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Complex interventions to prevent adolescents from engaging in multiple risk behaviours; a realist enquiry.

Christina Anne Cooper

PhD

2018

Complex interventions to prevent adolescents from engaging in multiple risk behaviours; a realist enquiry.

Christina Anne Cooper

A thesis submitted in partial fulfilment of the requirements of the University of Northumbria at Newcastle for the degree of Doctor of Philosophy

Research undertaken in the Faculty of Health and Life Sciences

February 2018

Declaration

I declare that the work contained in this thesis has not been submitted for any other award and that it is all my own work. I also confirm that this work fully acknowledges opinions, ideas and contributions from the work of others.

Any ethical clearance for the research presented in this thesis has been approved. Approval has been sought and granted by the Faculty Ethics Committee on 25/08/2015, and 18/03/2016 respectively.

I declare that the Word Count of this Thesis is 78, 502 words

Name: Christina A Cooper

Signature:

Date:

Abstract

Background: Adolescent health risk behaviours are a key contributing factor to adolescent morbidity and mortality. Evidence suggests that many risk behaviours begun in adolescence impact significantly on longer term health and well-being. While many prevention programmes have been found to be moderately effective, they tend to have little success when replicated at scale. Current literature fails to address underlying causality, or broader contextual factors which may contribute to this failure. The purpose of this research is to gain a deeper understanding of how, why, for whom, and in what circumstances complex multiple risk behaviour prevention programmes are most successful in reducing or preventing health risk behaviours in adolescents.

Methods and analysis: A novel realist approach was used, combining realist synthesis of the existing literature with aspects of realist evaluation, and qualitative analysis of primary data from stakeholders, to explore causal mechanisms and contextual factors which contribute to programme success or failure. Data collection and analysis was conducted across four phases:

Phase One: Building the framework. Mapping the theoretical and conceptual landscape of adolescent risk behaviour prevention in the literature.

Phase Two: Formulating initial programme theories through broad literature searching, and screening, to identify patterns or 'demi-regularities', guided by data from professional stakeholders.

Phase Three: Refining programme theories through purposeful, in depth screening of the literature, along with collection and analysis of primary qualitative data, from young people and school nurses.

Phase Four: Testing programme theories through interviews with youth workers, informed by young people, based on a series of vignettes, to explore the relationships within and between specific programme theories.

Data Analysis: A realist logic of analysis was used to align data from each phase with context mechanism outcome configurations. Substantive theory was then sought to further understand, and explain these findings.

Results The results of this study are complex and multifaceted. A broad range of context mechanism outcome configurations were formulated and tested, exploring key constructs such as implementation, leadership and support, programme deliverer and ethos, and sociocultural and interpersonal factors. Three overarching programme theories were identified, suggesting that complex multiple risk behaviour prevention programmes are most successful in reducing or preventing risk behaviour in adolescents when strongly grounded in theory, paying close attention to relationships, and wider contextual factors, such as family, community, culture, socioeconomic status, intersectionality, and health inequalities

Discussion Programme theories developed as part of this study provide key areas of focus for future adolescent risk behaviour prevention programmes, and the development of policy designed to guide practice. Furthermore, it is argued that future research could build upon these findings, and that findings can be generalised to other related issues, such as adolescent mental health, and the health and wellbeing of school staff.

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Glossary of Abbreviations

ALSPAC – Avon Longitudinal Study of Parents And Children

CBAM – Concerns Based Adaption Model

CDC – Centre for Disease Control and prevention

CEE – Corrective Emotional Experience

CMOc – Context Mechanism Outcome configurations

CSP – Collaborative Strategic Planning

DARE – Drug Abuse Resistance Training

HBSC – Health Behaviour in School aged Children survey

HIV – Human Immunodeficiency Virus

HSCIC – Health and Social Care Information Centre

LGBTQ – Lesbian Gay Bisexual Transgender Queer

NICE – National Institute for Health and Care excellence

NIDA – National Institute of Drug Abuse

NPS – New Psychoactive substances

ONS – Office for National Statistics

PHE – Public Health England

PP – Professional Participant/stakeholder

PSHE – Personal Social Health and Economic education

RCPCH – Royal College of Paediatric and Child Health

RTA – Road Traffic Accident

SAPHNA – School and Public Health Nurses Association

SDD – Smoking Drinking and Drug use amongst young people survey

SES – Socio-Economic Status

SN – School nurses

TND – project Towards No Drug abuse

TTM – The Transtheoretical Model

WHO – World Health Organisation

YPAG – Young people's Advisory Group

YPFG – Young People's Focus Group

Chapter 1
Introduction

The purpose of this research is to gain a deeper understanding of how, why, for whom, and in what circumstances complex multiple risk behaviour prevention programmes are most successful in reducing or preventing adolescent risk behaviour. The issue of understanding adolescent risk behaviour, and risk behaviour, is currently attracting attention across a broad range of domains. In the fields of both public health, and education the impact of personal, social, health and economic education (PSHE), the need for, and success and/or failure of, risk behaviour prevention programmes has been heavily scrutinised and debated. Within this thesis I discuss definitions of risk behaviour, and why it is a problem, external factors that influence risk behaviour, current policy to address adolescent risk behaviour, and the issues with current health behaviour prevention strategies. I go on to consider how realist methodologies can be used to address a current gap in knowledge regarding what works, for whom, in what circumstances, and why. A detailed account of how data was collected and analysed in order to answer these questions is provided, and both practical and conceptual findings are discussed. The thesis concludes with recommendations for the development of future policy and practice, and suggestions for further research.

Across the following six introductory subchapters, I provide a clear rationale for the study, through consideration of the current landscape within the field of adolescent health promotion, and risk behaviour prevention. I begin by defining health risk behaviour, providing current prevalence rates, and considering the impacts on, and implications for adolescent health and wellbeing. Following this I discuss the ways in which adolescence is defined within the literature, and the role of sociocultural factors in the uptake of adolescent risk behaviour. Finally, I provide a historical overview and critical summary of adolescent risk behaviour prevention programmes, and consideration of the methods for addressing complexity within public health programmes, including current policy recommendations. I conclude with a clear statement of the research aims, and questions to be addressed.

1.1 Adolescent Health Risk Behaviour

The current global population is an aging population, with public health policies of the last two decades, tending to focus on those at the polar ends of the age spectrum, infants, and the elderly. However, adolescents comprise a significant proportion of the population, currently 16% (Population reference bureau, 2017).

Adolescence, historically, been considered one of the healthiest life phases, with the lowest rates of morbidity and mortality across the life-course (Patton et al., 2016). In terms of infectious disease and biomedical illness, adolescents have the fewest health needs. However, despite adolescents being seemingly at the peak of health, there is increasing recognition that investment in adolescent health programmes is pivotal in improving health and wellbeing globally and there has recently been a shift in policy, practice, and research to focus on this critical life phase (Laski, 2015).

At the present time, leading causes of adolescent mortalities are caused by road traffic accidents (RTA's), HIV, suicide and self-harm, and interrelational violence. However, it is suggested that approximately 35% of the global burden of disease stems from health behaviour rooted in adolescence (World Health Organisation, 2017), having serious social and economic consequences (DiClemente et al., 2013). Poor longer-term outcomes associated with adolescent risk behaviour include long term substance abuse, poor physical, psychological, and sexual health, lower educational achievement, difficulties with transition in to employment and job performance, problems with social relationships, and economic instability.

In addition to this, a further important consideration is that adolescents are the next generation of possible future parents, therefore addressing their health needs now can help to prepare young people for parenthood, and meeting the needs of their offspring (Patton et al., 2016).On this basis it is proposed that failure to invest in adolescent health and wellbeing threatens the progress made in infancy and childhood, and compromises the health of future populations (Patton et al., 2016; WHO, 2017). It is therefore vital to consider adolescence both as a distinct life phase, and as a key part of the life trajectory.

For example, social deprivation and experiences from childhood, such as childhood trauma, can disrupt, delay or prevent the achievement of expected developmental milestones in later childhood and adolescence, including development of the cognitive and emotional skills required to achieve autonomy (Sawyer et al., 2012). This may then impact on relationship formation and maintenance, academic achievement, and future health or lifestyle choices (definitions of adolescence are discussed in greater detail in Introduction chapter 1.4.1 Age and developmental stage, p17).

The term ‘health risk behaviour’ is often used within the literature as an umbrella term, covering a broad range, including self-harm, and suicidality, dangerous driving, violence and anti-social behaviour, tobacco use, alcohol consumption, and drug use (often referred to collectively as substance use, and covering an array of different substances), sexual health and risky sexual practices, obesity and sedentary lifestyle behaviours, body image issues and eating disorders, (DiClemente et al., 2013).

Evidence suggests that these risk behaviours do not occur as individual risks, but cluster, with adolescents engaging in patterns of health and risk behaviours, suggesting some shared underlying causal factors (Jessor, 1991; 1994; DuRante, 1999; Coleman and Hagell, 2015; De Looze et al, 2015; Laxer, 2017). The way in which these behaviours cluster is considered below, providing a rationale for the focus within this thesis on those behaviours.

1.2 Risk Behaviour Clustering; Trends and Patterns

The key to understanding adolescent risk behaviour and how best to approach prevention or treatment, Jessor (1991) suggests, is to map out the structure and organisation of risk behaviours in order to explore whether they occur as individual risks, or cluster together in some form of 'problem behaviour syndrome'. While some adolescent risk behaviours may occur in isolation, or as a result of a specific set of underlying circumstances, there is strong evidence, Jessor (1991) states, which demonstrates covariation or clustering of a number of risk behaviours.

Two key explanatory theories for this clustering of risk behaviours in adolescence were suggested; the Problem Behaviour Theory (Jessor, 1991, Jessor et al., 2017) and the theory of adolescence-limited anti-social behaviour (Moffitt, 1993, Trzesniewski et al., 2006a).

The problem behaviour theory posits that behaviours such as substance use (including tobacco, alcohol, and drugs), risky sexual behaviour, and what they termed 'delinquent behaviour' cluster together to form a problem behaviour syndrome. Early work by Jessor (1991) attempted to predict the likelihood of risk behaviour engagement based on current engagement with one or more behaviours, typically cigarette smoking. However, they concluded that this over simplistic approach was not adaptive enough to account for adolescent behaviour. More recent reiterations of the problem behaviour theory were expanded to take intensity of engagement in risk behaviour into account (Jessor et al., 1994). This extended theory considers the role of both current risk behaviour engagement, and contributing social and environmental factors to predict risk behaviour proneness, described as normative attitudes towards, and likelihood of engagement in further or increasing risk behaviours.

The theory of adolescence-limited anti-social behaviour (Moffitt, 1993, Trzesniewski et al., 2006b) on the other hand proposes that adolescent risk behaviours cluster through perceived enhanced status associated with engagement. According to this theory,

experimentation with risk behaviours is indicative of normal adolescent development, only becoming problematic when other, external factors are involved. Furthermore, Moffit (1993) posits, turning away from parents and engaging in these experimental behaviours are key transitional processes in self-identity development and individuation achievement.

In considering these theories, De Looze et al. (2015) conclude that while there were small pockets of evidence available for both of these explanatory theories of risk behaviour clustering, very few studies looked across countries, cultures, or environments, limiting comparison and understanding of the impact of different populations and cultures.

De Looze et al. (2015), conducted a review of studies across 27 countries to investigate which behaviours typically cluster, and how this related to psychosocial determinants of health. Findings showed extraordinary similarities in risk behaviour clusters, with strong evidence that substance use (tobacco, alcohol, and cannabis) and risky sexual behaviours commonly co-occur, regardless of differences in attitudes, societal norms, and legal consequences across countries and cultures. Associations between these clustered behaviours and a set of underlying psychosocial correlates were also found to be strong across all countries studied. This study provides further empirical evidence for Jessor's (1991) problem behaviour theory of adolescent risk behaviour, but fails to account for Moffit's theory and the juxtaposing evidence between stability and predictability of adolescent risk behaviours, and the dramatic changes in prevalence throughout adolescence.

De Looze and colleagues (2015) posit that the pattern of findings across countries and widely varied cultures suggests there must be a normative element to risk behaviour experimentation, with the likelihood of experimentation increasing with age throughout adolescence, and tailing off again towards adulthood. Problematic risk behaviour in this instance would then be attributed to patterns in psychosocial factors, such as poor familial relationships, and low connectedness to school. De Looze et al. (2015) conclude that it is

essential to understand both the normative and the problematic to build a comprehensive picture of adolescent risk behaviour.

The world health organisation (WHO, 2014) provide support for this argument, stating that many health risk behaviours, which begin in adolescence, tend to cluster. Furthermore, WHO (2014) states, likelihood is increased when initiation of behaviours such as tobacco use, alcohol consumption, and risky sexual behaviour occurs in early adolescence.

Throughout the literature exploring clustering in adolescent risk behaviour, adolescent alcohol consumption, binge drinking and smoking are highlighted as of particular concern in the UK (MacArthur et al., 2012). Early initiation of alcohol and tobacco use have repeatedly been correlated with involvement in other risk behaviours, including risky sexual behaviours and underage pregnancy and use of other substances, and negative health consequences, such as poor relationships, poor academic performance and injury, possibly resulting in hospital treatment (WHO, 2014). While overall prevalence of many risk behaviours has begun to plateau (for further details see Introduction subchapter 1.3 Risk Behaviour Prevalence, p9), initiation is occurring at increasingly younger ages (DiClemente et al., 2013). As a result of these trends, the number of young people at risk remains fairly steady.

Supporting these findings, Brener and Collins (1998) state that while only 10% of adolescents aged 12–13 years had engaged in two or more health risk behaviors, approximately 30% of those aged 14–17 years, and 50% of those aged 18–21 years had done so. Furthermore, Spring et al. (2012) state that risk behaviours tend to increase in prevalence and multiplicity, across cultures, and throughout adolescence. Further evidencing this theory, DuRant et al. (1999) conducted a study to explore what drives this clustering of behaviours, concluding that substance use, and more specifically tobacco use initiation prior to age 11 was the most significant predictor of further risk behaviour engagement, with early uptake of alcohol and cannabis also having a similar impact. However, this should not be taken as concrete evidence that substance use from an early age leads directly to uptake of further risk behaviours, and reasons why the young person is engaging in health risk behaviours at such a young age should also be considered.

Building on this argument, Laxer et al (2017) argue that, while understanding of the common underlying causal factors is important, and requires further investigation, future research should also be mindful of the individual differences which influence behaviour, and may impact on programme effectiveness.

The following subchapter considers each of these behaviours individually in relation to prevalence, and impact on health and wellbeing across the lifespan.

1.3 Risk Behaviour Prevalence

Having identified above those behaviours which have a tendency to cluster, the following subchapter has been divided in to five parts, which consider in more depth the prevalence of each of these behaviours, typical behaviour initiation, and the impact on health and wellbeing. Consideration here is given to both global prevalence rates, and recent statistics presented in the UK, as this is where the findings of this research are most likely to be disseminated, and therefore have an impact.

1.3.1 Tobacco Use

The long-term negative health consequences of tobacco use are well documented, and are typically associated with chronic health conditions such as cancer and heart disease. Current statistics reported in the ONS opinions and lifestyle survey 2015/16 (NHS, 2017a) state that 479,000 hospital admissions, and 79,000 deaths were associated with tobacco use within the UK. While very few adolescents become ill from, or die of smoking related illnesses, there is a severe threat to future health and wellbeing (DiClemente et al., 2013). In addition to this, in young people specifically, smoking is related to reduced lung function, increased risk of asthma, impaired growth, and difficulty in engaging in exercise (Viner et al., 2017).

It is reported that the majority of all smokers started their habit in adolescence (Viner et al., 2017), with a large proportion of adults stating they had already had their first cigarette, or were already addicted by the age of 18. Within the UK, evidence from the Smoking, Drinking and Drug Use among Young People survey (SDD) (HSCIC, 2014), found that 18% of young people in secondary school (aged 11 to 18) had tried smoking at least once, with prevalence rising by age from 4% at age 11 to 35% by 18 years of age.

Young people who have begun using tobacco products report smoking on a regular basis, ranging from 1-2 a week, to daily usage. Evidence suggest it takes less time, and fewer cigarettes for young people to become addicted in comparison to adults, making smoking

prevention even more crucial for the adolescent population (DiClemente et al., 2013). Although the majority of young people reported getting their first cigarette from a friend (52%), and despite legal and public health restrictions, many young people report having purchased their own cigarettes, with 46% of adolescents reporting they had bought their tobacco products from a shop, suggesting pricing strategies and legal restrictions alone are not enough to prevent young people accessing tobacco products (NHS, 2017a).

Though tobacco initiation is currently at an all-time low, with only 8% of adolescents (consistent for males and females) in the UK taking up smoking, that still amounts to thousands of young people beginning to smoke every year. In addition to this, data shows that young people from areas of deprivation are more likely to begin smoking, and do so at a younger age, though prevalence does not differ by age 15 (NHS, 2017a). Further social determinants which contribute to initiation include family influence, peer usage, poor academic achievement and low self-esteem (NHS, 2017a). On this basis, it is suggested that programmes which aim to reduce smoking initiation will be most effective in further reducing smoking prevalence (Viner et al., 2017).

1.3.2 Alcohol Consumption

Alcohol, along with other substance use, is a significant contributing factor to the overall burden of disease. Those who drink alcohol are at greater risk of engaging in alcohol abuse in later life, which can lead to disease such as cirrhosis of the liver and some cancers. Current reported statistics for alcohol consumption show 337,000 hospital admissions, and 6,813 deaths attributed to alcohol consumption within the UK in 2015/16 (NHS, 2017b).

Unlike smoking, where negative consequences are rarely immediate, alcohol consumption, and particularly drunkenness can pose an immediate threat to wellbeing (Windle and Windle, 2017). Immediate consequences include impact on social

relationships, poor academic achievement, aggression, risky sexual practices, accidents, injury, and in extreme cases even death.

However, as with tobacco use, prevalence rates of adolescent alcohol consumption in the UK have fallen steadily since 2003 (NHS, 2017b), though they remain some of the worst in Europe (Viner et al., 2017). At the last measurement in 2014 an average of just 38% of young people aged 11 to 15 years of age had consumed alcohol, a dramatic fall from the 62% two decades earlier (NHS, 2017b).

Though young people tend not to drink as often as adults, when they do consume alcohol it tends to take the form of binge drinking, consuming between 3 and 5 beverages (or units) within a short space of time, typically around 2 hours (Hill et al., 2000). Of those adolescents who had drunk alcohol, 63% admitted to deliberately trying to get drunk, with 49% stating they had been drunk at least once (NHS, 2017b). The amount of alcohol consumed tends to increase with age throughout adolescence, ranging from less than 1% regularly consuming alcohol at 11 years of age, to 70% at 15 (NHS, 2017b). However, without the presence of other psychosocial issues, a normative trend tends to occur, whereby consumption tapers off again in adulthood. These trends show no significant gender differences.

Evidence from the Smoking, Drinking and Drug Use among Young People survey (SDD) (NHS, 2017b) suggests that young people are most likely to consume alcohol in the family home (56%) or with friends (46%). Unlike many other risk behaviours, alcohol use has been shown to have a negative social gradient with young people from higher earning families more likely to participate in alcohol consumption (Viner et al., 2017). Factors which may contribute to this are; increased ability to afford alcohol, possible increased unsupervised free time when parents are working, and access to alcohol within the home. Parental influences should be carefully considered for all young people as evidence suggests role modelling of parental behaviours, parental supervision, and family functioning have the greatest effects on underage alcohol consumption (Windle and Windle, 2017).

As with tobacco use, programmes preventing alcohol consumption initiation are seen as the gold standard in terms of intervention (Viner et al., 2017). Programme recommendations include; making sure young people have the knowledge and skills to make informed decisions about their health; interactive modes of delivery, both in the classroom and from external sources such as health professionals and those who have experienced issues due to alcohol use. Furthermore, it is recommended that more attention be given to health policies for the delivery of such interventions, such as The National Institute for Health and Care Excellence (NICE) guidelines. These policies are discussed in more detail in relation to the research findings within the discussion (p263).

1.3.3 Cannabis Use

Cannabis is the most commonly used illicit substance by young people in the UK, US, and many other countries (Taylor et al., 2017). There is some evidence to suggest that cannabis use frequently co-occurs with tobacco use (often in combination, i.e. joint smoking) and alcohol consumption, further increasing the health risks. Parental cannabis use within the family home has been highlighted as a potential predisposing factor (Taylor et al., 2017). Data presented here is drawn from the Avon Longitudinal Study of Parents and Children (ALSPAC) (Taylor et al., 2017). This data was used as it allows consideration of patterns and trends in cannabis use separate to other illegal substances. This allows for clearer investigation of the relationship between alcohol consumption, tobacco and cannabis use, and initiation of use of other substances.

Prevalence data shows that approximately 19% of young people have tried cannabis at least over by the age of 15, though the age of initiation is highly variable (Taylor et al., 2017). Cannabis use increases throughout adolescence for those using more than once, and there are no significant gender differences. Potential harms associated with adolescent cannabis use include altered brain development, cognitive impairments, increased risk of poor mental health (including anxiety, depression, and psychosis), and respiratory issues. Furthermore, cannabis could potentially act as a gateway drug to other

substances, particularly when used with alcohol, though this remains a controversial subject for debate (Viner et al., 2017). While gateway drug theories may be over simplistic, there is evidence that substance use behaviours do tend to cluster, potentially as a result of underpinning environmental, social, interpersonal, and personal factors, rather than as a result of a quest for the next high (Jackson et al., 2012b; WHO, 2014; Laxer et al, 2017).

Prevention strategies for adolescent cannabis use are often delivered in combination with smoking and alcohol consumption prevention, combined substance use programmes, or drug use programmes, given the separate associations with each of these elements (Viner et al., 2017). However, it is important that messages about cannabis use do not get lost within the larger programme.

1.3.4 Other Drug Use

Excluding inhalants and other volatile substances, prevalence of other drugs such as amphetamines, cocaine, ecstasy, LSD, opiates, and heroin remains at less than 2% of the UK adolescent population (NHS, 2017c). However, the impact of substance use on lifespan health and wellbeing is still significant. In 2015/16 there were 15,074 hospital admissions associated with overdose and drug related poisoning, with a further 8,621 admissions for drug related mental illness and behavioural issues. In addition to this there were 2,479 drug related deaths in the UK within the same period, a 10% increase from 2014, and 48% higher than 2005 (NHS, 2017c).

Inhalants and volatile substances produce a chemical vapour that can be inhaled to produce psychoactive or mind-altering effects. The term inhalants, the National Institute for Drug Abuse states, is used to describe a broad range of substances, which can be subdivided in to four main categories; volatile solvents, aerosols, gasses, and nitrates (NIDA, 2012). These products such as glues, deodorants and paint thinners for example are often readily available within the home, making them an easily accessible drug to

young people. Prevalence of adolescent use of this classification of drugs is approximately 7%, 1 in 15 young people, making this an important component for targeting in any substance use prevention programme designed for young people.

Furthermore, in 2014 15% of young people aged 11 to 15 years of age stated they had ever taken drugs, with 10% having taken drugs in the last year, and 6% within the last month (NHS, 2017c). As with alcohol and tobacco, prevalence rates increase with age, with 6% claiming to have taken drugs by the age of 11, rising to 24% by the age of 15.

Legal highs, or new psychoactive substances (NPS), are also becoming an increasing cause for concern (NHS, 2017c). Worryingly, data regarding young people's attitudes towards and beliefs about both inhalants and NPS appears to show a decline in perceived harm and disapproval (NIDA, 2012).

School truancy and poor school connectedness are the greatest contributing social determinants in the initiation of drug use behaviours, with deviant peer association identified as a possible mechanism for increased involvement of maintenance of drug taking behaviours (PHE, 2017). Therefore, programmes aiming to reduce or prevent adolescent substance use should include inhalants, illicit drugs, and new psychoactive substances, should be age appropriate, address attitudes and beliefs as well as behaviour, and aim to build connectedness to school, while encouraging and supporting healthy social relationships.

1.3.5 Sexual Health and Risky Sexual Behaviours

According to prevalence data for the UK presented in the State of Child Health report by the Royal College of Paediatric and child health (RCPCH) (2017), conception rates in those aged 15 to 17 has dropped by almost half, from approximately 45 pregnancies per thousand 15 to 17-year-old females in the year 2000, to 25 in 1000, in 2017 (RCPCH, 2017). Teenage pregnancy is associated with several poor health outcomes for young

women and their children, including poor physical and mental health, social isolation, poor academic achievement, and economic dependence on parents or state or socioeconomic deprivation. Poor outcomes for the child include premature birth, low birthweight, and possible developmental delay.

Despite this decrease in teenage pregnancies, self-report prevalence data shows that the number of young people engaging in sexual activity has dramatically increased (DiClemente et al., 2013). One third of young people declared they had had ‘heterosexual sex’ before the age of 16, with 10% of the adolescent population having had intercourse by the age of 13, and 25-30% by the age of 15. Statistics provided by the Centre for Disease Control and Prevention (CDC, 2017) provide evidence of gender differences, with males more likely to declare previous sexual activity than females, and also a greater number of sexual partners (CDC, 2017). Of those who were sexually active, one third stated they had not used a condom during sex, with one quarter not having used any method of birth control. While these figures are drastically improved based on previous findings, given the rising figures in sexually transmitted infections (STI’s), such as chlamydia, gonorrhoea, herpes, and genital warts, this lack of precaution highlights the need for ongoing sexual health education (Kirby, 2011). In addition to the need for sexual health education, Kirby (2011) states, young people have expressed a desire for more education regarding self-discovery, sexuality, and relationships in general. Young people from the Lesbian, Gay, Bisexual, transgender, and queer (LGBTQ) community were considered most vulnerable, due to a lack of relevant, comprehensive sex and relationships education (CDC, 2017). Consequently, programmes in some countries have begun to move away from the biologically focussed medical model of sex education, towards a more comprehensive curriculum. Despite this, there remains work to do in relation to sexuality and heteronormativity in sex and relationships education. Increased rates of sexual activity in adolescence have been associated with low socioeconomic status, peer influence, poor parental relationships (particularly where parental monitoring is low), and clustering with other risk behaviours such as alcohol and substance use (Santelli, 2000, Jackson et al., 2012b).

Intervention and prevention programmes targeting adolescent sex and relationships education are typically implemented in school, and are usually delivered by school teaching staff (Kirby, 2011). In order to continue to improve it is recommended that future programmes follow NICE guidelines, and provide links to relevant advice and services in a timely way (RCPCH, 2017).

The data highlighted in this subchapter of the thesis, is both a cause for celebration and concern. While prevalence in adolescent risk behaviours are decreasing across the board, rates of engagement remain higher than many other European countries.

1.4 Factors contributing to risk behaviour initiation

The concept of risk can be difficult to conceptualise, and requires understanding of both risky behaviours, as defined above, and risk factors which contribute both to the uptake of risk behaviour and engagement within risk behaviour prevention programmes (Coleman and Hagell, 2015). In the first half of this chapter I define the way in which adolescence is defined by the studies contained within this thesis, giving consideration to the stages of development which occur during adolescence, and the impact aspects of these stages may have on health behaviour. In the latter half I go on to consider the role of wider social influences, including national and structural, interpersonal, and personal determinants of health with specific relevance to adolescent health.

1.4.1 Age and developmental stage

The world health organisation (WHO) define adolescence as falling between the ages of 10 and 19, embedded within the definition of young people, which refers to those between the ages of 10 and 24 (Sawyer et al., 2012).

For this study a broad age definition of adolescence is used, in order to consider the possible impact of age, and sub-stages of this life phase on the adoption of risky behaviours, and perceptions of prevention programmes. Based on this broader definition the terms adolescence/adolescents, youths, and young people are used interchangeably throughout this project to mean young people who fall within this age range. This broad definition of adolescence can be sub divided in to three separate phases, early adolescence, mid-adolescence, and late adolescence, with different physiological, psychological, cognitive, and sociocultural changes emerging in each phase (Steinberg, 2014). Each of these phases is briefly outlined below, and considered later in relation to risk behaviour initiation, and prevention.

Early Adolescence typically refers to young people aged between 10 and 14, though this can differ slightly between girls and boys, with boys commonly reaching sexual maturity later than girls. Early adolescence is typically marked by the onset of physical and sexual maturation (the onset of puberty). The early adolescent brain undergoes a period of plasticity, similar to that previously seen in babies and young children. Changes in the pre-frontal cortex, such as synaptic pruning, and neurotransmitter changes can impact on cognition and behaviour (Furnham, 2015). Cognitive functioning during this phase tends to be concrete, and thought processes focus on the here and now. The future is concerned with what happens next today, and next week is a distant future. At this age young people struggle to plan for the future or consider future consequences of their actions. This tends to manifest as an attitude of invulnerability (Spear, 2000, Coupey et al., 2002). Psychosocial development is defined as identity, integrity, intimacy (Coupey et al., 2002), and independence. While values and beliefs are still largely defined by those of the parents or family, young people are starting to look beyond the family unit in the development of their own personal identity. This can be a time of high anxiety for young people as they begin to explore their changing bodies, and sexuality, moving away from the family unit to spend more time with peers (Curtis, 2015). During this phase the likelihood of engaging in risk behaviours is dramatically increased, particularly those of tobacco use and early sexual experimentation.

