunities to speak to medical staff. They were therefore keen to allow them to have the opportunity to ask lots of questions. Moreover, Participant B felt that the fact they were medics meant they would not be perceived as authority figures:

> “*I think we’re in a quite a privileged position and it’s also who we’re not we’re not the police which is a big advantage cause we’re not going in and saying we’ll get you if you if you don’t respond to these things*” (Participant B, interview).

Participant B believed that as medics, they were in a position where they were able to provide young people with information about the consequences of youth

violence rather than resorting to telling them what to do, which is an ineffective form of communication with adolescents (Hanna et al., 1999).

7.2.1.5.2 Messages delivered

Participants spoke about the messages they tried to convey during the session, which focused on one or more of the following items.

Staying safe. A minority of participants considered the majority of pupils they spoke to be more at risk of victimisation and not perpetration:

> "*I'm probably a wee bit more interested in the young trying to influence the youngsters to avoid violence as opposed to stop it obviously you want them to stop it but in any one class I think even in a relatively a relatively deprived area in anyone class there might just be one or two people that have are on the edges on it so trying to trying to influence the majority to say don't get involved in this in the first place and here's how to avoid being a victim if at all possible*" (Participant J, interview).

This participant therefore focused on advising the pupils of strategies that they can use to help stay safe and avoid potentially dangerous situation. The focus on victimisation prevention strategies enables the majority of pupils to benefit from the programme.

Dangers of engaging in violence and knife-carrying. The majority of participants focused on perpetration prevention although felt there was often only several pupils in the class who were at risk of engaging in violence (due to current antisocial behaviour):

> "*despite perhaps the disruptive ones being the most difficult to control their possibly the ones where if you can get a few pupils to take it in what we're trying to say then that can have the most positive effect*" (Participant K, interview)

The focus on perpetration prevention contrasts to victimisation prevention, which was a focus for a minority of volunteers. Interestingly, participants acknowledged that only a minority of pupils were at risk of perpetration. This changes the orientation of MAV from a universal intervention, which is targeted at a whole group (i.e. school year) to a more selective intervention, which is targeted at individuals or a sub-group who are at higher than average risk of violence perpetration (Johnson, 2002).

Emphasises choices. Several participants felt life choices were an important aspect of the programme and tried to emphasise that young people did have a choice not to get involved in violence:

> "*As an A&E nurse and a primary teacher I am only too aware of the effects of gangs and knife crime and indeed how the youth of*

> *today think and act. It is with this knowledge that I felt I may be able to help supply the children with the necessary knowledge to enable them to make informed choices*" (Participant 45, questionnaire).

Indeed, providing young people with information to allow them to make choices is regarded as an important aspect of effective communication with adolescents (Hanna et al., 1999, Lloyd et al., 2009) and as such may be an area that all participants should emphasise in the session. Moreover, Naidoo and Wills (2009), note that as simply telling individuals what to do is both ineffective and unethical, health educators should work to enable individuals to make informed choices about health risk behaviours.

7.2.1.5.3 Class sizes

The majority of participants had experienced a range of class sizes. Most commonly between twenty (one PSE class) and forty pupils (two PSE classes put together). Occasionally participants were asked to take whole year groups in sessions delivered in school sports halls. Issues relating to class size can be broadly grouped into the following points:

Difficulties engaging bigger classes. The majority of participants believed it was harder to engage larger classes (upwards of 30 pupils):

"*group was quite large and felt some kids were intimidated by the stronger characters and so didn't contribute as much as they would have liked to*" (Participant 19, questionnaire)

"*I have been on visits (by myself) where the number of children in the group has been as high as 60. This makes any meaningful discussion/ participation very difficult*" (Participant 22, questionnaire).

Participants identified large classes were particularly difficult at the group work stage, and subsequently a minority of participants even omitted group exercises:

"*I feel sometimes cause you're kinda going spending a few minutes with it then trying to go back and the kids will obviously get distracted between things eh and sometimes if it's a bigger class I'll just address it from the front*" (Participant B, interview)

Participant B acknowledged that this approach results in the session being a "kind of lecture", which was an aspect other participants avoided to improve engagement with the pupils (see section 7.2.1.5.1). However, it should be noted that Participant F, who was particularly confident at delivering the sessions did not mind large group discussions and was therefore happy to take very large groups of pupils and deliver sessions in the sports hall. However, as the majority of participants thought that engagement was difficult in large classes, it is questionable whether sessions with large groups are as effective.

Feel too small classes don't generate discussion. Several participants had taken very small groups (5 pupils) and felt that pupils did not want to speak out and contribute so it was not possible to generate any substantial discussion:

> "*I think you need a reasonable number to keep it interesting and you need a good mixture if you've very small classes it becomes very difficult you need a bit of you know a bit of banter between the children as well*" (Participant F, interview).

This inability to generate discussion with small groups of pupils may reflect a lack of teaching skills by participants and an aspect that should be incorporated in the volunteer training.

Believe 20 pupils are ideal for sessions. The majority of participants felt groups of 20 pupils were ideal as it was possible to split pupils into four small groups and the discussion was maintained. This equates to one personal and social education class, which was how the programme was designed.

7.2.1.5.4 Logistics

Participants identified logistical issues that influenced programme delivery, which could be broadly divided into the following five categories.

Lack of preparation by schools. Participants frequently commented that often the biggest problem was lack of preparation by the schools:

"*I don't think that end comes from the comes from medics against violence it's probably the individual schools cause some schools are excellent and they're ready before you and others you turn up and they look blankly at you and say who are you and why are you here so they the downside of it is the organisational element of it from the schools point of view*" (Participant D, interview).

Participants reported that time was often wasted at the start of the session in terms of not having identified a classroom, not setting up AV equipment, not having enough seats and not being met by the class teacher.

Difficulties covering all material. A minority of participants had difficulties covering all the material provided in one session and sometimes ran out of time, particularly if schools were not organised and the start of the session was delayed. However, one participant reported he sometimes did not have enough material to fill the session as the school pupils would not contribute to the discussion:

"*often you've got a fifty minute lecture you've got a twenty minute video a five minute introduction that still leaves you with 25 minutes to kinda almost do a one man stand-up routine*" (Participant B, interview).

However, it should be noted that this participant often omitted the group work when he felt the class size was too big and instead conducted the discussion from

the front of the class. This approach may have resulted in decreased engagement from the pupils and they may also have felt less comfortable speaking out in front of a large class.

Volunteer numbers. The majority of volunteers preferred to do the session with at least one other volunteer as it made the group work component easier to facilitate and added a different perspective if they came from a different speciality:

> "*it is better if the two people are there because it everybody comes from a different background and the perspective adds to it and it's just easier with the group discussions if you've got more than one person doing it*" (Participant D, interview).

Conversely, one participant preferred delivering sessions individually as found it easier just to take control:

> "*I often find it easier if I'm doing it myself otherwise because it's a bit like well this is me and this is them*" (Participant H, interview).

However, this participant did acknowledge that delivering a session with a medic from a completely different speciality was beneficial as they have different perspectives. In particular, it may be of benefit to pair mental health and physical health practitioners together.

Session as part of a multi-agency day. Four participants had also delivered sessions as part of multi-agency days, whereby the pupils received different sessions from external speakers on other issues related to health and well-being. The majority of these sessions had been successful; however, one participant commented that as it was delivered to an entire year group the group work component was not feasible.

7.2.1.5.5 Perceptions on content

Participants generally felt the content of the film and group discussions was informative and interesting for pupils. The following items were identified as being relevant to the evaluation of the appropriateness and effectiveness of content.

Age appropriateness. Participants felt they were targeting pupils of the correct age (S2) as and were reaching them before they began to become involved in violence:

> *"second year senior school is a better age because they tend to be a bit more receptive to listening to what you've got to say"*
> (Participant D, interview).

Data from the US indicates serious violence typically begins from twelve years (Office of the Surgeon General (US), 2001), which may indicate that S2 is an appropriate time for perpetration prevention. It should be noted that no participants commented on delivering sessions to S5 pupils. A minority of participants felt programme should be delivered according to life experience rather than age:

> "*talking to 12 13 year olds in a well-to-do-area you just don't get a response they all just absolutely shocked by it and you don't get that whereas if you maybe waited till they were you know 15 or something you might get a bit you might get a bit more of a discussion from them*" (Participant F, interview)

These participants felt that pupils from more affluent areas should receive the programme from about 15 years as they believed thus is the age when young people start to consume alcohol regularly and are subsequently at increased risk of victimisation. Indeed, Currie et al. (2012) report that 29% of 15- year-old boys and 25% of 15-year-old girls living in Scotland, consume alcohol at least once a week.

Adaptability of content. While a minority of participants thought the programme in its current format was less relevant to those in more affluent schools, others felt they could adapt the programme to focus on victimisation prevention:

> "*these children are a lot more naïve and so you're talking a lot more about what behaviour is sensible* [...] *the dvd presentation we use is quite good because it's quite clear that the different contributors are from different socioeconomic groups and mark scott's mum he was from a very privileged background [...]so you do need the kind of emphasis does change a wee bit but I think it's relevant to all of them really*" (Participant H, interview).

Again we see the shift in focus to victimisation prevention rather than perpetration in the more affluent schools. These participants felt able to utilise the programme to communicate the risks of violence to the pupils and then focus on strategies for staying safe when pupils are socialising in the evening.

Feel content is able to shock pupils. Several participants believed that although many of the pupils had been exposed to violence, they were still genuinely shocked by the video:

> "*they do find they do find the violence a bit shocking some of them laugh but I think that's because they're uncomfortable a lot of them are upset by the stories they're being told particularly by Mark Scott's mother she speaks very well also the boy who's in the wheelchair you do get a reaction so I think the material is appropriate I think it's fine*" (Participant H, interview).

Despite the perceived appropriateness of the "shock-tactic" approach, the efficacy of public health interventions that aim to shock people into not engaging in health-risk behaviours is unclear. For instance, a meta-analysis of organised prison visits for young people at risk of delinquency concluded that such programmes, which depict exaggerated scenes of murder and rape, are actually less effective than no intervention (Petrosino et al., 2003). Conversely, other *fear appeal* programmes have demonstrated success and in order to explain this disparity Witte developed the extended parallel process model (Witte, 1992). This model suggests that in

order for these programmes to be successful individuals' first need to realise that they are susceptible to the risk and have high perceived efficacy they can avoid it. Witte (1997) conducted further qualitative research with adolescents to develop a programme to deter against teenage pregnancy and HIV-infection and reported that the adolescents wanted to be informed of the negative consequences using a realistic approach and also methods for avoiding such consequences. This is consistent with the film, which was designed to demonstrate the consequences but without frightening the pupils.

Relevance of film. Participants generally believed the film was an excellent resource and pupils engage due to the use of real footage:

> "*the dvd that is shown is very good and very hard hitting and I think it definitely gets the message through very well because kids who are laughing and joking at the beginning of it by five minutes into it are nearly always quiet and paying attention to it and I think the fact that they can see situations and people they can relate to*" (Participant D, interview).

Participant H felt the inclusion of individuals with different socio-economic backgrounds was beneficial as it increased the relevance of the film for pupils in the more affluent schools. Conversely, another participant noted:

"I received feedback to say dvd was too middle class - maybe it is"

(Participant 4, questionnaire)

Several participants also thought the film need updated as the offender in the film is now back in prison, a fact some pupils are aware of. Furthermore, participants were concerned that as the Mark Scott murder was a long time ago, it could cause the film to feel a bit dated. As a result MAV are now developing a new film, which will be informed by the results of the evaluation.

7.2.1.5.6 Role of teachers and campus cops

As discussed, the majority of participants preferred to deliver the session with another medic. However, as it can be difficult to recruit two or more medics per session, it is important to consider the role of the teachers and campus cops as they are already present in the school and can attend the session with more ease. All participants had considerable experience working with teachers when delivering the programme and a smaller number had also worked with campus cops during sessions. The following items identified how teachers and campus cops contribute to the session and what, ideally, their role should be.

Teachers as disciplinarians. Participants appreciated that teachers maintained discipline during the session as many volunteers did not have much experience of disciplining young people and often did not want to take on that role:

> *"the more regular class teacher will usually stay with the class and that is definitely of benefit to someone like myself who is maybe used to dealing with children on a one to one basis but the kinda crowd control aspect of teaching is something I'm not too familiar with so that's definitely helps*" (Participant G, interview).

However, one participant felt the teachers were sometimes too strict for the purpose of the session:

> "*I try to tell the teachers if language gets a bit rough just ignore for this one session I'm not gonna be upset by it but it's happened to me on a few occasions that you're actually getting to a few nitty gritty points with them and then you know they swear or something or other and they get ejected so it kinda deflates the whole thing*" (Participant F. interview).

This participant considered that the use of bad language enabled him to relate to the pupils and talk to them on their level. This approach is consistent with strategies identified by Hanna (1999) as being useful for communicating with adolescents.

Engaged teacher helpful for group work. Many participants felt having an enthusiastic teacher was particularly helpful for group work as they were able to

facilitate discussions and contribute local knowledge. However, there did appear to be a lack of clearly defined roles as some participants reported that teacher involvement was variable:

> "*some of the teachers sit at the back and don't say a word and you're left going oh and actually some of them really get involved and really give you personal stories* [...] *I think that's actually quite an interesting part of it and quite a good part of it as well cause I think a lot of the students maybe look to their teacher for kind of understanding and leadership*" (Participant C, interview).

Conversely, one participant felt the teachers role should restricted to maintaining discipline:

> " *It's helpful if there is* [...] *someone else to facilitate the group that's not their own teacher you know I mean their own teachers are there to maintain discipline and order and attention and they're very good at that*" (Participant E, interview).

This lack of clearly defined roles highlights a need for MAV to provide teachers with direction regarding their role.

Teachers need more information. Several participants identified that providing teachers with more information on youth violence prior to the session may enhance their participation:

> "*have the teacher kinda pre-empted on what we're going to do and we'd like you to break them up we'd like you to ask them questions and y'know here's some of the answers and here's some facts for you to contribute"* (Participant C, interview).

Providing teachers with more information is a role that can be taken on by MAV and could also enable them to re-enforce the messages after the session in subsequent PSE classes. MAV have developed resources for teachers to use with classes after the session, however, as these are not used by all teachers further research is needed to establish why.

Campus cops help facilitate the session. The participants that had worked with campus cops reported that they were helpful in maintaining group work and provided an alternative perspective in the group discussions. The inclusion of campus cops would provide a multi-disciplinary approach to the session and would be consistent with the public health approach to violence (Dahlberg and Krug, 2002).

7.2.1.6 Perceived engagement

How volunteers felt pupils engaged in the session is important to understanding the results of the outcome evaluation. Analysis identified items that described how the pupils contributed towards the session and how they responded to the information provided.

7.2.1.6.1 Pupil contributions

Lack of response from some pupils. Some participants sometimes found it difficult to get pupils to contribute to group discussions:

> "*part of the trouble again as well is trying to get 14 year olds to speak out in a class where they don't wanna be seen as either teachers pet or contributing too much or damming their self by discussing what kinda knife they actually use*" (Participant B, interview).

Participants reported this was particularly challenging within smaller classes and were unsure of how to deal with the situation.

Pupils with more experience of violence able to contribute more to discussions. Many participants believed pupils from the most deprived areas often had more personal experience of violence and this enabled them to contribute more to the session:

> "*if you go to a school where you know part of the culture or their*

families know people that've been involved in knife crime or were affected by knife crime it's actually quite interesting because you can have a bit of debate" (Participant F, interview).

Similarly, participants reported that pupils from most affluent areas contributed less:

"*sometimes in the more affluent 2nd years have no exposure and feedback can be difficult*" (Participant 21, questionnaire).

However, as discussed (see section 7.2.1.5.5) some participants felt they were able to utilise the material in a manner that engaged pupils with less experience of violence by focusing more on victimisation prevention. This is therefore an aspect that could be covered in the training for MAV volunteers.

7.2.1.6.2 Pupil responses

Good engagement with DVD. The majority of participants thought that generally most pupils appeared to be paying attention to the DVD and any poor behaviour tended to stop as soon as the DVD started:

"*even with these classes where you know they are quite disruptive kids you still find that when you deliver the dvd you usually get almost complete silence yeah you think they are they're at least watching it"* (Participant L, interview).

> “*the presentations are still very powerful the children are almost universally wherever I’ve shown it the children watch it they don’t talk and they watch the dvd and what I do is I don’t watch the dvd I watch their reactions to what they’re watching*” (Participant H, interview).

Variable engagement in discussions. Participants felt that while generally engagement in the group discussions was good, some pupils did seem to switch off after the DVD:

> *“I think it’s easy for a few kids to eh sort of switch off and not really want to engage in the discussion bit of it they seem to like watching the dvd but some of them I think kinda shrug their shoulders a bit about some of the discussions”* (Participant J, interview).

Indeed, some participants acknowledged that the pupils who disengaged were probably the pupils most “at-risk”:

> “*I probably wasn't getting through to the few I really need to”* (Participant 33, questionnaire).

This lack of engagement by the pupils potentially most at-risk led a minority of participants to question whether the programme could be successful for the pupils

that don't want to engage:

> *"wonder really quite how successful it can be for those who don't wish to engage you're not going to reach those people are you really"* (Participant C, interview).

These perceived difficulties of engagement highlight the difficulties a top-down intervention, such as MAV, has in trying to reach those most at-risk.

Difficulties with pupils' behaviour. Interestingly, the interview participants did not describe any difficulties in dealing with bad behaviour from pupils, however; ten questionnaire participants reported dealing with bad behaviour on at least one occasion. This experience may have contributed to interview participants' willingness to volunteer for more sessions. Alternatively, those that deliver more sessions may enhance their ability to manage pupils' behaviour or develop skills at engaging pupils.

7.2.1.7 Perceived effectiveness of MAV

Participants felt it was not possible to quantify the success of MAV in reducing pro-violent attitudes and preventing violence solely on the basis of their experiences delivering sessions:

> "*I wouldn't vouch an opinion on it until I'd seen some evidence I think it's one of those things we have to be quite firm about*

> *because there is so much effort so much energy going into it and that's good but we have to measure it to make sure it's effective*" (Participant A, interview).

While participants consistently thought more evaluation was necessary to gauge whether MAV was effective, they did discuss what they would consider to count as success, the difficulties measuring effectiveness of MAV and their desire for feedback.

7.2.1.7.1 Perceptions of success

Consideration of behaviour change by pupils. Many participants viewed making the pupils stop and think about their behaviour (either safety or potential perpetration) as a positive outcome:

> *"you want to give something to them that makes people think really and whether they can obviously change their behaviour would be the positive outcome but even just to think*" (Participant C, interview).

Similarly, participants believed if pupils were receptive to the messages conveyed, this indicated success:

> "*Feeling like you may get the message across to even a few individuals*" (Participant 37, questionnaire).

The data suggests that the majority of healthcare professionals viewed sessions as successful if the pupils appeared to be taking in and thinking about the information presented.

Pupils displaying anti-violence attitudes. Less commonly, participants identified that following the session the pupils demonstrated appropriate anti-violence attitudes as illustrated by this quote:

> *"the sort of class hard men they come in and they're you know kicking people and pulling hair and all the rest of it but by the time the video's finished they're slightly more sobered their attitude has changed*" (Participant K, interview).

It should be noted that while the participants were able to identify an immediate positive effect, they do not have contact with the pupils following the session and as such cannot know if this effect is sustained in the long-term. This perception of success may therefore indicate a biased interpretation of results.

Positive response from teachers. A minority of participants described having positive feedback from teachers; however, they did not necessarily believe this constituted success:

> "*I get the kinda headteacher and the teachers saying oh yes yes you know they very much enjoyed that session but I'd want to*

> *think you know that we are making a difference and a little bit of interest to them*" (Participant C, interview).

While the participants identified that the teachers felt the pupils enjoyed the programme, they would prefer to have feedback directly from the pupils to better understand whether the programme is of interest to them. If pupils' feedback was positive, this information could be utilised to enhance volunteer recruitment and sustain volunteer participation

Impact in the short-term. Less frequently, participants expressed concerns that while session made a short-term impact, it may not be sustained particularly in the context of alcohol consumption at the weekend:

> "*it's difficult to know what happens in the long term I mean certainly the impression I get from the sessions is that it's made a difference* […] *the problem is getting the message across to someone when sober is different from getting some from getting the message to someone who's drunk on a Friday and a Saturday night*"(Participant D, interview).

Participant D acknowledged that while pupils seem to be receptive to the programme during the session, it is difficult to ascertain whether such changes are sustained. Indeed, the systematic review in chapter three identified a lack of follow-up as being an issue in the evaluation of school-based violence prevention

programmes and as such it is currently difficult to establish whether such programmes are effective in reducing violence in the long-term. Furthermore, Participant D's comments reflect difficulties in measuring behaviour and attitudinal change as this could be context specific. For instance, pro-violent attitudes may be reduced in the school setting but not in the context of going out drinking.

Positive response from pupils. Participants consistently reported that pupils generally seemed to interact with the sessions, found them interesting and appeared to be giving appropriate answers:

> "*almost without exception all the kids will you know answer the questions and will input with the asking questions and seem to be asking them the right questions in a lot of cases having the right answers for example if you're saying should you carry a knife then you're getting the right answers*" (Participant L, interview).

Participants particularly enjoyed these interactions with pupils as it enabled them to hear the views of young people and learn about their experiences with youth violence. However, one participant noted that at times he felt that pupils were not responding positively:

> "*it can feel a bit fruitless if you go in thinking there's bunch of kids who're talking and chewing at the back and wanted out and you think well that was rubbish*" (Participant B, interview).   `

Participant B thought that a poor response from pupils may lead some MAV volunteers to believe the programme is ineffective, which may subsequently result in decreased participation from these volunteers.

Discussion of programme by pupils. One participant identified that she was aware that pupils were talking about the session with their peers and viewed that as a positive outcome:

> "*well actually they will mention about 'oh somebody in another class said this' and so they're obviously talking to each other about it and that's not a bad thing*" (Participant K, interview).

Moreover, one participant thought MAV could potentially exert wider effects by pupils speaking to their siblings:

> "*if one of these kids goes back home and says to their older brother 'look John you know I was hearing today I know you've been in out with that gang and blah blah blah do you know what this could happen to you and all the rest of it' that's all unmeasurable influence*" (Participant J, interview).

However, whilst the pupils may show an increase in knowledge and change in perceptions, it should be cautioned that does not always result in behaviour change (Naidoo and Wills, 2009). Nevertheless, as MAV is an educational intervention, increases in participants' knowledge and consideration of behaviour change, can be considered indicators of programme success.

Preventing one violent incident counts as success. A minority of participants felt that if the programme could prevent one violent incident that would be enough to justify the programme:

> "*I think if we can stop one person getting killed or one person having their life altered out of all recognition because they serve a lengthy jail sentence that is worthwhile*" (Participant H, interview).

These participants believed that if MAV was able to prevent one young life being wasted, this would constitute success. However, the participants did not consider whether or not this would be cost-effective. This may reflect the fact that they volunteer their time and as such do not consider the financing of MAV.

7.2.1.7.2 Difficulties measuring success

Difficulties evaluating prevention interventions. Several participants identified difficulties in evaluating the effectiveness of MAV as the violent events that do not happen are immeasurable:

> "*we only know about the events that are actualised in other words violence that happens we don't know about violence that doesn't happen* […]*so medics against violence will have the same problem in evidencing its effectiveness*" (Participant E, interview).

Participant E likened this problem to the difficulty in evaluating suicide prevention programmes, in her role as a psychiatrist. As MAV (and many other violence prevention programmes) are educational interventions, it is appropriate to use educational objectives such as attitudes, levels of knowledge, or acquisition of new skills and behaviours (Naidoo and Wills, 2009). However, as these do not necessarily predict behaviour (Naidoo and Wills) they cannot determine whether such interventions have been effective in reducing rates of violence. Interestingly, participants tended to focus on quantifiable outcomes rather than qualitative data, which may be reflective of a more positivist approach to research. Nonetheless, qualitative research may provide more insight as to why an intervention succeeds or fails.

Difficult to assess long-term impact. Participants felt although the programme gets the message across at the time, it would be difficult to assess if the programme had any long-term effects. In particular, they believed the pupils most likely to be involved in violence would be more likely to have disengaged from school, an issue that has been demonstrated in the literature (Ellickson et al., 1997). Conversely, one participant thought the effects of the programme would not be immediate:

"we're in more immediate positions you give a drug and something happens straight away whereas you do this and you think well I can't see the reaction" (Participant B, interview).

This participant compares delivering the sessions to his current role as an anaesthetist, in which patients may improve immediately. Conversely, he believed the effects of MAV would be more apparent in the future and therefore did not provide a sense of success.

7.2.1.7.3 Feedback

Many participants were not aware of the evaluation of MAV, however, did feel an evaluation was needed to determine the effectiveness of the programme. Participants also consistently expressed a desire for a more formalised feedback process, in terms of personally receiving feedback from schools and being able to feedback their experiences and suggestions to MAV. The following themes were identified as relating to feedback.

Feedback to improve own performance. A minority of participants thought they would benefit from personalised feedback either from the schools (i.e. what worked well) or using peer-appraisal:

"if it was just done on a kinda more peer to peer basis with the other person at the session kinda of going through it you could possibly do it in a slightly non-threatening manner but still give

> *you a little bit of a sense it was worthwhile the kids got something out of it as well as you actually getting something out of it too*" (Participant G, interview).

In addition to improving session delivery and gaining a sense of the usefulness of the session, the wish for feedback may reflect a desire to feel appreciated.

Desire to see feedback for impact of MAV. Participants consistently expressed a desire to know if the sessions had any impact on pupils as this could help justify their involvement in MAV:

> "*I think you feel better about giving up your time and [...] you know that it was of value and you know the schools were grateful"* (Participant C, interview).

Use of social media to feedback to MAV members. One participant suggested using social media as a resource for volunteers to provide feedback on their school visit and provide information on issues such as parking.

7.2.1.8 Concerns and difficulties

A number of participants described some negative personal feelings and issues they felt needed further consideration.

7.2.1.8.1 Personal feelings

Feelings of isolation. A minority of participants described feeling isolated as a result of delivering sessions individually and a lack of group meetings, which results in volunteers being unable to discuss their sessions:

> "*if only there was more of a social event to kinda have somebody else to discuss things with it would make it a bit easier to have somebody else there*" (Participant C).

The experiences of these participants' contrasts with the social aspect that other participants identified a motivating factor taking part in MAV (see section 7.2.1.2.2). As lack of social contact may result in decreased participation, this may highlight the need for two participants per school visit or alternatively a forum for volunteers to discuss their experiences.

7.2.1.8.2 Issues for consideration

Need for a committee or regular meetings. A minority of participants believed a lack of a committee or regular group meetings resulted in difficulties implementing change or developing new resources. Less commonly, participants also expressed a desire for meetings to provide a social context for MAV to help combat feelings of isolation (see section 7.2.1.8.1.).

Query whether MAV is reaching schools most at risk. Participants described sometimes having less response from pupils in more affluent schools. Moreover, a

minority of participants considered they were not always targeting the most appropriate schools as the pupils were not at risk of perpetration of violence:

> "*sometimes I do wonder if we're preaching to the converted and not managing to get to the people that we really should*" (Participant D, interview).

> "*one of the criticisms I guess I would make is that in my experience it's very often the middle class schools that are invited and I think we need to work harder at getting right to the heart of where violence is*" (Participant I, interview).

Moreover, as one participant describes, the young people in the deprived areas may also be at greater risk of victimisation:

> *"in some of the poorer parts of Glasgow it's really difficult for them I think to avoid it and then subsequently avoid physical assault and you know a bottle being thrown at them or whatever it happens to be*" (Participant J, interview).

As volunteers are limited in the number of visits they do, it may be the case that delivering sessions in the most affluent schools instead of schools in the most deprived areas, is not the most effective approach. However, prioritising schools

according to level of deprivation would shift the focus of MAV from universal to selective prevention.

Presenter fatigue. A small number of participants expressed feelings of boredom when delivering multiple sessions:

> "*that sounds silly it actually is probably one of the reasons that does put me off maybe doing say one after the other cause you just think pff that dvd again"* (Participant C, interview).

Similarly, another participant felt the repetitive nature of the programme could result in volunteers not delivering the programme to the best of their abilities:

> *I think if you do it too often it gets into a bit of a rut and mm I don't think you I don't think you deliver it quite as well to the children* (Participant A, interview).

As one of the potential benefits of MAV is the consistency of the programme, having variations of the programme to reduce presenter fatigue is not necessarily a viable option. Moreover, having different presenters deliver back-to-back sessions is a waste of resources. However, increasing volunteer numbers to ensure the same volunteers are not doing all the visits may help with this issue.

7.2.1.2.9 Improving MAV

All participants discussed methods for improving MAV which reflect four different themes.

7.2.1.9.1 Logistical improvements

Providing schools clearer instructions. Participants consistently thought schools were not prepared for their visit and schools should be provided with more information on what to expect, particularly in terms of number of pupils per session and identifying appropriate classrooms prior to the session. Very occasionally there was a miscommunication, which resulted in participants arriving at the school at the wrong time and subsequently meant the session had to be postponed or cancelled.

Ensuring AV equipment is set-up in advance. A commonly expressed view was that time was often wasted setting-up the DVD at the start of the session:

> "*there's been times when it's taken half the session finding a dvd player and plugging it and getting the sound to work*"
> (Participant D, interview).

As such, participants felt that clear direction from MAV was needed and schools should be told to set this up in advance.

Pairing new volunteers with an experienced presenter. The majority of volunteers preferred to deliver sessions with two volunteers and although this was not always

possible, participants believed all new volunteers should always attend sessions with experienced presenters until they felt comfortable:

> *"ensuring that we always send newbies out with a few other people and to and give them a couple of sessions to get the hang of things before sending them in on their own"* (Participant A, interview).

Attending a session with an experienced presenter enables the volunteers to first observe sessions to gain an understanding of timing, the structure of the session and at what level to pitch the material. Being accompanied by a colleague may also help reduce initial anxiety in delivering the session.

7.2.1.9.2 Content and resources development

Providing an evidence-based resource. One participant thought a resource detailing the current evidence on violence prevention would enable participants to develop more points for discussion and feel more confident in their knowledge:

> "*it would make people if you came in armed with a load of facts if you just read up on something you're probably gonna be much more able to raise discussion points if you're informed about things*" (Participant B, interview).

Increase use of social media. One participant felt that MAV should have an increased

presence on social media sites such as facebook and twitter as this would be the most appropriate means to engage young people following the session.

Developing videos to match life-experience of pupils. As schools represented a wide range of socio-economic deprivation, one participant noted it would be useful to develop different videos to match life-experience of pupils (i.e. have a video that focuses on staying safe and one that focuses more on perpetration prevention). However, this approach would change MAV to a targeted intervention instead of universal and would result in difficulties in determining which schools were at greater risk of perpetration and which were at greater risk of perpetration.

Re-naming programme Choices. Less commonly, participants discussed young peoples' life choices during the session and as such one participant believed it should be re-named from MAV to Choices:

> "*the main strength of the programme is making young people appreciate that they have choices and I would actually re-name the programme choices because I think that for me is the major feature of it*" (Participant I, interview).

As detailed previously, providing young people with information and allowing them to make their own choices is an important aspect of effective health communication with adolescents (Lloyd et al., 2009, Hanna et al., 1999).

7.2.1.9.3 Increasing member satisfaction

Opportunities to discuss experiences with other members. A minority of participants expressed a desire opportunity to either meet with other volunteers or use social media to discuss their experiences and provide a social aspect to MAV.

Opportunity to be involved in the development and running of MAV. Less commonly, participants expressed a desire to have a role in the running of MAV and be part of a committee or help develop resources:

> "*I think a lot of people who get involved in it are quite strongly motivated by it and would like to see changes and improvements and things and at the moment the infrastructure isn't there and it's been running for four or five years now*" (Participant B, interview).

Providing feedback to members. Participants consistently expressed a desire for feedback on whether MAV was effective and as such would be more encouraged to do sessions if they felt MAV was having an impact (see section 7.2.1.7.3). This therefore highlights the need for an on-going evaluation.

Rewarding participation. Participants commonly felt that rewards in the form of certificates or continued professional development credits would help participants justify using their time for MAV and apply for discretionary points:

"*it may encourage people to do it because people are generally doing it on our what's it called our SPA which I don't know if you know what that is but basically a professional activity time so if that if we if we did get CPD credits it could sort of prove what we've been doing in that time*" (Participant D, interview).

Indeed, Clary et al. (1998) note that rewarding participation does increase motivation for future participation in volunteering. However, a minority of participants identified that while it may be possible to receive CPD for attending the training or delivering one session, it may not be possible to receive CPD for delivering the same programme on multiple occasions:

"*I think that might be quite difficult to achieve to be honest because you can really only justify CPD credits for doing something once* [...] *I give a number of lectures to our new doctors every 4 months but I can't claim CPD all the time for it I can only claim it once in like five years*" (Participant J, interview).

As it may not be possible to award CPD credits for every session delivered, it may be more feasible to provide members with a certificate for each session. These could then be used in appraisals to illustrate the time spent volunteering with MAV.

7.2.1.9.4 Future developments

The analysis identified a number of themes pertaining to the future development of MAV.

Using MAV as a template. Several participants thought the programme could be used as a template for healthcare professionals from different specialities to develop programmes for other health-risk behaviours:

> "*I think it would be very useful to create the template how it's been organised how it's run what the training is to let other organisations start from scratch as well if people wanted to target alcohol or drugs or teenage pregnancy*" (Participant B, interview).

Similarly, Participant 24 suggested developing a "Medics Against Binge Drinking" programme. As alcohol consumption is strongly associated with youth violence (Krug et al., 2002, Sethi et al., 2010) this could also be utilised in the context of violence prevention. Alternatively, alcohol could be given increased consideration in the MAV programme as its association with violence was a theme identified by pupils and volunteers.

Increasing number of school visits. A minority of participants thought that MAV should attempt to recruit more schools for visits:

> "*I think the main thing is you could deliver the programme to more schools because I'm not quite sure but I think at the moment we're struggling to meet demand*" (Participant H, interview).

A small number of participants felt that MAV was currently not reaching the schools most in need of the programme (see section 7.2.1.2.8). If MAV were therefore able to increase the number of volunteers and thus the number of school visits, it should ensure it attempts to recruit schools from all areas.

Inviting victims of violence to attend sessions. Two participants considered that asking a victim of violence to share their experiences at a session delivered to half a year group would be beneficial. This would fundamentally change the delivery model of MAV, however would be consistent with the pupils "request" for this.
Modify a programme for younger years. Several participants queried whether they were targeting the exact age group and felt there was a need for a programme for younger pupils. MAV are now currently developing a programme for primary schools entitled Brave, Confident, Strong Individuals (bCSI) and one participant expressed her to desire to be involved in this:

> "*I am looking forward to the delivering the primary programme when it is ready as I feel the earlier we can reach children the better the chance of encouraging them to make the right decisions in life*" (Participant 45, questionnaire).

Increasing teacher involvement in programme delivery. One participant suggested that in order to accommodate more school visits, healthcare professionals could deliver a hard-hitting session to half a year group and then the teachers could facilitate the group-work component with their individual classes:

> *"it's very labour intensive if we're gonna cover the whole of scotland then it's just not going to work the way we're doing it at the moment so I guess that would be my suggestion that we do much more liaison work and training work with the guidance staff [...]where the medics come and speak at a high level to the school with very high impacting slides or discussion that will really grab their attention [...]then the guidance staff take that away and we work on a new kind of education material that they can use within the school*" (Participant I, interview).

However, this would result in a complete change in the delivery model of MAV. Moreover, school pupils consistently identified the opportunity to speak to healthcare professionals as being fundamental to the integrity of the programme and as such the removal of this element could be detrimental.

7.2.1.10 Preparation for school visits

Participants had variable experiences with training and how prepared they felt. Analysis identified the following items as relating to training experiences and confidence in session delivery.

7.2.1.10.1 Experiences of training

*Need for formal training***.** Just over a third of interview and questionnaire participants did not attend the training session prior to their visit. This may reflect some of the less formal teaching practices that can occur within medicine:

> "*in medicine we have the tradition of do one see one you know see one sort of see one do one teach one you know so we don't spend an awful lot of time learning"* (Participant E, interview).

However, this approach may not necessarily be effective as participants who did not attend the training felt less prepared and more anxious prior to their first sessions:

> "*I didn't have any training this is possibly why I was nervous*" (Participant K, interview).

Training was a useful experience. Interview participants who did attend training believed it was a useful experience as it was very well organised and talked through what would happen in a session. This was consistent with results from the questionnaire where 9 out of ten participants who attended the training responded that it was either "very useful" or "extremely useful".

Use of demonstrative examples in training. Several participants suggested it would be useful to film an experienced presenter delivering a session to help new

volunteers with timing and identify successful components.

7.2.2.10.2 Confidence in session delivery

Anxiety prior to sessions. Participants consistently described feeling anxious prior to delivering their first session:

> "*initially was absolutely terrified I'm not somebody who's naturally at home with children even though I've got three and obviously you're out of your role your kinda comfort zone of dealing with patients*" (Participant A, interview).

> "*I probably wouldn't feel that confident on the basis of the training alone if I didn't do any teaching at all or I didn't have any children and I just arrived in a classroom to deliver the first teaching session I think that can be quite tough really*" (Participant I, interview)

In particular, those that had not attended a training session and those that were not used to working with young people were the most anxious. Conversely, participants who had come from a more deprived background were more relaxed going into the schools:

> "*I probably feel quite comfortable amongst them and at ease amongst these kids*" (Participant E, interview).

Daunting doing visits on own. Participants who had to deliver their first session on their own felt particularly nervous before the first session and thought it was best to pair a new volunteer with an experienced presenter.

Confidence in delivery increases with experience. Participants believed that the more sessions they took part in, the more they were able to develop their own approach and felt more confident in their new role:

> "*once you've done it a lot you're pretty confident in the material you don't need notes you know pretty much what they're going to say because in fact the responses are you know there's a fairly well-defined range of responses*" (Participant H, interview).

7.2.1.11 Participation

The questionnaire indicated that the majority of sessions were delivered by a small number of participants; with 18.7% delivering 11 or more sessions (see Figure 7.1).

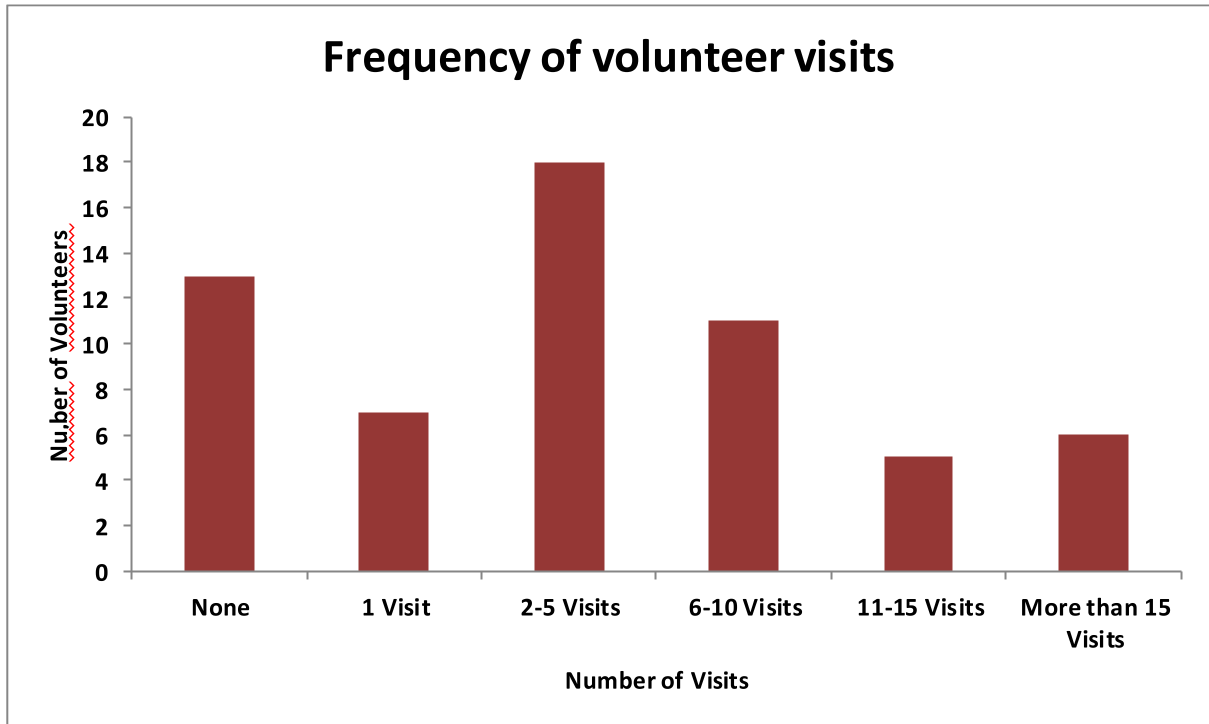

Figure 7.1 Graph demonstrating number of visits per volunteer

All participants who participated in the questionnaire and interviews were limited in their ability to take part in sessions due to clinical commitments. Indeed, several noted that they were doing fewer sessions than they had done previously. There were also rare occasions when participants had to cancel sessions at the last minute and this resulted in feelings of guilt. Analysis identified several reasons why clinical commitments and other factors impacted on participation and how MAV could attempt to improve participation.

7.2.1.11.1 Limitations of participation

Fewer non-clinical sessions. Participants consistently felt they now had fewer non-clinical sessions (i.e. a morning or afternoon when they are not on the ward, in

theatre or in clinics) in which they could do school visits. This was partly due to the strain on the NHS:

> *"I think we're all finding it harder and harder because of work commitments and [pause] when I started off I used to do you know a lot but now I'm sort of down to maybe one every three or four months and the last one I had to do I had to call off at the last minute cause I had to go and do some operating"*
> (Participant F, interview).

The reduced time available to healthcare professionals poses a considerable barrier to recruiting two volunteers as suggested by a number of participants (see section 7.2.1.9.1). This supports the supports the suggestion to increase the number of junior staff and other relevant healthcare professionals.

Difficulties co-ordinating sessions with clinical commitments. Participants also spoke about difficulties in fitting sessions into a working day. In particular, having sessions in the middle of the day could coincide with both morning and afternoon sessions. Such logistical issues need to be considered to increase the likelihood of volunteer availability.

Required to do sessions in non-work time. To a lesser extent, participants were prevented by their health boards from doing the sessions in their non-clinical time and could only take part on days off which could be off-putting:

"*I had to do them on my days off or do them before nightshift and things like that and that's just hard-going isn't it really when you've got the rest of life to organise*" (Participant C, interview).

Such unwillingness of health boards to allow staff to attend sessions indicates the need for an organisational shift in medicine from cure to prevention. Moreover, it is feasible that healthcare professionals working within health boards that do not allow MAV visits in non-clinical time will be less likely to deliver sessions. This subsequently may lead to decreased opportunities for school visits within these health boards.

Unable to travel to further afield for sessions. As the majority of participants were based in Glasgow hospitals, they found it difficult to travel out with Glasgow (i.e. to Ayrshire, Edinburgh) or even to the other side of Glasgow. This highlights a need to recruit volunteers from the other health boards and consider such issues when allocating school visits.

7.2.1.11.2 Improving participation

Providing advanced notice of sessions. Many participants were keen to have advanced notice of sessions, ideally at least six weeks, which would enable them to better commit to MAV:

"would be good to get a list of upcoming visits for a few months at a time so I could compare with rota and commit myself - if I sign in advance I will always keep to it, but when it's short notice

or you hear about one or two visits at a time I either already have plans or tend to think 'oh I've had a busy few weeks, I need my day off' or 'I'll wait and do the next one" (Participant 19, questionnaire).

Being able to do visits in local area. A minority of participants commented that they would be more likely to do visits nearer their place of work or home and would find information on distances between schools and hospitals useful as this enable them to easily identify more accessible visits. Moreover, by engaging more volunteers in the running of MAV (see section 7.2.1.9.3) volunteers may feel empowered to approach schools local to their home or workplace independently.
Obtain health board or governmental approval. A minority of participants suggested that MAV obtain permission and encouragement from relevant health boards or the government to use non-clinical time to take part in MAV:

"If you look at the aims of the health board this is just the sort of thing they should be promoting. They should be saying to all of the consultants that this is the sort of thing that they should be doing as part of their SPAs" (Participant 23, questionnaire).

Participants recommended that obtaining such support could be achieved by presentations by MAV relevant authorities. Alternatively, MAV could empower volunteers to take on this role and approach the relevant health boards themselves.

Arrange school visits to fit with training. Some participants felt new members lost the enthusiasm or became more nervous if they were unable to take part in a session shortly after the training session:

> "*the trouble is people have had the training and then they haven't had a chance to go out on a school visit immediately then the kinda enthusiasm for doing it can then wear off again you feel fired up and if you haven' done one for nine months and you go into somewhere by yourself it can be a bit of a daunting process*" (Participant B, interview).

Advertising MAV. Several participants felt MAV needed to increase their presence at educational conferences and in hospitals and even consider another recruitment drive to gain more volunteers.

7.2.1.12 Relationship between doctors and public health and violence prevention

In order to better understand what participants felt their role was in regard to public health and violence, their experiences of public health more generally and their perceptions on the role of doctors in violence prevention was analysed

7.2.1.12.1 Experience of public health out with MAV

Provide prevention advice during hospital admission. The two anaesthetists and the ENT surgeon regularly provided lifestyle advice on smoking, alcohol and weight loss to patients:

> "*I'm an anaesthetist so people when they go for operations you can you know use that to deliver advice about alcohol consumption smoking you know all that sort of thing*" (Participant H, interview).

However, no other participants were involved in the provision of broad preventative advice.

Previous involvement of public health interventions. Only two participants (the psychiatrist and the oral surgeon) had previously been involved in other public health interventions, which were relevant to their speciality. One general surgeon felt the opportunity to be involved in public health motivated her to participate:

> "*I think that's probably what attracted me to medics against violence as well really is y'know yeah never done anything like it before*" (Participant C, interview).

Role of doctors in public health. Participants had varying feelings about the role of doctors in public health. Interestingly, many participants felt promoting health was part of a doctors role:

"I *do see it as part of our role I suppose I have a tendency to think from you know a social determinants framework*" (Participant E, interview)

"*doctors do undoubtedly have a huge roll in in advising people to lead healthier lifestyles and most of that traditionally we thought of as drinking and smoking and eh exercise"* (Participant D, interview).

However, it should be noted that not all of the participants who believed clinical health professionals have a role in public health, actually engaged in public health activities. Conversely, a minority of participants felt that clinical healthcare professionals could not take on a public health role due to time constraints:

"*if somebody says you should take on the role of doing something as well you say well I've got quite enough to do at the moment an eight minute consultation about seeing somebody diagnose them explain what it is do a referral do a prescription and then you know lecture them on the dangers of violence and public health as well*" (Participant B, interview).

Interestingly, despite this comment, this participant did actually provide health promotion advice in his role as an anaesthetist. These varying attitudes and

inconsistencies between attitudes and behaviours indicate a lack of clarity amongst clinical healthcare professionals on the role of public health.

7.2.1.12.2 Role of doctors in violence prevention

Doctors could utilise alcohol reduction strategies. A minority of participants thought that doctors could also be involved in alcohol reduction strategies as a way of indirectly tackling violence. Indeed, one participant considered there was potential to develop a Medics Against Binge Drinking programme (see section 7.2.1.9.4).

Medics should be using their role to increase awareness of violence. A small number of participants suggested that medics should highlight the problem of violence to the general public and influence government through the media:

> "*I suppose there is uh a campaign group sort of side of it as well in terms of the media and the political side of it* [...] *I think they as a professional voice I think they do have a part to play in terms of the general debate around the subject"* (Participant G, interview).

One participant had previously tried to increase awareness of violence through articles in the local newspaper. This approach is consistent with the spectrum of prevention (detailed in section 2.3.2) which encourages providers to use their professional voice to educate not only clients but also influence policy (Cohen and Swift, 1999).

Role in information sharing. One participant felt that healthcare professionals should be working more with police and local authorities to share data on violent injuries. Such an approach is consistent with a successful information sharing partnership between the health service, police and local government, developed in Cardiff (Florence et al., 2011).

Need societal change beyond doctors' involvement. A minority of participants believed that healthcare professionals were limited in what they could do as a change in societal functioning is needed:

> "*It* [*violence*] *just seems so inevitable and I'm not sure whether without a change in maybe social and employment status there is anything else the doctors can do sorry that was bleak*"
> (Participant C, interview).

7.3 Discussion

Semi-structured interviews and online questionnaires were conducted to explore MAV volunteers' experiences with youth violence, motivation for participation, experiences delivering the session, how they felt MAV could be improved and perceptions of the role in healthcare professionals in violence prevention and public health more generally.

Participants all reported experiencing youth violence through their work. While the majority of participants generally treated young men with a range of violent

injuries such as facial scarring, abdominal wounds and even death, a small minority of participants treated patients with who had mental health problems secondary to violence. Regardless of speciality, participants consistently expressed concerns regarding the impact that violence had on victims' and perpetrators' lives in terms of stigmatism and reduced life opportunities. Participants generally expressed empathy towards victims (and at times offenders) as they believed violence often stemmed from deprivation, and an associated long-standing culture of violence and alcohol consumption. Such beliefs are consistent with the literature on youth violence (Leyland and Dundas, 2010, Bellis et al., 2008, Hsieh and Pugh, 1993) and are indicative of the wider social determinants of violence and health inequalities more generally (Marmot, 2005). However, a minority of participants expressed views that such injuries were self-inflicted and resented not being able to care for other patients.

As a result of their experiences with youth violence, participants were strongly motivated to volunteer with MAV in the hope that it would decrease the harm to young people. Moreover, participants reported that within a clinical setting their treatment was limited to dealing with violent injuries and not addressing the causes of youth violence, which they hoped could achieve through MAV. Interestingly, while many participants felt public health and health promotion should be a part of a clinical healthcare professionals' role, not all engaged in public health activities beyond MAV. A minority of participants felt that clinical healthcare professionals should not be obligated to carry out public health activities. The lack of consistency on attitudes towards the role of clinical

healthcare professionals can also be found in the participants' experiences with health boards, in so far as, some participants were permitted by their health board to use their non-clinical time for volunteering with MAV sessions, whereas others were not. This may reflect the current emphasis on cure rather than prevention within the health sector and indicates a lack of clarity of the role of clinically-based healthcare professionals within public health.

The majority of participants cited reasons pertaining to altruistic and humanitarian concern for others as the main motivating factors for volunteering with MAV, whereas a minority believed it enabled them to develop new knowledge and skills or feel better about themselves. Few participants volunteered for social or career benefits. This may be reflective of a lack of recognition of these components by MAV. First, only a minority of participants reported that MAV provided them with social opportunities. Moreover, a small number of participants expressed feelings of isolation when volunteering, which was a consequence of delivering sessions on their own and a lack of group meetings and group identity within MAV. Indeed, some participants believed MAV could be improved by implementing regular meetings and also developing a committee to guide the running and development of MAV. In terms of career, participants do not currently receive CPD credits for their involvement and as such volunteering with MAV, may have little or no impact on careers. However, participants consistently reported that being providing with CPD or even certificates would be of benefit and may increase motivation.