Mid-adolescence falls between the ages of 14 and 17, covering the high school years. This is the age group commonly thought of as teenagers. Transition from middle to high school can be a difficult time, with increased autonomy and increasing social pressures, affiliation with a peer group becomes of utmost importance (Spano, 2004). By the end of this stage, typically, puberty is complete and young people reach the peak of sexual maturity, leading to the development of intense sexual feelings. Abstract thinking develops in this phase, along with the ability to think into the future, becoming aware about consequences of actions. Adolescents in this middle phase of development become incredibly self-aware, with concerns developing over physical attractiveness, academic ability, failure, and the development of realistic future aspirations. Identity is no longer

defined by family role, and can change from day to day based on affiliation with peer groups. This exploration of self contributes to the development and testing one's own values, and beliefs, leading to clashes with parental values, and possible familial conflict (Steinberg and Morris, 2001).

Late adolescence is often defined as 17 to 19 years of age, though as definitions of adolescence change as described above, this later phase can now incorporate young people up to the age of 24. However, those in the 19 to 24 age bracket tend to be referred to as young or developing adults (Curtis, 2015). At this age physical changes are beginning to level off, though most males continue to develop height, weight, muscle mass, and body hair. Young people become more confident in their self-identity, developing resilience, emotional stability, and a more developed sense of humour (Spano, 2004). Independence and self-reliance are more fully developed, and care for self and others is established. A clear sexual identity has usually emerged by this point, and the drive is for romantic and fulfilling relationships, rather than sexual gratification. Internal values and moral principles are more fully developed giving better behavioural control.

However, though adolescence can be considered a distinct life phase, each of these developmental stages of adolescence are dependent on successful navigation of the previous stage, and conflict at any stage can lead to delay or disruption in the developmental trajectory. Perhaps due to the combination of physiological changes, increasing autonomy, and the struggle to define and develop a sense of self, risk behaviours typically manifest in the teenage years (Arnett, 2000). This proposal is not a new one, and has been recognised throughout history as demonstrated in the following quote, from Shakespeare in 1623 in *The winter's tale [Act 3, Scene 3]*:

> "I would there were no age between sixteen and three-and-twenty, or that youth would sleep out the rest; for there is nothing in the between but getting wenches with child, wronging the ancientry, stealing, fighting--Hark you now!" (Shakespeare, 2007).

The extent to which adolescents successfully navigate this critical period in their lives is dependent on the set of resources and opportunities available to them within the political,

economic, social, and cultural contexts in which they live (Patton et al., 2016). These social determinants of adolescent health and wellbeing are discussed in the following paragraphs.

1.4.2 The Social Determinants of Adolescent Health

In part 1.4.1 Age and developmental stage(p17) of the previous subchapter, I considered definitions of adolescence, both as a distinct life phase and within the life course trajectory. Recognising that, while adolescence is temporally confined, it is not a fixed process. Adolescence is shaped and influenced by the social environment in which young people live (Białek-Jaworska and Nehrebecka, 2015). Young people grow and develop within a complex network of family, peer, community, societal and cultural contexts, at a personal, familial, community, and national levels, which can impact on health and wellbeing (Viner et al., 2012).

The Health Behaviour in School aged Children survey (HBSC) (Currie et al., 2012) states that evidence gathered over the last two decades shows that disadvantaged social circumstances have an immediate and lasting impact on the health and wellbeing of young people, and that of future generations, highlighting the social determinants of health as a key concern for the development of future policy.

Social determinants approaches can incorporate both positive and negative factors that influence health and wellbeing, and the ability to change health behaviour through understanding and manipulation of these social determinants is becoming increasingly recognised in health promotion and prevention science (Catalano et al., 2012; Jackman and MacPhee, 2015). Typically, research exploring the social determinants of health has focused on infancy and early childhood (Currie et al., 2015). However, given the relatively recent shift towards recognising adolescence as a distinct life phase, Viner et al. (2012) opted to investigate more closely the impact of social health determinants on adolescent health specifically. The purpose of this research was to highlight the importance of positive personal and emotional development in promoting adolescent health, positing that

while risk behaviour prevention has its place, a stable social environment in which to deliver programmes is equally, if not more, important. Social determinants of health are typically measured in terms of socioeconomic status, either as an individual or in the case of young people that of their parents, including measures such as gender, ethnicity, and education (Currie et al., 2015). However, Currie et al (2015) argue, these individual dimensions have been under researched in relation to adolescent health, and should be considered in any future research seeking to understand social contexts which may impact on adolescent health and wellbeing.

Here, I consider the impact of the social determinants of adolescent health and wellbeing, briefly exploring broader national or structural influences, then delving into more proximal constructs, such as community, school, interpersonal, and personal factors. Similar to the concept of proximal determinants of health, is that of individual risk and protective factors. These factors occur at an individual level, such as personality, intelligence, sexual orientation, operating within and interacting with social determinants of health, and impacting on the likelihood to engage in health risk behaviours. Social determinants of health have an impact throughout the life-span, but are thought to become especially salient during adolescence, as children grow into young adults and strive for autonomy (Sawyer et al., 2012).

National/Structural Determinants

Structural determinants of health are defined as the fundamental structures that generate social stratification (Viner et al., 2012), such as the economic, political and social welfare structures within society. It is widely acknowledged that national wealth, income inequality, and socioeconomic status impact significantly on population health and well-being, particularly for those in the lower bands (Currie et al., 2015; Kelley et al., 2017). For example, higher prevalence of teenage pregnancy, poorer diet and low levels of physical exercise have been associated with belonging to a low income household. Currie et al. (2015) suggest that health inequalities arise as those in less affluent households are less

likely to have access to health resources, and are more likely to experience psychosocial stressors. While government spending on health and social welfare has been shown to have some impact on adolescent health and wellbeing (Elgar et al., 2017), it is much less salient than in adult health, and more proximal social determinants, such as access to resources in the local community (accessible age specific healthcare, good schools, community and leisure time activities) have a far larger effect (Viner et al., 2012).

School and Community Environments

The role of family and educational determinants of health has long been recognised in social research examining health outcomes for young people. Higher educational achievement has been correlated with lower adolescent mortality across both sexes. However, the role of the wider social community, and school as a social context in which young people live and grow has historically been overlooked (Viner et al., 2012).

Patton et al. (2016) considered the role of health promoting schools in relation to risk behaviour prevention, as risk behaviour is the most prominent threat to adolescent health and wellbeing. There is clear evidence that health promoting schools, where there is whole school, multi-level change is beneficial in reducing risk behaviour and increasing adolescent health and wellbeing, when school is embedded within the wider community. In this whole school, whole community approach the need for policy, process and practice that incorporates both social and educational aspects is key to success (Lewallen et al., 2015). Furthermore, Currie et al. (2015) suggest, experiences within school are pivotal in the development of self-esteem, understanding of the self, and positive self-regard. However, in western society there is a risk that the narrow focus on attainment and educational performance can undermine schools' crucial role in social development, marginalising health outcomes, and potentially damaging the mental wellbeing and self-esteem of students (Patton et al., 2016). Furthermore, educational achievement and health wellbeing are classified in policy as separate entities, when in reality they are

synergistic goals, with good practice in pedagogical care reducing school dropout, and bolstering school connectedness and academic achievement.

Increasing autonomy and time spent outside of the family home during adolescence, increase the importance of healthy social environments and communities (Viner et al., 2012). Factors such as access to resources and services, safe, supervised areas for leisure time, social norms and connectedness to others outside of the home and school environments all influence adolescent health. Broader structural determinants can impact on local environmental contexts, as neighbourhood deprivation limits access to resources and opportunities (Currie et al., 2015).

Peer Relations

Peer relationships are closely interlinked with both school and wider community contexts. As previously stated, the development of strong peer attachments is a central developmental tasks during adolescence, such as establishing self-identity, developing social skills, self-esteem, and autonomy (Currie et al., 2015). The HBSC study highlighted peer relationships as having a positive influence on adolescent health and wellbeing, with those engaged within social networks experiencing less psychological issues, and developing a stronger sense of wellbeing. However, the role of peer association is complex, as peer relationships are also closely linked with increased participation in risk behaviours such as tobacco use, and alcohol consumption (Currie et al., 2015). Furthermore, as the number and diversity of peers' young people have has expanded rapidly, further compounded by the popularity of social media (Patton et al., 2016). Peer affiliations can be positive or negative in influence.

Peer influence operates within, and is influenced by, wider social contexts such as family and community. Social media and access to the World Wide Web have also expanded the influence of peers on health behaviour (Patton et al., 2016). Peer affiliation and adoption of peer behaviours typically took place within the local environment, through in person contact with peers. More recently adolescent identity development incorporates new

concepts taken from global youth culture. However, the impact of social media, and the vastly expanded peer landscape, is relatively unknown, as research has thus far failed to keep up with rapidly developing technology.

Families and Home Environment

Families and the home environment are well established as a significant factor in health and well-being across cultures, and throughout the lifespan (Currie et al., 2015). Families are thought to be the primary influence on children's behaviours, and policies for child health highlight supporting families as a key tenet (Viner et al., 2012). Adolescence is a period of transition whereby young people go from dependent children to independent, autonomous young adults.

Autonomy is underpinned by a broad range of concepts, including successful detachment from parents, independence, agency and self-reliance (Petegem et al., 2012). Further to this Petegem et al. (2013) propose two dimensional constructs which attempt to explain how attachment style and autonomy impact on adolescent behaviour. The first, volition versus pressure, refers to decision making in family relationships, and the degree to which the young person feels their choices are their own. The second, distance versus proximity, describes the degree of interpersonal distance between the young person and parents. Perceptions of volition were found to be correlated with lower prevalence of problem behaviours, and a more secure attachment style, while distance was correlated with increased risk taking and an avoidant attachment style.

Social connections are central to adolescent development, and family relationships are considered the most important, playing a key role in the development of an attachment style that will form the foundation of relationship development and management throughout the lifespan (Viner et al., 2012). Adolescents who have strong family bonds tend to be less likely to engage in health risk behaviours, and are more likely to form prosocial friendships outside of the home. Furthermore, teenagers of parents who have

good family management techniques and are aware of their children's whereabouts when outside of the home, are less likely to engage in anti-social behaviour (Currie et al., 2015).

Family norms and attitudes are also identified as playing an important role in adolescent health and health risk behaviours, particularly in relation to smoking, drinking, and violence (Viner et al., 2012). Parenting styles, which incorporate the positive aspects, outlined above, often labelled authoritative parenting, are identified as successful in maintaining healthy family connections, supporting academic achievement, promoting prosocial behaviours, increasing feelings of self-efficacy, and reducing or preventing the onset of health risk behaviours. However, overly authoritarian parenting styles, which restrict or inhibit the development of autonomy, may have the opposite effect as conflict with parents drives the young person towards rebellion and deviant peer associations.

Self-Esteem

Within each of the key social determinants of health set out above, one core construct which appears to mediate social contexts and health behaviour is that of self-esteem. Definitions of self-esteem differ significantly from one source to the next, dependent on the focus of the research. In sociology and psychology research, self-esteem is defined as an individual's overall subjective emotional evaluation of self-worth. Self-esteem encompasses the individual's attitudes and beliefs towards themselves and associated emotional states. High self-esteem is frequently associated with academic achievement, success, good health and wellbeing and happiness (Trzesniewski et al., 2006b), while low self-esteem is thought to correlate with difficulty in forming relationships, self-doubt, failure expectancy and low self-regard, which may lead to deviant peer association and increased likelihood of risk behaviour engagement. Empirical evidence of the relationship between self-esteem and adolescent risk behaviours is somewhat ambiguous, and often groups all constructs within self-esteem under one umbrella term, confounding the results and limiting understanding (Wild et al., 2004).

Wild et al. (2004) explored the role of self-esteem in adolescent engagement in risk behaviours, including tobacco, alcohol, cannabis, solvents and other substances, bullying, suicidal ideation and attempts, and risky sexual behaviour, across six key domains; school, peers, family, sports/athletics, body image, and global self-image. The aim of the research was to explore the relationships between domains of self-esteem and specific risk behaviours, while also giving consideration to other variables such as gender. The key findings for each of these domains is presented below:

- Low school self-esteem was associated with an increased likelihood of tobacco use, and alcohol consumption, for both boys and girls. Boys were also more likely to report increased engagement in risky sexual behaviours.

- Low peer self-esteem, or peer group affiliation, was significantly associated with decreases in tobacco use, and alcohol consumption for both boys and girls, and decreased likelihood of engagement in risky sexual behaviours in girls.

- Low self-esteem within the family context was associated with a significantly increased risk of suicidality, risky sexual behaviour, and alcohol and cigarette use for both sexes, and an increased risk of drug use in girls.

- Low self-esteem with respect to body image was significantly associated, for girls, with an increased likelihood of suicidality, drug and tobacco use, and risky sexual behaviour.

Furthermore, no significant results were found for global self-esteem when controlling for these constructs. These findings, Wild et al. (2004) suggest, do not mean that the overall measure of self-esteem is not important in understanding, predicting, or preventing adolescent risk behaviours, but rather that individual constructs of self-esteem may be more relevant in relation to specific risk behaviours, and should be considered in relation to gender.

Findings relating to both peer and family self-esteem constructs are of particular interest, when considered in relation to theories of adolescent development which state that adolescents typically detach from parental or familial relationships, in favour of building bonds with peers, at least within high income or western societies. Given these findings it is important to recognise the role family relationships continue to play in adolescent health behaviours and decision making.

One key limitation in considering the results of this study is that no directional causal explanation can be offered. While there is evidence of a relationship between constructs of self-esteem and specific risk behaviours, it may be that in some cases risk behaviour engagement may impact on self-esteem, for example by leading to family conflict.

Furthermore, measures of risk behaviour did not account for degree of severity, making no distinction between having had one drink, and harmful drinking for example, or separating those who had had suicidal thoughts during stressful moments, to those who had made a serious attempt on their lives. A further consideration in interpreting these results in relation to the wider aims of this thesis is that of region. As the study was conducted in South Africa, it may be that findings from this research are specific to local social contexts and health concerns, limiting the potential for generalisability. However as this is an exploratory study, these findings provide an interesting starting point for further consideration in the development of programme theories.

Providing further supporting evidence for the need to consider the role of self-esteem in adolescent health and wellbeing policies, and the prevention of risk behaviours, Jackman and MacPhee (2015) posit that self-esteem and future orientation may be predictive of adolescent risk behaviour engagement. Building on the problem behaviour theory (Jessor 1991; 1994) Jackman et al. (2015) state that those with a positive outlook toward their futures, or those with expectations of future success are less likely to engage in risk behaviour. Further to this they assert that those with a positive sense of self-esteem are less likely to engage in risk behaviour. Jackman et al. (2015) suggest the underlying construct which underpins both future aspirations, and self-esteem is that of identity development. Identity development is considered a key developmental process in

navigating progression from childhood to adulthood, facilitating self-evaluation and positive self-regard. Those adolescents who are able to reflect on future orientation are more likely to explore their own attitudes and beliefs of self and others, and make better decisions regarding health and wellbeing.

While these findings provide evidence to suggest that self-esteem plays some role in risk behaviour engagement, and that prevention programmes should consider the impact of the different domains on specific behaviours, it is acknowledged that the impact of other personal, interpersonal and contextual factors should also be considered. For this reason, it is posited, evidence based programmes designed to prevent or reduce multiple health risk behaviours in adolescence should be complex, multi-faceted, and delivered on a number of levels.

1.5 Adolescent Risk Behaviour Prevention

As discussed previously, risk behaviours are the leading global cause of death and ill-health in adolescence (Hale et al., 2014). Adolescence, divided up in to early (10 – 14 years), middle (14 – 17 years) and late adolescence (17+ years), is associated with risk behaviours such as smoking, substance use, alcohol consumption and risky sexual behaviours, and many adults with problems related to substance use typically pinpoint adolescence as the point of initiation (Catalano et al., 2012). Therefore, preventing risk behaviour during adolescence, prior to initiation is the optimal way of reducing the burden of morbidity and reducing adolescent fatalities. The core approaches used to target these risk behaviours are health promotion, prevention programmes and treatment interventions (Catalano et al., 2012). The primary focus of this research project is prevention of risk behaviours, and therefore prevention programmes are key, however many programmes use health promotion techniques in addition to prevention strategies, therefore there may be some crossover between approaches.

Public health prevention programmes, such as those designed to reduce or prevent risk behaviours in adolescence, can be further divided in to *universal*, *selective* and *indicated* programmes, and may be brief or complex in nature (Cuijpers, 2009), each of these is described below:

- *Universal* programmes, typically considered primary prevention, target the general population, or a part of it that is not identified by a specific risk, for example young people.

- *Selective* programmes are aimed at individuals or groups of people who have been identified as having increased likelihood of risk behaviour engagement, such as those who have been excluded from school, or have problems within the family home. These programmes are typically considered secondary prevention.

- *Indicated* prevention programmes are aimed at those who do not have a formal diagnosis of addiction, but are beginning to display characteristic behaviours of problematic use or abuse, for example those who have begun to experiment with drugs or use alcohol on a regular basis.

The aim of this research is to explore universal programmes primarily, though evidence from other approaches may be included where relevant, as definitions within programmes tend to overlap.

Here, I begin by examining current policies around adolescent risk behaviour, how these have changed and developed over time, and how this is interpreted and operationalised within prevention programmes. I explore the types of programme that have historically been adopted, and which behaviours have been targeted and how, taking in to account the reported strengths and weaknesses of each programme type. I then go on to consider the way in which adolescent risk behaviour prevention is reported in the literature, including issues for review, and difficulties in making cross programme comparisons in relation to outcome data. Finally, considering how complex multilevel, prevention programmes can be utilised to address multiple adolescent risk behaviours simultaneously, and the role of understanding this complexity to provide new insight in to adolescent risk behaviour prevention.

1.5.1 Risk Prevention Policy and Guidance

Developing and implementing policies and strategies for health is a key role for the health sector. National health policies define the countries priorities, budget and plans for maintaining, and /or improving the health of the population. Since the recognition of adolescence as an important developmental phase for health and well-being in the last two decades, adolescents have become increasingly prevalent in national policies covering a range of topics, such as sexual and reproductive health (more recently expanded to include relationships), substance use, exercise and nutrition, and mental

health. However, adolescent specific goals and targets within policy tend to focus on supporting implementation of existing programmes (including staff training, monitoring and evaluation and youth participation), increased attention for adolescent specific health issues, and creating new policies surrounding adolescent health and wellbeing. However, many policies designed to reduce adolescent engagement in risk behaviours, such as tobacco use and alcohol consumption, focus on changes in legislation such as bans in public places, and minimum age for purchase, or policies such as minimum pricing strategies. Creating new health intervention programmes, incorporating health and wellbeing into school curricula and environments, and providing adolescent specific health services are less frequently addressed, receiving little attention within national policies (WHO, 2014).

A key issue in current policy and guidelines for practice is that, despite evidence for the effectiveness of addressing multiple risk behaviours simultaneously, recommendations continue to address each behaviour separately. For example, NICE have guidelines which address harmful sexual behaviours in adolescence (NICE, 2017b), prevention of STI's (NICE, 2007), smoking (NICE, 2008), and substance use (NICE, 2017a). Hale and Viner (2012) attribute this to policy developers taking a downstream approach, with a focus on prohibition and reducing accessibility, rather than the upstream approach, which focuses on social and environmental risk and protective factors, as is typically seen in empirical research. These discrete policy categories have historically led to the development of intervention programmes that target singular behaviours. However, more recently evidence has begun to demonstrate the benefits of taking a multiple health risk behaviours approach. The development of these programmes, along with limitations in implementation are considered below.

1.5.2 The Development of Adolescent Risk Behaviour Prevention Programmes

Despite evidence of risk behaviour clustering in adolescence, a large proportion of prevention programmes have tended to focus on prevention or treatment of single risk

behaviours. A rapid literature search, at the outset of this project returned 70 single behaviour intervention papers, covering a range of behaviours, including alcohol consumption (Patton et al., 2014, Schelleman-Offermans et al., 2014, Tanner-Smith and Lipsey, 2014), smoking and/or tobacco use (Campbell et al., 2008, Heckman et al., 2010), substance/drug use (Carney et al., 2014), and risky sexual behaviour (Jemmott III et al., 2010, Caruthers et al., 2014). Jessor (1991) referred to this as the problem of the week approach, whereby alcohol consumption is targeted one week, smoking the following week, and so on.

The majority of these programmes, designed to prevent or reduce a singular behaviour, are delivered in the form of a brief intervention (Bernstein et al., 2010). Brief interventions encompass a range of behaviour change techniques from advice to counselling and can range in duration from a one-off session (such as a special assembly), to a small number of sessions either one to one, or in groups or classes (Patton et al., 2014). Brief interventions, such as motivational interviewing, aim to reduce or prevent risk behaviour by preparing the adolescent to change their behaviour, starting with a change in attitudes and beliefs (Tevyaw and Monti, 2004). These interventions are attractive because they offer a solution which is easily delivered in a range of settings, and are not time, labour, or resource intensive, and therefore, if successful, can be considered extremely cost effective (Tanner-Smith and Lipsey, 2014). However, despite the oft cited potential for delivery in a range of settings, the majority of evidence tends to come from either clinical (hospital, acute services), or educational (school, college) settings, limiting the generalisability of findings, and recommendations produced (Walton et al., 2010, Patton et al., 2014).

The theoretical foundation for brief interventions is rooted in social learning theory, and cognitive behavioural therapy, taking a client centred approach (Tevyaw and Monti, 2004). These theoretical approaches, Tevyaw and colleagues (2004) state, recognise that therapist or programme deliverer behaviours, such as warmth, empathy, sincerity and acceptance, can have as much of an impact on behaviour change as client behaviours, with negative interactions and non-acceptance thought to produce no effects or even

worsening of risk behaviours. Furthermore, insight from social learning theory highlights the role of interaction between the social environment and personal characteristics of the individual. In addition to this, the model recognises that behaviour change can occur in a stepped fashion, with varying degrees of traits like motivation, whereby individuals can have varying degrees of motivation, rather than it being a case of motivated or not.

Brief interventions can also move away from information provision towards the practical application of skills. For example, one key task in motivational programmes is to set goals, and then reflect on how current behaviour may be hindering or preventing those goals from being achieved, and a plan is developed to overcome issues and facilitate behaviour change (Tevyaw and Monti, 2004). However, this highlights two key limitations of the approach from the outset. Firstly, the approach requires the young person to see the risk behaviours as problematic or undesirable, which is not typically the case. Secondly, it requires the young person to think about short and long-term risks of the behaviour. As previously stated, when defining adolescence (p11), young people tend to see themselves as somewhat invincible, and are unable to comprehend future consequences in a way that is relatable to themselves (Spear, 2000, Coupey et al., 2002). Further to this, the harm reduction, rather than absolute abstinence approach used in brief interventions with adults, is often seen as inappropriate for adolescents, leading those delivering the programme to change its purpose with no knowledge of how this might change outcomes (Tevyaw and Monti, 2004).

Empirical evidence for the efficacy of these programmes show that they can significantly reduce intention to, or engagement in, risk behaviours such as alcohol consumption, smoking, substance use and risky sexual behaviour in comparison to no intervention controls, though effect sizes are typically small. However, when compared to information only, no significant results are seen (Carney et al., 2014). Furthermore, no significant results were seen between brief interventions delivered in one session, and longer running programmes delivered over 6 to 8 weeks (Tevyaw and Monti, 2004). This has been taken as evidence that, due to comparable outcomes, the single session delivery

model is promoted as being more cost effective, leading to an increase in the frequency of use of these very brief interventions. However, brief interventions, targeting one behaviour, have been criticised for failing to recognise or acknowledge the role of interactions between behaviours, and the predictors or social determinants which underpin them (Catalano et al., 2012).

Coie et al. (1993) define prevention science as the prevention, modification or reduction of behaviours which are dysfunctional or damaging to health and wellbeing. The eradication or alleviation of the underpinning causes of the behaviour, and understanding of the risk and protective factors that mediate or moderate risk behaviour, are considered a central tenet to prevention. While brief interventions do recognise the role of the external environment and interpersonal and personal factors in shaping an individual's thoughts, attitudes, and beliefs, in practice they tend to be problem focussed, seeking simply to change undesirable behaviour without addressing underlying causal factors.

As a result of earlier limitations, and the growing need for a more comprehensive approach to risk behaviour prevention, practitioners, policy makers and prevention scientists working in the field have argued for an approach which incorporates positive youth development and bolstering of protective factors, in combination with risk prevention strategies (Catalano et al., 2012).The congruity between underpinning causal factors across risk behaviours, as previously discussed in relation to risk behaviour clustering in adolescence (p5), risk behaviour prevalence (p9), and social determinants of health (p20) suggests that interventions that address a specific behaviour will undoubtedly impact on other behaviours. Moreover, this shared commonality suggests that interventions or prevention programmes which target one or more interrelated causal factors will be more effective in reducing or preventing multiple risk behaviours, with the potential to reduce the time and resources needed for implementation (Hale et al., 2014), making this a beneficial and cost-effective approach (Catalano et al., 2012).

Multiple risk behaviour prevention programmes fall in to two broad categories; those which target proximal social determinants, such as those with a focus on improving familial relationships (Ary et al., 1999, Connell et al., 2007), addressing social norms and peer influence (McNeal et al., 2004, Hansen and Dusenbury, 2004), or increasing school connectedness (Chapman et al., 2013), and those which take a more comprehensive approach, making changes to both proximal determinants, and more distal/structural determinants through changes in policy and legislation (Catalano et al., 2012). However, multiple risk behaviour prevention programmes which target proximal factors or determinants have been somewhat effective in reducing adolescent risk behaviour, evidence of the effectiveness of this type of programme remains highly variable, typically producing moderate effects at best (Jackson et al., 2012a). Furthermore, programmes tend to be programme, or theory specific, are frequently one offs, with little to no success in replication (Hale and Viner, 2012).

Prevention programmes, which aim to reduce multiple risk behaviours in adolescence through changes to both distal and proximal determinants, such as the gatehouse project in Australia, and later The Core Connections Project in Canada (Patton et al., 2000, Bond et al., 2007, Hawe et al., 2015) have been somewhat more successful. However, programmes adopting this comprehensive approach tend to be much more complicated (Jackson et al., 2012b). They are typically considered as complicated as they operate at a number of levels, including changes in legislation and policy, as well as practice, and target a variety of broader social contexts including communities and schools, relationships and interpersonal factors, and personal skills, knowledge, attitudes and beliefs to bring about change in behaviour. As a result of this, outcomes are not one simple measure, but a complex array of broad and sustainable changes across a range of intentions and behaviours (Pawson et al., 2004, Catalano et al., 2012).

Multiple risk behaviour prevention programme design, and development, requires some understanding of underpinning causal factors, to facilitate the implementation of strategies that manipulate them, to bring about changes in behaviour. However, the complex

interactions between these risk and protective factors, risk behaviours, prevention strategies, and the contexts in to which they are delivered are largely ignored in interpreting programme outcomes (Morrow, 2008).

A number of systematic reviews have been carried out, seeking to evaluate adolescent risk behaviour programmes, from a varying range of perspectives, in order to better understand the underpinning causal processes in relation to programme outcomes. For example, Hale et al. (2014) explored the effectiveness of interventions for reducing multiple health risk behaviours in adolescence, Bonell et al. (2013) conducted a systematic review of the effects of schools and school environment interventions on health, and Agabio et al. (2015) conducted a systematic review of school-based prevention programmes for alcohol and other substances. The aim of each of these reviews was to explore the evidence for the effectiveness of a programme or set of programmes, to identify which programmes, or programme components are most effective for which behaviours. However, a common limitation in conducting systematic reviews is the lack of homogeneity between programmes, making meta-analyses of programme findings difficult (Pawson et al., 2004).

As a result of these methodological difficulties, systematic reviews of multiple risk behaviour prevention programmes, within the published literature, have historically shown a tendency to fall back on reporting which programmes or approaches are most effective, excluding those programmes that did not produce significant results, preventing comparison between programmes, and the underpinning factors that contribute to programme success and failure (Pawson 2002; Pawson et al., 2004).

More recently it has been acknowledged that the criteria for conducting systematic reviews has been broadened to include a wider evidence base (Greenhalgh et al., 2018), however focus remains narrow, driven by a very specific research question, with the primary focus on systematic selection, and scrutinization of primary sources, and reporting of efficacy data. The purpose here is not to argue that realist reviews are more useful, or methodologically more sound than systematic reviews, but that they are equally as valid in the evidence they produce, and more functional in understanding underpinning

mechanisms and the relationships between programme and broader sociocultural contexts.

Coie and colleagues (1993) state, the salience of these social determinants of health, and more specifically risk and protective factors, is not fixed, occurring in diverse ways and across a range of contexts. Individual factors may fluctuate across developmental stages of adolescence, within the course of the programme, or indeed at any given moment in response to life events. Contextual factors such as changes in policy or legislation, either at the higher government level, or within schools where these complex programmes are typically delivered, can also influence programme outcomes. This is particularly the case when those changes lead to a loss of funding or resources, or a change to the way in which health education is delivered (Coie et al., 1993). Therefore, further understanding of the underpinning causal mechanisms, and the influence of external social or contextual factors is vital in improving programme outcomes.