A small number of participants grew-up in deprived housing estates and therefore identified with many of the young people, which is considered a key motivation for volunteering (Hwang et al., 2005). Moreover, this group of participants felt most strongly that they had a duty to give something back to the community. Interestingly, participants from more deprived backgrounds appeared more comfortable delivering sessions and appeared to use more techniques that would enable them to relate to pupils, such as avoiding lecturing, utilising humour, and providing personal background information. Such techniques are recognised as being instrumental to effective communication with adolescents (Hanna et al., 1999, Lloyd et al., 2009).

Independent of personal background, participants reported that pupils generally engaged well with the programme, in particular the film, which participants reported had the capacity to shock the pupils. However, it was noted that the film may need updating in the future as Shaun (the perpetrator) is now back in prison. Engagement in group discussions was identified as being more variable, with a minority of participants feeling they were not able to engage with pupils most at-risk. Conversely, participants consistently felt that those from more affluent areas and had less exposure to violence consequently contributed less to the discussions. This led a minority of participants to question whether MAV was always reaching the schools and pupils most in need. However, as MAV is a universal prevention programme, targeting specific schools on the basis of socioeconomic deprivation would shift the focus to a selective intervention. A shift towards a more selective approach could lead to difficulties in determining which schools are most at-risk.

Moreover, if the programme was only delivered to the most "violent" schools, some schools may be concerned of the impact that on their reputation.

Some participants acknowledged the majority of pupils (particularly in the more affluent areas) were more at risk of victimisation and instead focused on victimisation prevention rather than perpetration prevention. While some participants felt the programme in its current format could be utilised for this, others thought it needed more work in this regard. Moreover, some participants believed pupils in the more affluent schools would benefit more from having the programme in S4 when they were starting to go out to bars at night. Again, this would raise difficulties in determining which schools were 'affluent enough' to receive the programme in S4.

In addition to pupils' experiences with violence, meaningful group discussion was also hindered by large or very small class sizes. This is consistent with the findings from the focus groups, whereby school pupils felt large class sizes were detrimental. While MAV is designed to be delivered to classes of approximately 20 pupils, participants reported having to contend with a range of class sizes from entire year groups to 5 or 6 pupils. Participants generally attributed this to a lack of organisation on the schools part and was consistent with other organisational problems encountered at schools such as time wasted setting up the film or locating a classroom. As such, participants consistently suggested that clearer communication between MAV and the schools was necessary to ensure schools were prepared for the visit so as the allocated time could be used most effectively.

This would enable more time for discussion between pupils and volunteers, an element of the programme that the pupils particularly valued. Such contact is important as it may subsequently help break down barriers between the young people and health professionals more generally.

In addition to improving communication between MAV and schools on logistical issues, several participants believed teachers needed further information to enhance their participation. While the majority of participants felt that teachers were effective at maintaining discipline and generally helped facilitate group discussions, others thought they needed more direction in terms of their role in the session (these participants reported that teachers had not been involved in the session) and more information on youth violence. Participants hoped that this would enable the teachers to re-enforce the messages after the session in subsequent PSE classes. Conversely, one participant noted that the teacher's presence hindered discussion and another believed they could be too strict for the purpose of the session, which again hindered discussion. Participants also valued the input of campus cops in terms of maintaining discipline and facilitating discussion. However, the majority of participants felt sessions were most successful when two volunteers were present. In addition, to helping facilitate discussion they were able to provide different perspectives on issues, and importantly provide support and guidance for new presenters who often felt anxious prior to sessions. Participants acknowledged the difficulties in recruiting two volunteers per session, mainly due to increasing clinical commitments, and as such suggested that as a minimum, new presenters should be accompanied by an

experienced presenter for at least the first few sessions. Participants thought such an approach would help supplement the training session, which was perceived as useful by the majority of participants who attended. However, it should be noted that just over a third of participants did not attend training, reflecting the culture of "on the job learning within medicine". Interestingly, those that did not attend training did report more anxiety prior to the session. While the majority of participants did feel the training and resources helped prepare them for sessions, several participants noted that demonstrative example (e.g. films of sessions) and more evidence on the epidemiology and prevention of violence would enhance the training.

In order to enhance their own performances, participants expressed a desire for feedback from schools. Moreover, participants acknowledged the need for an evaluation of MAV to determine its efficacy. However, the difficulties in measuring the long-term impact of an educational approach such as MAV were recognised. Despite this, participants believed the programme got a positive response and felt if it got pupils' to think about their behaviour, discuss the session or display anti-violence attitudes that would count as a success. It should be noted that the healthcare professionals' perceptions on success may represent favourable biases towards the programme, however, within the focus groups, the majority of school pupils appeared to have considered the session in terms of the consequences of violence. An increase in knowledge would be considered a positive outcome for an educational intervention (Naidoo and Wills, 2009) such as MAV.

Interestingly, although participants discussed whether or not they felt MAV was effective in reducing attitudes towards violence, they did not consider a theoretical basis of how MAV could potentially work. Despite this, participants did consistently report that young people had a lack of awareness of the consequences of violence and believed that if they were able to demonstrate the impact of violence, this would enable them to make better decisions. Indeed, a minority of participants specifically emphasised that pupils had a choice regarding involvement in violence and this notion of choices was discussed by a minority of focus groups. However, there is a lack of evidence to support the notion that increasing knowledge on the risks of a behaviour decreases involvement in the behaviour (Naidoo and Wills, 2009). Moreover, programmes that exaggerate the consequences of risk behaviour, such as the Scared Straight programme, have been shown to be detrimental (Petrosino et al., 2003). Nevertheless, Witte (1999) reported that adolescents felt that realistically demonstrating the negative consequences of teenage pregnancy would reduce engagement in unprotected sex. This highlights the importance of not sensationalising violence and instead providing a realistic portrayal of the risks of violence. The use of real footage, in particular interviews and discussion of healthcare professionals' experience of violence, is consistent with this approach.

Participants made a number of suggestions for developing MAV. However, it should be noted, that some of these improvements such as two volunteers per visit and increasing number of schools will be difficult to achieve without increasing the number of volunteers. Currently, the majority of visits are being delivered by a

minority of volunteers but due to increasing clinical commitments (secondary to pressures on the NHS) even the most dedicated participants are reducing the number of visits and have occasionally needed to cancel visits at the last minute.

Due to the strong association between deprivation and violence, participants generally felt there was little else they could do as healthcare professionals to prevent violence. However, a small number of participants thought they could use their professional voice to raise the issue of violence. Alternatively, a minority of participants felt they could be involved in alcohol reduction strategies, which may have the wider effect of reducing violence.

While this study provides insights as to healthcare professionals' understandings of youth violence and their experiences with MAV there are several limitations that need to be considered. First, the semi-structured interviews were conducted over the phone and as such non-verbal communication cannot be utilised as a further source of information (Opdenakker, 2006). Secondly, although all 136 healthcare professionals registered with MAV were invited to take part in the online questionnaire only 61 did so, therefore the data collected from the questionnaire may not be representative of all volunteers. Finally, as the data from this study (although anonymous) will be fed back to MAV, some participants may have been reluctant to be critical, particularly as some volunteers work closely with the MAV founders. Moreover, participants may be biased in their perceptions of MAV and as such may have overly favourable views in terms of its ability to engage with pupils and perceptions of success.

7.3.1 Summary of chapter

This chapter reported the qualitative findings from semi-structured interviews and open-ended questionnaires with healthcare professionals currently volunteering with MAV. Data was analysed thematically using the Framework method as detailed by Ritchie et al. (2003). The results demonstrated that these healthcare professionals regularly experienced youth violence through work and were strongly motivated to prevent it for both altruistic and personal reasons. Despite this strong desire, many participants were limited by clinical commitments in terms of the number of sessions they could deliver. Moreover, many participants believed there was little healthcare professionals could do beyond MAV to prevent violence. Indeed, involvement in public health initiatives more generally was variable and may reflect the lack of focus on prevention within the health sector.

While healthcare professionals felt pupils generally engaged and were positive about the session, they did acknowledge the need for objective measures to establish the effectiveness of the programme. Moreover, although participants appeared to believe that MAV was successful they did not have an understanding of a theory behind the programme, attributing success to the demonstration of consequences of violence. A number of themes regarding logistics and content were also identified and recommendations for development in this area will be detailed in chapter 8.

Chapter 8 Conclusion

8.1 Introduction

This thesis aimed to investigate whether a primary prevention approach is effective in tackling youth violence in secondary school pupils. Five research objectives were developed to address this and more specifically, establish whether a novel programme (MAV) is effective in the prevention of youth violence. This discussion will be split into three sections. First, each of the research objectives will be discussed. Secondly, the strengths and limitations of the study will be detailed, including a consideration of reflexivity within the study. Finally, implications for practice and future research will be described.

8.2 Discussion of research objectives

Each of the research objectives outlined in section 1.1.1.2 will be discussed in turn using the following format. First, a brief summary of the findings of each chapter will be provided and the results of this will then be compared and contrasted with other components of the study as consistent with a concurrent triangulation approach (Cresswell, 2006).

8.2.1 To identify and establish the applicability of definitions of violence from the range of disciplines who study violence.

A non-systematic search of encyclopaedias, handbooks, dictionaries, annual reviews, key texts and key journals from disciplines that consider violence was conducted and identified sixteen definitions from nine disciplines. While not an

exhaustive list, the number and range of definitions, even within specialities, highlights the lack of consensus as to what constitutes violence. While disciplines appeared united in the belief that violence should result in physical harm, the literature review identified differing opinions regarding the inclusion of psychological harm and maltreatment (as were included in the definitions offered by public health, criminology, and sociology), loss of human rights (as were included in the definitions offered by philosophy and political science) and humiliation (which was defined within anthropology as a feature of violence).

Although this study aimed to utilise the wide-arching public health definition of violence, what was used in practice may have actually been more consistent with definitions offered by criminal justice and psychology, which focus on physical violence. This emphasis on physical violence is reflected in the systematic review, the MAV programme itself and also in the healthcare professionals and pupils' perceptions of violence, a discussion of each now follows.

First, although the systematic review in chapter 3 did include one measure of non-physical violence, the other primary outcomes were focused on consequences of physical violence (i.e. assault, homicide, weapon possession, incarceration, aggression and attitudes towards violence) and indeed only two of the thirteen studies (all of which purported to take a public health approach) measured non-physical violence as an outcome.

Secondly, while MAV offer a primary prevention intervention and purport to take a public health approach to violence, the intervention focuses almost exclusively on changing attitudes towards violent injury and knife carrying. This resulted in the outcomes of the study having a focus on physical violence (i.e. the ATV scale measured attitudes towards physical violence and police data on violent offences), which is more consistent with a criminal justice definition of violence.

Finally, the qualitative data provides an understanding of what the MAV volunteers, and the young people themselves believe constitute violence. The healthcare professionals discussed violence in terms of treating either the direct physical consequences (i.e. the injury) or the enduring effects of physical violence which can be physical (i.e. facial scarring, hand damage) or psychological (i.e. post-traumatic stress disorder, bereavement). Their beliefs on what acts constitute youth violence were focused on physical violence, with no healthcare professionals discussing psychological violence, loss of human rights or maltreatment. Similarly, the school pupils focused almost exclusively on physical acts of violence. Indeed, some members of one focus group (group 2, school C) went as far as to argue that the use of weapons was needed to classify an act as violent. However, it should be noted that three groups did identify that girls were more frequently involved in 'slagging', which would be considered a form psychological violence.

Interestingly, although the public health definition of violence (Dahlberg and Krug, 2002) encompasses many acts beyond the physical, the actual practice of youth violence prevention, from the perspective of the systematic review, MAV and

indeed the healthcare professionals is focussed on physical violence. Indeed, the WHO (2013) statistics on violence are comprised of injury and death rates, and not psychological abuse. This may reflect the fact that violence was traditionally viewed as the "domain of the criminal justice system" (Rutherford et al., 2007, p.769) and has only relatively recently been considered within the field of public health. Nevertheless, those involved in the prevention of violence need to embrace this wider definition proposed by the WHO (1996) to ensure psychological violence and maltreatment, threatened or actual are not neglected.

8.2.2 To identify the magnitude of youth violence within Scotland and to understand why it occurs by examining theories of development of violence and how it can be prevented.

Scotland has one of the highest homicide rates in Western Europe (Eurostat, 2012) and the highest police-recorded total assault rate in the world (Heiskanen, 2010). In particular, areas of the West of Scotland have a long-standing problem with youth violence (Davies, 1998) and as such have the highest homicide rates in the country (Scottish Government, 2012). Within Scotland (and indeed at a global level), homicide disproportionately affects young males from the most socio-economically deprived areas (Leyland & Dundas, 2010). Youth violence in the West of Scotland tends to be associated with territorial based groups who engage in fighting to defend their housing scheme (Bannister et al., 2010, Kintrea et al., 2011). These issues around territoriality impact on the wider community by leaving other young people confined to their housing scheme and thus reducing their social mobility (Deuchar, 2009). To further explore youth violence within the

West of Scotland and to explore the context of MAV, the healthcare professionals delivering MAV and the school pupils receiving the programme were invited to discuss their experiences and perceptions on the causes of violence in terms of individual and environmental causes.

At an individual level the healthcare professionals felt violence was a result of bravado, a lack of awareness of the consequences of violence and the thrill of violence. Interestingly, the school pupils also identified "wanting to act tough" as a motivating factor for violence. This need for bravado was also documented by Deuchar (2009) in his qualitative study with young people in Glasgow. The concept of bravado could be viewed as an aspect of machismo, which is associated with strength and aggressiveness (Walker, 2005) and was identified as the biggest predictive factor of self-reported violence in a study of English secondary school males (Walker and Gudjonsson, 2006). Indeed, Bannister and Fraser (2008) note that young men may use physical conflict as a means of expressing their preconceptions of masculinity. Such preconceptions can result in 'toxic' masculinity which Kupers (2005) argues can result in violence, the need for control and negative attitudes towards women. Moreover, Deuchar (2013) notes that weapon-carrying in both Glasgow and Cincinnati is a representation of this 'toxic' masculinity.

Engaging in violence "for the thrill of it" was also identified by the school pupils who felt that some of their peers engaged in violence for the 'buzz'. Similarly, one MAV volunteer (who grew-up in a housing estate with gangs) acknowledged that

violence could be seen as very exciting for young people. Indeed, Deuchar (2009) also reported that some of the young people in his study experienced a 'buzz' and excitement when fighting. This quest for an adrenaline rush could be a consequence of low autonomic arousal, which is proposed to lead individuals to engage in stimulation seeking behaviour that may include antisocial or aggressive acts (Raine, 2002). However, longitudinal studies examining low autonomic arousal (in the form of low resting heart rate) have reported inconsistent results (see Scarpa et al., 2008, Verona and Sullivan, 2008, Posthumus et al., 2009).

Healthcare professionals and pupils both discussed familial influences on the development of violence. A minority of healthcare professionals specifically identified the 'cycle of violence', whereby young people are exposed to violence at an early age lead to victimisation of perpetration later in life (see WHO, 2007), as being instrumental to the high levels of violence in the West of Scotland. Moreover, pupils suggested that exposure to violence through families resulted in the perpetration of violence by younger family members.

At an environmental level, healthcare professionals' and school pupils' views of the causes of violence were consistent with the literature. First, participants believed that violence was partly a result of lack of opportunities within deprived communities. The school pupils also reported a lack of recreational activities for young people and felt the boredom associated contributed to underage drinking and violence. The association between deprivation and violence is well documented (Bellis et al., 2008, Dahlberg and Krug, 2002). Indeed, Agnew's (1999)

strain theory predicts that such community characteristics can increase violence by reducing the likelihood that residents will be able to achieve positively valued goals. This strain can lead to anger and potentially more violent situations.

Some healthcare professionals perceived violence as a normative behaviour within certain areas. More specifically, school pupils acknowledged the presence of peer pressure to engage in violence and the perception that violence is cool among some young people. Violence as a normative behaviour is constituent with subcultural theory, (Wolfgang and Ferracutti, 1967) and results in young people conforming to the social norms of a group in order to maintain a positive self-image (Vigil, 2003). Coupled with this is a culture supportive of violence, whereby cramped housing conditions and a lack of social control (Vigil, 2003) enables violence amongst young people to take place.

Both healthcare professionals and the school pupils identified territoriality as a being an important cause of violence, in particular, a desire to defend streets or housing schemes. This reflects the West of Scotland's long-standing history with territory-based groups, which are often involved in violence (see section 1.3.4; Banniseter et al., 2010, Deuchar, 2009, Kintrea et al., 2011). Such territoriality may be a result of bonding social capital, which can provide individuals, particularly those from disadvantaged areas with a form of social support (Kintrea et al., 2008). Indeed, Kintrea et al. (2011) note territorial identities provide an alternative to dysfunctional familial circumstances for marginalised young people.

Interestingly, healthcare professionals and schools pupils were in agreement on many of what they perceived to be the causes of youth violence. Their personal experiences are reflected in some of the theories identified by the literature review and other qualitative research on youth violence within Scotland. In order to integrate the results from the qualitative component of the study the logic model developed in chapter two (Figure 2.3) has been adapted with the aim of providing an understanding of how youth violence develops in the West of Scotland (Figure 8.1).

Both the literature review and qualitative data from this study demonstrate the role of wider social determinants of violence (i.e. socio-economic inequality). Such social determinants are associated with adverse health outcomes more generally and changes in public policy are necessary to create a social environment that facilitates good health (Wilkinson and Marmot, 2006). More specifically to violence prevention, the CDC argues that this necessitates intervention at all levels of the socio-ecological model (i.e. individual, relationship, community, society). Whilst an educational approach such as MAV can work at the individual level, prevention strategies are also needed at the other levels of the socio-ecological model. The CDC (2013) proposes that at a relationship level this can entail programmes designed to promote healthy relationships and conflict resolution skills. At a community level strategies can include social norms approaches that aim to influence the settings (e.g. schools, neighbourhoods) in which violence occurs (CDC). Indeed, Bannister et al. (2010) acknowledge the need for community level interventions that address longstanding cultural traditions supportive of

violence in the West of Scotland. Moreover, there is also a need for violence prevention programmes to address young peoples' notions of masculinity. In particular, a social norms approach could challenge such views and aim to group new norms of what it means to be a man. For instance, the Mentors in Violence Prevention programme, which adopts a social norms approach to preventing gender violence, has demonstrated positive qualitative results in Scottish secondary school pupils (Williams and Neville, 2013). Finally, at a societal level the CDC highlight the need to reduce the socio-economic inequalities between groups in our society. This need for broader societal change was also reported by a small number of MAV volunteers and requires change at the policy level to develop longstanding change in social and cultural norms.

8.2.3 To undertake a systematic review, to examine whether school-based primary or universal prevention programmes are effective in reducing youth violence.

A systematic review of RCTS, cluster-randomised controlled trials and quasi-experimental trials was conducted to establish the effectiveness of school-based programmes for the primary prevention of violence within young people aged 11 to 18 years. The search identified thirteen studies which met the inclusion criteria.

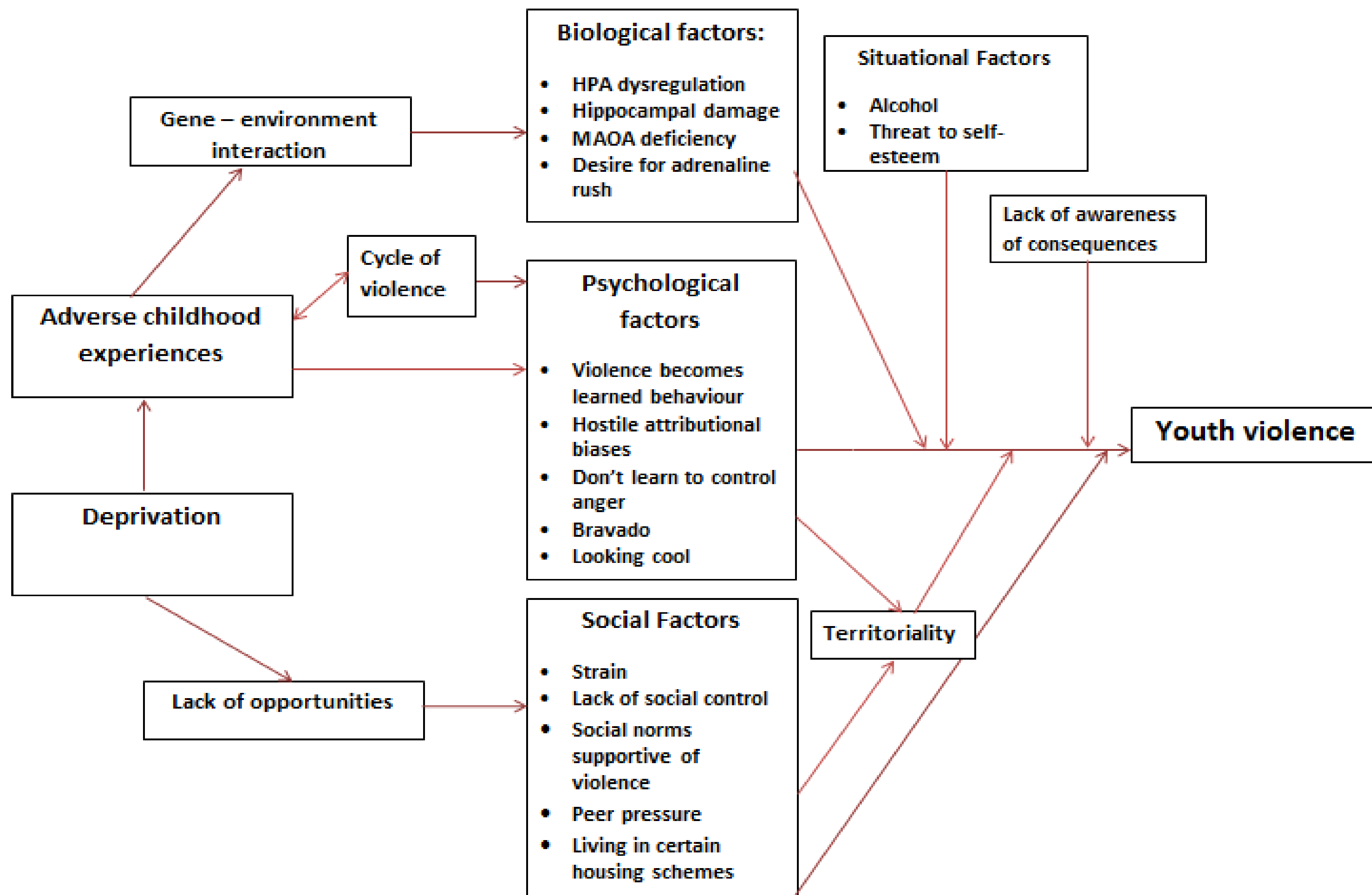

Figure 8.1 Logic model illustrating the development of Violence in the West of Scotland

Study quality varied with two studies graded as strong (although one was graded as moderate for one outcome), three studies graded as weak and the remainder graded as moderate. As outcome measures and study design varied considerably between studies a meta-analysis was not possible, and a narrative summary was provided instead.

There was little focus in the included studies on non-physical violence, with the majority of the outcomes reflecting physical violence. Indeed, only two studies measured non-physical aggression (Farrell et al., 2003b, Botvin et al., 2006) in addition to outcomes related to physical violence, which reflects the continued focus on physical violence (see section 8.2.1). Pro-violent attitudes were the most extensively measured outcome and were also the primary outcome in the study of MAV. The review identified that the majority of programmes had a small but significant effect in reducing pro-violent attitudes, which is somewhat consistent with the results of the MAV evaluation. However, despite (albeit small) reductions in pro-violent attitudes, the studies in the systematic review demonstrated less improvement in violent behaviour, physical aggression and victimisation (see table 3.3), highlighting the gap between attitudes and behaviours (see Armitage and Christian, 2003).

The primary prevention programmes identified by this systematic review were hypothesised to prevent violence by developing protective factors (see Figure 3.2). Similarly, MAV aimed to enhance empathy as a means of reducing pro-violent attitudes. However, within the systematic review, only five studies measured any

form of protective factor (i.e. conflict resolution skills and pro-social skills). Moreover, only a minority of these studies identified a significant positive effect in either conflict resolution skills (Farrell et al., 2003a) or pro-social skills (Van Schoiack-Edstorm, 2002). This is similar to the results of the MAV evaluation which found no significant increase in empathy score post-intervention. More research is therefore needed to better understand the role of protective factors in moderating change in violence and aggression. This may then help facilitate the development of more consistently effective violence prevention interventions.

To conclude, the systematic review identified that school-based primary prevention primarily consisted of social development programmes and tended to have small but significant effects on physical aggression, violent behaviour and attitudes towards violence. The absence of a large, sustained effect reflects the difficulties in changing individuals' attitudes (Ajzen, 2001) and was also identified in the evaluation of MAV. The programmes that demonstrated the most success incorporated social development and social norms approaches. The use of a social norms approach is advantageous as individuals are more likely to change their attitudes or behaviours to be consistent with people that they identify strongly with (Baron et al., 2006). It therefore may be beneficial for MAV to work with schools to develop follow-up activities that utilise a social norms approach, for instance with peer mentors (see Katz et al., 2011, Williams and Neville, 2013).

8.2.4 To undertake an outcome evaluation of MAV to assess its effectiveness in changing attitudes towards violence and developing empathy among school pupils.

MAV is a primary prevention intervention that aims to reduce violence by reducing pro-violent attitudes and increasing empathy among secondary school pupils. In order to evaluate whether MAV was successful in achieving this, a before-and-after study was conducted to measure attitudes towards violence (ATV) using the child version of the ATV scale (Funk et al.,2003) and empathy using the childhood empathetic attitudes questionnaire (CEAQ; Funk et al., 2008). Questionnaires were completed by all school pupils before the programme, immediately after and at three months follow-up. Additionally, police data on levels of violent offences within a two kilometre radius of one school receiving MAV (school A) and three control schools was obtained.

There was a small but significant decrease in mean ATV scores immediately after the intervention, however, this was not maintained at 3 months, where there was a small but significant increase in mean ATV score from the baseline score (see section 5.2.2.). This may reflect the notion that young people become slightly more pro-violent during adolescence (Shapiro, 1998). The decrease in mean ATV score between T1 and T2 was most pronounced in male pupils and pupils in school B, who received the programme in fifth year and were from the most affluent school. As the programme demonstrates some of the consequences of violence, the fifth year pupils, who are in the later stages of brain maturation (i.e. emotional regulation, response inhibition, and evaluation of risk; Kelley et al., 2004) may

benefit more from such an approach. However, this is confounded by the considerably lower levels of socio-economic deprivation in school B compared to the other schools, and it is therefore not possible to draw concrete conclusions regarding this.

However, it should be noted that baseline scores for the ATV scale were low and may indicate a floor effect, whereby a large proportion of the participants score near the lower limit of the scale (Hessling et al., 2004). This floor effect may therefore account for only a small change in ATV post-intervention. At all three time points pupils scored higher on the items from the reactive violence sub-scale (e.g. "it's okay to beat up a person for bad-mouthing me or my family"), compared to the culture of violence sub-scale (e.g. "people who use knives get respect), which had particularly low baseline scores. Indeed, while there was a significant decrease in mean reactive violence score between T1 and T2, this was not found for the culture of violence mean score.

Interestingly, the qualitative data generated from the focus groups indicated that while the pupils generally felt negative towards violence, knife carrying and gangs, they did feel it was acceptable to protect yourself or in response to a family member being insulted. Such beliefs regarding the acceptability of reactive violence may be reflected in the higher mean baseline reactive violence scores. The current research on reactive violence in adolescents is limited to forensic or psychiatric populations (e.g. Connor et al., 2004, Flight & Forth, 2007) and has not been conducted in a general adolescent population. Indeed, much of the research

on violence in adolescents examines violence as a homogenous entity and does not distinguish between proactive and reactive violence which may have different aetiologies (Raine et al., 2006). Further research is therefore needed to explore differences in prevalence and acceptability of reactive and proactive violence. Such evidence can then be used to inform the development of violence prevention programmes and the refinement of MAV.

MAV also aimed to reduce violence by increasing empathy, which is believed to be a protective factor (Hoffman et al., 2011). However, there was no significant change in empathy between T1 and T2, although there was a small but significant decrease between T2 and T3. This data may indicate that MAV may not have any effect on empathy and be one explanation for why MAV did not produce a bigger change in ATV score. However, it should be noted that during the focus groups pupils consistently demonstrated empathetic attitudes towards victims of violence and their families. The apparent lack of change in empathy scores may have been a result of low context specificity for violence in the CEAQ (Appendix 5.2). Indeed, only one item in the CEAQ examined fighting and one examined animal cruelty. Therefore, if participants' empathy had increased specifically for victims of violence, this scale may not have been able to detect a change. A lack of evidence for change in pro-social skills more generally was also identified in the systematic review. The results from the evaluation with MAV and the systematic review highlight the difficulty in changing pro-social skills such as empathy. Alternatively, such skills may be difficult to measure and therefore any change that has occurred may not have been detected.

While there was a decrease in violent offences between 2006-2009 and 2009-2012 across all schools (see section 5.4), there were a considerable number of confounders (e.g. campus police officers, CIRV, urban regeneration). This data therefore indicates that while there was a general reduction in levels of violence, it is not possible to isolate this to the impact of MAV.

To conclude, while it was not to possible establish whether MAV had any effect on violent offences, the programme may have resulted in a small but significant immediate decrease in mean ATV score; however, this was not maintained at T3. The fact that MAV only had a small effect may be partly explained by pupils already having negative attitudes towards violence, in particular attitudes that were not supportive of a culture of violence, at baseline and also because MAV did not have any demonstrable effect on empathy. As pupils were more supportive of reactive violence, MAV could consider adapting the programme to place a larger emphasis on this. Furthermore, as there was a significant increase in mean ATV between T2 and T3, this could reflect the need for continued input, particularly as involvement in violence increases during adolescence (Office of the Surgeon General (US), 2001). However, there are a number of limitations with this component of the study, which will be discussed further in section 8.3.

8.2.5 To conduct a process evaluation with school pupils and MAV volunteers to establish the necessity of MAV within the West of Scotland, and to explore their experiences with the programme and identify any strengths, weakness and areas for development.

A process evaluation comprised of focus groups with school pupils, and online questionnaires and semi-structured interviews with healthcare professionals who volunteered with MAV was conducted. The purpose of the process evaluation was first to provide information on the context of the intervention and establish if the target group is being reached and secondly to explore participants experiences with the programme and help interpret the outcome evaluation (Oakley et al., 2006).

While none of the young people who took part in focus groups admitted to being involved in violence, they did perceive it to be a considerable issue for young people growing-up in the West of Scotland. Pupils from the four most deprived schools all felt youth violence was related to territoriality and was an issue in their local area. Territorial based fighting has been identified in several qualitative studies in Glasgow (Deuchar, 2009, Bannister et al., 2010, Kintrea et al., 2011) and can lead to reduced social mobility for young people living in affected housing schemes, whether they are directly involved in violence or not. Pupils from the least deprived area were only aware of violence in the centre of Glasgow, particularly at night and described feeling frightened by it. From their experiences working in hospitals across the country, healthcare professionals felt levels of violence were greatest in Glasgow. Similarly, pupils acknowledged that violence

was a greater problem in their area compared to the rest of Scotland and as such prevention programmes are needed in this area.

Healthcare professionals believed the majority of their patients with violent injuries were adolescents. Similarly, the focus groups felt that early secondary school represented a transition point when young people started to become involved in violence and knife-carrying, although some groups acknowledged that primary school-aged children liked to imitate older adolescents. As a result, both pupils and healthcare professionals felt violence prevention programmes such as MAV were needed in early secondary school.

Although the healthcare professionals came from a wide range of specialities (see section 4.3.3) all participants regularly experienced youth violence through the workplace which was often associated with alcohol use. Indeed, a small number of healthcare professionals commented that an intervention such as MAV is limited in the context of alcohol consumption. The association with alcohol was also frequently described by school pupils. A minority of healthcare professionals described treating violent injuries as emotionally very stressful. However, other healthcare professionals felt frustrated at treating violence, regarding it as pointless. This notion of pointlessness was also echoed by some of the focus groups, indicating that these pupils felt negatively towards violence. These negative attitudes are also reflected in the low baseline scores in the questionnaire.

Whilst this data indicates there is a need for youth violence prevention programmes in the West of Scotland, the fact that many of these young people already felt negatively towards violence may indicate that they are not the most appropriate group for an intervention focused on perpetration. However, due to the areas that many of these young people live in, they are at risk of victimisation. This was recognised by a minority of volunteers who consequently focused on the issues surrounding this (e.g. strategies for staying safe). These presenters therefore did not focus on developing empathy (i.e. through discussion of the consequences of violence on victims, families and communities) and this may potentially explain the lack of change in mean empathy scores. Other volunteers also recognised that pupils were more at risk of victimisation but did not feel able to adapt the session and felt it needed more work in this regard (i.e. different lesson plans or videos with a focus on perpetration or victimisation prevention, depending on the schools' needs). Such an approach, would however, raise difficulties in terms of determining which schools would be considered at greater risk of perpetration and which would be at greater risk of victimisation. Moreover, a minority of healthcare professionals felt that MAV should focus on schools in more socio-economically deprived areas and thus change the focus of MAV from a universal to a selective prevention programme.

Regardless of background pupils expressed having enjoyed and engaged with the sessions. Similarly, volunteers felt the school pupils generally engaged well; however, a minority expressed difficulties engaging pupils from affluent areas or had difficulties maintaining the discussion when class sizes were large. This is

similar to my experiences observing the sessions, whereby, the majority of classes were engaged with both the film and the discussion and appeared very keen to hear about the healthcare professionals' experiences. Exceptionally, at a session delivered to one very large class in school E, pupils talked during the video and wandered off to speak to their friends during the discussion. Additionally, at a large session delivered in school B, pupils were quite hesitant during the discussion, although did appear to engage with the video.

Healthcare professionals felt that the presence of a school teacher or campus cop was helpful in not only maintaining discipline but also in facilitating the group work, particularly as they could provide "local knowledge". However, pupils felt their teachers did not have sufficient knowledge on violence to provide relevant information and instead valued the input from healthcare professionals. Participants consistently felt sessions worked best when there were at least two volunteers, however, due to increasing clinical commitments this was not always possible. Having a prepared teacher or campus cop who can contribute to facilitation of group discussions is therefore advantageous when there are difficulties recruiting additional volunteers for sessions. However, as teachers' contributions were variable, further work is needed to establish their formal role in the programme.

Based on their experiences working in clinical medicine, volunteers felt that young people who engaged in youth violence were unaware of the consequences. Their hope was that by educating young people on the consequences of violence, they

would be less likely to engage in perpetration of violence and use strategies to avoid victimisation. However, Bannister et al. (2010) noted that many of the young people they interviewed were aware of the consequences of the consequences of violence but still actively engaged in it. This reflects the difficulties in trying to change health risk behaviours more generally, whereby individuals know the adverse effects of a behaviour (e.g. smoking) but continue to engage in it (Naidoo and Wills, 2009). Indeed some education programmes, particularly those that exaggerate the consequences (e.g. the Scared Straight programme; Petrosino, 2003) have been shown to be detrimental in terms of behavioural outcomes. Educational approaches assume that by increasing knowledge, there will be a change in attitudes which can lead to a change in behaviour; however, they do not take account of the social and economic factors that influence decision-making processes (Naidoo and Wills, 2009). Such approaches (including MAV) do not address the wider social determinants of violence and are therefore limited in their ability to create sustained change by influencing social and cultural norms.

Nevertheless, both school pupils and healthcare professionals felt the film, which demonstrates the consequences of violence, was a good resource. Although many pupils found the film shocking, they were not upset by it and felt it was age-appropriate. A minority of pupils found it difficult to look at the graphic images and felt the film should not become more “intense” in this regard. In particular, the use of real CCTV footage, interviews and the Glasgow setting provided a sense of realism and made them more aware of the consequences of violence. This indicates that under the roll-out of MAV (e.g. in Dundee), location-specific videos

should be developed in order for the programme to have an impact. Indeed, public health interventions that utilise a *fear appeal* approach, need to make the threat appear serious and relevant (Witte and Allen, 2000). The pupils in the focus groups were able to discuss the cases in the film and relate these to the consequences of violence, in particular the impact on families. This may indicate that they had taken on board some of the messages in the video, despite the lack of change in empathy scores and low levels of change in ATV scores. Less commonly, healthcare professionals felt the film required updating as the offender who is interviewed has returned to prison, of which some young people were aware.

Both pupils and healthcare professionals noted that time was wasted at the start of the session (e.g. setting up the DVD, finding a classroom etc.). Moreover, most of the focus groups reported that they did not get enough time to discuss the issues raised and were keen to have a second session or a double period. Moreover, as there was a small but significant increase in mean ATV score between T2 and T3, this suggests the need for a more sustained approach. As the systematic review identified that interventions that combined a social norms approach with social development programmes, were the most effective in producing sustained positive outcomes, this may highlight a need for the schools to follow on from the MAV session and incorporate a social norms approach within the school (e.g. peer mentors). Moreover, the systematic review indicated that programmes delivered over one or more school years were generally more effective than those delivered over a school term. Interestingly, there was not an association between positive effect and number of sessions, in the programmes that were delivered over one

term. This indicates that a sustained approach delivered over several years may be preferable to an intense programme with multiple sessions delivered over a shorter period of time.

Some healthcare professionals described feeling anxious prior to their first session, however, those from a more deprived background felt more comfortable going into the schools. Although training is offered, over a third did not attend as they felt it was better to 'learn on the job', which is reflective of the learning culture within clinical medicine. However, the interview participants who did not attend training tended to be more anxious prior to their first visit. The training sessions were perceived to be useful but participants felt the training process could be improved by ensuring all new volunteers attend a session with an experienced presenter and trying to time training sessions to take place within the same month as school visits to prevent volunteers losing momentum.

Healthcare professionals generally enjoyed delivering sessions, but felt their ability to volunteer was limited due to clinical commitments and the majority of sessions are being delivered by a small proportion of volunteers. However, volunteers noted that participation could be improved by providing advanced notice of sessions, avoiding sessions in the middle of the day, awarding CPD credits, being able to do visits in their local area, obtaining health board approval to deliver sessions in non-clinical time and a recruitment drive. Furthermore, healthcare professionals felt member satisfaction (and thus volunteering rates) may be improved by providing feedback and developing a committee to allow volunteers

to be involved in the development of MAV, which could offer a sense of ownership. Alternatively, further resources could be delivered for the schools to implement. However, as school pupils felt the involvement of healthcare professionals made the session more realistic, this may not be effective. Indeed, one of the potentially positive aspects of MAV is its ability to break down barriers between adolescents and healthcare professionals, who can be viewed as authority figures by adolescents (Jacobson et al., 2001).

As the majority of MAV volunteers dealt with physical consequences of violence in an acute care setting, they lacked time to engage in health promotion with patients. The opportunity to provide violence prevention advice motivated many of these healthcare professionals to volunteer with MAV. Moreover, a minority of healthcare professionals felt it provided them with the opportunity to become more involved in public health as this was an area of medicine in which they were not currently involved. However, many healthcare professionals felt there was little else they could do in the prevention of violence as it required societal changes beyond their involvement, reflecting the need for a wider social determinants approach to violence (CDC, 2013). Nevertheless, some participants believed they had a role in information sharing, using their professional voice to highlight the issue of youth violence or becoming involved in alcohol reduction strategies as a means of reducing violence. In terms of developing the MAV sessions, healthcare professionals felt there was little that could be done, with the exception of a minority of participants expressing a desire to invite victims of violence to attend the session. Some school pupils also expressed a desire to hear about victims'

experiences or ex-gang members' experiences. Additionally, some focus groups were keen to learn relevant first-aid that they could use to treat somebody with a violent injury and this is now being incorporated into the MAV programme.

In conclusion, the use of real footage and hearing healthcare professionals' experiences led to good engagement from school pupils, although this could occasionally be an issue in more affluent schools. As these pupils generally felt negatively toward violence this may indicate they are not the most appropriate target audience and may have also contributed to the small change in ATV score. While some healthcare professionals felt they were able to make the session more relevant to this population by focusing on victimisation prevention, others felt the programme needed development in this regard. Moreover, as volunteers lacked an awareness of the theoretical underpinnings of MAV, they need to be better informed of the mechanisms behind attitudinal and behavioural change (see section 2.3.3). Due to the strong association between violence and alcohol that was identified by pupils and healthcare volunteers (and is supported in the literature; e.g. see Dahlberg and Krug, 2002) material on alcohol could also be incorporated into the programme. Further work is also needed to improve communication between MAV and schools to ensure each healthcare professional only takes one class and time is not wasted. Finally, participation from members needs to be improved to ensure that the burden of session delivery does not fall on a small group of volunteers.

8.3 Reflections on study

8.3.1 Strengths of the study

This thesis provided a number of insights into the primary prevention of youth violence. First, this PhD highlighted that what constitutes violence not only varies between disciplines but also between researchers and practitioners within the same discipline. Moreover, it identified that within the practice of public health, the definition used is more consistent with the criminal justice approach and not the public health definition.

A literature review of theories of violence demonstrated the multi-factorial nature of the problem in terms of social, biological and psychological factors, and subsequently a logic model was developed to illustrate how many of the theories are closely associated with deprivation and adverse childhood experiences. A strength of this study was the integration of the qualitative data (on healthcare professionals' and school pupils' experiences with youth violence) into the model to better illustrate the development of youth violence within the West of Scotland. Together the literature and qualitative data demonstrate the need to take into account the wider social determinants of violence, in the development of future violence prevention programmes.

In order to examine the current evidence on the efficacy of school-based violence prevention interventions, which were implemented following the publication of the first World Report on Violence and Health (Krug et al., 2002), a systematic review was conducted. Systematic reviews utilise pre-specified and systematic

methods to identify all available evidence on a particular topic and are at less risk of bias (Green et al., 2011). Therefore, such an approach is preferable to a literature review when evaluating the effectiveness of interventions. The current systematic review demonstrated that while such interventions show initial promise, in particular when social norms approaches are combined with social development programmes, further research is needed to understand the processes involved and thus enhance their effects. Importantly, this thesis used the results of the systematic review to provide greater understanding of the findings from the MAV evaluation and helped shape the recommendations for practice.

Finally, a key strength of the evaluation of MAV was the use of a mixed-methods approach, which incorporated an outcome and process evaluation. The use of a process evaluation enables exploration of the setting and implementation of the intervention, and helps further understand the results from the outcome evaluation (Oakley, et al., 2006). Indeed, Creswell (2006) stresses the importance of both qualitative and quantitative methods to provide a measurement of effectiveness in terms of outcomes and an understanding of the processes involved in the success or failure of an intervention. More specifically to this evaluation, the qualitative data helped provide a better understanding in the small change in ATV scores (see section 6.3) and indicated that the empathy scale may have lacked context specificity (see section 6.3). Analysis of the qualitative data also provided understanding as to how the MAV volunteers believed the programme could result in behaviour change (see section 7.2.1.4.2) and thus demonstrated a need to better inform volunteers of the mechanisms behind such change. In addition to

establishing that the programme was generally a positive experience for volunteers and pupils, the qualitative data identified a number of areas for development. One such recommendation (the inclusion of a first-aid component) is currently being developed.

8.3.2 Limitations of the study and future research

There were a number of limitations; however, the experiences gained during the study can usefully inform future research. As these limitations were discussed in detail in each of the relevant chapters, a brief outline will be presented to provide a context in which suggestions for future research will be discussed.

First, it was intended that the public health definition of violence would be used, which considers non-physical violence and maltreatment as forms of violence. MAV purport to adopt a public health approach, and while they do not specifically claim to use the public health definition of violence (or indeed, any definition of violence) the intervention is not consistent with the public health definition of violence. Consequently, this thesis was more focused on physical violence both in terms of the outcomes in the systematic review and also the evaluation of MAV, which focused on the prevention of physical violence. Therefore, the criminal justice definition of violence may actually be more appropriate. As those practicing public health are not consistently using the public health definition of violence and are instead focusing on physical harm, future research projects should provide clarification on what the researchers believe constitute violence.

Secondly, the systematic review included only studies from 2002 as this could likely signal a change in violence prevention following the publication of the World Report on Violence and Health. However, it is feasible that some relevant earlier studies that pre-dated this may have been omitted. Due to practical considerations, only studies published in English were included in the review, which will potentially introduce a degree of bias. Indeed, relevant studies published in Spanish and German were excluded from the review and it would therefore be beneficial to have been able to include these studies to gain a more comprehensive understanding of violence prevention efforts.

Perhaps the biggest limitation of the evaluation of MAV was the lack of a control school, which can threaten internal validity. In order to reduce this threat, it would be necessary to conduct a cluster-randomised trial. The use of a control group enables any effects to be more accurately attributed to the intervention and randomisation helps minimise selection bias and as such is considered the 'gold-standard' in research design (Higgins and Green, 2011).

Unfortunately, as it was not possible to follow pupils up individually, within participant variation over time was not able to be measured. This could increase the risk of bias within the study due to lack of independence between groups over time. If any future larger scale evaluation of MAV was to take place, it would be necessary to assist schools to follow pupils individually. This would require a member of staff in the school to act as a data guardian and link participants to

identifying numbers, whilst ensuring the actual class teachers could not associate pupils with the questionnaires to preserve anonymity.

A number of issues with the questionnaires should also be considered. First, the questionnaires were developed in elementary schools within the US, where it demonstrated good validity and reliability. The ATV scale was adapted to reflect the problem of violence within Scotland (i.e. replace guns with knives); however, it has not previously been validated for use with Scottish school children. Although it did demonstrate good internal consistency in this study, it is not certain whether the scales are able to accurately measure attitudes towards violence (i.e. the validity) in this population. Furthermore, as many participants had low scores at baseline for the items measuring a culture supportive of violence, of which ten of the sixteen questionnaire items are measuring, there was a floor effect and as such it would not be possible for the intervention to result in a large decrease in mean ATV score. Therefore, this apparent lack of change in ATV scores over time may be a result of using an insufficiently sensitive measure or may indicate that MAV should focus more on dealing with reactive violence (as pupils were more favourable of this). These low baseline scores may even indicate that an intervention, which aims to reduce pro-violent attitudes is not necessary in this group of pupils. It could therefore be argued that if MAV are aiming to prevent perpetration of violence, the intervention should focus on targeting pupils known to be involved in violence. Alternatively, if MAV wished to maintain a universal approach it may be appropriate to focus on victimisation prevention.

Before any further evaluation of MAV in undertaken, it would be important to validate the questionnaire for use in this population or establish whether any alternative questionnaires were more appropriate. Moreover, as MAV constitutes an educational approach to health promotion, it would be of benefit to include an educational outcome such as knowledge levels. As it was not possible to utilise the police data on violent offences due to the confounding factors any future evaluations of MAV should attempt to utilise other measures, which could provide more objective results. For instance, this could include school levels of violent behaviour or teacher ratings of aggression. However, this too could be limited as it would not capture 'recreational violence' occurring at the weekend. Alternatively, parents could be invited to complete questionnaires which measured levels of aggression or violent behaviour in their children.

The school pupils' component of the qualitative research may be limited by lack of diversity amongst pupils. Although attempts were made to ensure the pupils invited to take part in the focus groups represented a range of abilities, I felt that the most difficult pupils were not invited to take part. It is plausible some of the teachers may have only selected the most able pupils to create a good impression of the school. Furthermore, pupils from school A were unable to take part in the focus groups due to examinations and a school inspection. As the pupils from this school had the highest ATV scores it would have been particularly informative to gain their perspective.

Semi-structured interviews with teachers had initially been planned, however, the majority of teachers declined to take part due to industrial action or time constraints as a result of examinations or school inspections (see section 4.3.2). Gaining the teachers' perspectives on the implementation and what impact MAV had on the pupils, would have been useful. Any future evaluation of school-based violence prevention programmes, should consider developing an alternative method for use with teachers to account for their limited time. For instance, using a brief online questionnaire, which would be anonymous, so as to decrease social desirability bias.

8.3.3 Reflexivity in the research process

The researcher and research process can influence qualitative data (Mays and Pope, 2000) and while it is not possible to remove this influence, it should be considered (Maltreud, 2001). I shall therefore discuss how I interacted with participants and how their perceptions of my own characteristics may have influenced the data collected. First, in terms of the healthcare professionals, having previously worked as a doctor, I was used to interacting with this group and I attempted to take on a professional role, although I was not explicit with the healthcare professionals that I was medically trained. The primary reason for not disclosing my medical background was to reduce the risk that participants would view me as part of MAV, in the hope that participants may have been more open with me. Additionally, I did not want the participants to assume I was still working in clinical practice. Upon reflection, knowledge my professional background may have resulted in the healthcare professionals believing I was 'one of them' and

instead encourage them to be more open with me. Whilst some participants specifically did ask about my background (which I did disclose), I do not feel it is possible to say whether this increased their openness with me. Generally the discussions were relatively formal, however, interestingly the interviews with female participants felt less formal, particularly when speaking to the more junior healthcare professionals, possibly as they were nearer me in age. The healthcare professionals seemed to perceive me as a researcher and a number of them cited 'having done research before' as the reason for their participation and many asked questions about the research process. I also attempted to distance myself from MAV during the interview as I felt if the participants thought I was part of the organisation, they may have been less open with me. As participants were at times able to criticise aspects of MAV, I felt I was at least partly successful in achieving this. However, because I am from a medical school, school teachers perceived I was part of MAV, despite my attempts to make it clear I was not.

In an attempt to make the school pupils feel more relaxed and willing to openly express themselves, I took a more informal approach in the hope I would not be seen as an authority figure. I made explicit that I was a researcher and not from MAV to encourage the pupils to be open with me. As I attended a large (mixed-ability) local comprehensive school in the not too distance past, I felt quite comfortable with the pupils in this setting and felt this helped me to at least partly relate to them. Although the participants chatted about the issues during the focus groups, they were well-behaved, which may indicate that they did in fact perceive me as an authority and may have been conservative in some of their views.

Alternatively, it may indicate that the most well-behaved pupils had been selected to take part.

8.3.4 Implications for MAV

Based on the results of the evaluation of MAV the following points are recommended to help guide the development of the programme.

Logistics:

- Work with schools to ensure sessions are delivered to single PSE classes
- Provide teachers with explicit information detailing their role during the session (e.g. discipline, facilitating group work, etc.) well in advance of session.
- Ensure schools are informed regarding responsibility of setting up AV equipment in time for session start.
- Co-ordinate training sessions with up-coming school visits.
- Schedule two volunteers per visit, particularly when a new volunteer is delivering a session.
- Provide volunteers with at least six weeks' notice of upcoming visits.
- Provide information on the distance from local hospitals when recruiting volunteers for school visits.
- Increase volunteer numbers (including appropriate allied health professionals) through a recruitment drive to enable more school visits.
- Provide certification of visits for volunteers to use in appraisals.