1.5.3 Evaluating Complex Adolescent Risk Behaviour Programmes

Within the public health literature, it is widely recognised that the combination of individual and contextual factors, in to which programmes are introduced, can be incredibly complex and fluid in nature. Though public health programmes are often viewed as a closed system, a set of resources and personnel, which is introduced into a set of circumstances or contexts to bring about some predetermined change (Pawson et al., 2004), with the need for high fidelity in programme delivery cited frequently as a key factor in programme success. However, this rigid delivery, and interpretation of programme findings, fails to acknowledge the impact of these complex interactions.

Kreuter et al. (2004) define these intricate networks of complexity in public health research as ‘wicked problems’. The term is used here to delineate a problem that is illusive or difficult to pin down, and is influenced by an array of social and political factors which may change over the course of the programme. Furthermore, it is stated, the nature of the problem is likely to be viewed differently by different stakeholders.

Westhorp (2012) proposes that understanding such complex programmes is assisted through the application of complexity-consistent theory. Complexity consistent theory, Westhorp (2012) argues, is more useful in exploring the complex change processes which occur throughout a programme, particularly where these processes are non-linear, emergent, leaky or susceptible to human action, and, to some extent, unpredictable. Furthermore, Westhorp (2012) states that theories can be hierarchically arranged, or layered in terms of impact during programme implementation, or level of abstraction in relation to underpinning knowledge about the way in which a programme has that impact. The complexity highlighted here explains why experimental approaches to evaluating adolescent risk behaviour prevention programmes, such as randomised control trials, and quasi-experimental designs, are unsuitable as a sole method for interpreting programme outcomes. This difficulty is evident within the literature, and frequently emphasised as a limitation when attempting to conduct cross-programme comparisons through systematic review (Jackson et al., 2005). Pawson et al. (2004) state that far from being closed programmes, as represented within the experimental paradigms through which public health programmes are typically tested, programmes are open systems which are active, non-linear, and prone to leaks, which act on and interact with the complex systems in which they are embedded. Furthermore, Pawson and colleagues (2004) argue, exploring these complex interactions, or wicked problems, both within and external to the programme, is key to explaining the difficulties in implementing public health interventions such as these adolescent multiple risk behaviour prevention programmes, and understanding what works, for whom, in what circumstances and why.

As previously stated, the purpose of this research is to gain a deeper understanding of how, why, for whom, and in what circumstances complex multiple risk behaviour prevention programmes are most successful in reducing or preventing adolescent risk behaviour. A number of key factors for consideration have been highlighted within this chapter, including types, trends, and prevalence of adolescent risk behaviour, adolescent development, broader sociocultural factors, policy, and the role of complexity in

understanding adolescent risk behaviour prevention programmes. Building on this rationale, the research aims and questions are presented in chapter 1.6 below, p40.

1.6 Aims and Research Questions

The aims of the review are:

- To utilise a theory driven approach to identify factors which influence the success or failure of complex adolescent risk behaviour prevention programmes in reducing adolescent risk behaviours.
- To produce a set of refined programme theories of causal mechanisms and contextual factors that operate within strategies to facilitate change across short, medium and long term outcomes.
- To produce guidelines based on the evidence synthesis for consideration in future development and use of adolescent risk behaviour prevention programmes in research, policy, and practice.

Based on these aims the following broad research questions were developed:

1. What are the key contextual factors which influence the success or failure of complex prevention programmes for adolescent risk behaviours?
2. What are the key underpinning mechanisms, which, in the right contexts, lead to the success or failure of complex adolescent risk behaviour prevention programmes?
3. Are contextual factors and causal mechanisms consistent across a range of risk behaviours?
4. How do broader contextual factors impact on programme specific programme theories?
5. How might this influence future research, policy and practice?

From here, a number of more detailed research questions were developed to consider how the concepts outlined in the introduction can further understanding of what works, for whom, in what circumstances, and why in the prevention of adolescent risk behaviour.

Questions for consideration include:

- What are the shared underpinning causal factors which contribute to risk behaviour clustering in adolescence? How are these addressed in complex multiple risk behaviour prevention programmes?
- At what age are prevention programmes typically delivered? How does this fit with age of risk behaviour initiation and developmental stages of adolescence?
- What impact do social determinants of health (socioeconomic status, school and community, relationships, self-esteem) have on programme engagement and outcomes?
- How might current policies influence programme success or failure?
- Do prevention programmes allow for or address the complex stratified environment in which adolescents live and grow?
- How can understanding of these constructs, and the relationships between them inform future policy and practice?

In addition to driving initial literature searching, these research questions will be used to interrogate, and explain, the research findings. Within the methodology chapter, I discuss how realist methodologies can be used to explore complexities within programmes for the prevention of multiple risk behaviours in adolescence.

Chapter 2
Methodology

In the introduction to this thesis, I considered the problem of adolescent risk behaviour, highlighting adolescence as a key phase for intervention in order to improve the health of both the current, and future population. I discussed common approaches in both policy and practice, and considered the limitations of the empirical approach in understanding complexity.

Here, I consider how realist methodologies can be utilised to address this gap in knowledge. I begin by reframing multiple risk behaviour prevention strategies using a realist lens, and explore ways in which realism tackles these complexities, using an approach, unique to this thesis, which combines traditional methods of realist synthesis, with a conceptual lens more typically employed in realist evaluation projects. I provide a definition of the realist ontology and epistemology, moving on to explore how realist methodologies can be used to explore complex prevention strategies designed to reduce or prevent multiple health risk behaviours in adolescents through the formulation of context mechanism outcome configurations (COMC's). I conclude by describing the processes involved in carrying out a realist review, drawing on aspects of realist synthesis, and those more commonly utilised in realist evaluation, demonstrating how these processes lead to new, in depth understanding of the underlying causal pathways which lead to changes in thoughts, beliefs, and behaviour within the target population.

2.1 The Nature of Prevention Programmes: A Realist Perspective

Pawson et al. (2004) argue that the first step in conducting any kind of review of the literature is to understand the nature of the programmes or interventions being examined in order to match methodology to the phenomena in question. To do this Pawson and colleagues set out a number of core underpinning principles. Those which are relevant to this project are considered below.

Discussing these principles, Pawson and colleagues (2004) begin by suggesting that all programmes are theories. Prevention programmes are based on a hypothesis which assumes that if a programme provides a set of resources, manipulates key factors, or delivers services in a particular way, then it will bring about a predictable change in outcomes. In this way programmes consider what factors contribute to the uptake and maintenance of the target behaviour or behaviours, then theorise about how these factors can be changed or manipulated to facilitate behaviour change. Improvements in outcomes then, occur as a result of changes made to the social system in to which the programme is introduced.

This principle of realist synthesis formed the basis for the development of the theoretical framework upon which this review is based (p106). The purpose of this framework was to develop an understanding of the approaches typically employed in adolescent risk behaviour prevention, the theories from which these programmes are developed, and the settings or systems in to which these programmes are introduced.

Following this, Pawson et al. (2004) posit that programmes are active, and that programme effects are brought about through the involvement of active human action. As a result of this, prevention strategies delivered within the programme may be enacted and heeded, or they may be left out, forgotten, or ignored or overlooked in some way, or it may be rejected as unsuitable or overly paternalistic or moralistic by either those delivering or those receiving the programme. This can lead to a range of issues in programme

evaluation and interpretation. Scientific approaches such as randomised control trials consider human volition to be a confounding variable in testing programmes or hypotheses, and great efforts are made to prevent such contamination. However, when viewed as active, programmes can only work through human volition and reasoning, whereby those involved with the programme make the choice to engage actively with programme components. Furthermore, knowledge of stakeholder reasoning, Pawson and colleagues (2004) state, is integral to understanding programme outcomes.

An extension of this principle implies that programme implementation chains are long and densely populated (Pawson et al., 2004). Programmes begin in the minds of the developers, pass through management and those implementing the programme, programme deliverers, and hopefully finally in to the hearts and minds of programme recipients. At any of these points, programmes are susceptible to misinterpretation or failure leading to possible unintended outcomes. Reviews therefore should inspect the integrity of the implementation chain, both investigating what needs to occur for programme success, and where the blockages and contentions occur which act as a barrier to success.

In considering the ways in which this could be investigated within this review it became apparent to me that this principle, of programmes as active, and subject to change based on human action at any point within the implementation chain, shared commonalities with aspects of Pawson's (2013) VICTORE acronym for understanding complexity within a realist evaluation. Two items from the seven item checklist seemed most closely related here, volition and implementation. Consideration of this principle, along with understanding drawn from these evaluation methods provided me with a method which allowed a more systematic approach to thinking about, and investigating factors which may impact on programme outcomes.

For the sake of clarity, programmes are often presented in a linear fashion, as they have been here, as a series of actions or decision points which are implemented through

human action. However, a realist view highlights how it is only as a result of individual reasoning and responses that programmes may be altered or adapted in the way they are delivered or received. For this reason, the majority of programmes are non-linear. Where stakeholder consultation and guidance is involved in shaping the programme, this may be seen as a complete reversal of the implementation chain, with feedback coming from those receiving the programme being fed back to developers to shape future iterations of the programme. This feedback loop may include different stakeholders at different times during implementation, therefore reviewers should examine how this feedback influences implementation, and the impact this has on programme outcomes.

Up to this point, Pawson and colleagues (2004) have described the implementation of programmes as being populated by individuals, and activated through engagement with resources, reasoning behind engagement, and human volition in the choices that are made about health. However, programmes are also delivered within complex social systems which may shape the way in which they are delivered and received. As discussed when considering the development of adolescent risk behaviour prevention programmes, rarely is the same programme equally as effective when delivered in new or differing contexts. Regardless of the delivery of the same strategies and resources, differences in the layers that make up the social context, such as commitment from management to accommodate the programme, staff training, availability, and willingness to engage with the programme, socioeconomic status of the area or community in to which the programme is introduced, and availability of local resources, could all change the way in which the programme operates. These layers of contextual influence which can impact on programme effectiveness are similar in nature to those which contribute to the social determinants of health, and uptake of risk behaviours (p20). These contextual complexities represent one of the greatest difficulties in empirical evaluation of prevention programmes, and should be a key focus in any realist review. Again aspects of the VICTORE complexity checklist provided relevant insight here, relating to context, highlighting the need to consider relationships between structural determinants,

institutional settings, and interpersonal relationships both within and surrounding the programme.

In addition to this, programmes are ‘leaky’ and prone to cross contamination (Pawson et al., 2004). This tends to occur through informal discussions across programme delivery sites. For example, if two schools in close proximity are both running an intervention programme to target risk behaviour in adolescents, staff in those schools may discuss what has worked for them and how they are tackling issues of delivery, potentially leading to blending of techniques from the different programmes. While this in itself may not be bad practice, can reduce burden on schools, and aide in ironing out small issues, these informal programme adaptions mean that the programmes being delivered and evaluated, are not following implementation protocol as intended.

A key consequence of programmes being active, subject to change, and ultimately fallible is that learning occurs in relation to previous experience of programmes and is retained, both by those delivering and receiving the programme. This experience then changes receptivity to, and engagement with other programmes. While this learning can be detrimental for those receiving the programme, it could be argued that it has greater effect when occurring in those delivering the programme, particularly teachers in relation to adolescent risk behaviour prevention, as a lack of belief in the effectiveness of such programmes could potentially impact negatively on programme outcomes. Drawing on Pawson’s (2013) VICTORE checklist here, items for consideration in evaluation relating to time and rivalry seemed most relevant, particularly in relation to stakeholder experience of previous programmes, or the overlap between programmes, for example, delivered in schools, and other community projects in which young people may be involved.

2.1.1 Multiple Risk Behaviour Prevention Programmes as Complex Open Systems

Understanding complexity in relation to multiple risk behaviour prevention programmes poses a particularly tricky challenge for those who wish to better understand, or evaluate them, as complexity arises on a number of levels. Adolescent multiple risk behaviour prevention programmes aim to reduce a range of interrelated risk behaviours, in the case of this study tobacco use, alcohol consumption, substance use, and risky sexual behaviours as defined when exploring trends and patterns in risk behaviour engagement and prevalence. Prevention programmes such as these typically operate on a range of levels (individual, interpersonal and organisational), and incorporating a range of strategies and resources which interact to bring about changes across a broad array of outcomes, including attitudes and beliefs, intentions, and behavioural measures. These factors operate within systems either independently or interdependently, making it difficult to identify which component or components are active in bringing about behaviour change (Shiell et al., 2008). Furthermore, they are often implemented in contexts which respond to, and impact on programmes in unpredictable ways (Moore et al., 2013). Adolescent risk behaviour prevention programmes are typically delivered in schools, though they frequently incorporate aspects which involve the family or wider community settings, and these settings may themselves be considered complex systems (Shiell et al., 2008). Keshavarz et al. (2010) suggest that, while some attempts have been made to better understand multi-faceted risk behaviour prevention programmes in terms of complexity, the nature of settings in to which the programmes are introduced, and the role they play in the success or failure of programmes is much less well understood. Kurtz and Snowden (2003) divide systems in to four categories; simple, complicated, complex, and chaos, depending on the degree to which the cause-effect relationship can be predicted.

As previously mentioned, within the adolescent risk behaviour prevention literature, complexity is frequently used to describe complicated, multi-level programmes. However, as described by Gill Westhorp (2012), complexity in this thesis is taken from complexity

theory, and includes the key concepts of emergence and uncertainty. Emergence refers to potential unexpected effects or long-term adaptions, or unintended outcomes which emerge during the course of implementation. Emergent properties tend to be hidden, but follow a somewhat predictable pattern, while uncertainty refers to the 'unknown unknowns, which cannot be predicted by theoretical underpinnings, or when planning the delivery of the programme' (Pawson, 2013).

Further distinctions have been made in the complexity science literature, characterising complex systems as either adaptive, or non-adaptive (Cohen and Axelrod, 2000), however, within the field of health promotion and risk behaviour prevention, the notion that all systems are adaptive is widely adopted, indeed it is this adaptiveness itself which gives rise to the complexity (Keshavarz et al., 2010). Three broad types of complex adaptive systems are defined by Axelrod and Cohen (2000); artificial systems (computers, Artificial Intelligence), naturally occurring systems (ant colonies, language, the human body), and social systems (organisations, institutions, communities). By this definition, schools, and other social settings in to which programmes are introduced may be described as complex adaptive social systems. According to Keshavarz et al. (2010), complex systems are nested, containing diverse agents, which also may be considered agents themselves. For example, within a school setting individuals, such as students, teachers, administrative staff and managers, are nested within larger systems such as; peer groups; the school itself, with its formal rules; the community in which it is situated (and associated factors such as socioeconomic status, and availability of resources), and broader systems such as education policies and governance.

Both complexity theory, and realist approaches accept that reality is comprised of multiple layers of open systems in which change is generative and context dependent, and understand causation as creating a change in one level, that can produce outcomes at another (Westhorp, 2012). Realist methodologies provide a lens through which these complexities, at both programme and system levels, and the interplay between them can be better understood to strengthen the power of predictions in the development of future interventions.

2.1.2 Identifying and Mapping Complexity in Multiple Risk Behaviour Prevention Programmes

Pawson (2013) sets out a 'complexity checklist', which provides a starting point for understanding the key characteristics of programme complexity. Though Pawson initially formulated this checklist for use within realist evaluation, the similarities and overlap with the principles of realist synthesis is clear, and therefore incorporated here. Further clarity of the way in which constructs of realist synthesis and evaluation are used within this review is provided in the methods section, when discussing the research design (p71).

This checklist, set out under the acronym VICTORE, provides a tool by which all complex programmes or interventions can be explored, allowing realist researchers to map a programme, or family of programmes to identify areas where further exploration is needed. Each of these seven characteristics (Volition, Implementation, Contexts, Time, Outcomes, Rivalry, and Emergence) are defined below, followed by consideration of how they may apply in exploring and mapping complex issues in adolescent multiple risk behaviour prevention programmes.

Volitions

Volition has predominantly been defined as the way in which programme recipients engage with, and respond to, programmes or programme elements. The term 'choice architecture' is often used within the literature to describe how choices made are influenced through the range, layout and sequencing of choices made available to them through programme resources and strategies. For example, choices to participate in behaviours such as drinking or smoking may be influenced through information which challenges perceptions of social norms relating to peer use of that behaviour. While it is not defined within Pawson's checklist, I feel it is important to note here that programme participants are not the only active agents within the programme who can shape programme outcomes through volition. Choices made by any and all of the individuals

involved in the programme from conception, through to delivery can impact on the programme to produce either positive or negative unexpected outcomes.

Implementation

As previously stated in considering the nature of prevention programmes from a realist perspective, implementation chains are long and prone to misinterpretation, blockages, and delays which can lead to unintended consequences. Implementation is a huge topic in behaviour change and a constant source of complexity. Programmes pass through a large number of hands and this does not lend itself well to uniform delivery. These issues can be seen in the risk behaviour prevention literature, with implementation fidelity frequently cited in the literature as a limitation to successful programme delivery, though empirical studies rarely go on to investigate what it is about implementation that is failing.

Contexts

The context of the intervention and that into which it is introduced is another source of complexity. It is through the realist lens that we begin to see the messiness of context not as undesirable noise to be controlled for, but as a key contributing factor to the success or failure of a programme. Pawson (2013) lists four I's as an aide to remembering four of the key contextual layers at play within behaviour change programmes:

i. Individuals – the characteristics of the individuals involved within the programme
ii. Interpersonal relations – Stakeholder relationships that influence the programme
iii. Institutional settings – the rules, norms and customs which surround the programme
iv. Infrastructure – the wider social, economic and cultural settings in which the programme is embedded.

Considered here, in relation to adolescent multiple risk behaviour prevention:

i. Individuals may engage in risk taking behaviour for a number of reasons (social disengagement, poor family relationships, low self-esteem), and programmes may fail to prevent or reduce those behaviours as a result of similar underpinning factors which act as a barrier to engagement in the programme.

ii. Interpersonal relationships operating within the programme potentially include those between programme staff and school staff, school staff and managers, school staff and pupils, school and home, peer relationships, and those between individuals and their families. All of which have the potential to impact on risk behaviour engagement and/or programme success.

iii. Institutional settings – these are particularly relevant when prevention programmes are delivered in schools, and may relate to how the wider school ethos surrounding the programme can act as a facilitator or barrier to programme success.

iv. Infrastructural contexts are not typically targeted by risk behaviour prevention programmes but can significantly contribute to risk behaviour uptake and maintenance, and significantly impact on programme success through constraints such as socioeconomic status, community resources, and future aspirations.

However, the above is by no means a comprehensive examination of the role of context in understanding programme complexity, but provides some grounding from which to explore the literature and formulate early programme theories.

Time

Time refers to the history and timing of an intervention and variation in these factors, Pawson (2013) argues, is just as important a source of complexity as other characteristics. The history of a programme describes the learning which occurs through involvement with earlier iterations of implementation (such as a pilot), or other programmes which may or may not have been successful. This learning leads to

preformed expectations about an intervention which may impact on programme outcomes. Timing is also important in relation to adolescent multiple risk behaviour prevention for a number of reasons as the uptake of risk behaviours occurs at different ages. The level of risk is age dependent (particularly given the broad age range used in this study), for example alcohol consumption is considered risky at 15, but much less so at 18, whereas drug use remains risky across all age ranges. Additionally, developmental stages of adolescence are characterised by evolving cognitive and social capabilities, which can facilitate or act as a barrier to programme engagement dependent on age appropriateness of the programme.

Outcomes

Moving away from the scientific approach of clearly defined variables, and before and after measures, outcomes of complex intervention programmes map a wide array of measures, which monitor a range of outcomes. Examples from adolescent risk behaviour prevention may include; changes in attitudes towards, or intentions to engage in risk behaviours, or actual engagement in behaviours, each of which can be further broken down in to sub categories such as frequency or amount; measures of programme fidelity and acceptability; academic performance and school connectedness; relationships (peer, family); and personal factors such as self-esteem. Complexity here is further compounded by the reliance on self-report measures of socially undesirable behaviours and the subjectivity of those interpreting and applying outcomes.

Rivalry

As already alluded to in considering the impact of programme history and timing, programmes are not introduced in a vacuum, but into a world populated with other interventions. The way in which programmes sit alongside, or even within other programmes can have a significant impact on their success and can greatly add to difficulties in examining where effects are coming from. An example of this from the

adolescent risk behaviour prevention literature could be the introduction of new programmes embedded within an existing programme of PSHE, or where comparisons are made between intervention and control schools, where control schools have a comprehensive PSHE curriculum potentially confounding results.

Emergence

The final characteristic of complexity set out in Pawson's checklist is that of emergence, which has already been discussed to some degree when positioning multiple risk behaviour prevention programmes as complex, adaptive social systems. Here emergence is defined as the combining of programme components to produce novel or unexpected outcomes, thus the systems under investigation continually evolve and adapt. Understanding complexity requires us to map these adaptions, societal changes and unintended consequences, and note the impact on programme effectiveness. This final characteristic proves more difficult to explore in realist synthesis, as emergent or novel adaptions are rarely reported in the literature, and is more suited to realist evaluation.

Within the methodology so far, I have explored how intervention and prevention programmes are framed using a realist lens, considered the complexity within, and surrounding the prevention of multiple risk behaviours in adolescents, and considered the use of the VICTORE mnemonic in providing a starting point for mapping those complexities in a way that will facilitate a realist review. In methodology subchapter 2.2 (p55), I provide an overview of the development of realist methodologies, including ontology and epistemology, going on to demonstrate how realist methodologies may be applied to explore causation in subchapter 2.3 (p63).

2.2 Realism

Realism is a theory driven methodological paradigm rooted in philosophy, which sits between positivism (the world is real and can be observed directly) and constructivism (given that all we know has been processed through the human mind, we can never be sure exactly what reality is) (Bhaskar, 1978, Harré, 1980, Putnam and Stohl, 1990, Collier, 1994). Bhaskar (1975) developed scientific realism based on limitations of the scientific or empirical methodology in explaining outcomes. Empirical science claims that all scientists can do is observe and measure the relationship between cause and effect, however Bhaskar argues that true scientific explanation can only occur if the underpinning mechanisms underlying change are activated within the experimental paradigm. Furthermore, Bhaskar (1975) argues that we can infer knowledge about these unseen, unknown forces or powers, based on prior existing knowledge of the situational or contextual factors under investigation. This method of investigation was termed 'Scientific Realism'. In an attempt to apply this philosophy to the social sciences, Bhaskar (1978) developed the theory of 'Critical Naturalism'. Here Bhaskar argued that to use an empiricist ontology and epistemology, such as positivism which implies reality is made up only of that which we can perceive and experience, is to overlook the underlying, transcendental causal powers specific to the situation or context. Under the umbrella term 'Critical Realism' Bhaskar (1978) combines the ideas from these two theoretical paradigms to describe an interface between the natural (real) and social world. This interface is often referred to as the 'social reality' in realist texts.

Critical realism states that to be considered realist a theory must have objectivity, in that something is real whether or not it can be observed or perceived; fallibility, it is possible to refute theories on the basis of the evidence; transphenomenality, the theory goes beyond appearances to consider the underlying causal forces at play; and counter-phenomenality, that deep understanding of something may not only go beyond appearances, but may even contradict appearances (Collier, 1994). It is the job of the realist researcher to lay out

theories that can either be proven or disproven. Bhaskar (1978) suggests that experimentation, as used in empirical research, is still a valid tool in investigation of mechanistic action. The experimental paradigm is described as the isolation of one mechanism in a closed system, excluding or neutralising other mechanisms, the creation of an artificial environment, in which B invariably follows A, or the manipulation of the system until this is true. Bhaskar (1978) argues that it is through this process of creating and manipulating a synthetic environment that we can come to learn truths about the natural (real) and social world. Figure one below provides a diagrammatic representation of the difference between this successionist view of causation, and the generative approach proposed by Pawson and Tilley (1997a).

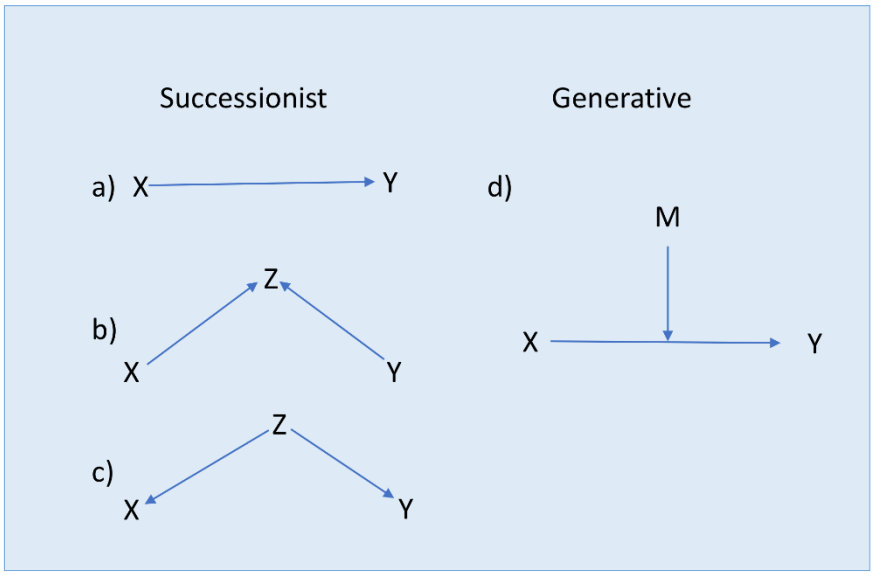

Figure 1: Models Of Causation (Taken from Pawson And Tilley, 1997: p.68)

It is here that Pawson and Tilley (1997) deviate from the ideas of critical realism. As with other realist approaches the role of underlying generative mechanisms as causal powers is key. However, Pawson et al. (2004) argue that in social science the closed system does not exist, what's more we are unable to isolate mechanisms, or inhibit firing of other mechanisms as this would require that we first have prior knowledge of what all the possible mechanisms are for that particular context. If this were the case, further research

would not be required. Furthermore, Pawson and Tilley (1997) argue that critical realism overlooks the complexity of social reality, stating that realistic research begins by recognising that the world in which we live is comprised of a stratified or layered reality. There are real structures and systems which exist and operate regardless of our perception of them. However, for an event to occur there must be processes or mechanisms underpinning the event, which cannot be directly observed. This way of thinking about the world suggests that reality must be stratified (Wong et al., 2013a). Social programmes attempt to induce change within a specific set of social structures and systems (communities, organisations, institutions, families, social groups). The actions of individuals are shaped by the social structures and systems of which they are a part. However, over time these structures and systems can also be shaped by the choices, decisions, and actions of the individuals operating within them. In this way, social change is formed of a network of interactions between the social environment and the individual actors operating within that system. Realist researchers attempt to make overt that which cannot be seen through investigation of underlying causal mechanisms in relation to the context in which they occur.

Pawson's Realism, described here as 'Applied Realism', posits that social reality cannot be known directly, as it is processed through human perception, language, culture and belief systems. While social reality cannot be measured directly, it is argued, it can be understood through careful and systematic investigation of underlying causal mechanisms, the contexts in which events occur, and the outcomes produced (Pawson and Tilley, 1997). Theories are presented as context mechanism outcome configurations (CMOc) using the formulation context + mechanism = outcome. A detailed description of each of these elements is given below.

2.2.1 Context

The relationship between causal mechanisms and their effects is not fixed, but contingent on pre-existing contextual factors (Pawson, 2013). An oft used example of this is that of the explosive potential of gunpowder (mechanism). Whether the gun powder explodes or not is dependent on the presence of the correct conditions (context), for example being stored in dry conditions, the presence of oxygen, and the application of a heat source (Pawson and Tilley, 1997b). In realist terms then, it is the contextual conditioning of causal mechanisms which turns causal potential into outcomes. However, further scrutiny of this example finds that it is somewhat lacking in explanatory power, as it implies that mechanisms are either fired, or not fired, when in reality, context may impact on the degree to which a causal mechanism is activated (Dalkin et al., 2015). Social programmes rarely, if ever, produce the same degree of effectiveness in all circumstances; this variability in efficacy can be attributed largely to changes in contextual factors.

Pawson (2013) postulates that all social programmes are implemented within, and effected by, pre-existing social conditions. Further to this, Moore et al. (2013) define context not only as the pre-existing environment in to which the programme is introduced, but also factors which emerge during programme implementation. Considered this way, context describes not only the physical environment in to which the programme is introduced, for example schools or communities, but also the social and cultural norms, values and relationships which operate within these environments. Realist research, therefore, must take into account the layered social reality in to which programmes are introduced. For example, contextual factors which may impact upon adolescent risk behaviour prevention programmes include: structural, sociocultural, and personal circumstances; skills, beliefs and attitudes of those delivering the programme (whether real or perceived); management and support of those implementing the programme; school ethos, school connectedness, and time and resources available; relationships between stakeholders, peer group membership, and family functioning. As previously

stated, adolescent risk behaviour prevention programmes are typically delivered in school settings (Botvin and Griffin, 2007, Fletcher et al., 2008, Agabio et al., 2015). Many of these programmes are designed to deliver information relating to the consequences of risk behaviours, modify perceptions of social norms amongst peers, and provide skills training in refusal and negotiation. Evidence suggests that the most effective school programmes are interactive in nature, involving elements such as discussions, role play, and computer based tasks, as well as teacher led taught components. However, Cuijpers (2002) proposes that classrooms are often seen by young people as a place of learning, in which the teacher delivers a set course of information, and students are expected to sit quietly and get on with their work. If this is the case then the context of the classroom, and its perceived rules may act as a barrier to the open communication and engagement required for these elements.