- Empower volunteers to work with their health boards to arrange time away from clinical duties for volunteers.
- Implement follow-up sessions to reinforce material (would potentially require greater number of volunteers).

Content and resources:

- Develop alternative lesson plan and film that focus on victimisation prevention and safe alcohol consumption to be used with older pupils (e.g. S4) in the more affluent schools.
- Develop an adapted version of programme for younger pupils (e.g. primary 6 and 7).
- Ask presenters to clarify what aspects of the film are real and which are fictional at the start of the session.
- Adapt the programme to have a component focusing on reactive violence.
- Emphasise strategies for staying safe and the association between alcohol and violence.
- Train volunteers in psychological/mental health consequences of violence.
- Incorporate material on psychological consequences and mental health implications of violence.
- Incorporate material on alcohol and violence.
- Adapt the programme to challenge pupils' preconceptions of masculinity in terms of violence and control.

Future developments:

- Increase advertising to schools in more deprived areas to ensure the target audience is receiving the programme.
- Enable volunteers to be involved in the development and running of MAV (e.g. through a committee).
- Annual or bi-annual teaching group meetings to allow members to discuss their experiences and to facilitate development of programme.
- Develop a first-aid component to teach pupils how to respond to a casualty with violent injuries.
- Consider inviting an ex-gang member to attend the session to share their experience.
- Develop resources for pupils, or teachers and campus cops (if available in the school) to use as a follow-up to the programme.

8.4 Conclusion

What defines violence is a contentious issue that varies both between and within disciplines, within disciplines and also between policy and practice. The difficulty in defining violence may also be reflected in its multi-factorial nature. Models such as the ecological model (Dahlberg and Krug, 2002, CDC, 2013) and cycle of violence (WHO, 2007) illustrate this complexity and highlight the need for different levels of prevention and complex interventions taking into account the wider social determinants of violence. The current evidence base for school-based primary prevention interventions, shows some promise in being able to reduce violent

behaviour, however, further research is needed to establish how and why these programmes exert their effects to increase their efficacy.

MAV is a novel violence prevention programme based in the West of Scotland, which is an area with high levels of territorial based violence impacting on the lives of many young people. The outcome evaluation demonstrated an immediate reduction in ATV scores that were not sustained over time. Additionally, no significant improvement in empathy scores was identified. However, the process evaluation demonstrated that MAV has been successful in engaging young people and increasing their awareness of the dangers associated with violence and strategies for staying safe. Indeed, a major strength of this study was the conduction of a process evaluation, which helped further understand the results of the outcome evaluation and will be used to guide the development of MAV. In particular, further work is required in terms of establishing who the programme is aimed at (i.e. potential victims or perpetrators), focusing on reactive violence and increasing the sustainability of its effects.

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WRIGHT, J. & KARIYA, A. 1997. Assault patients attending a Scottish accident and emergency department. *Journal of the Royal Society of Medicine,* 90, 322.

Appendix 1: Search strategy for specific databases

MEDLINE searched using OVID (1946- April 2013)

1. Program$.tw
2. Intervention.tw
3. Prevent$.tw
4. Diversionary.tw
5. Reduc$.tw
6. Initiative.tw
7. Educat$.tw
8. Population-based.tw
9. OR/1-8
10. exp Violence/
11. Youth violence.tw
12. Interpersonal violence.tw
13. exp Aggression/
14. Challenging behaviour.tw
15. Offend.tw
16. Fight.tw
17. exp Weapon/
18. knife.tw
19. exp Firearms/
20. Gun.tw
21. OR/10-20
22. Under 18s.tw

23. Adolescent.tw
24. Youth.tw
25. Teen$.tw
26. exp Schools/
27. Gangs.tw
28. OR/22-27
29. 9 AND 21 AND 28
30. Limit 29 to (english language and yr="2002 - 2013")

ERIC searched using OVID (1965-2013)

1. Program$.tw
2. Intervention.tw
3. Prevent$.tw
4. Diversionary.tw
5. Reduc$.tw
6. Initiative.tw
7. Educat$.tw
8. Population-based.tw
9. OR/1-8
10. exp Violence/
11. Youth violence.tw
12. Interpersonal violence.tw
13. Aggression.tw
14. Challenging behaviour.tw

15. Offend.tw
16. Fight.tw
17. exp Weapon/
18. knife.tw
19. Firearm,tw
20. Gun.tw
21. OR/10-20
22. Under 18s.tw
23. Adolescent.tw
24. Youth.tw
25. Teen$.tw
26. exp Schools/ OR exp Middle Schools/ OR exp Urban Schools/ OR exp Junior High Schools/ OR exp High Schools/ OR exp Suburban Schools/
27. Gangs.tw
28. OR/22-27
29. 9 AND 21 AND 28
30. Limit 29 (english language and yr="2002 - 2013")

EMBASE searched using OVID (1996 – April 2013)

1. Program$.tw
2. Intervention.tw
3. Prevent$.tw
4. Diversionary.tw
5. Reduc$.tw

6. Initiative.tw
7. Educat$.tw
8. Population-based.tw
9. OR/1-8
10. exp Violence/
11. Youth violence.tw
12. Interpersonal violence.tw
13. Aggression.tw
14. Challenging behaviour.tw
15. Offend.tw
16. Fight.tw
17. exp Weapon/
18. knife.tw
19. exp Firearms/
20. Gun.tw
21. OR/10-20
22. Under 18s.tw
23. Adolescent.tw
24. Youth.tw
25. Teen$.tw
26. Schools.tw
27. Gangs.tw
28. OR/22-27
29. 9 AND 21 AND 28

30. Limit 29 (english language and yr="2002 - 2013")

CINAHL searched using EBSCO HOST.

AB programme

AB intervention

AB prevention

AB diversionary

AB reduce

AB initiative

AB educat*

AB population-based

1 OR 2 OR 3 OR 4 OR 5 OR 6 OR 7 OR 8

AB violence

(MH “Violence+”)

AB youth violence

(MH “School Violence”)

AB interpersonal violence

AB aggress*

AB challenging behav*

AB offend*

AB fight*

(MH “Weapons+”) OR (MH”Firearms+”) OR (MH”Wounds, Stab+”)

AB knife

AB gun

10 OR 11 OR 12 OR 13 OR 14 OR 15 OR 16 OR 17 OR 18 OR 19 OR 20 OR 21

AB under 18s

AB adolescent

AB youth

(MH "Students, High School") OR (MH "Schools, Middle")

AB school

(MH "gangs")

23 OR 24 OR 25 OR 26 OR 27 OR 28

9 AND 22 AND 29. Limiters – Published Date:20020101-20131231

PsycINFO searched using EBSCO HOST

1. AB programme
2. AB intervention
3. AB prevention
4. AB diversionary
5. AB reduce
6. AB initiative
7. AB educat*
8. AB population-based
9. 1 OR 2 OR 3 OR 4 OR 5 OR 6 OR 7 OR 8
10. DE "Violence" OR DE "School Violence"
11. AB youth violence
12. AB interpersonal violence
13. DE "Aggressive behaviour"

14. AB offend
15. AB fight
16. DE “firearms”
17. AB gun
18. AB knife
19. 10 OR 11 OE 12 OR 13 OR 14 OR 15 OR 16 0R 17 OR 18
20. AB under 18s
21. AB adolescents
22. AB youth
23. DE “middle schools” OR DE “high schools”
24. DE “gangs” OR DE “Juvenile Gangs”
25. 20 OR 21 OR 22 OR 23 OR 24
26. 9 AND 19 AND 25. Limiters – Published Date:20020101-20131231

ASSIA searched using ProQuest

(programme OR intervention OR prevent$ OR diversionary OR reduc$ OR initiative OR educat$ OR population based)AB AND (violence OR youth violence OR interpersonal violence OR aggression OR challenging behaviour OR offend OR fight OR weapon OR knife OR firearm OR gun) AB AND (under 18s OR adolescent OR youth OR teen$ OR school OR gang)AB

Additional Limits: 2002-April, 2013

The Cochrane Library (includes Cochrane Database of Systematic Reviews and Cochrane Central Registrar of Controlled Trials)

(programme OR intervention OR prevent$ OR diversionary OR reduc$ OR initiative OR educat$ OR population based) AND (violence OR youth violence OR interpersonal violence OR aggression OR challenging behaviour OR offend OR fight OR weapon OR knife OR firearm OR gun) AND (under 18s OR adolescent OR youth OR teen$ OR school OR gang) title abstract keywords 2002-2013

The Campbell Collaboration Library of Systematic Reviews

(programme OR intervention OR prevent$ OR diversionary OR reduc$ OR initiative OR educat$ OR population based) AND (violence OR youth violence OR interpersonal violence OR aggression OR challenging behaviour OR offend OR fight OR weapon OR knife OR firearm OR gun) AND (under 18s OR adolescent OR youth OR teen$ OR school OR gang) Full text search. Publication Year 2002-2013

Web of Science (Science Citation Index Expanded (SCI-EXPANDED) 1970-present and Social Sciences Citation Index (SSCI) 1970-present)

TITLE: (programme OR intervention OR prevent$ OR diversionary OR reduc$ OR initiative OR educate$ OR population based)

AND TITLE: (violence OR youth violence OR interpersonal violence OR aggression OR challenging behaviour OR offend OR fight OR weapon OR knife OR firearm OR gun)

AND TITLE: (under 18s OR adolescent OR youth OR teen$ OR school OR gang)

Timespan=2002-2013

Search Language=English

Appendix 2: Ethical Approval

Approval was previously granted to another researcher to analyse data collected by MAV. An amendment was submitted to seek approval for the data collection detailed in this thesis.

University of St Andrews

University Teaching and Research Ethics Committee

25 January 2011

Vicki Gordon
School of Medicine

Ethics Reference No: *Please quote this ref on all correspondence*	**MD7185**
Project Title:	Analysis of secondary data obtained from the Medics Against Violence initiative
Researchers Name(s):	Vicki Gordon
Supervisor(s):	Professor Peter Donnelly, Dr Damien Williams

Thank you for submitting your application which was reviewed by the School of Medicine Ethics Committee on Tuesday 11th January. The following documents were reviewed:

1. Ethical Application Form — Yes
2. Attitudes Towards Violence Scale — Yes

The University Teaching and Research Ethics Committee (UTREC) approves this study from an ethical point of view. Please note that where approval is given by a School Ethics Committee that committee is part of UTREC and is delegated to act for UTREC.

Approval is given for three years. Projects, which have not commenced within two years of original approval, must be re-submitted to your School Ethics Committee.

You must inform your School Ethics Committee when the research has been completed. If you are unable to complete your research within the 3 three year validation period, you will be required to write to your School Ethics Committee and to UTREC (where approval was given by UTREC) to request an extension or you will need to re-apply.

Any serious adverse events or significant change which occurs in connection with this study and/or which may alter its ethical consideration, must be reported immediately to the School Ethics Committee, and an Ethical Amendment Form submitted where appropriate.

Approval is given on the understanding that the 'Guidelines for Ethical Research Practice' (http://www.st-andrews.ac.uk/media/UTRECguidelines%20Feb%2008.pdf) are adhered to.

Yours sincerely

Professor Gerry Humphris
Convenor of the School Ethics Committee

UTREC Convenor, Mansefield, 3 St Mary's Place, St Andrews, KY16 9UY
Email: utrec@st-andrews.ac.uk Tel: 01334 462866
University of St Andrews is a charity registered in Scotland: No SC013532

University of St Andrews

University Teaching and Research Ethics Committee

11 April 2011

Dr Anna Gavine
School of Medicine

Dear Anna

Re: Analysis of secondary data obtained from the Medics Against Violence initiative

Many thanks for submitting Amendment 1 for the above project. The application has been reviewed and has given **full approval** via the Chairman's action.

Yours sincerely

Professor Gerry Humphris
Convener School Ethics Committee

UTREC Convenor, Mansefield, 3 St Mary's Place, St Andrews, KY16 9UY
Email: utrec@st-andrews.ac.uk Tel: 01334 462866
The University of St Andrews is a charity registered in Scotland: No SC013532

Appendix 3 Pupil information sheets and consent forms

This Appendix contains:

- Appendix 3.1 Pupil information sheet for questionnaires
- Appendix 3.2 Pupil consent form for questionnaires
- Appendix 3.3 Letter to parents for questionnaires
- Appendix 3.4 Letter to parents for focus groups
- Appendix 3.5 Pupil information sheet for focus groups
- Appendix 3.6 Pupil consent form for focus groups

Appendix 3.1 Pupil information sheet for questionnaires

Participant Information Sheet

Project Title
Evaluation of the Medics Against Violence programme in school pupils.

What is the study about?
We invite you to participate in research which will evaluate the Medics Against Violence (MAV) programme which is shortly due to take place at your school. MAV is an organisation made up of health care workers who have treated young people who have been injured as a result of violence. They will talk to you about these experiences and other issues.

The overall aim of the project is to evaluate whether MAV is successful in reducing violence in young people. In order to find this out we are interested at looking what young people think about violence, the use of knives and being involved in gangs.

Do I have to take part?
This information sheet has been written to help you decide if you would like to take part. Your parents/guardians have already been told about of this research and have not raised any concerns about you taking part. It is up to you whether or not to take part. If you do decide to take part you will be free to withdraw at any time without providing a reason.

What would I be required to do?
Before your school is visited by MAV you will be invited to complete a questionnaire which will cover the following issues:

- Your attitudes towards violence
- How you feel about gangs
- Your attitudes towards knives
- How you feel in different situations

You will then be invited to complete the same questionnaire again soon after MAV visit your school and then again three months later. The questionnaire should take around fifteen minutes to complete.

Will my participation be Anonymous and Confidential?

Only the researcher, supervisor(s) will have access to the data which will be kept strictly confidential. Your permission maybe sought in the Participant Consent form for the data you provide, which will be anonymised, to be used for future scholarly purposes. If, however, you disclose your involvement in any illegal activities during the study, the researchers are required to inform senior police officers.

Storage and Destruction of Data Collected

The data we collect will be accessible by the researcher and supervisor(s) involved in this study only, unless explicit consent for wider access is given by means of the consent form. Your data will be stored for a period of 5 years in an anonymised format on a password protected computer system and in a locked storage cupboard before being destroyed.

What will happen to the results of the research study?

The results will be used to evaluate the effectiveness of Medics Against Violence in changing young people's attitudes towards violence. The results will be finalised by 2013 and will be written up as my PhD thesis, the Glasgow Community Initiative to Reduce Violence (CIRV) evaluation and in the form of papers to be submitted for publication in relevant academic journals and/or for presentation at conferences.

Are there any potential risks to taking part?

This research will explore your attitudes towards violence and experiences with Medics Against Violence. Should you experience any negative emotions or bad feelings as a result of taking part please contact the researcher or supervisor (contact details below), your own GP or a member of the CIRV team, who can offer a range of support services. The number for CIRV is 07867 970 441.

Questions

You will have the opportunity to ask any questions about this project before completing a Consent Form.

Consent and Approval

This research proposal has been scrutinised and been granted Ethical Approval through the University ethical approval process.

As this project involves the participation of children we have also obtained Enhanced Disclosure Scotland approval in accordance with the Scottish Government.

What should I do if I have concerns about this study?
A full outline of the procedures governed by the University Teaching and Research Ethical Committee is available at http://www.st-andrews.ac.uk/utrec/complaints/

Contact Details

Researchers: Dr. Anna Gavine (ajg16@st-andrews.ac.uk, 01334 461874)

Supervisors: Professor Peter Donnelly (pdd21@st-andrews.ac.uk; 01334 463560)

Dr Damien J. Williams (djw11@st-andrews.ac.uk; 01334 463481)

Appendix 3.2 Pupil consent form for questionnaires

Participant Consent Form

Project Title
An Evaluation of Medics Against Violence programme in school pupils.

Researcher
Dr. Anna Gavine
ajg16@st-andrews.ac.uk (01334 461874)

Supervisor
Dr. Damien Williams
djw11@st-andrews.ac.uk (01334 463481)
Professor Peter Donnelly
pdd21@st-andrews.ac.uk (01334 463560)

The University of St Andrews attaches high priority to the ethical conduct of research. We therefore ask you to consider the following points before signing this form. Your signature confirms that you are happy to participate in the study.

Consent
The purpose of this form is to ensure that you are willing to take part in this study and to let you understand what it entails. Signing this form does not commit you to anything you do not wish to do and you are free to withdraw at any stage. You are also free to miss out any questions which make you feel uncomfortable.
Material gathered during this research will be treated as confidential and securely stored. Your data will be stored for a period of 5 years before being destroyed. All data will be stored securely in an anonymised format on a pass-worded computer and backup storage hard drive. All paper copies and notes will be anonymised and will be stored in a locked storage cupboard or safe.

Please turn over

Please answer each statement concerning the collection and use of the research data.

I have read and understood the information sheet.	☐ Yes	☐ No
I have been given the opportunity to ask questions about the study.	☐ Yes	☐ No
I have had my questions answered satisfactorily.	☐ Yes	☐ No
I understand that I can withdraw from the study at any time without having to give an explanation and I do not have to accept the invitation to complete further research activities	☐ Yes	☐ No
I understand that my data will be kept confidential and anonymous and that only the researcher(s), supervisor will have access and selected members of the CIRV team will have access.	☐ Yes	☐ No
I agree to my data (in line with conditions outlined above) being archived and used for further research projects.	☐ Yes	☐ No
I have been made fully aware of the potential risks associated with this research and am satisfied with the information provided.	☐ Yes	☐ No
I agree to the use of anonymised quotes	☐ Yes	☐ No
I agree to take part in the study	☐ Yes	☐ No

Participation in this research is completely voluntary and your consent is required before you can participate in this research. If you decide at a later date that data should be destroyed we will honour your request in writing.

Name in Block Capitals

Signature

Age

Date

Further information about the study is contained in the enclosed letters and information sheets.

This form must be completed and returned to the researcher for the named young person to be included in this study: Please hand back to the school.

Appendix 3.3 Letter to parents for questionnaires

Parental Information Letter

Dear Parent/Guardian

An evaluation of Medics Against Violence programme in school pupils

Medics Against Violence is an initiative set up in 2008 by three Scottish surgeons to reduce violent injury by influencing the attitudes to violence among young people. Your child's school will be receiving a visit by the doctors involved in this initiative this year and we wish to inform you of our intention to evaluate the effectiveness of this visit by asking your child to complete some questionnaires about their attitudes towards violence. Your child will also be fully informed of this evaluation and asked to sign a consent form to say that they give their permission to participate. They will not be asked to do anything that they are uncomfortable with and do not have to answer any question they do not wish to. Your child is also free to withdraw from the evaluation at any point. It will not be possible to identify your child from the questionnaires.

This research proposal has been granted Ethical Approval by the School of Medicine Ethics Committee on behalf of the University Teaching and Research Ethics Committee at the University of St Andrews. As this project involves the participation of children we have also obtained Enhanced Disclosure Scotland approval.

If you are willing for your child to participate in the study then there is no need to do anything. We will assume that you give consent for your child to participate if the attached slip is **not** returned to the school within a week. If, however, you do not wish for your child to be involved in this study, then please complete the slip below and return it to the school. Should you require any further information about the study then please do not hesitate to contact Dr. Anna Gavine, Dr. Damien Williams or Professor Peter Donnelly using the details below or provide us with your phone number so that we can contact you.

Many thanks,

Contact Details

Dr. Anna Gavine: ajg16@st-andrews.ac.uk (01334 461874)

Dr. Damien Williams: djw11@st-andrews.ac.uk (01334 463481)

Prof. Peter Donnelly: pdd21@st-andrews.ac.uk (01334 463601)

Child's Name:---

- I am NOT WILLING to allow my child to participate in the study.
- I would like further information. Please contact me on

  Signed: Date

Appendix 3.4 Letter to Parents for Focus Groups

Parental Information Letter

Dear Parent/Guardian
An evaluation of Medics Against Violence programme in school pupils

Medics Against Violence (MAV) is an initiative set up in 2008 by three Scottish surgeons to reduce violent injury by influencing the attitudes to violence among young people. Your child's school will be receiving a visit by the doctors involved in this initiative this year and we wish to inform you of our intention to evaluate the effectiveness of this visit by asking your child to take part in a focus group to discuss their experience of the session, their attitudes towards violence and whether this has changed following the session, and if what they do in the spare time has changed.
Your child will be fully informed of this evaluation and will be asked to sign a consent form to say that they give their permission to participate. They will not be asked to do anything that they are uncomfortable with and do not have to answer any questions they do not wish to. Your child is also free to change their mind and withdraw from the evaluation at any point. The focus group will be recorded but all information that they provide us will be anonymised, kept apart from anything that may identify your child and stored securely in the school of Medicine.
This research proposal has been scrutinised and been granted Ethical Approval through the University ethical approval process. As this project involves the participation of children we have also obtained Enhanced Disclosure Scotland approval in accordance with the Scottish Government.
If you are willing for your child to participate in the study please return the attached slip within the next week. However, if you do not consent to your child's involvement in this study, then you do not need to do anything. Should you require any further information about the study then please don't hesitate to contact Dr. Anna Gavine, Dr. Damien Williams or Professor Peter Donnelly using the details below or provide us with your phone number so that we can contact you.

Many thanks,
Anna Gavine
Contact Details

Dr. Anna Gavine:	ajg16@st-andrews.ac.uk
	01334 461874
Dr. Damien Williams:	djw11@st-andrews.ac.uk
	01334 463481
Prof. Peter Donnelly:	pdd21@st-andrews.ac.uk

Child's Name: Date of Birth:

- I am WILLING to allow my child to participate in the study.

Signed: Date:

Appendix 3.5 Pupil information sheet for focus groups

Participant Information Sheet

Project Title
An evaluation of the Medics Against Violence programme in school pupils.

What is the study about?
We invite you to participate in research which will evaluate the Medics Against Violence (MAV) programme which is shortly due to take place at your school. MAV is an organisation made up of health care workers who have treated young people who have been injured as a result of violence. They will talk to you about these experiences and other issues.

The overall aim of the project is to evaluate whether MAV is successful in reducing violence in young people. In order to find this out we are interested at looking what young people think about violence, the use of knives and being involved in gangs.

Do I have to take part?
This information sheet has been written to help you decide if you would like to take part. Your parents/guardians have already been told about of this research and have not raised any concerns about you taking part. It is up to you whether or not to take part. If you do decide to take part you will be free to withdraw at any time without providing a reason.

What would I be required to do?
You will be invited to attend a focus group in your school to discuss the self-referral session you attended. This will consist of about 5-6 other pupils and will be led by a researcher. It will last no more than one hour and will cover the following issues:

- Experience of Medics Against Violence session
- Current attitudes towards violence and whether this has changed following the session.
- If what you do in your spare time and at school has changed since attending this session.
- How you feel the session can be improved or developed further

The focus group will be recorded and you are free to not answer any questions you feel uncomfortable about answering.

Will my participation be Anonymous and Confidential?

Only the researcher, supervisor(s) will have access to the data which will be kept strictly confidential. Your permission maybe sought in the Participant Consent form for the data you provide, which will be anonymised, to be used for future scholarly purposes. If, however, you disclose your involvement in any illegal activities during the study, the researchers are required to inform the senior police officers at CIRV.

Storage and Destruction of Data Collected

Your data will be stored in the school of medicine for a period of 5 years before being destroyed. All data will be stored securely, in an anonymised format on a password protected computer and backup storage hard drive. Until data is transcribed, tapes will be stored in a locked container within a locked cupboard in the school of medicine and will be separate from details including names, addresses or other information that could identify you. Only the researcher will have access to the key for this. Additionally, all names (of persons, units, buildings, addresses) that could identify you will be masked out. All tapes will be destroyed by 01/08/2014, on completion of the project. All paper copies (transcriptions) and notes will be anonymised and will be stored in a locked storage cupboard to prevent identification. Again these will all be destroyed by 01/8/2014 upon completion of the project.

What will happen to the results of the research study?

The results will be used to evaluate the effectiveness of CIRV in changing young people's attitudes towards violence. The results will be finalised by 2013 and will be written up as my PhD thesis, the CIRV evaluation and in the form of papers to be submitted for publication in relevant academic journals and/or for presentation at conferences.

Are there any potential risks to taking part?

This research will explore your attitudes towards violence and experiences with Medics Against Violence. Should you experience any negative emotions or bad feelings as a result of taking part please contact your school teacher, your own doctor, the researcher or supervisor (contact details below), or a member of the MAV team. The number for MAV is 0141 532 5805 or you can email Lauren Thompson at lauren.thompson@vruscotlandpnn.police.uk.

Questions

You will have the opportunity to ask any questions in relation to this project before giving completing a Consent Form.

Consent and Approval

This research proposal has been scrutinised and been granted Ethical Approval through the University ethical approval process.

As this project involves the participation of children we have also obtained Enhanced Disclosure Scotland approval in accordance with the Scottish Government.

What should I do if I have concerns about this study?

A full outline of the procedures governed by the University Teaching and Research Ethical Committee is available at ://www.st-andrews.ac.uk/utrec/complaints/

Contact Details

Researchers: Dr. Anna Gavine (ajg16@st-andrews.ac.uk, 01334 461874)

Supervisors: Professor Peter Donnelly (pdd21@st-andrews.ac.uk; 01334 463560)

Dr Damien J. Williams (djw11@st-andrews.ac.uk; 01334 463481)

Appendix 3.6 Pupil consent form for focus groups

Participant Consent Form

Project Title
An Evaluation of the Medics Against Programme in school pupils.

Researcher
Dr. Anna Gavine
ajg16@st-andrews.ac.uk (01334 461874)

Supervisor
Dr. Damien Williams
djw11@st-andrews.ac.uk (01334 463481)
Professor Peter Donnelly
pdd21@st-andrews.ac.uk (01334 463560)

The University of St Andrews attaches high priority to the ethical conduct of research. We therefore ask you to consider the following points before signing this form. Your signature confirms that you are happy to participate in the study.

Consent
The purpose of this form is to ensure that you are willing to take part in this study and to let you understand what it entails. Signing this form does not commit you to anything you do not wish to do and you are free to withdraw at any stage. You are also free to miss out any questions which make you feel uncomfortable.
Material gathered during this research will be treated as confidential and securely stored. All data will be stored securely, in an anonymised format on a password protected computer and backup storage hard drive. Until data is transcribed tapes will be stored in a locked container within a locked cupboard in the school of medicine away from details including names, addresses or other information that could identify you. Additionally all names of persons, units, buildings and addresses that could identify you will be blanked out from the tape. All tapes will be destroyed upon completion of the project (by 01/08/2014). All paper copies (transcriptions) and notes will be anonymised and will be stored in a locked storage cupboard or safe to prevent identification. Again these will all be destroyed by 01/08/2014.
Please turn over.

Please answer each statement concerning the collection and use of the research data.

I have read and understood the information sheet.	☐ Yes	☐ No
I have been given the opportunity to ask questions about the study.	☐ Yes	☐ No
I have had my questions answered satisfactorily.	☐ Yes	☐ No
I understand that I can withdraw from the study at any time without having to give an explanation and I do not have to accept the invitation to complete further research activities	☐ Yes	☐ No
I understand that my data will be kept confidential and anonymous and that only the researcher(s), supervisor will have access and selected members of the CIRV team will have access.	☐ Yes	☐ No
I agree to my data (in line with conditions outlined above) being archived and used for further research projects.	☐ Yes	☐ No
I have been made fully aware of the potential risks associated with this research and am satisfied with the information provided.	☐ Yes	☐ No
I agree to the use of anonymised quotes	☐ Yes	☐ No
I agree to take part in the study	☐ Yes	☐ No

Part of the research involves taking tape recordings which will be confidential. All tapes will be stored securely as detailed above. Recorded data can be valuable resources for future studies therefore we ask for your additional consent to maintain data and images for this purpose.

I agree to being tape recorded	☐ Yes	☐ No
I agree for my tape recorded material to be published as part of this research	☐ Yes	☐ No
I agree for my tape recorded material to be used in future studies	☐ Yes	☐ No

Participation in this research is completely voluntary and your consent is required before you can participate in this research. If you decide at a later date that data should be destroyed we will honour your request in writing.

Name in Block Capitals

Signature

Age

Date

Further information about the study is contained in the enclosed letters and information sheets.

This form must be completed and returned to the researcher for the named young person to be included in this study: Please hand back to the school.

Appendix 4 Healthcare Professional information sheet and consent form

This Appendix contains:

- Appendix 4.1 Information sheet for semi-structured interviews
- Appendix 4.2 Consent form for semi-structured interviews

Appendix 4.1 Information sheet for semi-structured interviews

Participant Information Letter

Project Title

An evaluation of the Medics Against Violence (MAV) programme in school pupils.

What is the study about?

We invite you to participate in a research project evaluating the Medics Against Violence (MAV) programme, which you have been involved in delivering. The aim is to identify the overall strengths and weakness of MAV, to assess gaps in the provision of services and perceptions of success. This will then help to improve MAV and the service it offers.

This study is also being conducted as part of Anna Gavine's PhD Thesis in the School of Medicine.

Do I have to take Part?

This information sheet has been written to help you decide if you would like to take part. It is up to you whether or not to take part. If you do decide to take part you will be free to withdraw at any time without providing a reason.

What would I be required to do?

You will be invited to attend an interview with a researcher (lasting no more than 30 minutes) to discuss the following:

- Reasons for getting involved with MAV
- Experiences delivering the session
- Strengths and weaknesses of the programme
- How MAV can be developed and improved
- Perceptions on whether MAV has been successful in changing attitudes towards violence

The interview will take place at a time that best suits you and can be either face-to-face or over the telephone. The interview will be recorded and you are free not to answer any questions that you feel uncomfortable with.

Will my participation be Anonymous and Confidential?
Only the researcher, supervisor(s) and selected members of the MAV team will have access to the data which will be kept strictly confidential. Your permission will be sought in the participant consent form for the data you provide, which will be anonymised, to be used for future scholarly purposes.

Storage and Destruction of Data Collected
The interview will be recorded using a digital recorder and then transferred onto a password protected computer, before being transcribed using computer software. Any identifying features (e.g. names, places) will be omitted from the transcriptions. Until the recordings are transcribed, the digital recorder will be stored in a locked container within a locked cupboard in the school of medicine and will be separate from details including names, addresses or other information that could identify you. Only the researcher will have access to the key for this. Additionally, all names (of persons, units, buildings) that could identify you will be masked out. All recordings and transcriptions will be destroyed by 01/08/14 upon completion of the project.

What will happen to the results of the research study?
The results will be used to evaluate the effectiveness of MAV in changing young people's attitudes towards violence. The results will be finalised by 2014 and will be written up as my PhD thesis, the MAV evaluation report and as part of a paper to be submitted for publication in an academic journal and for presentation at a conference.

Questions
You will have the opportunity to ask any questions in relation to this project before giving completing a Consent Form.

Consent and Approval
This research proposal has been scrutinised and been granted Ethical Approval through the University ethical approval process.

What should I do if I have concerns about this study?
A full outline of the procedures governed by the University Teaching and Research Ethical Committee is available at http://www.st-andrews.ac.uk/utrec/Guidelines/complaints/

Contact Details

Researchers: Anna Gavine (ajg16@st-andrews.ac.uk, 01334 461874)

Supervisors: Professor Peter Donnelly (pdd21@st-andrews.ac.uk; 01334 463560)
Dr Damien J. Williams (djw11@st-andrews.ac.uk; 01334 463481)

Appendix2 4.2 Consent form for semi-structured interviews

Participant Consent Form

Project Title

An evaluation of the Medics Against Violence (MAV) programme in school pupils.

Researcher

Dr. Anna Gavine

ajg16@st-andrews.ac.uk (01334 461874)

Supervisor

Dr. Damien Williams

djw11@st-andrews.ac.uk (01334 463481)

Professor Peter Donnelly

pdd21@st-andrews.ac.uk (01334 463560)

The University of St Andrews attaches high priority to the ethical conduct of research. We therefore ask you to consider the following points before signing this form. Your signature confirms that you are happy to participate in the study.

Consent

The purpose of this form is to ensure that you are willing to take part in this study and to let you understand what it entails. Signing this form does not commit you to anything you do not wish to do and you are free to withdraw at any stage. You are also free to miss out any questions which make you feel uncomfortable.

Material gathered during this research will be treated as confidential and securely stored. All data will be stored securely, in an anonymised format on a password protected computer and backup storage hard drive. Until data is transcribed recordings will be stored in a locked container within a locked cupboard within the school of medicine away from details including names, addresses or other information that could identify you. Additionally, all names of persons, units, buildings and addresses that could identify you will be blanked out from the tape and omitted from transcriptions. All transcription and recordings will be destroyed upon completion of the project (by 01/08/2014).

Please turn over.

Please answer each statement concerning the collection and use of the research data.

I have read and understood the information sheet.	☐ Yes	☐ No
I have been given the opportunity to ask questions about the study.	☐ Yes	☐ No
I have had my questions answered satisfactorily.	☐ Yes	☐ No
I understand that I can withdraw from the study at any time without having to give an explanation and I do not have to accept the invitation to complete further research activities	☐ Yes	☐ No
I understand that my data will be kept confidential and anonymous and that only the researcher(s), supervisor will have access and selected members of the CIRV team will have access.	☐ Yes	☐ No
I agree to my data (in line with conditions outlined above) being archived and used for further research projects.	☐ Yes	☐ No
I have been made fully aware of the potential risks associated with this research and am satisfied with the information provided.	☐ Yes	☐ No
I agree to the use of anonymised quotes	☐ Yes	☐ No
I agree to take part in the study	☐ Yes	☐ No

Part of the research involves taking tape recordings which will be confidential. All tapes will be stored securely in the manner detailed above. Recorded data can be valuable resources for future studies therefore we ask for your additional consent to maintain data and images for this purpose.

I agree to being tape recorded	☐ Yes	☐ No
I agree for my tape recorded material to be published as part of this research	☐ Yes	☐ No
I agree for my tape recorded material to be used in future studies	☐ Yes	☐ No

Participation in this research is completely voluntary and your consent is required before you can participate in this research. If you decide at a later date that data should be destroyed we will honour your request in writing.

Name in Block Capitals

Signature

Date

Further information about the study is contained in the enclosed information sheet

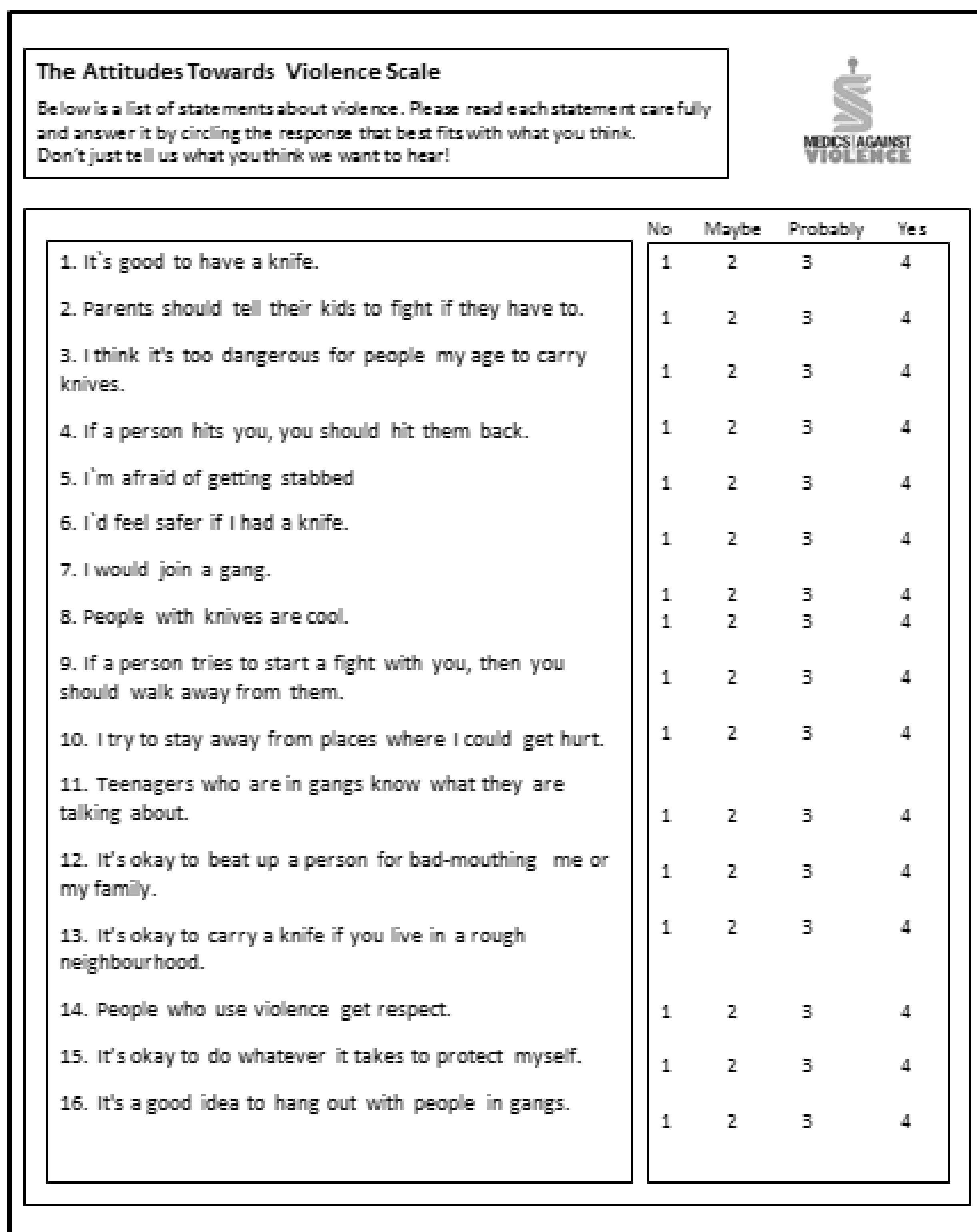
This form must be completed and returned to the researcher for the named person to be included in this study

Appendix 5 Questionnaires for school pupils

This appendix contains the two scales that were used in the questionnaires for school pupils:

- Appendix 5.1 ATV scale
- Appendix 5.2 CEAQ

Appendix 5.1 ATV scale



The Attitudes Towards Violence Scale

Below is a list of statements about violence. Please read each statement carefully and answer it by circling the response that best fits with what you think.
Don't just tell us what you think we want to hear!

MEDICS AGAINST VIOLENCE

	No	Maybe	Probably	Yes
1. It`s good to have a knife.	1	2	3	4
2. Parents should tell their kids to fight if they have to.	1	2	3	4
3. I think it's too dangerous for people my age to carry knives.	1	2	3	4
4. If a person hits you, you should hit them back.	1	2	3	4
5. I`m afraid of getting stabbed	1	2	3	4
6. I`d feel safer if I had a knife.	1	2	3	4
7. I would join a gang.	1	2	3	4
8. People with knives are cool.	1	2	3	4
9. If a person tries to start a fight with you, then you should walk away from them.	1	2	3	4
10. I try to stay away from places where I could get hurt.	1	2	3	4
11. Teenagers who are in gangs know what they are talking about.	1	2	3	4
12. It's okay to beat up a person for bad-mouthing me or my family.	1	2	3	4
13. It's okay to carry a knife if you live in a rough neighbourhood.	1	2	3	4
14. People who use violence get respect.	1	2	3	4
15. It's okay to do whatever it takes to protect myself.	1	2	3	4
16. It's a good idea to hang out with people in gangs.	1	2	3	4

Appendix 5.2 CEAQ

The next set of questions asks some questions about how you might feel in different situations.Instructions: Below is a list of statements about how you might feel in different situations. Please read statement carefully and answer it by circling the response that best fits with what you think. Don't just tell us what you think we want to hear! We want to know what you really think.

1. Seeing a kid who is crying makes me feel like crying

No Maybe Yes

2. Other people's problems really bother me

No Maybe Yes

3. I would feel bad if the kid sitting next to me got in trouble

No Maybe Yes

4. It bothers me when my teacher doesn't feel well

No Maybe Yes

5. When I see a kid who is upset it really bothers me

No Maybe Yes

6. It would bother me if my friend got grounded

No Maybe Yes

7. I understand how other kids feel

No Maybe Yes

8. When I see someone who's happy, I feel happy too

No Maybe Yes

9. I would feel bad if my mum's friend got sick

No Maybe Yes

10. I feel sorry for kids who can't find anyone to hang out with

No Maybe Yes

11. I'm happy when the teacher says my friend did a good job

No Maybe Yes

12. I feel happy when my friend gets a good grade

No Maybe Yes

13. When I'm mean to someone, I usually feel bad about it later

No Maybe Yes

14. It's easy for me to tell when my mum or dad has a good day at work

No Maybe Yes

15. If two kids are fighting, someone should stop it

No Maybe Yes

16. I would get upset if I saw someone hurt an animal

No Maybe Yes

Appendix 6 Topic Guides

This appendix contains the two topic guides used for the qualitative data collection:

- Appendix 6.1 Topic guide for use in focus groups with school pupils
- Appendix 6.2 Topic guide for use in semi-structured interviews with healthcare professionals

Appendix 6.1 Topic guide for use in focus groups with school pupils

For use with school pupils to evaluate their experience of the Medics Against Violence session and attitudes towards violence.

Views on youth violence:

- Explore experiences with violence
- Explore perceptions about what makes a gang
- Explore ideas around why people get involved with violence
- Explore ideas around what could improve youth violence

Impact of Medics Against Violence Session:

- Explore their experience of the MAV session
- Explore whether their behaviour has changed since the MAV session
- Understand what aspect of the MAV session had the biggest impact
- Identify how MAV could be improved

As this is a focus group further questions may expand upon the above topics depending on the participant's response.

Appendix 6.2 Topic guide for use in semi-structured interviews with healthcare professionals

For use with MAV volunteers to evaluate reasons for getting involved with Medics Against Violence and experiences with MAV

Views on youth violence:

- Explore experiences with violence
- Explore impact of youth violence at work place
- Explore ideas around why people get involved with violence

Reasons for getting involved with Medics Against Violence:

- What encouraged them to volunteer for MAV
- Have they been involved with any public health programmes before
- How many sessions have they delivered

Experiences delivering the MAV session:

- Explore their experience of the MAV session
- Explore how they felt prior to delivering their first session
- Identify whether the training adequately prepared them for the sessions
- Explore how many pupils/volunteers are best for each session
- Explore strengths and weaknesses of the programme
- Identify any difficulties they have had delivering the programme
- Explore any ways in which the programme could be improved.

Participation in MAV sessions:

- Identify what limits their participation in MAV
- Explore how participation could be improved i.e. CPD, logistics
- Explore whether there is anything else that Medics could do to help prevent youth violence

Effectiveness of MAV:

- Explore whether they think MAV has been successful in changing attitudes towards violence
- Explore whether they think their sessions have been successful in engaging the pupils

As this is an interview further questions may expand upon the above topics depending on the participant's response.

Appendix 7 Medics Against Violence Members Survey

Appendix 7 depicts the questions that were asked using SurveyMonkey

Q1. Are you?

☐ Doctor

☐ Dentist

☐ Nurse

☐ Paramedic

Other (please specify)

Q2. Why did you join Medics Against Violence?

Q3. Have you been to a training session?

☐ Yes I went to a training session but have not been on a school visit

☐ Yes I went to a training session prior to my first school visit

☐ No I didn't attend training but I went on my first visit with an experienced presenter

Q4. How useful were the volunteer training sessions at Medics Against Violence?

☐ Extremely useful

☐ Very useful

☐ Moderately useful

☐ Slightly useful Not at all useful

☐ Not at all

Q5. What could we do to improve the training sessions

Q6. How many school visits have you been on?

- ☐ None
- ☐ 1 visit
- ☐ 2-5 visits
- ☐ 6-10 visits
- ☐ More than 15 visits

Q7. What did you most and least enjoy about the school visits?

I most enjoyed

I least enjoyed

Q8. What could we do to improve the school visits in terms of the following?

Organisation and logistics

Usefulness to the target audience

Satisfaction for MAV members

Q9. If you have not taken part in any school visits yet can you tell us why?

Q10. Please add any further comments or suggestions you would like to make about the Medics Against Violence programme here. Many thanks for your time

Appendix 8 Conceptual frameworks

This Appendix contains the two conceptual frameworks used in the qualitative analysis:

- Appendix 8.1 Conceptual framework developed from the school pupils' data
- Appendix 8.2 Conceptual framework developed from healthcare professionals' data

Appendix 8.1 Conceptual framework developed from the school pupils' data

1. Experience of Youth Violence	
1.1 Awareness of youth violence at school	i.e. witnessing, hearing about or experiencing fighting or knife carrying in school
1.2 Awareness of youth violence out with school	i.e. witnessing, hearing about or experiencing violence or knife carrying in the area in which they live, other areas, in the home or Glasgow centre
1.4 Awareness of gangs and gang fighting	i.e. aware of gangs in their area, school, family and the association with violence
1.5 Demographics of those involved in youth violence	age, gender etc.
1.6 Girls involved in youth violence	awareness of girls involvement in youth violence e.g. what type of violence, between girls or girls and boys, associations with boyfriends' involvement in violence
1.7 Alcohol and violence	awareness of an association between alcohol and violence
1.8 Drug use and violence	awareness of an association between drug use and violence

1.9 perceptions of why people engage in youth violence	
1.9.1 Peer pressure	Their friends or gang are involved and feel they need to do it to remain friends
1.9.2 Looking cool	Engaging in youth violence to appear cool, impress girls and friends
1.9.3 Bravado	Engaging in youth violence to appear hard and get a reputation for being tough
1.9.4 Role of football	Youth violence associated with football e.g. Celtic and Rangers rivalry
1.9.5 Family involvement	Engaging in youth violence as their parents/siblings are (or had previously) been involved in youth violence and were encouraged/expected to do so
1.9.6 Scheme fighting	Living in a scheme that fights with other schemes and engaging in violence to defend the scheme
1.9.7 Exhilaration	Engaging in violence for the excitement of it or to get a buzz
1.9.8 lack of awareness of consequences	Engaging in violence as unaware of the consequences to victim, offender or families

1.9.9 Media violence	Exposure to violence in films, TV, computer games contributing towards violent behaviour
1.9.10 Honour	Believing they need to resort to violence if a family member is criticised, mocked etc or if they themselves have been mocked to defend their honour
1.9.11 Racism	Thinking that youth violence is partly a result of racism
1.10 Awareness of knife carrying	
1.10.11 Protection	Believing that they will be safer if they carry a knife
1.10.12 Respect	i.e. believe it will impress peers and will gain respect in their social circle
1.11. Reasons why young people joining gangs	
1.11.1 Living in a scheme	Living in a scheme that has a gang
1.11.2 Safety	Believe that they will be safer if they are part of a gang i.e. the gang will defend them
1.11.3 To be part of something	Join the gang to feel part of something that's not their family or previous friends

1.11.4 Unable to leave gang	Remain in the gang even if they want to leave, as they are scared to leave the gang
1.11.5 Gain respect/fear	Believe they will gain respect from peers if they are part of a gang and will also gain the respect of the gang
1.12 Association with deprivation	Discussing the association with youth violence and deprivation
2. Experience of MAV session	
2.1 Age appropriateness	Is the programme suitable for their age or should it be older/younger i.e. when does youth violence begin
2.2 Shock	how shocking did they find the session and was this appropriate
2.3 Extent session is remembered	Particular bits of session that participants identified as memorable or if they were unable to remember session
2.4 Perceptions of medic volunteers	Perceptions of medics i.e. knowledge, trustworthiness, approachability
2.5 Realistic nature of content	Perceptions of how realistic they believed the session to be i.e. CCTV footage and applicableness to their lives did they feel it to be.