Each time an established programme is introduced in a new context, success or failure of that programme is contingent on such contextual factors. Understanding these contextual factors, how they change from iteration to iteration, and how they may impact on the programme, acting as either as a facilitator or barrier to causal mechanism activation, may go some way to helping us understand some of the variability in programme outcomes.

2.2.2 Mechanism

The causal mechanism is often described as the key characteristic tool of realist methodology. There are many different definitions of mechanism, even within realism, however, the common elements within these definitions are that mechanisms are hidden; they are context dependent; and they generate outcomes (Pawson, 2013). Following Pawson's definition, mechanisms are the underpinning causal possesses or structures which bring about change. It is through investigation of these underlying causal mechanisms that we step away from asking whether or not a programme works, and begin to consider how it works, for whom, and in what circumstances. Social programmes work through the introduction of programme strategy to bring about intended outcomes.

Exposing mechanisms, and more importantly, their interactions within context is central to the evaluation of complex social programmes. Within social programmes, mechanisms describe how programme outcomes follow stakeholder choices, and their capacity to put these into practice, through utilisation of, and interaction with programme resources. Mechanisms should not be seen as a further, intermediary step between A and B, but an explanation of the processes which cause the relationship between A and B within a specific situation or context (Wong et al., 2013a). Deciding whether contributing factors act contextually or mechanistically to programme outcomes has been a frequent problem in realist research (Pawson and Manzano-Santaella, 2012). Whilst the role of resource and reasoning has been described in Pawson's work, it is not clear how they come together to form mechanistic action. Dalkin et al. (2015) further clarify the processes by which mechanisms are operational by clearly defining the role of resource and reasoning within mechanistic action, providing an alternative model of the CMO configuration. This model explicitly highlights how resources are introduced, through the social programme, into a pre-existing context in such a way as to bring about a change in, or enhancement of, stakeholder reasoning. It is this stakeholder response to the resources provided that leads to the changes in thoughts, beliefs and/or behaviour demonstrated in the programme outcomes.

In health behaviour change programme, evaluations focus tends to fall on participant reasoning (trust, relationships, engagement, motivation), however, social programme theories follow a long chain of implementation from conceptualisation, to delivery, through to interpretation and utilisation by the participant. Therefore, mechanisms which impact on specific outcomes may also come from stakeholders further upstream such as policy providers, programme developers, programme deliverers, and other relevant individuals, such as parents and peers.

2.2.3 Outcomes

Evaluators need to understand what the outcomes of a programme are, and how they come about. Outcomes provide key evidence to ‘mount, monitor, modify, or mothball’ social programmes (Pawson, 2013). Programmes will often generate multiple outcomes to varying degrees of success with different individuals, and in numerous contexts. Outcomes may be defined as the short, medium and long-term changes, either intentional or unintentional brought about through involvement with the intervention program. They are not generated as a direct result of application of the program, but by the gradual activation of causal mechanisms within the correct conducive context. Realism seeks to investigate outcomes, not to test the efficacy of the programme, but rather to explore which mechanisms have an impact, in what context, on which particular outcomes.

A key problem, discussed previously within the introduction to this thesis, which was identified early in the process of undertaking this review, was the homogeneity of programme outcomes. Regardless of approach used, programme outcomes remained moderate at best, with the vast majority producing an effect size, using Cohen’s d of 0.3 when drawing comparisons between programme effects and those of controls. Two key issues arise from this, with small to medium effect sizes, the actual impact of the programme on outcomes can be trivial, and, with the majority of programmes producing a similar outcome it is difficult to answer those questions relating to what works best. As it was not possible to separate out differences in outcomes, and investigate the causal mechanisms and contextual factors which lead to those differences, the focus of this review became more about exploring aspects relating to ‘for whom, in what circumstances, and why’, while aiming to identify factors which may impact on programme success or failure (outcome). This required a different approach to those typically utilised in carrying out a straightforward realist synthesis, described further, in more detail, in subchapter 2.3, applying realist methodology, (p63), when discussing the application of realist methodologies, and clarifying the process for the review.

2.2.4 Demi Regularities

Investigating underlying causal mechanisms and the context in which they operate to bring about social change in itself is not enough to understand or explain how change occurs, for whom, or in what circumstances. In order to generalise findings from the specific to provide wider universal guidance, the realist evaluator must begin to identify patterns of behaviour change for particular people in certain situations, across a range of studies. These patterns are referred to in realist literature as demi-regularities. Lawson (2006) coined the phrase demi-regularity, stating that human action occurs in a semi-predictable manner, with variability occurring due to contextual factors and individual differences.

Realist research aims to extract and evidence these demi regularities to allow for the development of abstract ‘middle range’ theories which are specific enough to aid in the formulation of testable hypotheses, whilst being abstract enough to allow for generalisation to other similar cases. This allows for the development of guidelines to aid in the decision-making process in policy development. Because theories are judged by objective criteria, realism promotes the development of theories which transform rather than rationalise existing practices (Pawson, 2013). Furthermore, Pawson (2013) states that the purpose of social enquiry is to highlight interesting, confusing, significant and socially relevant regularities through the exploration of causal mechanisms, and the contextual conditions on which they are dependent, in an attempt explain why a pattern of outcomes are observed. The underlying assumption is that individuals, in a given context, will make similar decisions (though this is not guaranteed), and therefore our decisions are guided by particular contexts, giving rise to observable patterns of regularity (Rycroft-Malone et al., 2012).

2.3 Applying realist Methodology

In this thesis, realist synthesis methods (predominantly retrospective investigation of literature, and stakeholder guidance) were utilised in the formulation of early programme theories. Methodology more typically seen in a realist evaluation was then drawn upon in order to investigate and validate the potential or value of these theories in practical use, either in guiding policy, or in the development of future prevention programmes. To this end, primary data was collected, and the literature further interrogated, in order to evidence, refine, adjudicate between, or refute existing programme theories. Further to this, where patterns of themes commonly arose within the primary data that I had not previously considered, new or amended programme theories were developed which in turn led to further literature searching.

The inclusion of service users, and stakeholders, in health care decision making, and research, is becoming increasingly popular (Thompson, 2007), and has long been advocated in a wide range of policies (Groene and Garcia-Barbero, 2005). Whilst close stakeholder engagement, from the outset, is recommended in realist synthesis (Lhussier et al., 2015, Pawson et al., 2004, Rycroft-Malone et al., 2012) the fact it is considered here as primary data, and the way in which data will be analysed, coded, and integrated, from both primary and secondary sources, within a realist synthesis, is relatively novel, with only one other known study using primary data collection within a realist synthesis (Maidment et al., 2017). As this research incorporates a broad range of programmes, delivered in a wide range of settings, I propose that the inclusion of primary data in the synthesis will give greater insight in to possible causal mechanisms which might not be apparent within the literature. It provides additional transparency in the process of developing, evidencing, refining, adjudicating between, and refuting emerging programme theories, allowing the inclusion of direct quotes from the young people when presenting the findings of this research. Evidence of stakeholder opinion, particularly those of young people, is relatively scarce, and lacks the depth required to inform understanding of contextual and mechanistic factors. Therefore, I posit that the inclusion of primary data

gives greater strength to stakeholder voices within the research, particularly those of adolescents themselves (Morrow, 2008).

As the review develops, and evidence is sought, these competing mechanisms become further refined, also giving consideration to which risk behaviours this CMO configuration may relate to most. Difficulties encountered during this process are considered further in the discussion chapter of this review, subchapter 7.2 Strengths and Limitations of the project, p271).

Pawson et al. (2004) stipulate that a realist synthesis is not a linear process, however it should be clearly defined in order to allow the reader to see how decisions were made, how and why evidence was included for review, how evidence was appraised, and synthesis carried out. Furthermore, they propose that a realist synthesis should be carried out in four distinct stages: 1) Defining the scope of the review 2) Evidence searching and appraisal; 3) Data extraction and synthesis; and 4) drawing conclusions and making recommendations.

The synthesis, following the RAMESES guidance and publication standards for realist synthesis (Wong et al., 2013b), seeks to examine and organize the data in order to address the following issues (examples given below are taken from emerging programme theories from early phases of the research).

2.3.1 Reviewing Programme Theory Integrity

Adolescent risk behaviour prevention programmes tend to be complex, with a number of stages, or levels, within the programme, at which change or deviation from the intended programme may impact on outcomes. The purpose of reviewing programme theory integrity is to explore weak points which commonly occur in the history of implementation of adolescent risk behaviour prevention programmes. Within this research this, involves consideration of how training and resources are made available to the programme deliverer, the mode, and location of delivery impact on programme outcomes. Evidence to

support this was sought from the empirical and theoretical literature, as well as through consultation with programme developers and deliverers.

For example: Complex adolescent risk behaviour prevention programmes (c) are more successful when good quality programme deliverer training is provided, including leadership/teaching skills (Mresource), **ensuring facilitators have a clear understanding of the programme strategies and behaviour change techniques contained within the programme, and how to deliver them** (Mreasoning), ensuring programme components are delivered well (o).

Intervention programmes which adhere to the intended delivery strategy (c) provide clear information, support and opportunities for skills development (Mresource) **making it easy for adolescents to access, understand and utilise programme strategies** (Mreasoning) increasing the likelihood of a change in beliefs or behaviour (o).

2.3.2 Reviewing to adjudicate between rival theories

The purpose of this strategy is to gather evidence to discover which, of a number of competing programme theories, is driving differences in programme outcomes. Frequently within the literature, it is not possible to elicit which underlying causal factors are driving observed changes in outcome. This commonly occurring problem makes consultation with a range of relevant stakeholders invaluable in clarifying what works, for whom and in what circumstances. As can be seen in the examples provided below, the context and outcomes remain the same, but different aspects of adolescent reasoning are hypothesised as impacting on programme outcomes.

In the first example, increased success of programmes which employ peer educators to deliver social norms information is attributed to greater rapport with programme deliverer (highlighted below).

Adolescent risk behaviour prevention programmes designed to change beliefs around social norms (c) are more successful in changing attitudes and beliefs (o) when delivered

by a peer educator (Mresource) **as young people are more likely to identify with the beliefs of their peers** (Mreasoning).

However, in the second example, it is suggested that programme success results from open communication between programme deliverers and recipients, increasing programme engagement.

Adolescent risk behaviour prevention programmes designed to change beliefs around social norms (c) are more successful in changing attitudes and beliefs (o) when delivered by a peer educator (Mresource) **as adolescents are more open to communication with peers and therefore engage more fully with the programme components** (Mreasoning).

2.3.3 Reviewing the same theory in comparative settings

The purpose of this strategy is to further explore for whom, and in what circumstances, a programme is successful. This method tends to focus on specific components of the prevention programme, looking for techniques or components of the programme that are more or less successful within each context. This type of component by component comparison is also used to explore how, for whom, and in what circumstances specific components of a range of prevention programmes with differing theoretical underpinning impact on outcomes. I believe that primary qualitative data from young people themselves will be key in developing greater understanding here.

For example: Risk behaviour prevention programmes delivered in schools, which take a harm reduction approach (c), containing advice and information (signposting) on what to do if you do have a problem or are participating in risky health behaviours (Mresource), are more likely to succeed in changing behaviour (o) than those which take a ‘should not’ ‘do not’ approach, **as young people felt their needs were actually being considered without judgement and were less likely to switch off to a ‘telling off’** (Mreasoning).

Further clarity is provided regarding which of these processes is being addressed as each set of programme theories is presented when building and evidencing the programme theories (p106).

2.3.4 Clarifying the Review Processes

Given the multifaceted approach planned, the research is described here in four distinct phases in order to maintain clarity. However, the synthesis process is much more iterative, cycling between empirical literature searching, and data collection, and constant refinement of, adjudication between, and evidencing of emerging programme theories represented here in Figure Two: Zigzagging – Realist synthesis data collection processes, (Developed from descriptions by Nick Emmel (2013) in his book Sampling and choosing cases in qualitative research: A realist approach). This constant triangulation is continuous throughout the research period.

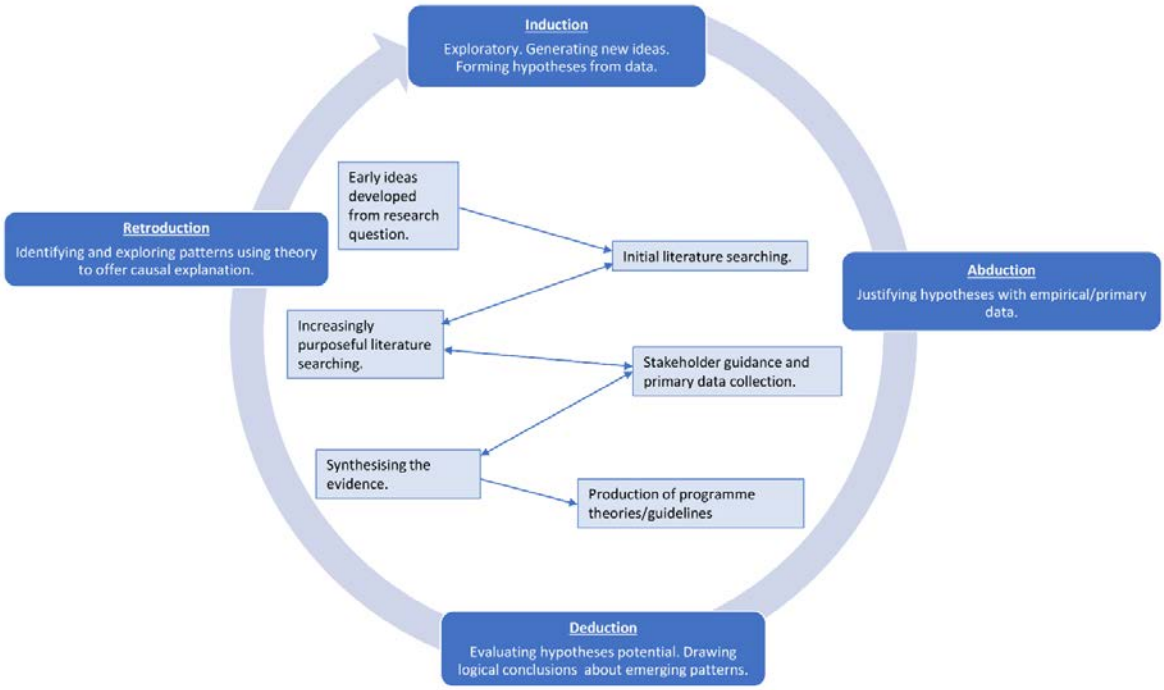

Figure 2: Zigzagging - Realist Synthesis Data Collection Processes

Four key modes of inference, demonstrated in the model above, are employed throughout data collation and synthesis (Eastwood et al., 2014): Induction, Abduction, Deduction, and

Retroduction, to identify how evidence contributes to the development, refinement, or refutation of programme theories.

These terms are defined below.

- Induction: Induction approaches realist synthesis with questions about stakeholder experience, collecting data to address these questions. New hypotheses or programme theories are then developed driven by stakeholder opinions.

- Deduction: Deduction involves approaching the research with a hypothesis about a given phenomenon, then searching the literature for evidence which tests this hypothesis. Evidence in this case need not support the hypothesis, and may refine or even refute it.
- Abduction: To interpret and reconceptualise observed phenomena within a conceptual framework, or set of ideas. To understand phenomena in a novel way as a result of interpretation through a new framework. Abduction uses abstract theory as a mediator to make theoretical inferences from observed phenomena.
- Retroduction: Harre and Baskar define retroduction as the use of thought processes and prior knowledge in the reinterpretation of observed phenomena. Generating causal explanation by exploring observed patterns or regularities in the evidence to discover what produces them.'

The process, both within, and between each stage is an iterative one, allowing the researcher to move freely from one data source to another, between empirical evidence and more abstract theoretical reasoning, as programme theories develop and change (Pawson, 2004). The way in which these processes are applied to data collection and analysis is discussed in the following chapter, and an example of how data strands were used to shape programme theories, and drive research can be seen in Appendix One: Programme Theory Development (p312).

Chapter 3
Methods

In the methodology chapter, I stated the core principles of scientific realism, described the processes involved in realist research, and considered how this may be used to cut through the complexity of social programmes such as adolescent risk behaviour prevention programmes to better understand what works, or doesn't, for whom, how, and in what circumstances. Here, I describe how these processes were operationalised.

I provide an overall view of the research design, giving a brief description of the development of the methodological framework, followed by a detailed description of each phase of the research, including population, recruitment, instruments used, data collection methods, reflection on the key strengths and limitations of each phase, and data analysis processes. I conclude with an outline of the emerging programme theories.

3.1 Research Design

The purpose of the review was to collect data which uncovers or explores underpinning causal, context dependent mechanisms, and the degree to which they are activated. The research design employed in this review combined realist methodologies with qualitative methods, to generate in depth knowledge of stakeholder experience of programmes designed to reduce or prevent adolescent risk behaviour prevention programmes, utilising a combination of primary and secondary data to explore developing programme theories.

This exploration of stakeholder experience was undertaken though the combination of primary and secondary data sources, which goes beyond the more typical stakeholder involvement, which has been described in other realist syntheses (Rycroft-Malone et al., 2012; Lhussier et al., 2015).

Given the complex nature of realist research, and to provide more clarity around how data was collected and utilised a summarising table of data collection methods in each phase is provided below (see table One). Themes set out in this table to describe how data strands contributed to the formulation, evidencing, and refinement of programme theories were highlighted as key areas of interest during the building of the theoretical framework during phase one (see p75).

Table 1: Data Collection Methods

Theme ↓ / Data set →	Literature Searching				Professional Stakeholder interviews				Young people's Focus Groups				School nurse Focus Groups				Vignettes			
Training and resources																				
Mode of delivery																				
Location/ Institution																				
Manager attitudes and beliefs																				
Deliverer attitudes and beliefs																				
Content/behaviour Change techniques																				
Social connectedness																				
Home and Family																				
Community																				
Individual differences																				

Key for Table One: Data Collection methods

- Phase One: Framework development
- Phase Two: Formulating PT
- Phase Three: Refining PT
- Phase Four: Testing PT

3.1.2 Ethical approval

Initial ethical approval was sought for this review, from Northumbria University ethics committee, in April 2015, covering phase one and two of the research, including consultation with a young person's advisory group (as described in phase one below, p77), and stakeholder consultations (detailed in phase two, p84). Issues were raised

regarding how the data was to be collected, recorded, and used within the thesis, with discussions centring on what constitutes primary data collection, and differences in contribution between the Young person's advisory group and the professional stakeholders. As discussions with the young person's advisory group were not to be recorded, and would guide the scope of the review, formulation of the research questions, and development of the research materials it was decided that this did not represent primary data collection. Professional stakeholder interviews on the other hand were to be recorded contributing directly to the formation and refinement of programme theories. On these grounds I made the decision to classify data from interviews as primary data, allowing me to use verbatim quotes within my analysis. With these clarifications in place, ethical approval for this phase was obtained on 25/08/2015.

Ethical approval for phase three of the research (p90) was sought in collaboration with the Burdette/SAPHNA research group, with myself and the principal investigator named as co-researchers for the purposes of data collection and analysis. Within the application it was made clear that data would be collected collaboratively to reduce burden on the young people participating, and that analysis of the data would then be conducted individually, to satisfy the requirements of both projects. Given this approach to data collection, application for approval was submitted as a new submission, as opposed to an amendment to the original study. Ethical approval for this phase of the research was obtained on 18/03/2016.

Approval for the fourth and final stage of the review was submitted to Northumbria University ethics committee, in September 2016, as a new submission, rather than an amendment, as I was introducing a new phase which had not been planned or detailed within the original application. Data collection methods in this phase used a less well known method in which materials were presented to young people by youth workers, rather than myself, with primary data collected from those youth workers. The purpose of this method was to reduce discomfort to the young people, and to protect their anonymity. This approach also served to reduce ethical issues which may have arisen regarding the discussion of sensitive topics with young people with a stranger (myself), utilising the

strengths, knowledge and experience of the youth workers in handling these discussions which I myself, as an early career researcher, did not have. Application for this phase was guided closely by my supervisory team to ensure ethical standards were clearly met. Approval for this phase was obtained on 23/11/2016.

Each of these phases are presented below, detailing recruitment, instruments, and data collection processes.

3.2 Phase One – Building a Framework

Early screening of the literature investigates the theoretical underpinnings on which programmes are based in order to map out the conceptual and theoretical landscape of adolescent risk behaviour programmes, how they are supposed to work, and at what points intended protocol is changed or adapted to suit circumstance (Pawson et al., 2004). Literature searching in this phase was conducted to allow me to familiarise myself with the literature and to aid in the development of the theoretical framework upon which the review is based (see p106). Literature searching was carried out using intuitive search terms, defined by the research questions, as demonstrated in the table below. These terms formed only a starting point, developing as I became more familiar with the literature.

Table 2: Initial Search Terms Used In Initial Literature Screening

Adolescence	**Multiple**	**Risk behaviours**	**complex**	**Prevention Strategy**
Adolescents Teenagers Young people Teens Youths Minors Juveniles	Clusters Groups of	Health behaviours	Multiform Multilevel Multi component	Programme Intervention

In accordance with the methodological approach, the search was carried out to locate evidence from a broad range of sources including empirical efficacy studies, editorials, evaluations, systematic reviews, and follow up papers. An example of the number of papers retrieved and screened within this initial phase is given in Figure 3: Initial Literature Searching.

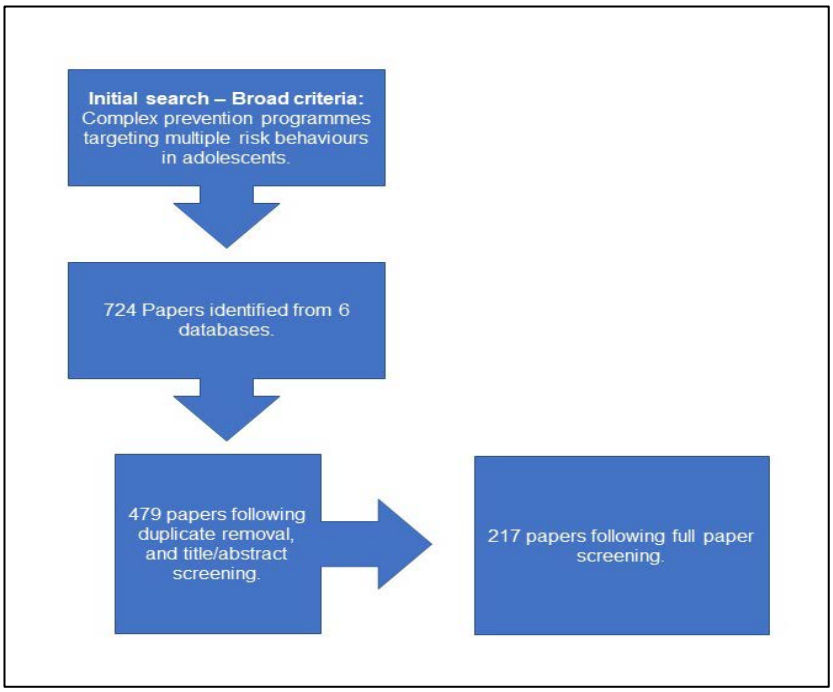

Figure 3: Initial Literature Searching

Broad searching of the literature, at this stage highlighted some broad factors which may have an impact upon the success or failure of adolescent risk behaviour prevention programmes. These broad themes, listed below, are indicative only, and were revised and refined throughout the review process:

- Training and resources which are required and/or provided by the programme
- Mode of delivery
- Location for delivery (school, community, family)
- Attitudes and beliefs of those supporting the programme
- Attitudes and beliefs of those delivering the programme
- Content / behaviour change techniques employed by the programme
- Social connectedness
- Familial influence
- Individual factors (resilience, self-efficacy, autonomy)

These broad themes provided a framework around which search terms were developed for further literature searching (see 3.3 Phase Two – Formulating Initial Programme Theories, p80), and materials were developed for early stakeholder consultations.

Development of the initial research questions, and development of the conceptual framework were carried out in consultation with a young person's advisory group. The panel is a pre-existing group of young people, both male and female, aged 13 to 19 years. The purpose of the panel, accessed through the Fuse Centre for Translational Research in Public Health (www.fuse.ac.uk), is to provide advice and guidance to researchers carrying out research which involves or impacts upon young people. This approach benefits from experiential knowledge, recognizing young people as experts in adolescent life, ensuring materials are accessible, and produce relevant and meaningful findings (Moore et al., 2015).

3.2.1 Young Person's Advisory Panel

Early sourcing, appraisal, and evidence searching from the initial literature review was supported and guided by consultation with a young person's advisory panel, as is typical in realist synthesis. The panel consists of twenty-seven young people, both male and female, aged 13 to 19 years. This advice was used to develop the initial framework, and formulation of early programme theories in the first phase of the research.

Initial access to the group was facilitated through discussions between myself, and my FUSE colleagues. The group was then consulted by those colleagues to gage interest in informing my research design. The young person's advisory group was consulted in person during one of their regular monthly sessions. Consultations took place in the groups' usual meeting venue, and were moderated by the group leaders. For the initial consultation, I was allocated a 1-hour slot, in November 2015, in which to present my research to the young people, and to obtain their opinion and guidance on what young people would want from this research. This was done through a verbal presentation of my research protocol, followed by a discussion session with the young people. Pens and paper was also made available to the young people to allow them to write down any views and opinions they did not want to share verbally. Due to the nature and purpose of the group, this guidance was not recorded as data but used to inform and shape the direction

of the research. Feedback covered topics such as the focus for the review, typical health and risk behaviour sessions delivered in schools, programme deliverer, and preferred mode of delivery.

The aim of the project, originally, was to build on the existing body of evidence for the efficacy of peer led interventions to support behaviour change in adolescents and to determine how, when and in what circumstances these programmes succeed or fail. However, during these consultations, the majority of young people, from the outset, voiced concerns about peer intervention and delivery. Key issues arising from discussions were trust; both in the reliability of the information received, and in confidentiality, level of training and reason for taking part in programme delivery, and degree of 'peerness'. The young people consulted at this stage expressed a clear preference for professionally led programmes.

Following this initial consultation stage, and reflection on the issues raised, it became apparent that the focus of the research was too narrow to allow consideration of other contextual or causal factors that may affect uptake of, or engagement with a programme, thus affecting programme outcomes. Through further consideration of the literature, alongside discussions with my supervisory team, I decided to broaden the scope of the research. Given the broad array of programmes being delivered across a range of contexts, at numerous levels, delivered by a diverse range of people, I felt it best to keep the overarching research question as broad as possible in the early stages. Thus, the question simply became what works for whom, in what circumstances, and why in adolescent risk behaviour prevention? This change of research question does not mean that peer interventions were overlooked, but that they were considered as one method for delivery, within the broader context of adolescent risk behaviour prevention programmes. Further refining of the research question was undertaken through engagement with the literature, as defined in the introduction to this thesis (p1).

Young people were also consulted over the development of research materials to be used by their peers (see Methods chapter 5: Phase 4, p100, for further details). While this guidance does not constitute data collection, this approach benefits from experiential knowledge, recognizing young people as experts in adolescent life, ensuring materials are accessible, and produce relevant and meaningful findings (Moore et al., 2015).

This second consultation with the young person's advisory group was arranged during the development of the vignettes for use with young people in phase four. For this consultation, I was allocated a 30-minute slot, in June 2016, in which young people read through the vignettes and assessed them for usability. Factors such as length, language used, plausibility, and engagement were scrutinised, and recommendations for improvement were made wherever possible. Further details of vignettes given in Phase four (p100).

3.3 Phase Two – Formulating Initial Programme Theories

The purpose of the review at this stage was to uncover and investigate demi-regularities in outcome patterns, exploring how, or why programmes may have succeeded in one instance but failed in another, or why actual outcomes do not meet with expected outcomes. It is this questioning of how, why, and in what circumstances programmes produce both intended, and unintended outcomes that allows us to consider the underpinning causal mechanisms, and contextual factors which may impact on them.

3.3.1 Secondary Data Searching

Consistent with the realist approach, there were several literature searching phases throughout the evidence synthesis, starting with a broad search to allow the development of a theoretical framework (phase one), and becoming more specific as evidence is sought to formulate, support, adjudicate between, or discard potential or emergent programme theories.

Inclusion and Exclusion Criteria

Broad inclusion/exclusion criteria, as set out in the table below, were used to guide the scope of literature searching in the early stages of this phase of the research.

Table 3: Inclusion And Exclusion Criteria

Inclusion	Exclusion
1. Programmes targeting adolescents aged between 10 and 24 years. 2. Programmes targeting two or more risk behaviours (alcohol use, risky sexual behaviours, smoking, and substance use). 3. Complex risk behaviour prevention programmes (using a range of behaviour change techniques, on several levels, across contexts), designed to be delivered to the general population. 4. Complex multiple risk behaviour prevention programmes based on a psychosocial model of behaviour change.	1. Programmes exploring interventions in childhood or adulthood. 2. Programmes designed to target one specific risk behaviour only. 3. Brief/targeted interventions, designed for use with specific, at risk, populations. 4. Programme with a biological/neurological focus.

Literature searching in this phase began with searching for literature reporting primary empirical data. The purpose here was to move from the general list of themes developed in phase one of the review, to the formulation of programme theories using the context-mechanism-outcome configurations as described within the methodology (p55).

I then went on to conduct subsequent, purposive searches, relating to emerging theories or areas of explanatory potential. In accordance with the realist approach, searching in this phase was conducted to locate evidence from a broad range of sources including empirical efficacy studies, editorials, evaluations, systematic reviews, and follow up papers. Literature searches were guided by the review objectives, and initial programme theories, along with any new causal mechanisms and contextual factors emerging from stakeholder interviews. Here, as evidence sought relates to causal mechanisms and/or contextual factors, rather than programmes, evidence may be sourced from literature which crosses programme, sector, and/disciplinary boundaries (Wong et al., 2013a). Therefore, at this stage literature searching was no longer guided by the inclusion/exclusion criteria of the previous stage. Here, increasingly purposive searches were carried out in relation to emerging theories or areas of explanatory potential.

A number of methods recommended for realist evidence searching (Papaioannou et al., 2010, Finfgeld-Connett and Johnson, 2013) were used throughout. These included using new, targeted search terms not defined in the initial search, and reference and citation searches of key papers to identify parent, sibling, and follow up papers which relate to emerging programme theories.

The databases searched include: Applied Social Science Index Abstracts (ASSIA), Child Development and Adolescent Studies, CINAHL, Cochrane, MEDLINE, PsychArticles, and Web of Science. Other sources, and search engines such as Google scholar were also used to identify further evidence from grey literature and webpages.

Below I describe how papers were appraised for relevance and rigour, and how evidence was extracted for inclusion in the synthesis.

Appraising Relevance of Evidence

Appraising evidence for a realist review is not a clearly defined process. Traditional systematic reviews tend to follow a rigorous literature searching strategy, which seeks to source primary empirical studies to test the relationship between a defined treatment or intervention strategy and predefined outcomes (Pawson et al., 2004). As stated above literature searching for a realist synthesis is a little more subjective, led to some degree by the researcher and the way in which emerging themes are interpreted. However, research questions, and the initial framework formulated in the early stages provide some structure, and allow the researcher to answer specific questions, or evidence specific aspects of programme theories. Understood in this way, saturation is reached not when every programme has been uncovered, but when sufficient evidence has been gathered to back up claims made by the programme theories. One difficulty which needed to be managed at this stage was the volume of relevant papers. In attempting to address this, reports were rated on relevance on the basis of how much the evidence contributed to the development, refinement, or refutation of programme theories, or elements of programme theories (Contextual or mechanistic) or understanding thereof. Papers were rated as low *, medium **, or high *** in relevance. Beginning with those providing the most relevant evidence, and drawing on those lower down the scale for further supporting evidence where needed ensured the best possible evidence was used, and proved quick and efficient in ordering papers for data extraction. In addition to this, papers were also rated on the quality of the evidence provided.

Appraising Rigour of Evidence

Appraisal of the methodological quality of empirical evidence is an important step in any evidence review. The aim here is to ensure that empirical studies are held to the highest methodological standard, with those rated poorly typically rejected (Pawson et al., 2004). Systematic reviews, Pawson says, operate on a hierarchy of evidence, with randomised

control trials seen as gold standard, with case studies and opinion pieces firmly at the bottom of the heap. Realist review rejects a hierarchical approach, citing it as an example of

> "The law of the hammer (to a man with a hammer, everything is a nail)" (Pawson et al., 2004, p21).

Realist review supports the need for quality appraisal, but the way in which ratings of rigour are used is somewhat different. Realist synthesis serves an exploratory function, and draws on a much wider evidence base, as described earlier. Furthermore, realist enquiry rarely looks simply at the study as a whole, but investigates specific elements relating to context, mechanism, outcome or some combination of the aforementioned. Quality here relates to whether or not the inferences made by the researcher are methodologically sound enough to make a significant contribution to the shaping of programme theories.

Papers were subject to quality appraisal using an adapted tool based on previous appraisal work developed by Jagosh et al. (2011). The tool allows papers to be appraised for rigour and relevance, based on the richness of evidence for outcomes, and the participatory processes involved in the programme. Reports may then be ranked as conceptually rich***, moderate**, or low*, in line with ratings of relevance as above. Throughout the various iterations of literature searching this rating system was used to annotate the evidence. Evidence was not excluded based on this appraisal, but it allowed a focus on the more conceptually rich papers, without excluding 'weaker' papers which may still contribute to the final evidence synthesis (Pawson, 2006).

Data Extraction

Data extraction was recorded using a specially developed data extraction table, to aid in the process of sorting, sifting, and annotating data source materials. Data extraction uses

a combination of tasks, from simply highlighting relevant sentences within a text which relate to an aspect of a programme theory, or link together concepts within a programme theory, to using NVivo to track, and link evidence with primary evidence and accompanying retroductive reasoning to allow the researcher to collate and map the findings in a clearer way. Data extraction from both primary and secondary data sources was undertaken simultaneously to allow constant triangulation across all data sets.

In addition to evidence from the existing literature, the process of developing and refining emerging programme theories was guided by a series of interviews with professional stakeholders. Stakeholder consultation served two key purposes within the research, guiding the development of initial programme theories, and acting in a thought checking capacity in early interviews, and contributing to processes of evidencing and refining in later interviews. Despite this, all transcripts were reviewed throughout all key stages of the review, and data included where it provided further evidence in refining, adjudicating between, or refuting programme theories.

3.3.2 Stakeholder Interviews - Professionals

Interviews were conducted with six professional stakeholders (PP1 – 6) from the field of adolescent health promotion, including researchers, teachers, community youth workers, PHSE leaders, and peer coordinators, as detailed below. The number of stakeholders recruited here is not guided by data saturation, whereby no new ideas emerge from further data collection and analysis, but one of satiation, with data providing enough evidence to give an element of truth to, or trust in developing programme theories. Interviews were conducted, over a period of six months, from February to August of 2016.

Recruitment

Recruitment of the professional stakeholders utilised theoretical and purposive sampling. Sampling here is defined, not as the typical act in research of defining a population and then drawing a representative sample from that population, but the act of choosing cases based on emerging themes and gaps in knowledge which need addressing (Emmel, 2013). Sampling procedures in qualitative research are often seen as less rigid, and less well defined, however when presented fully, and in a transparent way these recruitment methods are valid and rigorous (Coyne, 1997). The recruitment methods used in this research have their foundations in Grounded theory (Glaser and Strauss, 1967). Grounded theory is a methodological approach used for recruitment, data collection and analysis to generating explanatory theory in social research, sharing much in common with the realist approach. Here sampling is directed systematically and purposefully in order to elicit and evidence themes arising from early screening of the literature.

Grounded theory describes three methods of sampling in qualitative research. Theoretical sampling, purposeful sampling, and theoretical or purposive sampling. It is the third example of theoretical or purposive sampling that has been used here, however a brief description of each method is provided here, to give a clear understanding of how the method used was developed, before providing details of recruitment in this research project.

According to Glaser and Strauss (1967) theoretical sampling is used to generate theory, through observation and interpretation of everyday behaviour and social interaction. This is a pragmatic approach in which theory remains close to empirical findings. Emerging theory is key to theoretical sampling, wherein the researcher collects, codes, and interprets data, and decides from emerging themes what data to collect next in order to further develop the theory.

Purposeful sampling is more dependent on prior knowledge of the research topic. Purposeful sampling is employed to study information rich cases which can provide answers to the research questions. In purposeful sampling, a recruitment strategy is set

out prior to beginning the research to best fit the needs of the study, the resources available, and the contextual restraints which may present themselves during the study (Patton, 1990). Strategies include snowballing, theory driven sampling, opportunistic sampling, and sampling for maximum variation (see Patton, 2002), for full description of the strategies and examples of how these may be combined).

While purposeful sampling was not employed in this predefined way in this research project, I have drawn on a number of the techniques described here during recruitment for this phase. For example, as with the snowballing strategy, recruitment began with individuals who were known to me through professional networks as being directly involved in the design and delivery of adolescent risk behaviour prevention programmes. Each individual case was chosen to generate new, rich data relating to the research questions, while also seeking to explore a wide range of stakeholder opinion, similar to outcomes of maximum variation sampling strategies.

Theoretical or purposive sampling is a much more intuitive or inductive sampling method, in which the researchers intellectual work is key in the development and evolution of the research. Using this method emerging theories are developed and tested through strategic sampling, designed to explore what the researcher wants to know about a social programme. This can change, and evolve throughout the research process, allowing the researcher to follow the natural flow of the research as new themes emerge.

Emmel (2013) describes this purposive work in relation to the realist approach, stating that the realist sampling strategy is driven by theories about the social phenomena we wish to investigate within a particular context. This theoretical understanding is defined early in the research and defined within the research questions and early programme theories, or hunches about what is going on which form the basis of what is to be tested. These assumptions inform the choices to be made about who to sample within the research. This led to the development of tentative inclusion criteria for initial stakeholder recruitment, as listed below:

- Professional involvement in the development or delivery of an adolescent risk behaviour prevention programme (including PSHE in schools).

- Expertise in either a community, institutional, health practice, or academic field in relation to adolescent risk/health behaviours.

- Knowledge and understanding of contextual, interpersonal, and personal factors which may impact on health behaviours, and risk behaviour prevention programme outcomes.

Initially I recruited three professional stakeholders for consultation, based on my own knowledge of their areas of expertise. Another three were then recruited, using snowballing methods, guided by those already recruited to the study, as emerging themes were developed, in order to further knowledge and understanding. A further two professionals were invited to participate, however due to other demands on their time they were unable to participate at the time of the research.

In total I recruited 6 professional stakeholders for interview (3 male, 3 female), age range 35-55, with an average of 15 years' experience in the development or delivery of adolescent risk behaviour or health promotion programmes in a range of settings.

Stakeholders were contacted initially via email, introducing the study, and inviting them to take part. All participants were provided with a detailed information sheet describing the purpose of the study, and I obtained consent from each prior to interviewing, either by email or in person (see Appendix Two – Professional Stakeholder Information Sheet, p315, and Appendix Three – Professional Informed Consent, p318). All participants met the inclusion criteria as defined above.

3.3.3 Data collection

Instruments

Realist interviews begin with the interviewer having some knowledge, or having formed some hypotheses of how and why a programme may work in a particular way, based on initial literature searching (Manzano, 2016). Stakeholders were interviewed using a semi structured interview guide (see Appendix Four - Sample Interview Schedule, P320) as a basis for discussion. Interviews followed guidance for realist interviewing, with questions designed to explore possible causal or mechanistic explanations of programme outcomes in specific contexts. Factors such as who delivers the programme, where the programme is delivered, stakeholder beliefs and attitudes, programme content, and broader contextual factors were discussed, along with possible personal and interpersonal factors such as relationships, trust, and social connectedness.

Interview procedure

Professional stakeholder interviews were conducted either face to face (4 interviews), or via skype video calling (2 interviews) to suit the needs of the participants. Each interview lasted approximately one hour. At the beginning of each interview I read out a short description of the research, including how any data provided may be used. Following this, I informed participants that interviews would be recorded to aid analysis. Verbal consent was then requested prior to beginning the interview. All participants provided this verbal consent in addition to the written consent already obtained (either in person or via email).

In order to maximise the use of time within interviews, and reduce workload for participants, stakeholders were only asked questions which I deemed were relevant to their individual area of expertise. While this may run a small risk of missing out on some insight, I felt it was the most economical and ethical use of stakeholder time. This targeting of questions was knowledge and theory driven, and handled carefully throughout.

In addition to the interview questions, designed to explore elements of theories emerging from the literature, discussions relating to stakeholder knowledge and experiences were explored. This exploration served two purposes to guide the development on new theories, and later to serve as potential evidence in the further refinement of existing strategies. New themes emerging from the interviews then formed the basis for subsequent literature searches. Furthermore, new themes arising from the data were included for discussion in subsequent stakeholder interviews, where relevant to stakeholder expertise. In this way, both new, and existing themes were developed, evidenced, and refined. Interviews were not repeated; though informal contact was maintained via email or in person to facilitate any thought checking or clarification as needed.

3.4 Phase Three – Evidencing and Adjudicating Between Theories

It is widely acknowledged in realist research (Pawson et al., 2004; Wong et al., 2013) that evidence of causal mechanisms, particularly end user reasoning in engaging with programme resources, is difficult to unearth through investigation of the published literature. For this reason, the inclusion of primary data from stakeholders brings added value to the research. Therefore, while literature searching, and the sourcing of evidence continued throughout, this phase of the research was primarily led by the collection of primary data.

An additional point worth noting here is that primary data collection, conducted in phase three of this research, was carried out in collaboration with another similar project. The project, led by a senior researcher from Northumbria University, investigated school nurses and young people's views on healthy eating and resources to support healthy lifestyles. Funded by Burdett trust for nursing, in collaboration with The School And Public Health Nurses Association (SAPHNA), the project aimed to inform the development of resources and training materials including a train the trainer pack and App to support young people engage with healthier lifestyles and ultimately reduce obesity. It was agreed by both myself and the principal investigator that the similarity in topics, and the exploratory nature of both projects warranted shared data collection.

Materials, such as focus group schedules and accompanying tasks, were produced collaboratively, though data analysis and interpretation was conducted entirely independently to meet the needs of each project.

Here I provide a detailed description of each phase, giving a full and transparent account of data collection and collation.

3.4.1 Focus groups - Young People

Focus groups were carried out with young people in order to gain a deeper understanding of young people's perceptions of health, and risk behaviour, and to explore what would help them engage more effectively with risk behaviour prevention programmes. All tasks were conducted to allow young people to provide us with insight in to lived experience of such programmes, and to elaborate on contextual and mechanistic factors which may facilitate, enhance, or act as a barrier to programme success.

Recruitment

In this phase, groups were selected using purposive sampling, as described above in phase two. Using Patton's (1990) 14 strategies for purposeful sampling as a guide to select cases or groups for study, maximum variation strategies were used to ensure a broad range of experience, and reduce the impact of health inequalities, based on gender or socioeconomic status, while theory based or confirming/disconfirming strategies were utilised to allow further in-depth exploration of emerging theories.

Groups were selected initially following previous involvement with the principle investigator, and other members, of the Burdett/SAPHNA research team. Though groups were selected on this basis, I was involved in decisions regarding the characteristics of the groups to be involved, and was also involved in discussions about suitability, to ensure the data collected would be useful to both myself and the Burdett/SAPHNA team.

Gatekeepers, Such as youth group leaders and school head teachers, were initially contacted through via email to local schools, services, and youth groups across the North East of England, with an invitation to take part. Gatekeepers then spoke with the young people in each group to gage interest in taking part prior to agreeing to involvement in the study. Detailed information sheets (See Appendix Five – Young Persons Focus Group Information Group, p322), and informed consent documentation (see Appendix Six – Young Peoples Focus Group Informed Consent, p325) were then emailed to gatekeepers for distribution to young people. Young people opted in, if they wished to take part, after

receiving a participant information sheet and informed consent form (completed by parents or guardians where young people were under the age of 16). Questions posed during these focus groups were generic and based around experiences of health, and health information delivery. Given the potentially sensitive nature of discussions which may arise regarding health and risk behaviours, and other sensitive subjects such as body image, the age range for inclusion in the research was 13 to 17 years of age.

Based on these criteria for recruitment, five focus groups (YPFG 1 – 5) were arranged with young people. 28 young people participated in total (14 males, 14 females), ranging in age from 13 to 17 years (details of each group below):

- A mixed group of 4 participants, (1 male, 3 females, aged 13 – 16 years) who had all previously attended a health intervention programme at a local leisure centre. The programme was designed to improve health choices such as exercise and nutrition, smoking, and alcohol use, as well as other factors such as body image, and self-esteem. All young people in attendance had been referred to the programme through the school nurse. This gives the young people in this group a deeper insight into health promotion, and risky behaviour prevention, both within and outside of school.

- A mixed gender group (5 participants, 2 males 3 females, aged 14 – 17 years). Participants were recruited through an established youth council group in the North East of England. The youth council consists of 50 young councillors, ranging in age from 11 to 19 years. The purpose of the group is to represent the views and ideas of young people in the area. The youth council meets once a month, with councillors deciding their own priorities, and making decisions about what to be involved in. Recruitment was therefore reliant on who turned up to the allocated session.

- A mixed gender group from low socio-economic backgrounds (as determined by postcode) (7 participants, 3 males 4 females, aged 13 – 16 years). Participants were recruited through a youth project in the North East of England, which works specifically with marginalised young people, from low socio-economic status areas. The project uses an outreach format, whereby youth workers go out in to the community to find out what young people want or need in the local area, meaning that projects are youth led.

- A ‘females only’ group (4 participants aged 13 – 14 years). Participants in this group were recruited from the youth council as described above. Single sex groups were recruited to allow young people the chance to speak openly about health issues and health programme provision, which may be gender specific.

- A ‘males only’ group (8 participants aged 13 – 16 years) participants in this group were recruited through a local secondary school in the North East of England. The school selected for recruitment has a focus, in policy and practice, on health and well-being in addition to that of academic achievement. The research was advertised within school through standard school procedures, and participants signed up if they wished to take part. All of those who signed up were recruited.

Focus groups were conducted across four days throughout March and April of 2016.

Data collection

Instruments

Focus group discussions used a semi-structured design (see p327), using open ended questions to guide discussions around knowledge and experience of healthy lifestyle promotion. Focus group schedules were developed in collaboration with the principal investigator, a senior lecturer at Northumbria University, and members of the research team to make sure broad questions covered areas which were relevant to both projects, while more specific questions were introduced in a way that was easy for young people to understand, and which followed on from earlier discussions. Topics covered by the schedule included awareness of health issues and risk behaviours, involvement in programmes, role of school, school nurses/professionals, and parents in health behaviours and health education, the kinds of strategies they would like to see in place, and who they would be most likely to seek help from. The use of digital health education, such as apps and web based strategies was also discussed.

In addition to this, young people were provided with large sheets of paper, sticky notelets, and pens. This was done to make the research as accessible as possible, allowing young people to choose the way in which they found it most comfortable to express their opinions (Morrow, 2001). Observation sheets were used throughout the sessions to make notes, and track discussions to aid in analysis. Data record sheets were used to take note of name, age, and area code (first 3 or 4 letters of postcode). This data was used only by the researchers, and was kept in a locked filing cabinet for the duration of the research.

Focus group procedure

Each focus group session was approximately one hour long, and participants were provided with refreshments. The researchers were introduced at the beginning of the sessions, and a brief description of the two projects was given. At this point, young people were given the opportunity to ask questions about the individual projects, and it was reiterated that they could withdraw from the project at any time. Group rules were then set before beginning the discussions. These were set by the young people, with the guidance of the researchers, and included things such as no talking over each other, to show each other respect and not laugh at what was being said, and to keep anything that was said confidential to the group. Observational data was also recorded at each session to aid in analysis of the data.

The first focus group we conducted was with those who had previously been involved in a health promotion programme. This was done in the leisure centre where the health programme had taken place. Following the introduction and rule setting we began discussions by asking the young people if they thought adolescent health was a problem, and if so what they thought those problems were. This led on to the rest of the questions in the schedule. My co-researcher and I took it in turns to ask questions wherever possible, with each then asking any follow up questions or leading discussion if it were deemed more relevant to our own research. Prompts such as ‘there is no right or wrong answer, we just want to know what you think’ were used if young people seemed hesitant. Young people were also provided with post it notes, and informed that if they wanted to tell us something, but did not want to say it out loud, they could write it on a note, which would not be seen by anyone but the researchers. This technique worked well, particularly with one participant, who we later found out has some learning difficulties. Following discussion, the young people were given two large sheets of paper for a further task. Young people were asked to use one to design the ideal health intervention, and the other to show what someone delivering a health intervention should be like, and what qualities they should have.

At the end of this session myself and the Burdett PI, reflected on how the session had gone. It was noted that young people had been very reluctant during the question and answer/discussion session, but had become much more relaxed and open during the paper and pen tasks. For this reason, the tasks were swapped over in subsequent focus groups, with young people beginning with the pen and paper tasks, and moving on to the discussion session. An opportunity was also given to return to the pen and paper tasks at the end of the session to address anything arising from the discussions. This made a significant difference in the flow of discussions in the following focus groups, with young people appearing more relaxed and open during sessions.

A further influencing factor during the first focus group was the presence of a parent, who requested to stay for the session. While the parent did not directly influence what the young people said, it was a concern that their presence may have made it harder for the young people to open up. For this reason, aside from the youth workers who facilitated the groups, it was preferred if other adults did not remain for the sessions in subsequent interviews. It was also requested that youth workers refrain from giving their opinion during sessions unless they felt it necessary.

The subsequent four focus groups followed this adjusted format as closely as possible, although topics arising in previous groups, which had not been addressed in the original schedule were also discussed to allow young people to evidence, dispute, or reject themes emerging from previous groups. This allowed us to explore how common or widespread some issues are.

At the end of each focus group, participants were debriefed, including a brief outline of how the data would be analysed within each project, and what it might be used for in the future. Participants were given another opportunity to ask questions of either researcher, and were once again reminded they were free to withdraw from the study at any time without consequence. All participants were then thanked for their help, before being collected by parents/guardians. Each session was recorded and transcribed verbatim, through a university transcription service, for analysis.

My co-researcher and I would then have a short discussion reflecting on each focus group, noting any key observations, information, or data, which may need to be considered in the next group, or during analysis. This protocol was followed for each of the five groups.

3.4.2 Focus Groups - School Nurses

Recruitment

Twenty-two school nurses, all female, with a varied range of experience, from newly qualified students to area managers with 15+ years' experience, were recruited using opportunity sampling, based on availability to participate at the time of carrying out the research. Invitation to participate was sent out via email to the area lead for school nurses, which was then cascaded through the school nursing service within the North East of England. Those who expressed an interest in participating were then sent a detailed information sheet (see Appendix Eight – School Nurses Information Sheet, p328) and informed consent form (see Appendix Nine – School Nurse Informed Consent, p331). All participants provided informed consent prior to interviewing.

Data collection

Instruments

Focus group discussions used a semi-structured design (see Appendix Ten – School Nurses Focus Group, p333) with open ended questions to explore school nurses knowledge, understanding, and experience of adolescent healthy lifestyle promotion, and risk reduction programmes. As with young people, focus group schedules were developed in collaboration with the principle investigator of the Burdett trust group. Topics covered in the schedules included; the role of the school nurse in health information provision; nature and quality of training, resources, and support in delivery, as well as opinions on the

content of, and behaviour change techniques employed by health promotion programmes, and how these may contribute to success or failure.

Participants were also provided with paper and pens to allow any contributions which they may not be confident in sharing aloud. This was done to reduce and discomfort or embarrassment in sharing opinions, regarding either the service or personal issues, in front of colleagues. Observation sheets were used throughout the sessions to make notes, and track discussions to aid in analysis. Data recording sheets were used to note name, area of work, and level of training/years of experience. Participants were also allocated a random number to allow anonymous note taking and observations during the focus group discussions. All personal data was kept in a locked storage cabinet, and accessed only by the researchers.

Focus group procedure

Two focus groups were held (SN 1/2), one week apart. This allowed those participating a choice of two dates, while also allowing the researchers, my co-researcher and I, to reflect on data from the first session. This format allowed us to address any new themes or issues arising from the first group. Groups were held in a meeting room in a local health centre which was central to those taking part, during March of 2016.

At the start of each session we introduced ourselves, and gave a brief description of our individual research projects. During the opening introductions, participants were allocated a random number to ensure anonymity during analysis. Participants were then given an opportunity to ask questions, and reminded that they were free to withdraw from the study at any time without consequence. Participants were then informed that the sessions would be recorded, and oral consent for this was obtained. Prior to beginning, ground rules for the session were established, including allowing others a chance to speak, respecting what was said, and maintaining confidentiality outside of the session.

Sessions were started using a go-around technique, in which we would pose a question, and then move around the table in turn, giving each participant the chance to say

something should they want to. This was done for the first three questions, until conversation became more open and fluid, with discussions and debates occurring naturally. In addition to this, participants were provided with notelets and pens, so they could make anonymous contributions if they so wished. This method was used less by school nurses than it was by the young people, and appeared to be used more in these groups as an aide memoire, with participants noting thoughts until they had an opportunity to speak. In addition to this I recorded observational notes throughout the sessions, noting how topics were discussed, and where relevant, the proportion of participants who were in agreement, or strength of feeling around particular points, giving further strength to the data collected and allowing a more informed analysis.

At the end of the discussion session participants were given the opportunity to make any points they felt had not been raised or adequately discussed, and to ask any further questions about the research projects, and how the data might be used. Participants were again informed at this stage that they were free to withdraw from the research at any time. All sessions were recorded and transcribed verbatim, through a university transcription service, for analysis.

3.5 Phase Four - Testing programme theories

Young people are often thought of as a vulnerable, hard to reach population. To enable us to gather the opinion of as many young people as possible, with minimal risk, a series of vignettes (see Appendix Eleven – Vignettes, p334), were designed to investigate key themes emerging from programme theories. Vignettes were used to provide a common context around which discussion may be shaped, reducing the need to rely on a personal frame of reference, allowing young to talk openly, without judgement (Morrow, 2008). Utilising youth leaders who have an existing, trusting relationship with the young people, as facilitators for dissemination, data collection, and discussion in this way can reduce the impact of perceived power imbalances between researcher and participant. Researcher bias is also reduced (Morrow, 2001) increasing the likelihood that the data gathered is as representative of young people's opinions as possible.

3.5.1 Vignettes - Youth group leaders

Recruitment

Purposive sampling was used to recruit two Youth leaders from local community youth groups providing services for young people aged 12 – 24 years. Informal contact was made with group leaders during the earlier phases of the research, who had expressed an interest in being involved further. I then contacted youth group leaders with a follow up email inviting them to participate in this final phase of the research, during August 2017. Youth leaders were provided with copies of the vignettes, along with a detailed information sheet (See Appendix Twelve – Youth workers Information Sheet, p337) and informed consent documents (See Appendix Thirteen – Youth Workers Informed Consent, p340), prior to agreeing to take part to ensure fully informed consent. An offer was also made to meet with youth leaders prior to delivery of the vignettes to discuss methods for doing so, however, the youth leaders in question felt confident enough to go ahead with discussions without this additional meeting, having been previously involved with the research. This

also helped to reduce demands on their time, making it an acceptable arrangement for both parties.

Data Collection

Instruments

Vignettes were designed to provide a common context, based upon a set of fictional characters and circumstances, around which discussion may be shaped, reducing the need to rely on a personal frame of reference, and therefore allowing participants to talk openly without judgement (Morrow, 2008).Furthermore, vignettes were designed to present programme theories or elements of programme theories which had not yet been strongly evidenced, in a way that was accessible to young people. To ensure this, vignettes were screened for usability by the young person's advisory group, and adjusted following their recommendations, as previously discussed (p77).

Recommendations included; changes to layout, making sure each vignette was short and questions relating to each vignette were asked immediately following it, not at the end of the document; language used, keeping it simple, but not condescending or 'trying to be cool'; the inclusion of pictures to break up text, and font, being clear and easy to use. Once these adaptions had been made, the vignettes were approved for use by the young people's advisory group.

Vignettes consisted of three short situations involving four fictional characters; Adam, Ali, Steven, and Rachael. Each vignette situation was designed to address context mechanism outcome configurations, or specific elements therein, which I felt needed further evidence, from primary data, for inclusion in the final synthesis. Topics covered within the vignettes included content of health education delivered in schools, preferred agent for delivery, the role of home life and relationships in influencing behaviour, and resources delivered within programmes. Each vignette was followed by a series of

questions (using both yes/no and open ended styles) to explore young people's opinion of these situations.

Vignette Procedure

Participation in the research involved a discussion between the adult youth group leaders recruited to take part in the research and the young people who attended the sessions, about risk behaviour prevention, based around the content of the vignettes provided. Vignettes were presented to young people, without my presence, ensuring anonymity of all young people involved. No group was especially convened for the purpose of the research; and discussions took place within the normal running and activities of the group. Discussions lasted approximately one hour, including discussion of the vignettes, and an opportunity to ask questions or make points that young people felt were relevant. Involvement was run on an opt in/opt out basis with young people free to leave at any point without consequences. Other activities were available to the young people within the centre at all times during the discussions and other youth workers were available in case any young person become upset or distressed during the session. Though the actual events of the meetings were not discussed at great length with myself, in order to maintain confidentiality, no major issues were raised by youth leaders during follow up.

Data was collected via recorded interviews with the youth leaders who had made notes on the responses of young people throughout discussions. Responses were fed back, providing the young people's opinions, and strength of opinion, for example "the majority of young people said. . .", or "some said A while others preferred B", and reasons for these decisions were discussed if given.

Further to this, issues which were important to young people which had not yet been addressed in my research were highlighted, including inclusivity, culture and sexuality in the delivery of health information. This led to a discussion with youth workers about how health education can be more inclusive, when it is done well, and how community projects can help to bridge the gap. This data was also incorporated in to the findings. No personal data was collected from the young people in order to maintain anonymity.

3.6 Data Analysis

This project was informed by five strands of data collection (literature searching, stakeholder consultation, young people's focus groups, school nurses focus groups, and vignettes with youth leaders), as presented in Table 1: Data Collection Methods, p72.

Data analysis, following a realist logic, can be broken down in to two key tasks. The first, building and evidencing the programme theories (p117) involves aligning the evidence with specific elements of the refined programme theories to show that particular mechanisms produce certain outcomes, within a specific context. The aim here is to explain whether, and to what degree, mechanisms are activated within a particular context to produce an outcome, or set of outcomes, using cross-programme, inter-context comparisons to draw out patterns of demi-regularity from the literature, and supported here by the data collected.