2.6 Upset at violence shown or discussed in session	Experiencing feelings of sadness, worry during the session, finding it too gruesome or disgust of violence
2.7 Class size	Thoughts on whether the class size was too big/too small
2.8 Length of session	Thoughts on whether the session was too long/too short/right length
2.9 Session dislikes	Any aspect mentioned that participants disliked about the session
2.10 Clarity of session	Appearing to misunderstand which scenes are real and which are not, whether to go around in groups or message not clear enough
2.11 Technical issues	Describing any technical issues during session e.g. DVD not working
2.12 Shock	Finding parts of the session e.g. pictures shocking
2.13 Attention	Describing how much attention pupils paid
3. Knowledge, behaviours and attitudes	

3.1 Avoid potentially risky and dangerous situations	Taking measures where they believe they are at risk e.g. avoiding drunk people, not going to certain areas, staying away from people with knives, not drinking too much
3.2 Go around with friends	Going out with friends and not on own
3.3 Never involved with violence	Had never personally been involved in fighting/knife-carrying
3.4 Perceptions of personal safety after session	Discussing whether they feel more or less safe following session
3.5 Reflections on session afterwards	Discussing whether they had independently discussed or reflected on session or behaviour afterwards
3.6 Young peoples' choices	Discussing their choice to be involved in violent behaviour, knife carrying etc.
3.7 Awareness of dangers	Awareness of risks of violence e.g. when going out, carrying a knife
3.8 Already aware of issues	Discussing that they already had a knowledge of violence and related issues prior to the session
3.9 Carrying items for protection	Discussing whether they carried items i.e. phone, keys, a weapon for their own protection

3.10 Mediation	Discussing thoughts on how conflict can be mediated without violence e.g. role of girlfriends and police
3.1 1 Pro-violent attitudes	Demonstrating attitudes supportive of violence
3.12 Anti-violent attitudes	Demonstrating attitudes against violence e.g. disdain
3.13 Violence for self-defence	Discussing the use of violence for self-defence
3.14 Physical consequences	Discussing physical consequences of violence e.g. types of injuries, death
3.15 Psychological consequences	Discussing psychological consequences of violence e.g. sadness
3.16 Impact on victim's life	Awareness of the impact violence can have e.g. unable to work, confined to wheelchair
3.17 Impact on offenders' lives	Awareness of consequences of committing a violent offence e.g. jail, guilt
3.18 Impact on families	Awareness of the impact on victims' and offenders' families
4. Development of MAV / further school-based programmes	

4.1 Victim of violence or ex-gang member attend session	Desire to hear about the experiences of victims and offenders
4.2 Drama sessions	Suggesting the use of drama sessions in violence prevention programmes
4.3 Police involvement	Desire to hear from the police e.g. about their experiences
4.4 Violence prevention events	Desire to have a school violence prevention event e.g. a week or a day focussed on this
4.5 Programme for younger years	Discussing whether a programme should be developed for younger years
4.6 First-aid	Desire to learn first aid to learn to treat injuries
4.7 Programme structure	Discussing aspects of the programme structure that could be changed e.g. number of sessions, videos, length of session
4.8 Desire for further information	Expressing a desire for further information on violence e.g. prevalence in other cities or felt they did not get enough information

5. Other methods of violence prevention	
5.1 Sentencing	Discussing the role of sentencing in violence prevention e.g. time spent in jail
5.2 More clubs/activities for young people	Discussing whether lack of clubs etc. leads to violence and if improving this would help decrease violence
5.3 Not preventable	Expressing a belief that violence is not preventable
5.4 Role of surveillance e.g. police, CCTV, metal detectors	Discussing the role of police and other preventive measures such as CCTV and metal detectors in violence prevention

Appendix 8.2 Conceptual framework developed from the healthcare professionals' data

1. Personal Details	
1.1 Gender	
1.2 Speciality	
1.3 Grade	
2. Reasons for involvement with MAV	
2.1 Experience with youth violence	describing their own experiences with youth violence in the work place e.g. type of injuries, frequency
2.2 Working with MAV founders	discussing whether working with Christine influenced decision to take part in MAV
2.3 Preventing violence	having a desire to prevent violence or discussing how it can be prevented
2.4 Personally experiencing youth violence when growing up	describing personal experiences of violence e.g. where they lives, family involvement
2.5 Benefit to society	discuss wanting to volunteer for the benefit of society

2.6 Doing something different from normal work	discussing whether taking part in MAV provides them with a change to their normal job
2.7 Having children of their own	discussing whether having their own children has influenced their decision to take part
2.8 Reducing workload	Perceiving that by volunteering in MAV and violence prevention activities will reduce workload
2.9 Time spent treating victims and not other patients	Discussing concerns that treating victims of violence means they have less time for other patients.
3. Youth Violence	
3.1 Discussing physical consequences	Discussing experience of managing physical consequences of violence in workplace or participants understanding of physical consequences
3.2 Discussing psychological consequences	Discussing experience of managing psychological consequences of violence in workplace or participants understanding of psychological consequences
3.3 Discussing impact on young peoples' lives	Acknowledging the effect of violence on victims and perpetrators'' lives

3.4 Associating violence with alcohol	Discussing whether in their experience alcohol is associated with violence
3.5 Discussing culture of violence	Discussing whether some young people grow-up in a culture of violence, which may lead to further violence
3.6 Associating violence with socioeconomic deprivation	Discussing which socio-economic groups violence is most prevalent in
3.7 Demographics of victims and perpetrators	i.e. gender, age
3.8 Discussing gangs and violence	Mentioning the role of gangs in youth violence
3.9 Concern for innocent victims	Displaying concern for "innocent victims" i.e. those who are not involved in youth violence but become a victim anyway, e.g. Mark Scott
3.10 Role of family in violence	Discussing how the family can influence whether or not a young person gets involved in violence
3.11 Cycle of violence	Discussing how early exposure to violence can lead to later involvement in violence
3.12 Territoriality	Discussing how issues of territoriality can lead to violence

3.13 Violence as a [public health issue	Whether they see violence as a public health issue and if it is being treated as one
3.14 Economic impact of violence	Mentioning an awareness of the financial ramifications of violence
3.15 Association with bravado	Discussing whether bravado in young people is associated with violence
3.16 racism	Discussing whether violence can be attributed to racism
3.17 Location i.e. West coast versus East coast	Discussing the geographic patterning of violence i.e. comparing East and West Scotland, or comparing Scotland to other countries
3.18 Association with drugs	Discussing the role of drugs in violence
4. Experiences delivering session	
4.1 Perceived engagement of pupils	How well they feel the pupils engage with them i.e. how they can relate to them, how much the kids listen or act, whether the kids get involved in discussions
4.2 Number of pupils and volunteers	Discussing experiences of different sized groups and varying numbers of volunteers and what they believe works best

4.3 Role of teachers in session	Discussing how the teacher's presence can influence the success of the session i.e. good and bad experiences with teachers, what the teachers should be doing and how to develop their role
4.4 Campus cop involvement	Experiences with campus-cops at session and what their role should be
4.5 Mixed-session days	Discussing alternative sessions i.e. where MAV has been part of a wider Public Health day
4.6 IT difficulties	Problems during the session with the film, computer or issues receiving information re. MAV
4.7 Issues with schools impacting sessions	Discussing problems with the schools that can impact session e.g. schools not being aware of visit, wrong times, schools not understanding purpose of MAV
4.8 Participant experience of violence	Discussing whether the participants will discuss their own experience of violence during the session and whether this influenced by age and location
4.9 Strengths of programme	Discussing any strengths of the programme and what they like about it

4.10 Experience delivering the session in other settings	Discussing their experience of delivering the programme in prisons, back to work schemes, Kibble secure unit etc. and how this compares to the schools
4.11 Improving the programme	Discussing ideas on how the programme can be improved
4.12 Feedback on sessions	Expressing a desire for feedback on their individual performance or MAV as a whole
4.13 Length of session	Discussing the length of the session and how they fill the time
4.14 Adaptability	Discussing having to or wanting to adapt the programme to best fit the needs of the school or setting and thoughts on how adaptable the programme is
4.16 Helping make choices	Emphasising the need to help young people make appropriate choices and decisions
4.12 Perceptions of success	Whether they feel the programme has been successful and why
5. Training	
5.1 Experience of training	Discussing experiences of training i.e. attending a session or going on a visit with an experienced presenter

5.2 Feeling prepared prior to session	Whether they felt the training and information pack provided them with enough experience and information prior to running a session
5.3 Anxiety in delivering sessions	Discussing feelings of anxiety when delivering sessions
6. Participation	
6.1 Limits of participation	Discussing limitations of participation e.g. time, location of sessions
6.2 Logistical improvements	Discussing how logistical improvements could improve participation e.g. when to advertise sessions
6.3 CPD credits	Discussing whether CPD credits would be applicable for MAV and whether this would enhance participation and moral
6.4 Advertising i.e. for volunteers and recruiting schools	Discussing how and where MAV and anti-violence campaigns should advertise and promote themselves
6.5 Working with health boards/Government	Discussing how MAV works with the government or health boards and how this could be developed to improve participation

6.6 Session delivered in protected time vs. Own time	Discussing whether volunteers should be doing sessions in their own free time or professional activity time
6.7 Role of junior doctors in sessions	Discussing whether junior doctors should be involved in MAV sessions
6.8 Role of doctors in violence prevention	Discussing whether doctors should have a role in violence prevention and what other aspects of violence prevention could they be involved in
6.9Experience of public health more generally	Discussing their personal experience of involvement in public health more generally
6.10 Involvement of running MAV	Discussing the running of MAV and who should participate in this

Appendix 9 Example thematic charts

This Appendix contains two example thematic charts used in thematic analysis:

- Appendix 9.1 Thematic chart developed from the school pupils' data on their experiences with the session
- Appendix 9.2 Thematic chart developed from healthcare professionals' data on their experiences delivering the sessions

Appendix 9.1 Thematic chart developed from the school pupils' data on their experiences with youth violence

	2. Experience of MAV session				
Focus group number, school	**2.1 Age Appropriateness**	**2.2 Shock or upset at session**	**2.3 Perceptions of volunteers**	**2.4 Structure of session**	**2.5 Engagement and understanding of session in session (i.e. attention)**
Group 1, School A (n=12, 7 female)	Thinks it's really important got it in 5th year but should start doing it to younger people as they're not aware of the consequences of being violent R1 thinks as people are drinking a lot younger they need to learn to be more careful and they wouldn't get into as much trouble R7 thinks they should get in the first year and 3 others agree R2 thinks kids are growing up quicker and saw a fireworks video in p7 which kept him away from fireworks so thinks it would help younger pupils	R some of the pictures made it more shocking and *more that actually does happen* R2 agrees as thought pictures shocked you but that was the harsh reality Number of others in group agree and discuss the shocking reality of the photos R10 didn't like seeing the pictures as found them disgusting	R12 talking to the doctors helped as they've seen casualties so know what can happen so it's good to get their perspective R2 liked the stories from the doctors and couldn't believe how bad the injuries were R there's no one else who will tell us R11 they've worked in A+E so have seen what happens R1 guidance teacher doesn't know as they don't have first-hand experience so want someone who knows what they're talking about R6 can trust doctors and they wouldn't often lie R1 you know what they're saying is the truth	R the period was too short to finish the questions	R3 if you just hear stories thinks can just brush them aside but when see photos you realise more R4 Liked the fact it tells you what happens in Glasgow as that's where they're from so it made it more realisitic R thought the interviews with people affected made it more real R11 Thought pictures showed how bad it really is as if someone tells you what happened you wouldn't think about it too much but the pictures brought it to reality R2 Thinks the combination of videos and interviews and doctors talking about it brought a sense of realism to it as you hear stories about people getting stabbed but you don't take it in

Group 1, School B (n=6, 3 females)	R4 when they're in primary they'd probably be scarred by this. R5,6,1 also don't think it should have been earlier R1 if had been too early nobody would have understood it R6 at the end of 2nd year was a good idea R5 if it had been later it would have been too late R6 all of them would have been in gangs and then you cannae get out	R1 you see the CCTV footage and it's really bad *there's not even knives it's like fists and feet* R3 was *a bit disturbed by the hobo that got stabbed* R4 found it a bit gruesome for some folk R1 people who don't like blood and guts wouldn't like it but liked how the medic said they could step outside if they needed to R3 thought it *scars you for life if you watch this* R6 thought it wasn't too gruesome although there was one bit that scared him	R4 liked they were understandable as said people could leave if they need to R6 liked that they came in as have seen this stuff before R1 they've witnessed it and teachers wouldn't be able to describe it so was good they took their time to see us	Were in two classes put together and found it noisy R5 it is better with a smaller group as could actually pick it up and wasn't as cramped R4 a bigger group could be better as your friends would be there and you'd have a bigger group for discussion R5 didn't have time to talk about stuff after the video by the time they got in	Were in a double class. R5 people were giggling R6 I couldn't pick it up because people were talking about ginger Jim During group work R6 a lot gather round their friends and started talking R1 weren't really paying attention then and forgot parts of video as were talking then too Some group members were confused as to what was real and what was acted Group discuss although wheelchair guy was with his friends he still got stabbed as was helping someone else R5 you're saying that being in a group with a few people would help but it might not Group had thought about the session after R5 had quite a lot of mental pictures running through my head R1 spoke about it with friends as it was telling you what violence can do
Group 2, School B (n=5, all female)	R4 should be delivered to younger kids as they go out and think it's cool to fight R3 thinks it should be shown to older people	As a group they found the level of graphic images about right	R4 Wouldn't have meant anything having teachers doing it R6 so used to hearing it from normal teachers it		

	R2 as older people fight and go out more often they should see it		wouldn't have meant anything		
Group 3, School B (n=6, all female)	Group thinks it was shown at right age R1 anybody younger wouldn't be able to handle it. Thinks as they could hardly handle it how can 9 year olds handle it R3 thinks it better to show them earlier so don't start R1 and others think 12 is a good age as it's when they all change and are deciding what to do Group conclude with thinking it should be shown to 1st years	R2 could hardly handle it R1 thinks that if anything else was added nobody would be able to cope with it As a group extensively discussed and found the hospital pictures *hideous, disturbing* and felt *it gave them a fright* R3 *I cried at the part where the wee boy was outside the pub and he was crying for his mum cause he didn't want to die* as he was meant to be a tough guy. R1 also really didn't like that part and said it made her feel sick but was a really *good experience to watch it* Group also felt it was the right thing to do to see the video Rc *I don't care if I cried my eyes out it was the right thing to show me* Think it provides what they need to know for *life decisions*	R1 speaking to someone face to face helped as they know what they're talking about as they've seen it R they've got the pictures in their head R3 was good to have people coming in and doing that	R1 thinks should be longer to give more chance to talk	R1 liked that it was set in their town Ra thinks it showed them what really happens as it if it was something fake looking *you'd be like whatever* and wouldnae watch it. Group then discusses the fact that it was so real and told them the truth and made them think about it afterwards

Group 1, School C (n=6, all male)	Group think they are the right age as it's when they're turning and getting into gangs R1 thinks it more suitable for older people R2 thinks it should be given to younger people as well	R it showed you his face (after being attacked) and it was unbelievable Re more goes on than you actually think and was shocked when you saw people getting stabbed because of gangs.	R1 prefer to get the medics as they've got first-hand experience with what's happening R2: they know more information than teachers do Agreement from group R they were able to answer questions	R5 it was a good length R had quite a bit of time R4 it was 55 minutes Agreement from others	As a group they had thought about the session afterwards
Group 2, School C (n=6, 1 female)	Group feels they were the right age for the session R2 it's the age where you start to get into it R3 thinks a younger person shouldn't have been watching that Rd thinks younger people should have been shown it R2 thinks younger people would have found it funny	R1 didn't like the violence in it, like watching folk getting hit R3 didn't like the videos as felt it was a bit too much when they showed folk in hospital and the pictures of the damage was quite shocking R found a bit too intense	Group as a whole enjoyed talking to the doctors Rd the teachers don't really know that much about it R2 teachers only have some knowledge as pupils from watching the video R3 better to have the doctors as they've had experience	R4 thinks would be better if was in the hall with all the 2nd years together Rd if it was bigger would have been better R3 thinks nobody would watch then R1 thinks session was too short R3 thinks was too short as didn't get a chance to discuss a lot Some pupils thought length was fine R4 would be more time to cover it all in a double period	Group discusses scenes from video and say they will remember the sesion
Group 1, School E (n=7, 5	Group thinks they are the right age as it's when they start going into town and to	M it's gruesome M1 found it hard-hitting	M1 doctors were able to give a lot more information the teachers	Group debated whether they had enough time to ask	F1 found the acted scenario a bit confusing because of the two parts

male)	the pictures at night and 2 participants think it would be too much for younger kids F2 thinks p7 and up is alright for the video M *if you were a wane you wouldnae really understand that*	As a whole group didn't like seeing the blood and violence however felt it wasn't too graphic as it showed what would happen M3 *I didn't like it when the wee boy was getting jumped aboot and then he got stabbed with the machete* other felt it was a shame on the wee boy.	wouldn't know M felt they explain it more M cause he's an actual doctor he probably treats knife wounds	questions – some felt there was enough others didn't M2 needs to be a wee bit longer to get more information as only got five minutes with him at the group work	M2 found the acted part quite complicated as it shows the stabbing and at the end it changes F2 remembers video Number of group talk about the footage of getting stabbed F1 remembers group work M3 cannae really remember the session M can only really remember video M can remember the video but don't remember the doctor talking Other members then discuss group work with doctot (ambulance times, worst place to get stabbed) M liked the session as they got out of their class

Appendix 9.2 Thematic chart developed from healthcare professionals' data on their experiences delivering the sessions

3. Experiences delivering the session					
Interview no. Speciality, Gender	**3.1 Structure of session**	**3.2 Role of teachers and other staff in session**	**3.3 Difficulties with sessions**	**3.4 Perceived engagement with session**	**3.5 Adaptability**
Medic A, Maxillo-facial registrar, female	Feels session works best with the smallest classes	Community police officers have been there to try and keep order. Feels teachers are there to impose discipline	Had been at a school where there was 120 pupils but was different difficult to project voices and trying to get the pupils to do group work was impossible. Thinks there had been a breakdown in communication	Feels as the kids tend to want to listen so don't need to take nonsense	
Medic B, Consultant Anaesthetist, Male	Tries to introduce some life coaching regarding the choices of what young people want to happen (i.e. if you hang around in gangs this is what could happen). Sometimes need to do a *one man stand-up routine* as you can have another 25 minutes after the video. If it's a bigger class and on own addresses it from front as group work can be difficult as kids get distracted	Having the teacher involved can be helpful for group work. Sometimes teachers leave class and that leaves you vulnerable. Would like to teachers help to organise pupils and sit ones who talk separately. Thinks teachers should be pre-empted and ask them questions and provide teachers with the answers and facts to contribute.	Putting into groups isn't sometimes practical as they might have no desks and there's a lot of noise. Issues using logistical with schools not aware of what's happening and AV equipment not ready. Feels this comes from the schools as it is variable	Feels has made the most impact in prisons. Part of the trouble is getting 14 year olds to speak out as they don't want to be teacher's pet of *damming thereself by discussing what kind of knife they actually use.* Find gets less attention in better off areas as kids don't feel it applies *I think almost almost in many ways the*	had to change the talk when was delivering it in prison as one of the men in the video was actually in prison

				worse the kids are in inverted commas the more attention you get from them.	
Medic C. General surgery registrar, female	Thinks it can be good to have two people from different specialities to put their input in as have different experiences and also very useful when in groups. Usually just does one class and sometimes two which is fine.	Some teachers sit back and don't do anything but others get very involved and give personal stories which, is very useful. Students also look to their teachers for understanding and leadership so it's very positive when the teacher gets involved.	Did one session with three classes in a hall and went really badly as the medic taking it lost all the kids pretty quickly	Found the boys in prison really attentive and had really good sessions although felt the boys were just glad to see somebody to break up the day and might have just been paying lip service to the guards. Did a preparation for work session and felt that it had been no interest to participants and was a waste of time. Finds some classes *just get it and they just twig with it and you have a really interesting conversation* Wonders if it can really be successful for those who don't want to engage.	

				Thinks can engage kids better as is younger and will relate to her.	
Medic D	Mostly has been on own but better if you can have two volunteers as it's easier for group discussions and adds a different perspective. Ideal class size is 20. If too big a group you can't get round them all but if too small finds they won't speak.			Thinks on the day the session is usually well received but wonders how long it's remembered for. Finds get more out of it in deprived areas as children have personally experience through friends and family of violence. Kids always laughing and joking at start but by 5 minutes of the video are nearly all paying attention	Thinks delivering to sessions to older kids is a bit late and ideal age is 2nd year as they are more receptive
Medic E, Consultant Psychiatrist, Female	It was a bit of a shock as pupils all left as soon as bell went. Has had variable sizes of classes but finds it easier with another volunteer to facilitate groups	Has had the community police at sessions a couple of times and they've been very good at keeping the group discussion going and have been helpful. Feels teachers are there to maintain discipline and it's better if it's someone who not their teacher is doing the group work.		Tries to engage with them on their level by getting on knees at group work and not lecturing them. Feels do get a meaningful interaction and they like to hear about the gore.	

Medic F, Consultant Oral Surgeon, Male	Has done them in classes and also gym halls and doesn't mind the size. Feels need a decent number to keep it interesting and it's more difficult if it's smaller classes	Some schools have had the campus cops which have been good and if they're running the session it's usually fine. Want to get teachers involved, this could be pointed out to them or get the teachers along for a lecture. Would like to teachers to allow bad language for the session to allow debate to continue.	Has had the odd computer failure but never really had a problem	Talking to 12, 13 year olds in well-to-do areas you don't get a response as they're all shocked by it and thinks they just get scared. Feels can have a debate in schools where kids have experience of it.	Programme should be delivered depending on life experience rather than age. In a well-to-do area it could be delivered to S4 before they start going to the pub and be slanted in a different way as a lot of these kids never have any intention of carrying a knife so emphasis should be changed depending were you're going.
Medic G, Paediatric Dental Registrar, Male	Generally has delivered to PSE classes so not really a problem of too little or too few as it's quite a good number. Doing it in pairs brings a bit of variety. Also means can spend more time talking to them at the group stage and is not quite as effective with one person. Sometimes an experienced takes the lead or if the volunteer is more hesitant he will take the lead.	Teachers normally stay and feels that is benefit to him as used to dealing with children on a one-to-one basis and less familiar with the crowd control aspect of teaching. Teachers have been able to keep any disruptive pupils under control		Thinks they do engage but unsure if it has any lasting impact. Generally doesn't find the kids disruptive. In each class a couple of kids are on the periphery of violence and can easily relate and the majority see the video and can discuss that. Has had a few classes with 1 or 2	

				disruptive pupils.	
Medic H, Consultant Anaesthetist, Female	Doesn't tell them what to do, simply asks them to choose and be responsible for their own choices. Has delivered to a big range of sizes i.e. hall of over 100 and 3 boys in the Sure Start programme but 20 is a good numver as can divide into 4 groups of 5. Finds it easier doing session on individually although can be good to be with someone from a different speciality	Has sometimes done sessions with campus cops and that can work well. Likes to have a teacher who is engaged and circulates with pupils.	Has had the *odd glitch* re. miscommunications about timings of session but is usually fine . Was with a gastroenterologist but feels they had less of an impact as they *don't have so many stories to tell*	Finds engagement variable. Those from most deprived areas will speak about personal involvement. But children are almost universally engaged with dvd and reactions quite similar. A lot of them upset by the stories and shocked by the violence.	Find in some schools a there is a lot of nice children who are quite naïve and the message is more focussed on avoiding trouble and how to stay safe when they're in the centre of Glasgow and making them aware of the dangers.
Medic I, Consultant in Oral Medicine, Male	Makes the session about life-decisions and making them aware that they have the choice to walk away from it. Finds a class size of 15 ideal as if it's too many they can wander off but if it's less the pupils feel on the spot	Feels teachers should be utilised to help make next resource and they could deliver this as they can tailor it better to the background of the pupils.		Thinks engagement is down to presenter and if they are used to engaging and bantering with young people and street credibility is very important. Thinks providing them personal background info can help engage as don't think you're *just a middle-class highly educated individual*	Adapts programme for use in prisons due to low concentration of inmates and the dvd is too soft. Hasn't seen it used in the toughest schools but concerned that it may be mocked a bit as these are tough cookies
Medic J, Consultant in A+E, Male	Finds there's often time constraints in a class period as takes time to get organised and often finds runs out of	Sometimes two classes get combined and then really need the teacher to be a bit more		Trying to engage all of the class can be difficult depending on what kind of	More interested in trying to influence the youngsters to

	time and as soon as the bell rings *that's it.* Class sizes vary and tends to be to second years. Sometimes two classes get combined but really about 20 is ideal if it's just one volunteer to make 4 groups of five. 10 oe 12 is too small as some kids won't speak.	involved. Has been *struck with is the enthusiasm of the teachers* and has always had them there to act as disciplinarians and shout which is great. Had one teacher who tuned out and did marking which was not good. Thinks teachers need to be involved and reinforce message after the session.		class it is and some kids will switch off. Thinks video is hard-hitting and kids are a bit stunned by that. Told by teachers kids pay a lot more attention than usual. Finds lots of the kids interactive and genuinely don't want to get involved. Thinks girls sometimes tune out so emphasises that they can influence boys behaviour.	avoid violence rather than stop it as in most classes there are probably only 1 or 2 people on the edge of it so tries to influence the majority to avoid it. Some schools are genuinely shocked but others the kids are completely aware of it
Medic K, Consultant Orthopaedic Surgeon, Female	Always done it with someone else except two visits but found that ok as knew the school and were also campus cops there for support	Also had campus cope when did visit on own to a school and this helped session go fine	Finds sometimes that teachers can't work dvd players	Thinks video catches attention at start even in the classes with more disruptive kids as usually get almost silence and really hopes they're taking it in. Thinks the kids are asking the right questions and giving right answers. Always hears *sharp intakes of breath that at the appropriate bits in the dvd.*	

Medic L, Consultant Forensic Pathologist, Female	Thinks has only had one class at a time, maybe 2. Feels works fine on own or with another medic as they can bring another viewpoint but doesn't feel kids lose anything with one volunteer.	Hopes that teachers follow-up and reinforce messages			Has had informal chats with other medics re. whether it's being delivered at the right age group.
M01, dentist	Feels MAV should organise a second follow up lesson		problems with IT which sometimes held up starting the lesson	Enjoyed interacting with the pupils	
M02, doctor					
M03, doctor			Lack of awareness of visit by the school		
M04, doctor			It became challenge had to teach 4 classes instead of 1	Large class reduced interaction and allowed the rowdies to have more control	I received feedback to see cd was too middle class- maybe it is
M05, dentist					
M06, doctor				Interactive audience, usually appeared interested	
M07, doctor		Feels would be better if teacher knew what to expect		Some of the interaction with the children! Some in a group will always be more of a challenge to engage - c'est la vie	

M08, doctor			sometimes poor organisation (on the part of the organisations we are visiting)	Enjoys interacting with children	One boy at a provate school vomited in to a waste paper bin. A teacher told me he thought some of the images were "full on". I speculated the teachers fed this back to MAV and that MAV have decided the images are ok for this age group
M09, doctor		Feels teachers don't help always control pupils		Likes to encourage discussion	
M10, doctor and dentist	Sometimes left waiting around			Enjoys engaging with the pupils	
M11, doctor	Would prefer sessions first thing in the day.		Sometimes has difficulties getting kids to pay attention	Has good and bad sessions	

M12, doctor	Thinks it's better to work with smaller groups and would like MAV to avoid sessions between 12 and 2pm as that involves taking two sessions out of a clinical working day			Finds the kids normally very interactive	
M13, dentist					Feels meets target audience's needs.
M14, doctor				Has always found the schools positive but the students at preparation for work courses were silent and dismissive	
M15, doctor	Thinks it's well-designed		Has difficulties travelling to sessions		
M16, dentist			being on my own for a visit at a school with more difficult pupils		
M17, nurse				Found that they listened and were sometimes shocked by the video	Feels should be delivered to a younger age groups
M18, doctor and dentist			Teaching staff who did not understand the remit/trying to teach very large or older classes	Enjoyed getting discussions going	Should be kept to S2 pupils

M19, doctor			group was quite large and felt some kids were intimidated by the stronger characters and so didn't contribute as much as they would have liked to	Enjoyed talking to children and finding out their experiences of gang culture.	
M20, doctor	Thinks DVD and presentation good but wonders if it will need updated		Turning up to find logisitc difficulties and not able to deliver presentation	Enjoyed hearing viewpoint of young people	
M21, doctor			Difficulties with very large groups of older children (5th yr pupils)	Enjoyed interaction and discussion with the pupils	sometimes in the more affluent 2nd years have no exposure and feedback can be difficult
M22, doctor		Sometimes found teachers seem more concerned with "getting everyone through" rather than making the visit meaningful - rather as though it was a "tick box" exercise.	Difficulties with very large groups of older children (5th yr pupils). Has been in groups of up to 60 pupils	Enjoyed engaging with the children but found meaningful discussion hard with large groups	
M23, doctor	Thinks lesson plan is fine	Found it hard turning up and doing a lesson with an uninterested teacher. Thinks teachers need to understand what MAV are trying to achieve.	Thinks lesson plan is fine	Enjoyed the interaction with the children	

M24, doctor	Finds format excellent			Enjoys seeing the pupils paying attention to the video & getting involved in the discussion groups.	
M25, doctor					
M26, doctor				Felt it was good when kids who didn't really want to engage were drawn in and contributed.	
M27, doctor	Found everything worked well			Enjoyed the attentiveness of children during video and discussion afterwards	
M28, doctor			giving session to too large groups and has had a couple of times schools have organised whole year groups which is less effective	Enjoys getting into classroom discussions	

M29, doctor			Sometimes finds the organisation of sessions poor e.g. timings and AV facilities	Finds the children responsive	
M30, doctor			Found everything worked well	Enjoyed interaction	
M31, doctor					
M32, doctor	Feels it's well organised in most schools			Enjoyed taking part in discussions	
M33, , doctor and dentist				Thought that probably wasn't getting through to the few I really need to!	
M34, doctor	Felt session was very rushed but enjoyed small group discussions				
M35, doctor and dentist			Found IT inconsistent		
M36, doctor					
M37, doctor	Thinks fewer visits to more classes would be better	Thinks need more engagement with the class teachers. Sometimes they don't help keep the classes attention during the small group sessions	Trying to find the schools and sometimes the classes are disorganised or visits are cancelled or changed with short notice		
M38, dentist					

M39, paramedic					
M40, doctor					
M41, doctor			Disliked dealing with difficult pupils		
M42, doctor	Thinks presentation is good but would like feedback		Has not had any difficulties	Thinks DVD makes big impact	
M43, dentist			Went to one school for nothing as the talk had already taken place.	Enjoys the interaction and feels they are a good audience	
M44, doctor			if a class with no experience of problems then it can be difficult	Enjoys interacting with the class	Thinks targeting depends on the school If a class with no experience of violence then should may be look at S4 rather than S2
M45, nurse			Sometimes finds behaviour of some children difficult	Enjoys interacting with children and being able to answer questions	
M46, doctor		some teachers could not control pupils and did not discipline them.			