Data from each strand was analysed using techniques more commonly utilised in thematic analysis (Braun and Clarke, 2006), which was ongoing throughout the data collection period. Thematic analysis is a method for qualitative data analysis which aids the researcher in organising and describing the data set, or specific aspects of it in rich detail, allowing clear interpretation of the research topic or topics of interest. Data was screened and analysed in two keys ways. Top down, theory driven or deductive analysis (Boyatzis, 1998) used early programme theories as a-priori themes, extracting evidence which helped to further develop, refine, or refute them. Bottom up, data driven or inductive analysis (Frith and Gleeson, 2004) was used to allow for the emergence of new themes, which had not yet been covered in the literature. This formed the basis for further literature searching.

In keeping with both realist synthesis and thematic analysis methods, themes are not only sought within each data item (e.g. an interview or focus group manuscript) but across the entire data set. This allows for the role of retroductive reasoning while mapping and evidencing a theme across the data set. Furthermore, used as a realist method of analysis, latent thematic analysis gives primacy to stakeholder experience, meaning, and

reality, and the way in which broader social contexts may impact on that meaning, allowing us to unpick that reality. Going beyond the semantic content of the data in this way, we begin to explore underlying ideas, assumptions and conceptualisations that shape and inform the data (Braun and Clarke, 2006).

Data was initially collected, themed and analysed by hand, using colour coded highlighters to track and record themes relating either to whole programme theories, or specific aspects of programme theories. However, with such a large data set, data management became quite unwieldy, and difficult to manage. Therefore, further analysis was carried out using NVIVO to collate, annotate, and align evidence from primary and secondary data, and to map out relationships within and between refined programme theories, supported by substantive theory, in keeping with recommendations for realist synthesis (Pawson et al., 2004; Wong et al., 2013). Data analysis began with annotation of the literature sourced in the first two phases of the review, with data from stakeholder interviews serving in a thought checking capacity. The key aim here was to review programme theory integrity, and to begin to review similar theories in comparative settings. From here, analysis became more complicated, using constant triangulation between primary data, both from stakeholder interviews and focus groups, and secondary analysis of data extracted from the literature, allowing me to populate developing programme theories, and to begin the process of refining or refuting my initial theories (see Table 1: Data Collection Methods, p72).

Analysis of data from the final stage allowed me to further evidence programme theories, serving to adjudicate between rival theories, and provide further evidence of contributing contextual and/or mechanistic factors. An example of these review processes, showing development of a programme theory from the initial formulation through to a set of fully refined programme theories, is described in Appendix One: Programme Theory Development (p312).

The second and final task of realist review involves a further level of abstraction in order to make sense of the findings (Wong et al., 2013b). The purpose of this phase is to identify, and evidence middle range theories through the application of substantive theory which can explain why these patterns of context dependent causal mechanisms may be occurring, and the relationships between them (See p186). While consideration of the substantiating theory is defined here as the final stage of the research, theoretical underpinnings of programmes were considered from the outset, beginning with the development of the theoretical framework (p106). The theoretical framework explores how programmes are supposed to work, and details the theoretical foundations on which programmes are based. As well as providing a starting point for the development of programme theories, knowledge of these theoretical underpinnings also provided a base from which to begin to consider the role of substantiating theory in understanding the relationship between programme theories. Further substantiating theories were then sought based on regrouping of programme theories in to broader themes based on middle range theory.

Understanding at this more abstract level allows knowledge gained from this review to be generalised to other programmes or new situations. This final step in evidence synthesis, moving away from the specific to the more abstract, brings us closer to meeting the final aim of the research, to produce a set of guidelines for consideration in future development and use of adolescent risk behaviour prevention programmes in research, policy, and practice.

Chapter 4
Building The Theoretical Framework

Programmes follow a long chain of implementation, from conception and development, through agents for delivery, and on to those receiving the programme (Pawson et al., 2004). As previously discussed within the methodology (P42), multiple risk behaviour prevention programmes are complex and adaptive open systems, which are subject to either intentional or unintentional change as they interact with, and adapt to the environment in to which they are introduced (Shiell et al., 2008). As a result of this, programmes are subject to change at various time points throughout design, implementation, and delivery. These points of change provide a basis from which to develop a framework, allowing me to make comparisons between how a programme is intended to work, and the variation in outcomes we find in practice. As previously demonstrated, a number of steps were taken to develop this framework of complex behaviour programmes currently utilised in the prevention of adolescent risk behaviour.

Here, I present the findings from the theoretical framework development, as set out in phase one of the research methods chapter (p75). I examine in more depth how complex adolescent risk behaviour prevention programmes are supposed to work, exploring the different programme models or approaches typically used, the underpinning theoretical foundation of each approach, behavioural change techniques, and outcome measures commonly used.

The development of the theoretical framework involved getting to know the existing literature in the field of complex multiple risk behaviour prevention programmes for use with adolescents. Essentially, this was early assessment of the existing literature to make explicit the typical models used within this family of intervention programmes, the theoretical foundations of each model, common or shared factors, such as outcome measures, contentious issues and programme limitations. This chapter provides an overview of six key complex programme models, and approaches used to prevent or reduce multiple risk behaviours in adolescents. These are not designed to be a definitive list, but were defined and grouped based on the literature included within this project.

The six key models identified are as follows:

- The motivation-skills-decision making model
- The social norms approach
- Family centred/social influence models
- Harm reduction and minimisation
- The assets model
- Whole school ethos/settings approach

Due to the heterogeneity in programme design and techniques used across programmes, individual programmes are not described in detail individually. The intervention studies included within this review differed considerably in the following areas; setting; population size and characteristics; training provision; duration, intensity and complexity of the intervention programme; agent and method for delivery; and secondary outcome measures. Though intervention programmes, and the way in which efficacy is tested, differs greatly from programme to programme, the majority of programmes include a similar set of primary outcome measures. Those measures typically include some, or all of the following: intentions to use; lifetime substance use; monthly substance use; frequency of substance use; lifetime sexual activity; refusal of condomless sex; and last sexual encounter, as well as knowledge, attitudes and beliefs towards substance use, and risky sexual practices. Substance use typically includes tobacco, alcohol, cannabis, and other drug use. Outcome data largely relied on self-report questionnaires. All programmes included were delivered either directly to young people, or indirectly through parents and family.

4.1 The Motivation-Skills-Decision Making Model

The motivation-skills-decision making model, developed from Botvin's Life skills programme (Botvin et al., 1980), is a commonly used type of intervention programme

used in the prevention and/or reduction of multiple adolescent risk behaviours, providing the foundation for many of the other approaches. Designed to address adolescent tobacco use, and later alcohol consumption and other drug use, the life skills programme was developed as an alternative to earlier approaches that used information provision in combination with fear arousal or moral discussion around the consequences of such behaviour. It was noted that these fear based approaches showed little success in changing adolescent behaviour, in fact figures tracking adolescent engagement in these behaviours continued to rise, triggering a move towards a more practical, skills based curriculum. Botvin (Botvin., 2000b, Botvin et al., 1990a, Botvin et al., 1990b, Botvin et al., 1984, Botvin et al., 1980) developed the Life Skills programme, based on the motivation-skills-decision making model to test the efficacy of this type of programme in reducing multiple adolescent risk behaviours.

The motivation-skills-decision making model was developed as a primary prevention approach (Botvin et al., 1980), to be delivered to middle school pupils, aged 12-14 years, with the aim of reducing or preventing risk behaviour initiation as young people age. Based on the social influences theoretical model of adolescent behaviour, the model recognises the role of individual, social, and environmental factors, such as cultural identity, familial factors, peer influence, school bonding, cognitive skills such as decision making, attitudes and beliefs, and self-esteem (Botvin, 2000a). The model is designed to raise awareness of the social pressures to engage in risky behaviours during adolescence, and to provide young people with the skills needed to refuse them. Behaviour change techniques utilised within this programme include Information provision regarding the social acceptability of substance use, health and legal consequences of substance use, decision making, resisting social pressure and refusal training, motivation and self-directed behaviour change, communication, and general interpersonal skills (Botvin et al., 1990b).

4.2 Social Norms Approaches

Social norms approaches were developed from the Motivational-skills-decision making model, when it was noted that the most successful programmes using this model had a strong core focus on norm setting, to address misperceptions around social norms in peer risk behaviour (McNeal et al., 2004). These approaches have their theoretical foundations in the theory of reasoned action.

The theory of reasoned action (Fishbein and Ajzen, 1977, Ajzen and Fishbein, 1980) posits that measures of behavioural intention predict and mediate behavioural change. A key limitation of the theory is that it is often applied in situations where those wishing to make behavioural change do not have all of the information required to form well-reasoned intentions about their own behaviour. Within public health behaviour change models, and particularly with adolescent risk behaviour prevention programmes there is often an incongruence between perceived peer engagement in risk behaviour, and actual usage data (McNeal et al., 2004), often summed up as “If everyone is doing it, I should be doing it too”. The social norms approach aims to prevent initiation, or reduce engagement in risk behaviours by correcting these cognitive misperceptions. Ajzen and Fishbein (1980) posits that the social norms model is most effective for behaviours where young people have complete volitional control, and less so where behavioural control is perceived as being weaker. This provides an interesting starting point when considering adolescent risk behaviours, in relation to actual and perceived control of that behaviour.

4.3 Harm Minimisation Approaches

The harm minimisation or harm reduction model was developed as an alternative to the two predominant approaches of the time; those seen as taking a moralistic approach, focusing on abstinence and the legal and moral consequences of risk behaviour engagement; and the medical model which focused mainly on health consequences an addiction (Marlatt, 1996). With its foundations in public health policy and practice the harm minimisation approach is promoted as a more compassionate approach to managing

health and health risks. Based on the office of national drug control policy, and originally designed for use with adults in the management of alcohol and drug addiction, the focus remained on reduction of use, with harm reduction as a secondary outcome.

Marlatt (1996) discussing the development of the harm minimisation approach states that early harm minimisation programmes focussed predominantly on physical harms, with interventions taking the form of needle exchanges for intravenous drug users, and free condom supply programmes. From here, harm minimisation approaches were adapted to be used in with young people in educational settings, stemming from the low success rates of existing programmes, along with concerns from young people that information gathered during participation in these programmes would be used to single out, punish, or expel ‘problem students’. A further criticism of the existing programmes, Marlatt states, was that they tended to be entirely problem focused without exploration of underlying reasons for use, and the ‘pros and cons’ of using. Young people felt that their opinions were not accounted for in current approaches, with those delivering health information being condescending and judgemental. Perhaps confirming this issue to some degree, programme deliverers such as teachers and health professionals reported having some difficulty in disassociating adolescent experimentation from broader social issues such as drug crime and violence.

Harm minimisation approaches were seen as an opportunity to bridge this divide, moving away from the patriarchal medical model, towards a more collaborative approach. A key component in bridging this gap, Marlatt (1996) suggests, was the inclusion of young people from the outset. It was noted that unless people who are representative of the target population (age, gender, SES, culture) are involved in development and implementation of a programme, they are much more likely to fail. Simply parachuting in a programme from another area, particularly when they differ in key demographic factors, is not beneficial and may have negative consequences as young people feel their needs are not being met.

Despite taking a step away from the moralistic and/or medical approaches typically utilised, the harm minimisation approach is not anti-abstinence per se, but recognises that

though abstinence may be the ideal goal, to many it may seem unrealistic or even unobtainable. Those in favour of the harm minimisation approach to adolescent risk behaviour prevention and reduction (Marlatt, 1996, Newton et al., 2009b), argue that the harmful effects of risk behaviour occur on a continuum, with harm reduction approaches aiming to keep associated harms at as low a point on the continuum as possible. This graduated 'step down' approach encourages individuals to take manageable steps to reduce the harmful consequences of their behaviour. In this way, harm reduction is positioned as a bottom up, user focused approach which places control in the hands of the individual. Much like elements of the motivational-skills-decision making model and social norms approaches, with theoretical foundations in models of social influence and social learning theory, the harm reduction model aims to provide the individual with the knowledge, skills, and resources to make healthy decisions and act accordingly.

Harm minimisation approaches have faced some opposition from parents, teachers, and communities who fear that risk behaviours may be glorified or promoted by not expressly forbidding them. Because of this opposition, harm minimisation approaches are not common despite showing some promise in adolescent risk behaviour prevention. Australia has been pioneering in developing this progressive approach, and adaptions have, more recently, been considered to make the programme suitable for use in the UK (Newton et al., 2014a).

4.4 Assets Model

The asset approach acknowledges that risk behaviours and health related decisions surround adolescents in their daily lives. The model proposes that, given the differences in uptake of these behaviours, along with varying degrees of success across a broad range of prevention programmes, there must be individual, interpersonal, and contextual factors which can predispose to, or protect from poor health decisions, such as risk behaviour engagement (Rutter, 1993). The core assumption of the approach is that health

behaviours occur within communities, families and social institutions, and health choices can be effected by the attitudes, beliefs, and behaviours of others within these social contexts (Bernat and Resnick, 2006). These social determinants have already been discussed at length within the introduction to this project, briefly summarised here in order to consider how they relate to the underpinning theory of, and assumptions made by, the asset model of risk behaviour prevention. Individual factors are defined by Rew and Horner (2003) as age, gender, childhood experiences, temperament, resilience, coping styles, and academic performance.

Family factors such as socio-economic status (SES), family structure, and family functioning are defined as mediating factors in risk behaviour engagement. While SES is often seen as a broader contextual factor, it impacts directly on the family's financial situation including the number of jobs or amount of hours worked in order to support the family, reducing the amount of time spent in the family home. Family structure, such as single parent families, can also impact on the amount of individual attention young people receive. However, recently family structure has become less important, with family functioning, such as parental monitoring, communication, and support reportedly having greater impact on risk behaviour engagement.

Communities, defined as the social context in which people live, act, and grow, includes institutions such as churches, recreational centres like youth and community projects and schools, with schools being considered the primary social context in which young people grow and develop. Bernat and Resnick (2006) state that youth who are positively attached and engaged in social activities, including connectedness to peers, school, and the wider community, have a lower prevalence of risk behaviour engagement. It is this assumption that forms the basis of the assets model.

It is acknowledged within the approach that while it is not possible to alter the vulnerability of young people, it is possible to increase the positive strengths and resources (assets) defined here, to act as a protective barrier between young people and poor health choices, including risk behaviour engagement (Rew and Horner, 2003). It is argued, by many (Oman et al., 2004, Fergus and Zimmerman, 2005, Brooks et al., 2012) that building

on these positive individual and social factors, as opposed to typical problem centred approaches, may address universal health needs across a longer timescale, preventing amelioration of results at follow up.

4.4.1 Family Interventions

There is a range of both theoretical and empirical evidence that suggest that parental attachment, support, involvement and availability to young people can impact significantly on problem behaviour and mediating factors, such as association with deviant peers (Patterson et al., 1992, Deković, 1999).

The model of problem behaviour proposed by Patterson et al. (1992) explains adolescent delinquency and antisocial behaviour in relation to involvement in deviant peer relationships. However, it posits that poor parental attachment, and poor family management practices, such as poor parental monitoring may underpin the formation of these deviant peer relationships. The model suggests that these underpinning factors lead to rebellion from the child, which drives antisocial behaviour. Lack of, inconsistent, or overly harsh discipline from the parents then exacerbates the problem. The model proposes that this behaviour may then be carried on in school, leading to ‘normal’ peer rejection, academic failure, reinforcing attachments to deviant peers.

4.4.2 Leisure time

In addition to parental monitoring of adolescent free leisure time, Kristjansson et al. (2010) investigated the role of structured positive or healthy leisure time in the prevention or reduction of adolescent substance use. Based on previous research findings which showed that adolescent engagement in risk behaviours in Iceland has been attributed boredom and unsupervised activities such as parties, while abstinence from risk behaviours has been associated with parental monitoring and structured, supervised activities such as team sports. It was developed by the Icelandic centre for social research

and analysis in collaboration with health professionals, schools, community youth workers, parents, and young people. (Sigfúsdóttir et al., 2008) The programme aimed to prevent or reduce adolescent engagement in substance use, through increased parental monitoring and provision of opportunities within the local community for participation in sports activities, and community projects (Sigfusdottir et al., 2008). Community projects were seen as particularly important within this asset based model, as they allowed young people to identify and engage in activities they enjoy, rather than being told what to do.

4.5 School Connectedness and Whole School Ethos Approaches

School connectedness programmes are developed from Bowlby's theory of attachment, highlighting the importance of secure attachments in adolescent development in relation to wellbeing and health promotion programmes (Patton et al., 2000). Bowlby et al. (1989) hypothesised that anxiety arises where patterns of attachment are insufficiently developed or insecure. As previously discussed, adolescence is a turbulent time, when patterns of attachment and social connectedness are changing on a number of levels. Young people are moving away from family connections and becoming more independent, negotiating peer relationships and trying to fit in within their broader social contexts. According to Bowlby (1989), an individual's ability to deal with adversity and adapt to change is, to some degree, contingent on the availability of support within the immediate social environment and the skills to make secure attachments and seek support when needed. Social and familial settings are central to health and well-being, with a strong sense of connectedness, open communication, trust, and perceptions of genuine care, particularly that of adults, having a significant positive impact. The quality of these attachments and range of social connections, within a number of contexts (family, peer, community, school), impact on the individual's sense of belonging and self-regard (Patton et al, 2000).

Schools are often considered the best option for adolescent health promotion, as they are considered the only site with universal access to young people on a regular basis at a

time of great physical, emotional and social change, with which many health risk behaviours are associated. Young people spend much of their waking day in school and the quality of relationships, with both adults and peers can impact on happiness, wellbeing, feelings of belonging and connectedness, and behaviour (Pearson and Wilkinson, 2013).

Chapter 5 Evidencing And Refining Programme Theories

A key element of conducting realist research is the formulation of candidate theories about how programmes work, for whom, in what circumstances and why, and testing of those theories for explanatory power. Theories are presented as context-mechanism-outcome configurations (see methodology, p42, for details). Candidate theories were developed through exploration of the literature around complex adolescent risk behaviour prevention programmes, in concurrence with stakeholder consultation and data collection. Programme theories were continually developed, refined and tested through further literature searching, stakeholder consultation, and evidence from primary data sources, as set out in the methods section (For sources of primary data included in the building and evidencing of programme theories, see quote identification system below).

PP1 – 6 Professional stakeholders
YPFG 1 – 5 Young people's focus groups
SN 1/2 School nurses focus groups

While all qualitative data collected played a role in deductive and retroductive processes during programme theory development and refinement, only the most representative quotes were included as evidence, therefore not all participants are cited here.

Twenty-four programme theories were developed as a result of this process, across four key domains, each forming a subchapter, for structural clarity.

- 5.1 Implementation Fidelity
- 5.2 Programme Delivery, Design, and Content
- 5.3 Wider Social Environment
- 5.4 Personal Factors

In the following four subchapters, I discuss each of these domains, presenting the relevant programme theories alongside the data used to develop, test, and refine them. Programme theories presented here are refined theories, which have been evidenced to

some extent. I developed these theories from early hunches or candidate theories though this constant process of data triangulation. Although the subchapters are presented here as separate, for the sake of clarity, they remain closely interrelated, often discussing similar themes or aspects of programme theory. Relationships between programme theories explained using substantiating theory in the development of middle range theories

5.1 Implementation Fidelity

Adolescent risk behaviour prevention programmes are complex (multi-component, implemented on a number of levels, context dependent, subject to change), involve the active engagement of a number of stakeholders and adaption to local contexts within wider social settings, such as schools (Pearson et al., 2015). Put differently, these prevention programmes are complex systems, embedded within complex systems (see introduction p37), making programme implementation difficult from the outset.

A key limitation of implementation of complex adolescent risk behaviour prevention programmes, highlighted in the literature, is that of implementation fidelity, often in relation to the quality and nature of training provided for those delivering the programme, and resources available to support successful implementation (Sloboda et al., 2009b). Studies by Sloboda et al., (2009) and Ennett et al. (2011) suggest that programmes implemented in schools are implemented with between 1% and 17% fidelity.

Twenty-seven intervention studies (rated as moderate to high in quality) included within this review highlighted implementation fidelity, either with the aim of overcoming the limitations of previous programmes, to allow comparisons between agent of delivery and implementation fidelity, or as a major limitation of the research.

Implementation fidelity refers to the degree to which programmes are delivered in the way originally intended, and is considered crucial in the successful delivery of evidence based programmes (Breitensein et al., 2010). Adherence, within an adolescent risk behaviour prevention programme, may relate to content, strategies used, dose, quality of delivery, or engagement of recipients (Ennett et al., 2011). The purpose of this review was to look beyond whether training and implementation fidelity impact upon programme outcomes, to explore when this happens, for whom, how, and why.

Some of the work on this was already covered by Pearson et al. (2015), who conducted a realist review investigating the implementation of school health promotion programmes within the UK. Pearson et al.'s review differs in purpose from this study, as it focuses on health promoting programmes, rather than risk behaviours specifically and has a broader age range (5-19 years), with intervention programmes typically starting at the lower end of the scale. Within this review I aim to build on this existing knowledge, to better understand how these issues impact across a range of risk behaviour prevention programmes, with specific relevance to adolescents. Therefore, comparisons are made, between my own findings and those of Pearson et al. (2015), where relevant.

Four initial programme theories were developed in relation to implementation fidelity, training, resources and engagement of programme deliverers. Initial programme theories developed from the literature centre on two competing views of programme implementation fidelity, defined as training, and adaptability. Each theory is set out below, alongside the evidence used in development. Further evidence, exploring what works for whom in relation to programme deliverer and programme content is then provided to aid in adjudicating between and/or reconciling these seemingly juxtaposing theories.

5.1.1 Training Provision and Fidelity

The first programme theory, shown here in two steps, relates to the quality of training provided to those delivering the programme, prior to implementation, with a focus on ensuring the programme deliverer has the relevant knowledge and skills to deliver the intervention as intended. Evidence supporting this programme theory explores training quality in relation to duration and content of training provided, and the agent for delivery.

CMOC1.1 - Complex adolescent risk behaviour prevention programmes delivered to large groups/classes of adolescents (C1), which provide good quality programme delivery training, that considers the specific skills of the programme deliverer (Mresource), ensuring facilitators have a clear understanding of the programme strategies and behaviour change techniques contained within the programme, and feel confident in delivering them (Mreasoning), are more likely to adhere to the intended programme delivery strategy (O1).

CMOC1.2 - Complex adolescent risk behaviour prevention programmes which adhere to the intended delivery strategy (C2) provide clear information, support and opportunities for skills development (Mresource) making it easy for adolescents to access, understand and utilise programme strategies (Mreasoning) increasing the likelihood of a change in beliefs or behaviour (O2).

As previously stated, training and fidelity have been a long running, and oft-cited limitation when explaining programme outcomes, particularly in studies with poor or unexpected outcomes. A further innovative feature of the Life Skills training programme, at the time, was the use of peer leaders as programme providers, as well as teacher led delivery. Considering this, a secondary aim of Botvin's research was to compare these two agents for delivery for efficacy and programme fidelity. Based on existing knowledge from earlier iterations of risk behaviour prevention programmes, Botvin et al. (1995) utilised observational data to monitor programme fidelity throughout programme delivery. This was done for both the teacher led and peer led arms.

All teachers involved in programme delivery, including both core curriculum and booster sessions, attended a one-day training session, held immediately prior to beginning programme implementation. The main purpose of this one-off session was to familiarise

teachers with the programme components and rationale. An opportunity was also provided to experience some of the practical components of the programme. Similarly, peer leader training was delivered through one four-hour workshop, which was designed to introduce the problem of substance use and introduce programme deliverers to the programme. However, a series of briefing meetings were also delivered to peer leaders, prior to each session, providing specific instruction on the content of the upcoming session and allowing peer leaders to practice the skills needed for that session. Each briefing meeting lasted between 45 and 60 minutes.

As detailed in defining the theoretical framework (p106), programmes using The Lifeskills programme include Information provision, health and legal consequences of substance use, decision making, social skills, and refusal training, motivation and self-directed behaviour change (Botvin et al., 1990b).

Programme findings, in relation to programme deliverer, showed greatest success when delivered by peers and this was, at first, considered strong evidence for peer led risk behaviour prevention programmes. However, observational data showed some issues with fidelity, with ratings particularly low in the teacher led arm. In some classes, Botvin found, rates of fidelity were so poor, these cases were removed from the final analysis, potentially skewing results in favour of peer delivery. In considering these findings, Botvin (1995) posits that a lack of good quality training, lack of confidence in delivering health information, and incongruence between the beliefs of the programme deliverer and the underpinning message of the programme being implemented may have contributed to these unexpected outcomes. Furthermore, while differing training needs between teachers and peers were recognised, decisions about how to address these needs were made by programme developers, with little to no consultation with programme deliverers. This may have resulted in the disparity in training provided, having unintended consequences on programme outcomes (Botvin and Griffin, 2004).

Mellanby et al. (2000) provide further support for this theory, in their critical review of peer led versus adult led programmes. In attempting to understand this failure to adhere to programme protocol, he suggests that in uncertain contexts, teachers may revert to didactic teaching methods, predominantly delivering information or factual knowledge, as this is where they feel most confident in their ability. Peers, not having these preconceived notions of teaching or programme delivery, he proposes, are more likely to deliver the programme as instructed in training. However, Mellanby et al. (2000) suggests, peer training typically consists of problem defining, information provision, programme curriculum and delivery techniques, with no formal training in teaching or classroom management. Despite the comprehensive training typically provided for peers, per-led sessions can be affected by factors outside the programme schedule, for which peer leaders are ill prepared. In this situation, the peer leader role may be further undermined if teachers or other professional staff feel the need to step in.

Issues of programme fidelity and adherence, however, are not restricted to teacher and peer led programmes, and similar issues have been raised by other health care professionals involved in delivering health information to young people. Evidence from professional stakeholders, particularly those involved directly in the delivery of programmes, such as school nurses, provides further support for this hypothesis. The following quote highlights a common issue which occurred in discussions with health professionals, in that they are used to, and confident in delivering health information and guidance to young people in a one-to-one situation, but feel less confident when delivering to larger classes as are typical in health promotion, and risk behaviour prevention programmes.

> *"I think for me, being really new to the service and things like that, confidence would be a great hinder and I think it's, like [Name] says, if somebody comes to you asking for that help then I think you've got more confidence then you can go tap into resources and things that you've got whereas, as far as the preventative and the health promotion side of things, I would find that harder, personally, because I don't have the experience in broaching it and the confidence at the moment." (SN1).*

McNeal et al., (2004) developed the All-stars programme to reduce adolescent risk behaviours with a focus on tobacco, alcohol, marijuana, inhalant use, and sexual activity. A secondary aim of the programme was to evaluate whether teachers or health professionals were more effective in delivering risk behaviour prevention programmes such as this. Within the literature, McNeal et al. claim that training was tailored specifically to the agent for delivery, in an attempt to meet their individual learning needs, though the needs of teachers, again seems to have been largely overlooked. In recruiting deliverers for the All-Stars programme, health professionals were recruited from outside agencies, based on previous teaching experience, ability to build rapport with students, and previous experience of health programme delivery. Teachers were recruited solely on the basis of employment in a participating school, and no other consideration to qualifications was given. Furthermore, teachers appear to have been unable to opt out of the role.

Teachers worked in teams, with training being delivered via a 1-day workshop. Programme handbooks were also slightly different depending on role, with those for health professionals providing a step by step guide to implementation. However, ratings of fidelity were ranked as high throughout delivery. Despite the lack of training, or previous experience, findings show that teachers were able to have moderately significant effects in reducing alcohol consumption, and tobacco and cannabis use. No significant impacts were found in the intervention arm delivered by an outside professional. These findings suggest that something other than training is impacting on both fidelity and programme outcomes in relation to agent for delivery.

Further support for this hypothesis comes from Project D.A.R.E (Drug Abuse Resistance Education), Ennett et al. (1994), initially developed in 1983 by a police department in Los Angeles. A publicly funded programme, delivered by specially trained law enforcement officers, Project D.A.R.E. was designed for use in elementary schools, and then gradually extended to include junior and senior high schools in LA and across America (Ringwalt et al., 1994, Sloboda et al., 2009a). As with other programmes based on this model, focus was on building skills to recognise and resist social pressures around substance use,

decision making and choosing healthy alternatives, and building self-esteem. Training in this programme consisted of an 80 hours course, delivered over a 2-week period. It included classroom management, teaching strategies, communication skills, adolescent development, substance use information, and curriculum instructions. Despite this comprehensive training programme, and ratings of high fidelity throughout delivery, no significant results were found, and conversely negative impact was seen for both tobacco use, and alcohol consumption. In discussing the limitations of the study in relation to these findings, Sloboda et al. (2009) suggest it may be attributable to factors outside of the programme, within the broader social contexts of delivery. However, despite implementation in a range of locations, a lack of significant results remained at both 5-year and 10-year follow up.

I would suggest that, given the evidence gathered here, these findings may be contingent on the interaction between those delivering the programme, programme type, and target population.