M47, doctor					
M48, doctor			Difficult audience - 14 - 16 yr olds 'already known to police'!! A baptism of fire!		
M49, dentist					
M50, student doctor					
M51, doctor and dentist			Disliked standing around waiting for staff	Enjoys interacting with the young people	Thinks should tailor presentations to "life experience" of the young people
M52, dentist					
M53, doctor					
M54, doctor	Would prefer to address bigger groups of pupils			Enjoys interacting with the pupils	
M55, doctor			organisation of technology required for presentation		
M56, doctor				Found schools were engaged	
M57, dentist					
M58, doctor					

M59, dentist					
M60, doctor			Found it hard being on the spot	Found the kids enthusiastic	

Appendix 10 Example descriptive charts

This Appendix contains two example descriptive charts used in the descriptive analysis. These charts detail the data for one sub-theme identified in the thematic charts (Appendix 9) and the categories that were derived from this:

- Appendix 10.1 Descriptive chart developed from the school pupils' data on their perceptions of the MAV volunteers.
- Appendix 10.2 Descriptive chart developed from healthcare professionals' data on their perceived engagement of school pupils during session.

Appendix 10.1 Descriptive chart developed from the school pupils' data on their perceptions of the MAV volunteers

Data charted in column 2.3 Perceptions of volunteers	Elements/dimensions identified	Categories/classes
Group 1, School A R12 talking to the doctors helped as they've seen casualties so know what can happen so it's good to get their perspective R2 liked the stories from the doctors and couldn't believe how bad the injuries were R there's no one else who will tell us R11 they've worked in A+E so have seen what happens R1 guidance teacher doesn't know as they don't have first hand experience so want someone who knows what they're talking about R6 thinks can trust doctors and they wouldn't often lie R1 you know what they're saying is the truth	Felt talking to doctors useful as they have experience of violent injuries Enjoyed hearing about doctors' experiences Felt only the doctors will tell them about the reality of violence Thinks as they've worked in A+E they have a knowledge of violence Doesn't feel guidance teacher have enough experience to teach about violence Thinks can trust doctors and know they wouldn't lie	Enjoyed hearing about volunteers' experiences of youth violence Felt shocked by session Felt only healthcare professionals could provide them with this information Believe healthcare professionals experience makes them an authority on violence Don't feel teacher has enough experience to deliver session Feel can trust doctors
Group 1, School B R4 liked they were understandable as said people could leave if they need to R6 liked that they came in as have seen this stuff before R1 they've witnessed it and teachers wouldn't be able to describe it so was good they took	Felt volunteers were empathetic and were pleased could leave session if needed to Glad volunteers attended session as they have experience of violence Feel as they've experienced youth violence was good to hear from them as their teachers would	Appreciated being able to leave session Found volunteers empathetic Enjoyed hearing about volunteers' experiences of youth violence Felt only healthcare professionals could provide them with this information Don't feel teacher has enough experience to deliver session

their time to see us	be able to give them all the information	
Group 2, School B R4 Session wouldn't have meant anything having teachers doing it R6 is so used to hearing it from normal teachers it wouldn't have meant anything	 Doesn't feel session would have been meaningful if delivered by teachers Feels always hearing the same messages from teachers so never listen	 Don't feel teacher has enough experience to deliver session
Group 3, School B R1 speaking to someone face to face helped as they know what they're talking about as they've seen it R thinks the volunteers have got the pictures in their head R3 thought it was good to have people [volunteers] coming in and doing that	 Felt talking directly to doctors was useful as they have experience and knowledge of violence Feels they have a lot experience of injuries, which they remember Felt it was good to have the volunteers come in to speak to them	 Believe healthcare professionals experience makes them an authority on violence Enjoyed hearing about volunteers' experiences of youth violence
Group 1, School C R1 prefer to have sessions with the medics as they've got first hand experience with what's happening R2 thought the volunteers know more information than teachers do Agreement from group R though the volunteers were able to answer questions	 Like to hear about the medics experiences of violence Feel they have more knowledge than their teacher Felt they had the knowledge to answer their questions	 Enjoyed hearing about volunteers' experiences of youth violence Don't feel teacher has enough experience to deliver session Believe healthcare professionals experience makes them an authority on violence

Group 2, School C Group as a whole enjoyed talking to the doctors R4 thinks that the teachers don't really know that much about it [violence] R2 teachers only have some knowledge as pupils from watching the video R3 Thinks it's better to have the doctors as they've had experience of dealing with violence	Group enjoyed speaking to doctors Feels their teachers don't have much knowledge about violence Believe teachers only have same knowledge as pupils Prefer to speak to doctors as they have experience of violence	Enjoyed hearing about volunteers' experiences of youth violence Don't feel teacher has enough experience to deliver session Felt only healthcare professionals could provide them with this information
Group 1, School D M1 doctors were able to give a lot more information that the teachers wouldn't know M felt the volunteers were able to explain it [violence] more M cause he's an actual doctor he probably treats knife wounds	Felt the doctors were able to provide them with more information than teachers Felt the medics could provide more detail Believes as the volunteer was a doctor he will treat victims of violence	Don't feel teacher has enough experience to deliver session Felt only healthcare professionals could provide them with this information Believe healthcare professionals experience makes them an authority on violence

Appendix 10.2 Descriptive chart developed from healthcare professionals' data on their perceived engagement of school pupils during session.

Data charted in column 3.4 Perceived engagement with session	Elements/dimensions identified	Categories
Medic A, Feels as the kids tend to want to listen so desn't need to take nonsense	Kids want to hear session so behaviour is fine	Feels kids engaged in session Behaviour usually good
MediC B, Feels programme has made the most impact in prisons. Thinks the part of the trouble of engaging the pupils is getting 14 year olds to speak out as they don't want to be teacher's pet of *damming thereself by discussing what kind of knife they actually use.* Find gets less attention in better off areas as kids don't feel it applies *I think almost in many ways the worse the kids are in inverted commas the more attention you get from them.*	Sessions made most impact in prison Issues with 14 year olds speaking out Pupils in less deprived areas pay less attention as don't feel it applies to them but kids from most deprived areas pay more attention	Good response in prisons Pupils don't want to speak out Less applicable to well-off pupils Pupils have variable experience with violence Pupils with more experience of violence able to contribute more
Medic C, Found the boys in prison really attentive and had really good sessions although felt the boys were maybe just glad to see somebody to break up the day and might have just been paying lip service to the guards. Did a preparation for work session and felt that it had been no interest to participants and was a waste of time. Finds some classes *just get it and they just twig with it and you have a really interesting conversation* Wonders if it can really be successful for those who don't want to engage. Thinks can engage kids better as she is younger and will relate to her.	Sessions in prison went well as boys enjoyed something different Preparation for work session waste of time Some classes engage well and can discuss it Doesn't think it can be successful for kids not wanting to engage Thinks engages kids better as she is younger	Good response in prisons Variable engagement from classes Difficult to engage those at the preparation for work course Like to hear the pupils' perspective Query success for those who don't want to engage Relates to kids

Medic D, Thinks on the day the session is usually well received but wonders how long it's remembered for. Finds get more out of it in deprived areas as children have personally experience through friends and family of violence. Kids always laughing and joking at start but by 5 minutes of the video are nearly all paying attention	Session usually well received on the day Unsure how long the kids will remember it Kids from deprived areas able to contribute more due to personal experience Although joking at start pay attention once video is started	Feels kids engaged in session Queries longevity of impact Pupils have variable experience with violence Pupils with more experience of violence able to contribute more Poor behaviour at start stops when video starts
Medic E, Tries to engage with them on their level by getting on knees at group work and not lecturing them. Feels do get a meaningful interaction and they like to hear about the gore.	Works with kids on their level Doesn't tell them what to do Feels engage with her Thinks pupils want to hear gory details	Relates to kids Able to interact with pupils Doesn't lecture Feels kids engaged in session Desire to hear about gore
Medic F, Talking to 12, 13 year olds in well-to-do areas you don't get a response as they're all shocked by it and thinks they just get scared. Feels can have a debate in schools where kids have experience of it.	Don't get good response in well-off area Scares kids with no experience of violence Can discuss the issues better with kids who have experience	Response variable Pupils have variable experience with violence Concerned scaring kids with less life experiences Pupils with more experience of violence able to contribute more

Medic G, Thinks they do engage but unsure if it has any lasting impact. Generally doesn't find the kids disruptive. In each class a couple of kids are on the periphery of violence and can easily relate and the majority see the video and can discuss that. Has had a few classes with 1 or 2 disruptive pupils.	Kids engage at time Unsure if impact lasts Some kids in each class have experience of violence and can easily relate Classes generally well-behaved except for a couple of disruptive pupils	Feels kids engaged in session Queries longevity of impact Behaviour usually good Aimed at kids on periphery of violence Pupils have variable experience with violence Pupils with more experience of violence able to contribute more
Medic H, Finds engagement variable. Those from most deprived areas will speak about personal involvement. Thinks most children are almost universally engaged with dvd and reactions quite similar. Finds a lot of them upset by the stories and shocked by the violence.	Engagement varies Kids from more deprived areas speak about personal involvement Many upset or shocked by stories in video	Variable engagement from classes Pupils have variable experience with violence Pupils with more experience of violence able to contribute more Finds pupils shocked by video
Medic I, Thinks engagement is down to presenter and if they are used to engaging and bantering with young people and street credibility is very important. Thinks providing them personal background info can help engage as don't think you're *just a middle-class highly educated individual*	Presenter needs to banter with kids to engage them If experienced working with young people and have street cred helps engagement Gives background information to help kids relate to him	Need presenters who can banter with kids Relates to kids
Medic J, Trying to engage all of the class can be difficult depending on what kind of class it is and some kids will switch off. Thinks video is hard-hitting and kids are a bit stunned by that. Told by teachers kids pay a lot more attention than usual. Finds lots of the kids interactive and genuinely don't want to get involved.	Can be hard to engage all of the class Kids can be shocked as video is hard-hitting Teachers mention kids pay more attention than normal Kids engage and don't want to be involved in violence	Difficult to maintain engagement in whole class Finds pupils shocked by video Feels kids engaged in session Kids show anti-violence attitudes Emphasises role of girls

Thinks girls sometimes tune out so emphasises that they can influence boys behaviour. Some schools are genuinely shocked but others the kids are completely aware of it	Girls can tune out so emphasises their role in reducing violence	Finds pupils shocked by video Pupils have variable experience with violence
Medic K, Thinks video catches attention at start even in the classes with more disruptive kids as usually get almost silence and really hopes they're taking it in. Thinks the kids are asking the right questions and giving right answers. Always hears *sharp intakes of breath that at the appropriate bits in the dvd.*	Video gets kids attention Disruptive kids usually settle and get silence Hopes kids are taking it Thinks kids give appropriate responses Show signs of shock during dvd	Poor behaviour at start stops when video starts Feels kids engaged in session Finds pupils shocked by video
M01, Enjoyed interacting with the pupils	Enjoys interaction with pupils	Able to interact with pupils
M04, Large class reduced interaction and allowed the rowdies to have more control	Unable to interact with large class Rowdy behaviour in larger class	Class size impacts on interactions Behaviour harder to control in larger class Difficult to maintain engagement in whole class
M06, Interactive audience, usually appeared interested	Pupils usually interested and interacted	Feels kids engaged in session Able to interact with pupils
M07, Some of the interaction with the children! Some in a group will always be more of a challenge to engage - c'est la vie	Enjoys being able to interact with those who want to. Finds some pupils harder to engage	Able to interact with pupils Variable engagement from classes
M08, Enjoys interacting with children	Enjoys being able to interact with the pupils	Able to interact with pupils
M09, Likes to encourage discussion	Encourages discussion with pupils	Able to interact with pupils

M10, Enjoys engaging with the pupils	Likes to be able to engage with pupils	Feels pupils do engage
M11, Has good and bad sessions and sometimes has difficulties getting the kids to pay attention	Engagement varies between sessions and can be hard to get pupils to listen	Variable engagement from classes
M12, Finds the kids normally very interactive	Pupils normally engage and take part in session	Feels kids engaged in session Able to interact with pupils
M14, Has always found the schools positive but the students at preparation for work courses were silent and dismissive	Found engagement from school pupils good but was poor from students at preparation for work course	Feels pupils do engage Difficult to engage those at the preparation for work course
M17, Found that they listened and were sometimes shocked by the video	Pupils listened during and session and expressed shock at film	Feels pupils do engage Finds pupils shocked by video
M18, Enjoyed getting discussions going	Was able to get kids to take part in discussions	Able to interact with pupils
M19, Enjoyed talking to children and finding out their experiences of gang culture.	Was able to have discussions with the pupils about their experiences with violence	Able to interact with pupils Pupils with more experience of violence able to contribute more Like to hear the pupils' perspective
M20, Enjoyed hearing viewpoint of young people	Was able to have discussions with the pupils and liked hearing the viewpoint	Able to interact with pupils Like to hear the pupils' perspective
M21, Enjoyed interaction and discussion with the pupils	Was able to have discussions with the pupils and enjoyed this interaction	Able to interact with pupils
M22, Enjoyed engaging with the children but found meaningful discussion hard with large groups	Liked to engage with the pupils but this was hard in large groups.	Harder to engage larger groups of pupils

M23, Enjoyed the interaction with the children	Enjoyed being able to interact with the school pupils	Able to interact with pupils
M24, Enjoys seeing the pupils paying attention to the video & getting involved in the discussion groups.	Enjoyed watching the pupils engaging with film and taking part in discussions with groups of pupils	Feels pupils do engage Able to interact with pupils
M26, Felt it was good when kids who didn't really want to engage were drawn in and contributed.	Was able to engage with pupils who did not initially want to do so	Able to engage pupils who were initially not interested Feels pupils do engage
M27, Enjoyed the attentiveness of children during video and discussion afterwards.	Found pupils listened to video and took part in discussion	Feels pupils do engage
M28, Enjoys getting into classroom discussions	Enjoys the discussions with pupils	Able to interact with pupils
M29, Finds the children responsive	Pupils interact with session	Feels pupils do engage
M30, Enjoyed interaction	Enjoyed interacting with pupils	Able to interact with pupils
M32, Enjoyed taking part in discussions	Enjoyed interacting with pupils	Able to interact with pupils
M33, Thought that probably wasn't getting through to the few I really need to!	Felt couldn't engage with most at risk pupils	Query success for those who don't want to engage
M42, Thinks DVD makes big impact	Pupils impacted by film	Finds pupils shocked by video
M43, Enjoys the interaction and feels they are a good audience	Enjoys being able to interact with pupils and feels they listen	Able to interact with pupils Feels pupils do engage
M44, Enjoys interacting with the class	Enjoys the interaction with classes	Able to interact with pupils
M45, Enjoys interacting with children and being able to answer questions	Enjoys the interaction with classes and taking questions	Able to interact with pupils
M51, Enjoys interacting with the young people	Enjoys the interaction with classes	Able to interact with pupils

M54, Enjoys interacting with the pupils	Enjoys the interaction with classes	Able to interact with pupils
M56, Found schools were engaged	Pupils were engaged with session	Feels pupils do engage
M60, Found the kids enthusiastic	Felt pupils enjoyed session	Feels pupils do engage

Appendix 11 Results of descriptive analysis

This Appendix contains tables detailing classifications, categories and descriptive items identified in the descriptive analysis:

- Appendix 11.1 Classification of categories and descriptive items identified in descriptive analysis of school pupils' data.
- Appendix 11.2 Classification of categories and descriptive items identified in descriptive analysis of MAV volunteers data

Appendix 11.1 Classification of categories and descriptive items identified in descriptive analysis of school pupils' data.

Classifications	Categories	Descriptive items
Experiences of youth violence	Awareness of youth violence in their life	Awareness of violence in own neighbourhood Awareness of violence in Glasgow city centre Believe there is a problem with weapons Aware of violence at school Scheme-fighting Peers involved in violence Personally been victimised
	Feelings towards youth violence	Anxiety associated with violence Negative feelings towards violence
	Demographics of those involved	Violence worse in specific areas Age of initiation into violence Girls' involvement in violence
Perceptions of why young people are involved in youth violence	Reasons for fighting	Peer pressure Violence perceived as cool by young people Family pressures to take-part in violence Wanting to act tough Defending the scheme Excitement of violence Association with football
	Reasons for being in a gang	Protection Desire to feel part of something. Unable to leave gang
	Reasons for knife-carrying	Protection Respect gained from knife-carrying
	Associated with alcohol and drugs	Lack of control associated with alcohol Alcohol increases aggression Recreational drug use and youth violence Violence and heroin addicts
Experiences with MAV session	Perceptions of volunteers	Provision of realistic information from volunteers Healthcare providers made session more meaningful Desire to learn about volunteers' experiences of youth violence and gain advice

	Engagement and understanding of session	Relevance of session Confusion at video Reflections on session
Experiences with MAV session cont.	Feelings experienced during session	Shocked by session Feelings of upset at session Graphic nature of film Age-appropriateness
	Organisation of session	Length of session Class sizes
Understanding of issues around violence	Impact on victim's life	Awareness of physical consequences (e.g. paralysis, scarring) Awareness of psychological consequences
	Impact on offender's life	Believe life is ruined by being in jail Guilt
	Impact on family's life	Awareness of the effect on the victim's family Awareness of the impact on offender's family
Attitudes towards violence	Anti-violence attitudes	Negative perceptions of knife-carrying Sense of unfairness for innocent victims Negative feelings towards those engaging in youth violence Negatively feelings towards those involved gangs Awareness that they can choose not engage in youth violence
	Pro-violent attitudes	Justify fighting if someone bad-mouths mum Justify violence for self-defence
Avoiding violence	Awareness of dangers	Awareness of risks of carrying knives Increased awareness of dangers to self when out Feelings of safety following session
	Strategies for safety	Exercise caution when interacting with people Stay with friends Backs away from anyone with a knife Stay sober Avoiding potentially unsafe areas Avoiding getting angry

Development of MAV programme	Involvement of others affected by violence	Hearing experiences of a victim of violence Hearing experiences of an ex-offender Sessions by police
	Desire for more information	Desire to learn about first-aid Desire for information on global prevalence of youth violence Need to know how to respond to an attack
	Session duration	Would like more sessions/time Receive session annually
Other methods to reduce youth violence	School-based activities	Would like drama sessions Would like dedicated violence prevention time
	Role of criminal justice system	Believe need tougher sentencing Role of surveillance
	Activities	Activities for young people in the evening

Appendix 11.2 Classification of categories and descriptive items identified in descriptive analysis of MAV volunteers data

Classifications	Category	Descriptive items
Youth violence at work	Experiences of youth violence	Deals with a large number of young people injured by violence Treatment limited to dealing with injury Deals with psychological consequences of violence Treats a small number of children with violent injuries Involvement of older men Experienced higher rates of violence in West of Scotland Homicide an unintended consequence of violence
	Feelings when dealing with youth violence	Emotional burden of violence Stress of treating knife wounds Excitement at treating knife wounds Concern at the wider impact of violence on families Concern at long-term impact Frustration at the pointless nature of violence Perceptions that violence related injuries are self-inflicted.
Motivations for participation	Preventing violence	Reducing violence related workload Personally impacted by violence Want own children to be safe Concern for innocent victims Approval of prevention approach
	Personal development	Doing something different Find sessions stimulating Enjoys working as a multidisciplinary team See MAV as additional charity work Wanting to give something back to the community
Impact of violence	Health consequences	Impact on victim's physical health Impact on victim's mental health

Impact of violence cont.	Impact of victims' lives	Stigma Reduced life opportunities Effect on victim's mental health
	Impact on offender	Wasting life serving a jail sentence Risk of committing a serious act of violence by carrying a knife. Impact on offender's mental health
Perceptions of causes of youth violence	Alcohol and drugs	Lack of control after drinking Culture of alcohol use
	Individual factors	Thrill of violence Lack of awareness of consequences Bravado
	Environmental factors	Lack of opportunities Normality of violence Territoriality Cycle of violence Lack of positive role models
Experiences delivering sessions	Interactions with pupils	Avoiding lecturing Perceptions of socio-economic class Relating to pupils Involvement of younger healthcare workers Enable young people to speak to doctors
	Messages delivered	Staying safe Dangers of engaging in violence and knife-carrying Emphasises choices
	Class sizes	Difficulties engaging bigger classes Lack of discussion with small classes Believe 20 pupils are ideal for sessions
Experiences delivering sessions cont.	Logistics of session	Lack of preparation by schools Difficulties covering all material Volunteer numbers Perceptions of multi-agency days
	Perceptions on content	Age-appropriateness Adaptability of content Content is able to shock pupils Relevance of DVD

	Role of teachers and campus cops	Teachers as disciplinarians Engaged teacher helpful for group work Teachers need more information Campus cops help facilitate the session.
Perceived engagement	Pupil contributions	Lack of response form and some pupils Pupils with more experience of violence able to contribute more to discussions.
	Pupil responses	Good engagement with DVD Variable engagement in discussions Query success for those that don't want to engage Difficulties with pupils' behaviour
Perceived effectiveness of MAV	Perceptions of success	Consideration of behaviour change by pupils Pupils displaying anti-violence attitudes Positive response from teachers Impact in the short-term Positive response from pupils Discussion of programme by pupils Preventing one murder would count as success
	Difficulties measuring effectiveness	Difficulties evaluating prevention interventions Difficult to assess long-term impact
	Feedback	Feedback to improve own performance Desire to see feedback for impact of MAV Use of social media to feedback to MAV members
Concerns and difficulties	Personal feelings	Feeling of unappreciated Feelings of isolation
	Issues for consideration	Need for a committee/regular meetings Queries whether MAV is reaching schools most at risk Presenter fatigue after multiple sessions
Improving MAV	Logistical improvements	Providing schools clearer instructions Ensuring AV equipment is set-up in advance Increasing volunteer numbers by recruiting junior doctors Pairing new volunteers with an experienced presenter

Improving MAV cont.	Content and resources development	Providing an evidence-based resource Increase use of social media Developing videos to match life-experience of pupils Re-naming programme Choices Increase graphic nature of pictures
	Increasing member satisfaction	Opportunities to discuss experiences with other members Opportunity to be involved in the development and running of MAV Providing feedback to members Rewarding participation
	Future developments	Using MAV as a template Increasing number of school visits Inviting victims of violence to attend sessions Modify a programme for younger years Increasing teacher involvement in programme delivery
Preparation for school visits	Experiences of training	Need for formal training Training a useful experience Use of demonstrative examples in training
	Confidence in session delivery	Anxiety prior to sessions Daunting doing visits on own Having the life-skills to cope with the situation Confidence in delivery increases with experience
Participation	Limitations of participation	Having a decreasing number of non-clinical sessions Difficulties co-ordinating sessions with clinical commitments Required to do sessions in non-work time Unable to travel to further afield for sessions
	Improving participation	Providing advanced notice of sessions Being able to do visits in local area Obtain health board or governmental approval Arrange school visits to fit with training Advertising MAV

Relationship between doctors and public health and violence prevention	Experience of public health out with MAV	Provide prevention advice during hospital admission Previous involvement of public health interventions Role of doctors in public health
	Role of doctors in violence prevention	Doctors could utilise alcohol reduction strategies Medics should be using their role to increase awareness of violence Views medics as useful to prevention but not essential Role in information sharing Need societal change beyond doctors' involvement