Lisha et al. (2012) cite four key domains that impact on programme implementation fidelity and immediate outcomes, based on findings from the Project Towards No Drug abuse (TND):

- Dosage – how much of the programme is received
- Adherence – to what degree the programme guidelines were followed
- Quality of delivery – how well the elements of the programme were delivered
- Responsiveness of the recipients

Lisha et al. (2012) propose that these domains are contingent on the quality of programme training (as demonstrated above) and the degree to which the programme aligns with the attitudes and beliefs of those delivering the programme. It is the second part of this proposition, Lisha et al. (2012) claim, which is often overlooked in training, with

only a prescriptive model of delivery being demonstrated. Pearson et al. (2015) support this claim, investigating the role of engagement of those delivering the programme. Pearson et al. (2015) found that motivation to engage with the material being delivered was dependent on whether or not programmes addressed knowledge and skills which were deemed necessary, or important to them. Discordance seemed to be particularly prevalent in the delivery of programme elements related to relationships and sex education. This relates back to having deliverers who are comfortable and confident in delivering sensitive health information to young people. Lisha et al. (2012) suggest that discomfort in delivering sensitive issues, or discordance between programme messages and personal beliefs may contribute to failure to deliver the whole programme (dosage) or delivery of elements that deviate from those set out in the programme protocol (adherence). However, while training can be adapted to meet the needs of the individual, it is more difficult to address these issues of agent-programme discord.

Evidence suggests that programmes which incorporate stakeholder guidance are more successful in reducing or preventing adolescent risk behaviours (Bond et al., 2001, Bond et al., 2004, Patton et al., 2012, Newton et al., 2014b, Newton et al., 2012, Newton et al., 2010, Newton et al., 2009b). While this often focusses on meeting the needs of young people, identifying the needs, attitudes, beliefs and concerns of those delivering the programme in order to identify possible conflict and addressing them prior to implementation, may enable programme developers to capitalise on the existing skills of those delivering the programme. Therefore, prevention programmes should be guided, in development and delivery, by the needs of both those delivering, and receiving, the programme in each local context.

5.1.2 Concordance, Relevance, and Adaptability

The programme theories included in this section begin to move beyond quality, dose, and duration of training, and confidence in delivering a prescribed programme, to consider adaptability, acceptability, and relevance of the programme, for both those delivering, and those receiving the programme. Two largescale programmes, rated as high in relevance

and rigour within this research, contributed strongly to the development of programme theory Two:

CMOC2 - Complex adolescent risk behaviour prevention programmes in which programme development and delivery is stakeholder led, and adaptable to meet the needs of programme deliverers, context, and individuals to whom the programme is being delivered (C), have more relevance to those involved (Mresource) and are therefore more likely to be accepted and internalised (Mreasoning), leading to increased engagement, and a change in core beliefs and attitudes (O).

The Gatehouse project (Bond 2001; 2004; Patton, 2012) identified staff willingness and ability to engage with programme delivery, along with the availability of time and resources as pivotal in programme success. To identify common barriers to engagement with the programme, and to aid in the development of strategies to overcome these issues, a school health team was formed in each participating school. Health teams consisted of key stakeholders, such as managers, teachers and school administration staff, students, psychologists, and public health professionals. These teams were tasked with identifying the most prominent problems, or areas of greatest need within each school, and implementing strategies to bring about change within the classroom and at the whole school level. No formal training was given for this programme, with programme deliverers free to adapt the material being delivered to suit the needs of their specific cohort.

Similarly, the Climate Schools programme (Newton et al., 2009; 2012; 2014) was developed in collaboration with teachers, students, law and health professionals from the outset, and incorporated the needs of key stakeholders in to the programme design. Stakeholder consultations were repeated each time a new element was developed, or

tested within a new context, and adaptions made accordingly. However, programme implementation appears to remain relatively rigid post pilot testing, with little room for adaption in real time, when delivered on a larger scale.

The two programmes use a similar approach to tackling the issue of concordance with deliverer beliefs, and relevance for those receiving the programme, employing a stakeholder team to undertake consultation, formulate strategies, and drive change in a way that is relevant to local contexts. However, within the Gatehouse project these adaptions are ongoing, allowing problems to be overcome as they occur, while the climate approach returns to a more prescribed method for delivery once stakeholder feedback has been incorporated in the piloting phase. Unfortunately, within the published literature, the types of adaptions that were made in order to increase deliverer concordance, and programme relevance are not stated explicitly, therefore programme theories here remain quite broad.

Pearson et al. (2015) also considered issues with programme adaption stating that, within the published literature, it remains difficult to distinguish between justified variations (based on evidence or necessary for the success of the programme) and unjustifiable changes (driven by other factors such as non-compliance due to personal beliefs, or lack of time and resources), or the impact these unexpected changes may have on programme outcomes. However, usefulness and acceptability of programmes with both core and customisable elements were not evaluated within their review.

Only one programme identified within this project takes this approach throughout programme design, and delivery. Healthwise South Africa (Smith et al., 2008, Wegner et al., 2008, Caldwell et al., 2011, Tibbits et al., 2011) delivered training via a 3-day workshop, to familiarise teachers with the core components of the programme. A manual was also provided, and teachers had continued support, from programme managers, in delivering and adapting the programme as required throughout implementation. The programme showed positive significant results both in pilot testing and in larger scale trials

(Caldwell et al., 2011, Tibbits, 2011), consistently finding delayed initiation for alcohol, tobacco, cannabis use and sexual activity, and increased condom use, both at baseline and follow up. Though it is not possible, from the evidence available, to attribute these positive findings to programme implementation alone, it provides a foundation from which to further explore in what circumstances this combined approach may be beneficial, in improving implementation fidelity and programme outcomes. For example, while it may be beneficial to allow teachers, or trained health professionals to adapt programmes, it may be detrimental to expect the same from peer educators, who may not have the experience or skills to do so effectively.

At this point in bringing the findings together for reporting, I began to ask myself so what? What do these findings mean for the implementation and deliverer of complex multiple risk behaviour prevention programmes for adolescents? Given that both training and implementation fidelity, and programme adaptability, two seemingly juxtaposing ideas, can both improve programme outcomes to some degree. As discussed above, it seemed that perhaps combining both training and adaptability within a programme might be the best way to improve programme efficacy, though the evidence supporting this theory is relatively small. I then looked back over the data, screening for any other pattern or demi-regularity, using questions such as ‘what else is similar in these programmes?’ ‘What else is different?’, which may help to explain these findings.

This fresh interrogation of the data revealed that the programmes, included so far, which were most effective in bringing about change in attitudes and beliefs, intentions to engage in risk behaviour, and/or risk behaviour, all provided ongoing support from programme managers and senior staff for programme deliverers throughout implementation.

5.1.3 Support

Botvin et al. (1995), in comparing peer versus teacher led delivery, found that peer intervention was more successful than teacher led delivery, with issues in implementation

in implementation fidelity in the teacher led arm being considered a contributing factor when interpreting the findings. However, as previously mentioned, peer leaders, being seen as less experienced in classroom management and health information delivery, were provided with ongoing support throughout delivery, given on a weekly basis. A similar pattern can be seen in programmes such as The Gatehouse Project (Bond 2001; 2004; Patton, 2012), and Healthwise South Africa (Wegner 2007; Smith et al., 2008; Caldwell, 2011; Tibbitts, 2011), where ongoing support was provided in identifying issues and implementing strategies to overcome them. However, little consideration is given, within the empirical literature, to the impact of this support on programme outcomes. It is acknowledged here, in the following chain of programme theories.

CMOC3.1 - Complex adolescent risk behaviour prevention programmes delivered within a school setting (C) by a facilitator who has strong support from managers and other team members/colleagues (Mresource) will feel more calm and confident as a result of shared responsibility (Mreasoning) leading to feelings of increased competence in programme adaption and delivery (O).

CMOC3.2 - Complex adolescent risk behaviour prevention programmes which are delivered by a competent, confident agent for delivery (C2) provide clear, relevant information, support and opportunities for skills development (Mresource) making it easy for adolescents to access, understand and utilise programme strategies (Mreasoning) increasing the likelihood of a change in beliefs or behaviour (O2).

Pearson et al. (2015) provide further support for this theory, particularly in relation to relationships and sex education, stating that implementation fidelity is highest when

programme deliverers are embedded in a collaborative setting, where issues with delivery can be discussed with colleagues, and support is provided by senior staff, and programme managers. Pearson et al. (2015) suggest that successful implementation of health programmes is governed by perceptions of reciprocity, suggesting teachers are more likely to engage fully and invest time and resources, if they feel they have practical and educational support, enabling them to fulfil their role. However, teachers are quite often viewed as competent within programmes and left to deliver the programme with minimum support (Botvin, 1995).

The following quote from a participant in this study, who has held a number of senior roles within education settings, considers the role of good leadership in health promotion, going on to say that teachers' feelings of connectedness are as important as that of the young people if they are going to work together towards a common goal.

> *I think there is a real need for leadership too. If I am a manager, head teacher or whatever, it is my job to make sure my staff are happy and supported and able to do their best work. If I am pushing an academic agenda, and I am getting shit. . .trying to meet targets, if I pass that shit down to my staff, the likelihood is they will pass it on to the kids. That's no good is it? (PP1)*

Below, in a similar vein, a participating school nurse talks about wanting to work in a more integrated way in schools:

> *I think we need to change our whole way of working around it to be honest. I think that, like you know, we're often just a tiny snippet of a package if you like, I'd say more joined up working with other people. . .* (SN1)

Discussions with professionals around how skills and resources of a range of service providers could be combined, to the benefit of those delivering the programme, while getting the best results from programmes, provoked further literature searching to explore whole school systems approaches to adolescent risk behaviour prevention. I discuss these findings, when considering whole school approaches in part 5.2.2 Programme content and design, (p157).

5.1.4 Programme Resources

One final element identified within the literature as having an impact on programme fidelity is the nature of programme resources. Two possible mechanisms were identified as underpinning fidelity of programme delivery; reduced workload, and enforced adherence and compliance. Reduced workload, as previously stated in relation to support provision, increases willingness to engage with the programme and seems to be particularly relevant when teachers are delivering the programme:

CMOC4.1: Complex adolescent risk behaviour programmes delivered by teachers in schools (C) which provide resources for implementation and delivery, such as a comprehensive handbook, and computer based tasks (Mresource) increase programme fidelity (O) as programme deliverers are more willing to engage when workload stress is decreased (Mreasoning).

Programmes developed to be high in fidelity from the outset, provide resources that aim to increase implementation fidelity through enforced adherence to programme elements. Enforced adherence and compliance work as programmes must be completed in a sequential manner, and elements in each section must be completed before participants can move on to the next.

CMOC4.2: Complex adolescent risk behaviour programmes delivered by teachers in schools (C) which provide resources for implementation and delivery, such as a comprehensive handbook, and computer based tasks (Mresource) increase programme fidelity (O) as errors in compliance and adherence are less likely (Mreasoning).

However, no attempt has been made to differentiate between these mechanisms, and it is possible that both will be relevant and have equal potential to contribute to programme fidelity. I consider the impact of programme resources on behavioural outcomes further in 5.2 Programme Delivery, Design, and Content, 5.2, (p135).

5.2 Programme Delivery, Design, and Content

In the previous subchapter, I explored issues with implementation fidelity in connection to training, adaptability, support and resources. While these aspects may not directly influence adolescent behavioural outcomes, the way they interact with agents for delivery and therefore programme implementation, has been demonstrated and possible mechanisms considered through the available empirical evidence. As previously stated, I consider these issues further in the context of programme delivery, content, and design as they arise. The purpose here is not to create a taxonomy of preferred behaviour change techniques, but an exploration of commonly occurring patterns in the literature which may explain what works, for whom, in what circumstances and why or conversely, why not.

The first programme theory presented here differs slightly, in that it arose not from screening of empirical literature, or directly from data collected, but from observations made during the data collection phase, when it was noted that there were prominent differences in the way staff were viewed by young people, dependent on contextual factors such as school policy and focus on health. While this theory ties in with programme theories delivered nearer the end of the chapter, relating to school connectedness and whole school ethos, it is presented here first as I felt it should be taken in to consideration when interpreting the data regarding other programme theories in this chapter. The remaining six programme theories presented here, relate to desired qualities in a programme deliverer, programme content and resources, target behaviours, and the way in which these factors interact, within specific contexts, to successfully prevent or reduce adolescent risk behaviour.

5.2.1 Programme Deliverer

Role

The question of who young people would rather go to, or have delivering health information, particularly sex and relationships education, caused some debate. As previously stated, an interesting divide arose between certain groups, as the majority of young people stated that they would prefer to go to a professional, such as the school nurse, rather than a teacher, with typical comments represented by the quotes below:

> *"You can't go to teachers because they grass you up." [YPFG1]*

A professional participant, with experience in both education and health, proposed a potential explanation of this distrust in teachers and health information delivery, in relation to the teacher's role within the school, outside of health based classes:

> *It's all very well the kids coming to you and doing that really emotional stuff, if when they get it wrong in my maths lesson I harrang them, and bully them and trip them up with stupid questions to see how much they have forgotten. [PP1].*

These difficulties in switching role, or extending a more pastoral approach to education across the curriculum are discussed further in relation to school ethos and whole systems approaches (p150).

Many of those who did not feel comfortable talking to a teacher or a peer stated a preference for a professional such as "*a school nurse or doctor" (YPFG4)*. Although some concerns were raised regarding current funding cuts, and the lack of visibility of school nurses within school.

> *"It would be the school nurse but they've been cut back 50%." (YPFG3).*

However, those in the final focus group (YPFG5), stated that they would be most likely to go to a teacher, for example "*the PE or biology teacher" (YPFG5)* if they were seeking

help, and would have no problem receiving health education from them. This difference in opinion was so notable, given the typical responses from other groups; it became a point of discussion between my co-researcher and myself, with whom I had been collecting data. Field observations indicated that this final group was recruited from a school where there was a drive to foster student health and wellbeing as much as educational attainment. Closer scrutiny of the transcripts relating to these findings revealed that young people in these health and well-being focused schools were much more open to discussing health issues with both teachers and parents, and the school itself was held in high regard.

In comparison to this, many of the young people who expressed distrust in teachers had also made remarks around lack of health education and in some cases physical education, giving the impression of an environment where health was less of a driver than educational attainment. The following programme theory, therefore, relates to programmes delivered into schools where health and wellbeing are not a key focus.

CMOC5: Complex adolescent risk behaviour prevention programmes delivered in schools where health and wellbeing is not a key focus in practice (C) are more successful in engaging students, and reducing risk behaviour (O) when delivered by a qualified health professional, such as the school nurse, specially trained health teacher (PSHE), or outside agent (Mresource) as young people have more trust in information provided, and issues regarding confidentiality (Mreasoning).

Supporting this observation, Dooris (2006) suggests that in schools where the focus remains largely on academic achievement, young people tend to respond better to a health professional, or specially trained teacher. This may be of particular salience to adolescents who feel disconnected from school, or valued solely on academic ability, where trust in teachers is likely to be low, and should be taken in to consideration when interpreting the data in other parts of this chapter.

This debate was reiterated in findings from phase four of the research, in which vignettes were used as a tool to gather young people's opinion (Methods 3.5 Phase Four - Testing programme theories, p100). Youth workers reported that young people were divided, with some young people stating a preference for health education delivered by a teacher, while others were in favour of a health professional, such as the school nurse. Similarly, to data collected from focus groups, key reasons behind this included issues of trust and confidentiality, with teachers seen as 'weeding out the bad kids' or gathering information for some other purpose. However, others in the group agreed that talking to a health professional might be difficult given the lack of any kind of relationship with that person.

Some suggestions were made by the group in an attempt to resolve these issues, including specially trained teachers, who do not deliver standard curriculum, or longer intervention periods which focus on building trust and rapport with the programme deliverer prior to moving on to more serious or personal topics.

Similar issues with trust were expressed as limitations within empirical literature regarding programmes that take a peer education approach. For example, despite some positive results in Backett-Milburn and Wilson (2000) study, confidentiality was a key concern for a number of reasons. Students were concerned that peer educators may be obligated to report to school staff regarding risk behaviours, which may get them in trouble. Another concern was that peer educators may talk amongst themselves around school, leading to accidental disclosure, or even purposefully discussing student behaviours with other pupils. Furthermore, concerns were raised by students, teachers and other stakeholders about the factualness of information exchanged, particularly in the early stages of training, and in less formal settings such as the schoolyard, when peer educators may discuss what they are learning with other students. Incidences of these exchanges are very difficult to monitor, and measuring impact on outcomes even more so. However, aside from the risk that young people may be receiving the wrong information, disputes over what they had been told led to concerns regarding trust, both in information received and in those delivering the programme (Backett-Milburn and Wilson, 2000). These frequently

arising issues relating to programme deliverer and trust, both in confidentiality and in the information provided led to discussions around what type of person the young people would like to have delivering the programme, and the qualities that person should possess.

Qualities

In further considering the qualities young people want in someone who provides health education, such as a risk behaviour prevention programme, adolescents, participating in the focus groups, identified a number of key themes, which they felt very important. These included confidentiality, trust, lack of judgement, and understanding of individual personal circumstances. Approachability, a kind, open demeanour, the ability to listen and act on what is heard and being positive and supportive were also thought to be important. The key points are represented by the quotes below:

"Trustworthy. Be quite a good listener and not sort of like jump in and try and judge whatever you're saying so like let you finish." (YPFG3).

"Respect, confidentiality if you feel like particularly insecure you don't want them announcing your problems with megaphones." (YPFG5).

"And someone who like kind of doesn't judge you straight away and like kind of hears you out the full time and even if that takes more than one session like to get the full story out". (YPFG3)

Gregory and Ripski (2008) explored adolescent trust in teachers and the implications for behaviour and behaviour change within the high school classroom. Trust is conceptualised as respect, personal regard, and interrelational trust among leaders, staff, students, and pupils. The initial focus of Gregory and Ripski's (2008) research was on authority and acceptable behaviour within the classroom. However, the results showed that the teachers took a relational approach to students, building rapport, mutual regard and respect, and ultimately trusting relationship that were most successful in preventing poor behaviour.

These findings are represented in the programme theory below:

CMOC6: Complex adolescent risk behaviour prevention programmes in which the agent for delivery is perceived to be trustworthy, respectful, and non-judgemental (C) are more successful in engaging students, and reducing risk behaviour (O) as deliverers are able to foster rapport, and mutual regard (Mresource) as young people feel more secure (Mreasoning).

Further to this, participants felt that the professional should be knowledgeable and able to provide current, culturally relevant, local information regarding health issues, including practical advice of what can be done in the here and now, as well as information regarding future consequences. These findings, while providing evidence towards existing programme theories, also acted as a catalyst for further literature searching around school connectedness, school ethos and whole settings approaches. Findings from this phase of searching are presented in the following subchapter exploring programme resources, and content, which is typically dictated by programme approach and theoretical underpinnings, as set out in the initial theoretical framework (p106).

5.2.2 Programme content and design

The motivational-skills decision-making model, developed from Botvin's Life skills programme (Botvin, 1980) provides the foundation upon which many of the programmes included in this review have been developed. Aiming to change adolescent risk behaviour through the provision of information, along with decision-making, and problem-solving skills, the approach claims to recognise the role of social and environmental factors. However, refusal skills, consequences and commitment to abstain remain central concepts throughout many of the programmes adopting this approach, with the judgemental or moralistic tone of programmes being the most common concern for those attempting to address their limitations.

Programmes such as Project Alert (Ellickson et al., 2003) attempted to move away from the moralistic language, reminiscent of the old medical model, dropping talk of abstinence, instead using language around reduction of use. While the move away from the moralistic abstinence driven approach seems to be a positive one, a simple change of language was not enough to change programme outcomes. Interaction with the agent for delivery, their personal approach and mannerisms in interacting with the young people, and belief in and willingness to engage with the programme also needs to be considered, with those having a poor rapport with young people possibly confounding the problem (Pearson et al., 2015). The following programme theories aim to explore how aspects of programme design, content and resources can impact on engagement with the programme, and therefore programme outcomes.

Design, content, and resources

Endeavouring to better understand these interactions and how they may impact on adolescent engagement with programmes, I consulted young people about what content or resources would be useful in a multiple risk behaviour prevention programme of this nature, and drew up a list of the most commonly cited. Components young people felt would be most helpful in reducing risk behaviour, and making healthy choices included in a health promotion/risk prevention programme include:

- Information, that is comprehensive but easy to use, culturally relevant, and accessible.
- Tools and skills for planning, motivation, and goal setting.
- Signposting to local services and resources, clubs, and health centres.
- Online resources/App.
- General good health information – cravings/stress/emotions/sleep – healthy coping.

Young people felt that these skills and resources would be most useful in improving health and wellbeing, and reducing the likelihood of risk behaviour, with access to

relevant information and services outside of school, within the community. Represented below in programme theory 7.

CMOC7: Complex adolescent risk behaviour prevention programmes which provide access to resources (an app, website, or information in the planner/homework diary) (C) which signpost local, relevant information and support (Mresource) will be most effective in reducing or preventing risk behaviours (O) as teenagers can access information, and make informed decisions in the moment, as needed (Mreasoning).

Further literature searching and screening of the existing literature around these concepts brought the harm minimisation approach to the fore. Prevention, harm reduction, and harm minimisation were cited as core principles of the UK Updated Drug Strategy 2002 (Home office, 2002), however programmes implemented with young people tend to ignore the need for harm reduction and minimisation, and instead continue to focus on abstinence and refusal skills (Velleman et al., 2005). The harm minimisation approach, as described in the theoretical framework, has not, thus far, been widely adopted and therefore the evidence base is limited, making it difficult to develop hypotheses that can claim generalisability. However, The Climate For Schools Programme (Newton et al., 2009) has been continually developed, tested and refined over a long period, producing a broad range of data in a number of different contexts (Newton et al., 2009a, Newton et al., 2012, Newton et al., 2014a, Teesson et al., 2014, Champion et al., 2013, Champion et al., 2015, Vogl et al., 2014).

The Climate schools programme (Newton et al., 2009) was initially designed to reduce cannabis use and associated harms with young people, eventually expanding to cover a broad range of adolescent health issues, including risk behaviours and mental wellbeing. The programme was developed in collaboration with students, teachers, health, and legal

professionals from the outset, attempting to overcome common issues experienced in other programme types. Based on the social influence model, and drawing on the motivation, skills, decision making approach, this harm minimisation programme incorporates three core components; information provision, normative content, and resistance skills training. However, the goals of these components differ somewhat between this programme and traditional abstinence based programmes.

Newton et al. (2012) state that information provided must be developmentally appropriate and based on outcomes directly relevant to the young people involved in the programme. Furthermore, it should be accurate, from a credible source and focused on both positive and negative effects of substance use.

The aim of normative content within the programme is to relate to young people in a way that is relevant to them, advocating safer health choices by challenging and correcting misperceptions around peer engagement in risk behaviours, and exploring ways in which those who do use keep themselves safe. This relates back to the provision of accurate information, allowing young people to make informed choices about their health (Graham et al., 1990). Much like earlier approaches the resistance skills training component teaches the skills needed to resist and refuse drugs, however in this approach skills are also taught to reduce associated harms, with the aim of allowing the young person to maintain friendships and social standing within their peer group (Cahill, 2007).

Designed to be implemented with high fidelity, the Climate Schools programme was developed as a curriculum based programme, with each module consisting of 6 sessions. Sessions were divided in to two components, a 15-minute computer based task, followed by 45 minutes of classroom-based activities. The computer-based component comprises of young people working through a teen-based cartoon drama. Classroom activities are then used to allow young people to relate content to their own lives, referred to within the programme as active learning. Information provided by the programme includes:

knowledge of law and legal consequences of risk behaviour; economic factors; reasons young people engage in these behaviours, and the pros and cons of use as young people see them. Skills developed through involvement with the programme include: identifying physical and psychological risks, and tools for dealing with and reducing those risks; care for self and others, maintaining mental health and wellbeing, seeking help and identifying local resource; and safety skills, including what to do in an emergency (Making a 999 call, CPR and first aid), and managing withdrawal (Champion et al., 2013; Vogl et al., 2014). This combination of education without moralistic overtones, non-judgemental interaction, and provision of practical and applicable skills, along with the need for mutual respect and rapport as described in programme theory 6 (p135), lead to the development of the following programme theory:

CMOC8: *Complex adolescent risk behaviour prevention programmes which take a harm minimisation approach (C) are most successful in reducing risk behaviour prevalence, and related harms (O) as programmes provide practical advice and support, without judgement (Mresource) which makes young people feel (a) valued and cared for, and (b) able to care for themselves and others (Mreasoning).*

The Climate for Schools Programme initially consisted of two six-session modules covering alcohol and cannabis, and cannabis and psychostimulants (Newton et al., 2009). Results showed increases in alcohol and cannabis knowledge, and a reduction in both alcohol use and cannabis consumption at baseline and again at six months follow up in comparison to usual curriculum controls. Despite positive results, the programme effects had lost power by six months follow up. Providing feedback during fidelity testing, young people stated that repetitiveness across modules led to reduced engagement, as it was felt no new knowledge was being gained.

Climate Schools aims to produce developmentally appropriate sequential messages, which are relevant to young people. On this basis, new modules were developed to build

on knowledge gained from participation in earlier modules. New modules developed included ecstasy (Newton et al., 2012), new emerging drugs and psychoactive substances (Champion et al., 2013; Vogl et al., 2014) and mental health and wellbeing modules, targeting anxiety and depression, and their impact on health and education outcomes (Teeson et al., 2014).

Results, across iterations, consistently show that those in the intervention group have significantly greater knowledge and express significantly lower intentions to use in the future at both six and twelve month follow up, although there were no significant differences between the intervention group and controls for use of either ecstasy or psychoactive substances (Champion et al., 2016). However, prevalence of use, for both ecstasy and new psychoactive substances (legal highs), was very low in both groups, most likely due to cohort age (14 – 16 years, average age 15). However, positive effects on knowledge, and intentions to use was seen as good evidence of potential programme effectiveness.

Evidence gathered using vignettes, as set out in phase four of this project, provides support for use of the harm minimisation approach. While the vignettes did not directly mention a specific approach to adolescent risk prevention, questions provided an opportunity for young people to think about what might be most useful.

Young people felt strongly that being told to ‘Just say no’ was overly simplistic, and did not account for individual circumstances, using phrases such as ‘easy for them to say’ to express this opinion. It was also reiterated that, if delivered by teachers, this would be ‘just another telling off’ which would probably be ignored, or worse may make the young person more determined to partake in risk behaviours such as smoking and drinking, particularly outside of school where teachers are seen as having no real jurisdiction or control over young people’s lives.

In contrast, young people felt that practical advice and skills, such as seeking help, first aid, and access to local resources would be beneficial, not just in relation to risk behaviours, but in thinking about the health and wellbeing of themselves, and others

around them. Furthermore, young people felt that using computers to find resources for themselves, with guidance from teachers or programme deliverers on how to find reliable sources of information, would be more effective, and more fun to do, than simply being 'lectured'. However, perhaps surprisingly given young people's attachment to their phones and other electronic devices, apps were seen as having limited capability, as they tend to be generic. Young people felt there was already an abundance of apps available, and had tried some, though it was felt the novelty of them had worn off, causing them to lose interest and eventually stop using them.

The key important points, as defined by the young people in this phase of the research, were mutual trust and respect between those delivering the programme, and those receiving it, and feeling that the material being delivered was relevant, useful, and there to help, rather than just stop young people doing things that are a natural part of growing up.

Further support for this method comes from the School Health and Alcohol Harm Reduction Project (SHAHRP) (McBride et al., 2004), which replicated the findings of the Climate Schools programme across a large cohort in Australia. Furthermore, it is noted that the programme did not increase prevalence of substance use, a key concern raised by parents and other stakeholders in considering the feasibility of the harm minimisation approach.

Further adaptions included issues regarding programme implementation and delivery, programme dose and duration, and timing of programme delivery. For the sake of clarity, issues regarding implementation and delivery were included in the previous chapter (p120), in relation to support (p130) and resources (p133). Programme dose and duration are addressed here, and timing of programme delivery follows in chapter 4.3 (p182), when considering the impact of age on programme effectiveness.

Though the Climate Schools programme has showed promising results across a broad range of adolescent risks and health behaviours, the impact on sexual practices has not yet been explored. Professionals interviewed as part of this study suggested that harm

minimisation is the basis of many sex education approaches, as the focus is on staying safe, happy, and healthy sexual relationships, rather than abstinence.

> *"I think the harm minimisation approach is definitely one that is, that works and obviously that is the approach that is being taken with programmes like the C card, that is more of a come and get it, come and learn about it before you are doing it, and then if you are going to be doing it at least you know how to look after yourself when you are doing It so really c card is that harm minimisation approach." (PP4).*

Design, deliverer and risk behaviour

Due to the lack of empirical evidence relating to specific methods for targeting sexual risk behaviour, a literature search was conducted specifying programmes for the reduction or prevention of adolescent substance use and risky sexual behaviours. The following programme theory was developed from the results of this literature search, in an attempt to better understand how programme outcomes could be improved for risky sexual behaviours.

Mellanby et al. (2001) conducted a comparative study investigating peer led and teacher led sex education delivered within the wider context of school health education programmes. The peer education element was delivered to year 9 students (age 13/14) using an established programme, named A-Pause (Adding power and understanding in sex education) (Evans et al., 1998). The aim of the programme was to establish whether different agents for delivery could achieve different outcomes for a range of different behaviours, and who was most effective in delivering which aspect. The A-pause programme consists of 10 sessions specific to sex and relationships education, 6 delivered by a teacher and a healthcare worker, and a further 4 delivered by a group of teenaged peers (aged 16-17). Delivery was carried out in normal school classes. The A-pause programme is developed using the collaborative social influences model, with social learning theory as a central component. Peers and adults received the exact same training and delivered the same programme in all but one session. In this session peer classes involved role-play centred on rejecting sexual advances, with young people practicing techniques learned earlier in the programme by rejecting the feigned advances

of peer educators. This component was missed out for those in the adult led arm of the programme, with other refusal skills, such as refusing drugs and alcohol were practiced, as it was felt that rehearsal of sexual advances and rejections between teachers and students was inappropriate.

A core aim of the programme was to establish, or confirm conservative norms, in this case reinforcing the message that the majority of teenagers are unlikely to have engaged in sexual intercourse under the age of 16. Peer educators were significantly more effective in getting this message across than adults, despite the rest of the relationships and sex education programme being delivered by those same adults. This was taken as strong evidence for the efficacy of employing peer educators for the delivery of health information, when using a social norms based approach. Students reported feeling more embarrassed in the peer led sessions, however, impartial observers reported that students were also more animated and vocal in these sessions, suggesting the embarrassment felt may result from opening up and sharing more than perhaps they usually would. Furthermore, those in the adult led arm were more knowledgeable in the transmission of STI's and reproductive biology, suggesting adults may be better placed to pass on the informational or knowledge based components. However, given the findings of earlier research regarding teacher led programme delivery (discussed in relation to programme implementation fidelity and training, p121), where teachers are uncomfortable or unsure of the programme they are delivering they tend to revert to standard teaching practices. In relation to sex and relationships education this may involve returning to typical messages of abstinence, combined with biological aspects and the promotion of condom use. This unexpected finding is summarised in programme theory nine below:

CMOC9.1: Complex adolescent risk behaviour prevention programmes which aim to reduce sexual risk behaviours (C) are more likely to delay initiation of behaviour (O) when a social norms element is included (Mresource) as young people's misperceptions between perceived and actual prevalence among peers are challenged and corrected (Mreasoning).

CMO9.2: Complex adolescent risk behaviour prevention programmes, which take a social norms approach to sex and relationships education (C), are most successful in changing attitudes and beliefs (O) when delivered with peer facilitators (adult led delivery with additional peer support) (Mresource), as young people relate to peers more easily facilitating engagement in open, honest conversation (Mreasoning).

However, empirical research investigating the role of social norms approaches in reducing other risk behaviours, such as substance use, have produced mixed results. For example, the All Stars programme (Hansen and Dusenbury, 2004) was designed to target four core mediators seen as contributing to adolescent onset of substance use:

- Normative beliefs
- Incongruence between substance use and lifestyle
- Commitment to non-use
- Bonding to school

The aim of the programme is described as creating change in these core mediating factors to create behavioural change. The All Stars programme (Hansen and Dusenbury, 2004) draws on techniques perceived as contributing to the success of other programmes, such as discussion sessions, debates and games in whole class, group, and individual

sessions. One to one sessions were included, to address issues for those seen as disengaged from the school community. Either teachers or trained health professionals delivered the programme in schools over a period of 6 months. Despite the programme being ranked high in fidelity in both conditions, results were modest. Teacher led programmes saw a small delay in substance use initiation, and this correlated with desired changes in the predefined programme moderators. However, health professional led programmes saw no significant change. There were no significant results for sexual behaviours, and no significant results on all variables at 12 months follow up. In considering these results, with a specific focus on agent for delivery, McNeal et al. (2004) suggest possible explanations may include poor administrative support for the programme; poor integration in to school life; and lack of motivation of delivery staff, programme delivery skills, and bond between staff and students. It was concluded that while project alert highlighted some important mediating variables, the small effect size found suggests further adaptions are required to produce an effective prevention programme, proposing integration of the programme into schools, and frequent contact with students are vital for success.

Taken together, these findings support the evidence gathered, suggesting that attitudes and beliefs of the programme deliverer, affecting deliverer motivation and engagement, and relationship between deliverer and recipient are central to successful delivery of the programme. Furthermore, interactions between programme design, target risk behaviour (especially more personal components, such as sex and relationships education), and wider social contexts may impact further on programme outcomes in ways which could not be predicted prior to implementation.

School ethos and connectedness

While a broad range of adolescent risk behaviour prevention programmes have been delivered in schools, relatively few programmes have focused on developing positive assets, such as relationships, and connectedness as a core construct (Patton et al.,

2003). It is on these principles that school connectedness programmes, such as The Gatehouse Project (Bond et al., 2004), are based. Initially developed to improve mental wellbeing through the promotion of a positive school environment, the programme was later extended to explore effectiveness of the model in reducing health risk behaviours (Bond et al., 2004). The programme was designed to make changes to school learning environments, introduce relevant skills through the curriculum and increase links with communities, with a key focus on enhancing trust and communication with school staff and peers, and to encourage meaningful and involved participation in school life (Patton et al., 2000). The Gatehouse project was implemented in year 8 (average age 12 years), with continued professional development provided to allow teaching staff to develop and continue to use the skills learned through participation in the programme, in their day to day teaching in years 10 and 11 (aged 13 – 15).

Programme materials and activities were designed to be utilised in health-related classes, such as Personal and Social Health and Economic education (PSHE) and Physical Education (PE), as well as English classes within the mainstream curriculum, integrating tasks such as problem solving, communication and managing stress and emotions in to classes (Patton et al., 2002).

Bond et al. (2004) conducted a randomised control trial to investigate the effects of The Gatehouse project on emotional wellbeing and risk behaviour engagement, including alcohol consumption, tobacco and cannabis use. Results show a modest reduction in substance use, particularly in relation to alcohol and tobacco, for those enrolled in the programme. However, no positive results were seen for development of social relationships, or ratings of depressive symptoms.

In considering the limitations of the study, the authors acknowledged that whole school and community-based programmes can be difficult to implement, and that the programme may not have been long enough to engender a sufficient level of systemic change to bring about changes in social relationships (Bond et al., 2004). Furthermore, they note that

implementing change in only one lesson, outside of those already dedicated to health and wellbeing may not have been enough to influence teacher-student bonding outside of lesson time. Programme 10 therefore highlights the importance of relationships, not just between programme deliverer and those receiving the programme, but with the wider school environment too.

CMOC10: Complex adolescent risk behaviour prevention programmes which aim to reduce risk behaviour through increasing school connectedness (C) are most successful in increasing substance use knowledge, and reducing intentions to use, and engagement in substance use (O) when focusing on improving relationships within school, and acceptance of self and others (Mresource) through increased feelings of belonging and greater self-worth (Mreasoning).

Chapman et al. (2013) conducted a systematic review of school-based programmes designed to reduce adolescent risk behaviour to try to elicit factors which may contribute to their success or failure. However, as stated above, though high levels of school connectedness are related to lower engagement in risk behaviours, it is unclear the direction this correlation takes. It may be that those who are securely attached in other aspects of life, as well as school, are naturally less inclined to engage in risk behaviour, or those who choose not to engage in risk behaviours naturally feel more connected to family and school. The question remains, how do we improve social connectedness, feelings of security and self-regard, and reduce or prevent risk behaviour for those who are at greatest risk?

Chapman et al. (2013) reviewed 14 papers comparing key components and methods, duration, dosage, and size of the study, and key programme outcomes. Many of these programmes were developed and implemented in the united states, except for the

Gatehouse Project (Bond et al., 2004), which was developed in Australia. All programmes had a similar contextual thread of increasing school connectedness and reducing and/or preventing risk behaviours through changes to school policy and environment, and classroom activities. All studies in the review highlight the importance of relationships, particularly teacher-student relationships and peer bonding, often focussing on commitment to, and engagement in school. Intervention strategies for building school connectedness, engagement and commitment focused on positive youth development and frequently included factors such as academic expectations and achievement, strong classroom management, consistent enforcement of disciplinary policies, and encouragement to participate in extracurricular activities.

These methods were also used in the studies included here, however, the link between these factors and increased feelings of security and connectedness is unclear, and seems somewhat at odds with Goodenow's (1993) definition of social connectedness (as outlined in the theoretical framework, p106), which highlights the importance of acceptance of young people just as they are. It may that this focus on academic achievement and striving to fit in, further isolates those young people who are at risk. Furthermore, the focus remains on young people to build their connections with school, rather than asking what schools can do to improve engagement and connectedness for young people (Shackleton et al., 2016).

A commonly occurring limitation on which success of school based programmes is contingent is staff willingness, and ability to engage with the programme, and the availability of time and resources to allow proper implementation. Young people and professionals alike also expressed these concerns, visible within the literature.

Young people felt that time was not made available for health education within the school timetable:

> *"I feel like if somebody is really bothered then they will kind of have to investigate themselves, or not bother ……. I just feel like there isn't enough*

time in, just physically in the timetable for that sort of thing now, unfortunately." (YPFG5).

Whereas professionals feel that changes need to be made in governmental policy and provision, to allow for better integration between education and health:

> *"I think the government misses a trick where, there was a really strong move, to try and, we are talking about getting health services in schools, and there was funding and resources so there were drop in and there were health professionals available for kids in secondary school, partly for contraception and drugs advice, but also for exam stress or bereavement or relationship loss. Just having somebody there to talk to, but we never had. . ., the national lead for education said of course this is where young people are, of course it makes sense so let school fight those battles on their own. There just aren't the time and resources made available, you know?" (PP1).*

These findings are supported by Thurman and Boughelaf's (2015) investigation of teacher and student opinions of substance use education in schools. It is recognised here that substance use education and substance prevention programmes differ slightly in intentions, with a focus on knowledge transfer, rather than a change in behaviour. However, the key themes emerging from the investigation are so similar in nature to the findings of this study that it felt worthy of inclusion. Thurman and Boughelaf (2015) found that approximately one fifth of secondary school students in London had not received any substance use education. Of those who had, 50% stated it was delivered once a year or less, typically as a health driven assembly. Among these students the majority felt that this was not enough, requesting they be given more information on everything across the board, as current provision was not sufficient. Furthermore, Chapman et al. (2013) claimed that health promotion work delivered in schools is rarely co-ordinated or sustained, typically arising in response to changes in government policy, from the personal interests of management, or through experimental testing of new and developing programmes. These programmes are typically short term, problem focussed, and have little to no support for staff.

Taken in conjunction with the expressed need for collegial working, highlighted throughout the empirical and primary evidence in relation to implementation fidelity, it seems that

whole school ethos programmes may be the most effective way to address the shortfalls and limitations typical in multiple health risk behaviour prevention programmes for implementation with adolescents. This is expressed below, in CMOc 11.1

CMOC11.1: Complex adolescent risk behaviour prevention programmes taking a whole school approach (C) are most successful in engaging students (O) as those delivering health information feel supported in delivery by both managers and other colleagues (Mresources), reducing workload stress, and allowing problems to be discussed and resolved quickly (Mreasoning).

Both young people and school nurses felt that joined up working throughout school would be more beneficial, with commitment to health focussed on healthy school meals, more engaging PE lessons, and health drop ins or clubs requested in addition to more traditional curriculum based classes. It was felt that provision of these resources would represent a global interest in the health of young people, rather than a way of controlling and erasing unwanted behaviours alone.

Many of the young people felt that opportunities for a healthy lifestyle were lacking within school, and that school resources were not being used to their full potential. Concerns are represented by the quotes below:

> *"I just think that we're not like educated enough on how to make the right decisions on like our health and how we act around our health and stuff." (YPFG4).*

> *"I don't think the teachers are very motivated, like in my school particularly, the PE teachers aren't really bothered, they'll just sort of let you do what you want." (YPFG2)*

Suggested reasons given for this indicated that attention shifts to academic achievement and exam performance in later school years, and lack of time and resources:

> *"Yeah, we used to have Fit for Life classes but with like coming into Year 11 and stuff those lessons just get of pushed back, just because revision for other lessons kind of takes over." (YPFG5).*

What is more, if any health information was received it tended to be in the form of one off assemblies:

> *"We had an assembly last year about it, but nothing more." (YPFG2).*

School nurses, expressed similar opinions with the majority agreeing that health promotion in schools should go beyond the curriculum, to include other aspects of health, such as Physical education, and nutrition.

> *"I think with schools I think it's about sort of trying to link up as much as you can around, you know, any opportunity to discuss health in schools, because you're still seeing lots of like, you know, things that would contribute to obesity on the menus, it's still happening, so I think any kind of sort of discussions that you can do to try and influence that." (SN2).*

Based on these findings, programme theory 11.2 goes beyond school connectedness to consider how the wider school environment can support healthy lifestyle choices.

CMOC11.2: Complex adolescent risk behaviour prevention programmes delivered in schools (C) are most successful in reducing risk behaviours and promoting positive health choices (O) when taking a whole school approach (Mresource) as young people (a) perceive health to be important (b) feel supported in making healthy choices (Mreasoning), and (c) have resources available to them.

Considering the points made above, in combination with issues highlighted within the cited literature, it became clear that, while school ethos and connectedness programmes are

more comprehensive than single class approaches, there is much more schools can do to promote health and wellbeing, and reduce risk-taking behaviours. On this basis, a further literature search was conducted to investigate whole school or whole systems approaches. I discuss these findings below.

Whole school approaches

The whole school approach deviates from the standard risk behaviour prevention methods, positioning itself within the healthy settings approach to adolescent health and wellbeing (Dooris et al., 2006; Shackleton et al., 2016). The health promoting schools approach was developed based on the Ottowa charter, which states "Health is created and lived by people within the settings of their everyday life; where they learn, work, play, and love." World Health Organization (1986). This approach goes beyond programmes taking place within a setting, to recognise that the setting or context itself can contribute to health behaviours. Much like the assets model of adolescent risk prevention, the healthy settings model shifts from the deficit model of disease, to utilise the intrinsic potential for health and wellbeing promotion within schools. The underpinning mechanism by which this model is proposed to work is the strengthened sense of both self and belonging. The health promoting schools model incorporates health education, along with any activities taken to improve the health and wellbeing of its community, including students, teachers, and other school staff. Healthy schools are defined as “a school that implements a structured and systematic plan for the health, well-being and the development of social capital of all pupils and of teaching and non-teaching staff” (SHE, 2014). The core aim of the healthy schools’ model is to develop multisectorial policies and practices that take the importance of health and wellbeing into account and putting them on an equal footing with educational achievement. While some schools have attempted to implement the healthy schools approach, such as the Gatehouse Project (Bond et al., 2004), they tend to make partial change, never quite committing to the whole paradigm shift. The whole school approach to health has six core components; (i) healthy school policies, (ii) physical environment of school, (iii) social environment of school, (iv) individual health skills, (v)

community links and (vi) health services (Turunen et al., 2017). The whole school approach is based on five core values (equity, sustainability, inclusion, empowerment, and democracy) and five mainstays (whole school approach to health, participation, school quality, evidence base, involvement of schools and communities). Furthermore, it can be extended in to the wider community, including families, community projects, and use of leisure time (Turunen et al., 2017). I consider the role of these wider environmental factors in more depth in the following subchapter (p160).

Programme Dose and Duration

A further aspect to consider which can influence programme success, is the frequency (dose) and length (duration) of the programme being delivered. Though programme dose and duration is relevant to all multiple risk behaviour prevention programmes, it appears particularly salient in programmes delivered in schools. Twenty school based prevention programmes were reviewed for the development of this programme theory. The majority of multiple risk behaviour prevention programmes designed for adolescents are delivered within a fairly short time frame typically 3 to 6 months, and include a relatively small number of sessions or classes, most commonly 6 to 15 sessions (Ellickson et al., 1993, Ennett et al., 1994, Faggiano et al., 2008, Sloboda et al., 2009b). Results among these programmes tend to be moderate at best, with effects deteriorating rapidly following cessation of the programme. However, programmes delivered over a longer period (12 months +), and including a greater number of sessions, (Bond et al., 2004, Botvin and Griffin, 2004, Hansen and Dusenbury, 2004, Faggiano et al., 2010, Hawe et al., 2015), tend to have greater significant outcomes, with changes in behaviour more likely to remain at follow up.

In light of these findings, I suggest that programmes which provide a greater number of sessions (dose), over a longer period of time (duration) are more successful in bringing about, and maintaining behavioural changes, such as delay, reduction, or prevention of risk behaviours. These findings are represented in the programme theory below:

CMOC12: Multiple risk behaviour prevention programmes delivered within school settings (C) are most successful in reducing or preventing adolescent risk behaviours, and maintain behaviour change beyond the delivery period (O) when delivered over a longer period, and including a greater number of sessions (Mresource), as young people have more time to develop the understanding and skills required to facilitate behaviour change (Mreasoning).

5.3 Wider Social Environment

Literature searching to investigate whole school and whole systems approaches elicited research that goes beyond typical information and skills provision approaches, to consider the role of wider social contexts. These whole systems approaches begin to address the complexities of the multi-layered social environments in which young people live and grow, highlighting the limitations of focusing solely on one aspect (typically school/education based), while failing to acknowledge the role of home environment, community resources, and individual differences in the way these social determinants of health combine to impact on adolescent risk behaviours, and needs within a prevention programme. Programme theories, which consider each of these factors, are presented here.

5.3.1 Home Environnent

Chapman et al. (2013) suggested that programmes which were most successful in reducing adolescent risk behaviours included whole school level change, along with a family component (Hawkins et al., 1992, Hawkins et al., 1999, Battistich et al., 2000, Catalano et al., 2003, Catalano et al., 2004, Li et al., 2000, Li and Lerner, 2011) providing support for involvement of the wider social environment, as set out by the Ottawa charter (World Health Organisation, 1986). Further support for increased effectiveness when these elements are included, comes from the assets model (Rutter, 1993, Bernat and Resnick, 2006), and family based interventions. Family involvement is strongly recommended for those who have poor to moderate relationships with parents (Patterson et al., 1992, Deković, 1999). There is a broad range of both theoretical and empirical evidence, which suggest that parental attachment, support, involvement and availability to young people can affect problem behaviour and mediating factors, such as association with deviant peers (Patterson, et al., 1992; Dekovic, 1999).

The need to educate parents was highlighted by professionals, particularly school nurses within this study. It was acknowledged that parental behaviour can influence that of young people:

> *"I think for some parents, as well, it's about educating them because they, a lot of parents don't understand, that's the way they've been brought up and that's, you know, their parents have done that so it's kind of a knock-on effect." [SN2]*

And that educating parents, and having them back up, or support what is being delivered in schools is important to success of the programme.

> *"It's alright going into school delivering the PSHE to the little ones in primaries and all the way up but if you've not got families on board you can teach these kids, telling them they should be doing, you can't move forward with it anyway because you need the backup of the parents." [SN2]*

Home-School communication

An early step in family involvement, which is seen as important to both education, and health and wellbeing of young people, is open channels of communication between home and school. Dishion et al. (2004) cite several reasons for including contact with parents as part of risk prevention programmes, including informing parents of any problem occurring at school, the opportunity to discuss peer relationships, and any impact these may be having, and to provide parents with information or education relating to risk behaviour prevention. Furthermore, parental involvement in young people's school life is thought to promote academic achievement and the development of future aspirations (Kumpfer and Alvarado, 2003). It is proposed that this sharing of information, and attitudes towards health, and health risk behaviours will encourage parents to deliver the same messages at home.

CMOC13: Adolescent risk behaviour prevention programmes delivered in an educational setting (C) are most successful in changing attitudes, beliefs and behaviours (O) when there are open channels of communication between home and school (Mresources) as programme messages are reinforced in a wider environment leading to greater acceptance and internalization of key messages (Mreasoning).

Parental Involvement

The Model of Problem Behaviour (Patterson et al., 1992) predominantly explains adolescent delinquency and antisocial behaviour in relation to involvement in deviant peer relationships. However, it posits that poor parental attachment and poor family management practices, such as poor parental monitoring may underpin the formation of these relationships. The model suggests that these underpinning factors lead to rebellion from the child, driving antisocial behaviour. Lack of, inconsistent, or overly harsh discipline from the parents then exacerbates the problem. The model proposes that this behaviour may then be carried on in school, leading to 'normal' peer rejection and academic failure, reinforcing attachments to deviant peers. (Patterson et al., 1992)

Ary et al. (1999) re-evaluated Patterson et al.'s (1992) model of adolescent problem behaviour development to investigate the extent to which family attachment and peer influence impact on a) an older adolescent population, and b) a wider range of risk behaviours. They suggested that findings in support of this model would provide support for the development and implementation of programmes that aim to modify elements of family functioning in order to reduce adolescent risk behaviours. The extent to which adolescent substance use, sexual behaviours and academic failure can be classified, and treat as one construct are also considered. (Ary et al., 1999)

Based on the model of antisocial behaviour development, Ary et al. (1999) hypothesised that families with low levels of conflict at baseline would have high levels of family attachment and positive relationships. Participants were involved in a longitudinal study investigating the role of family factors that influence adolescent risk behaviours. All participating families had at least one young person aged between 11 and 15. Those with low levels of conflict and high positive relations were expected to be rated highly on parental monitoring at 12 months follow up, which in turn was expected to lead to low levels of deviant peer association and risk behaviour involvement at 24 months.

Findings of the study provide some support for the model, with results showing those families with high levels of conflict and low family attachment relationships were more likely to report low levels of parental monitoring and greater association with deviant peers. Low levels of parental monitoring and association with deviant peers were also correlated with subsequent engagement in risk behaviours (Ary et al. 1999). The results also support the notion that despite increasing importance of peer attachments in adolescence, familial relationships continue to impact strongly on social behaviour and health choices. Given their findings, Ary et al. (1999) conclude that programmes designed to reduce adolescent risk behaviour should include a family element, with components such as improving parental practices, parental monitoring, improving communication in the home, and improving communication between parents and schools. It is recommended that these family elements be implemented at an early an age as possible (pre-13 years) in order to preclude associations with deviant peers, and the onset of risky behaviours.

Among those factors identified within the family approaches, the role of parental monitoring is seen as a key contributing factor in the prevention of risk behaviour (Li et al., 2000). Parental monitoring is defined here as communication between parents (or guardians) and their children, and parental supervision of the young person's behaviour. The aim Li et al.'s (2000) study was to understand adolescent perspectives of parental monitoring, when and how parental monitoring impacts on adolescent risk behaviour, and whether this influence changes as young people age. Previous research supporting the role of parental monitoring was typically conducted with predominantly white, middle class youths in suburban American high schools. To understand the role of culture and status within this construct, Li et al. (2000) conducted this study in a low income, urban area, with a predominantly African American population. A prospective, longitudinal study was carried out with young people aged 9 to 15 over four years, to assess the role of parental monitoring over time.

Results show a strong relationship between perceived parental monitoring and risk behaviour, with those who perceived parental monitoring to be low significantly more likely

to engage in risky sexual practices, substance use, and distribution of drugs at baseline, in comparison to those who rated parental monitoring as moderate, or high. These findings remained significant across testing at 1, 2, and 3 year follow up. However, by year 4, when the average age of the cohort was 15, only involvement in drug distribution remained significant. These findings provide support for perceived parental monitoring as an important mechanism in the prevention of adolescent risk behaviour (Li et al., 2000).

Borawski et al. (2003) aimed to explore the concept of parental monitoring in more depth, breaking the construct down in to three sub-constructs; perceived parental monitoring (attention, tracking, and structuring contexts), negotiation of free time (communication, problem solving, limit setting), and the role of mutual parent-child trust. Borawski et al. (2003) suggest that open communication and trust are as important in adolescent risk behaviour prevention as knowledge of whereabouts. The aim of the research was to explore the role of these three sub constructs on adolescent risk behaviours including sexual activity and substance use (tobacco, alcohol, and cannabis). Data was collected from 692 adolescents in 9th and 10th grade (average age 15.9 years), enrolled in health education classes in urban American high schools. Results provide support for previous findings, with the overall construct of parental monitoring having a significant impact on risk behaviour engagement, with those rating parental monitoring as high significantly less likely to engage in risky behaviours. Somewhat surprisingly, results showed that those who reported their parents allowing them to negotiate unsupervised time with peers were significantly more likely to engage in both sexual activity and substance use, even when communication and trust were rated as high. However, it is also shown that these young people were significantly more likely to engage in protective sexual practices such as condom use and refusal where no protection was available. These findings remained the same for young people who rated parental monitoring as high (calling or texting when late home and knowing the young person’s whereabouts) Borawski et al. (2003). These findings suggest that opportunity to engage in risk behaviours can significantly increase risky behaviour, regardless of parental monitoring.

Females, but not males, within this study rated the third construct of parent-child trust as highly important. However, Borawski et al. (2003) state, it was not possible to say whether trust impacts on risk behaviour engagement, as there is also a strong body of evidence which suggests that adolescent risk behaviour also impacts on trust. Finally, the study concludes that all aspects of parental monitoring, including negotiation of free time and trust, are dependent on open and honest communication between young people and their parents.

These findings were supported by those of Huebner and Howell (2003), who conclude that while parental monitoring is greatly important, it is perhaps open and honest communication between parent and child, which mediates risk behaviour engagement, as parents rely on honest disclosure of activities and whereabouts in order to monitor behaviour. I propose that a collaborative environment, where the young person feels supported in exploring their own autonomy, is most beneficial in successfully transitioning from child, through adolescence, to adulthood. In this light, both overly authoritarian, and overly permissive parenting styles are likely to increase engagement in risk behaviour.

This body of literature led to the refinement and testing of the following programme theory:

CMOC14: Adolescent risk behaviour prevention programmes which incorporate active parental involvement, including family management and parental monitoring skills (C) are most successful in reducing risk behaviours (O) as young people have greater perceived family security (Mresource), because of trust, based on open and honest conversation (Mreasoning).

Selective/Responsive Parental Involvement

While there is strong evidence for the inclusion of a parent or family module within the broader context of adolescent risk behaviour prevention programmes, careful

consideration must be given to the individual needs of the families involved prior to delivery. Those with strong bonds and good practices in family management may experience this element as work overload, or unwelcome interference, causing disengagement from the programme. Furthermore, those with the poorest relationships may feel further disconnected due to embarrassment and/or parental disinterest or refusal to participate. Therefore, family elements should perhaps be selective rather than universal and dependent on individual circumstances (Velleman et al., 2005). Connell et al. (2007) developed an adaptive approach to family intervention, consisting of three elements; a universal classroom based curriculum received by all students; a family check-up, which assessed the social interaction dynamics within the family; and the family management-training element, which was offered to those families who were identified as most likely to benefit from this extra support.

It is typically common practice for universal programmes to be implemented, particularly in schools, so that all participants receive the same programme throughout. However, in response to limited resources, the adaptive approach recognises that individuals, or individual families may have very different needs, and it is therefore not effective to carry out family training with all families when only a small proportion of them might benefit from it. Suggested benefits of this type of approach are; involvement in, and dosage of specific elements of the programme (in this case family management training) are tailored to the needs of the individual; decreased likelihood of negative effects of involvement in unsuitable or unneeded programme components, potentially increasing programme adherence; and increased programme power. The intervention promotes choice, actively encouraging individuals to select the elements of the programme most beneficial to them, with the support of the programme management team. An important limitation for consideration in this approach is that need for programme involvement may be confounded by perceived need, and therefore willingness to engage in further elements of the programme. Adherence to programme elements was closely monitored in Connell et al.'s study (2007) to allow consideration of impact when interpreting the findings.

The Adaptive Family Centred Programme (Connell et al., 2007) recruited 998 adolescents and their families, in 6th grade (aged 10 – 11 years) across three middle schools. The universal element of the programme was implemented in all three schools, and the family centred components were then offered to all students within the programme. Classroom based sessions were modelled on the life skills programme, proposed by Botvin (1980), as described earlier (p109). This component covered academic success, making healthy decisions, building positive peer relationships, problem solving, coping with stress and anger, and respect (Connel et al., 2007). Parent-child tasks were also included to motivate parents to participate in other elements of the programme. The family check-up consisted of three sessions, with families able to opt-in and teachers encouraging participation from those thought to be most at risk. The check-up involved an interview, which allowed parents to discuss any concerns relating to parenting or problem behaviour with a qualified therapist. This was then followed up with an assessment of parent-child interactions within the home (recorded on video), and a feedback session to discuss the specific needs of the family, provide opportunity and increase motivation to engage in the family management training sessions. These comprised of parent training, family therapy and tasks such as role-play and discussions to allow families to practice the skills learned. (Connell et al., 2007)

Within the experimental intervention arm of the study, 115 families elected to take part in the family check-up (23% of participants), with 88 families going on to receive the family management training. Contrary to expectations of the programme, the majority of families elected to have ongoing, periodic meetings throughout middle school, rather than a more intensive therapeutic approach. Outcome assessments were taken in the spring semester from 6th grade through to 9th grade (age 10 to 14 years), with a final follow up in 11th grade (age 17 years) using a specially developed outcome tool (Connell et al., 2007).

Results show that programme engagement is associated with reduced risk of problem behaviours including tobacco, alcohol, and drug use, up to the age of 17. Incidences of arrest for antisocial behaviour and diagnosis of problematic substance abuse in later

adolescence were also significantly lowered. Elevated family conflict was directly related to deviant peer association and increased risk of problem behaviours, while engagement in the family management training was related to improved communication within the family and higher ratings of parental monitoring techniques. These long-term findings provide strong support for the inclusion of a family element in adolescent risk behaviour prevention programmes, when appropriate and/or required, forming the basis of the programme theory set out below.

CMOC15: Family components within complex programmes for the prevention of multiple risk behaviours in adolescents (C) which are offered on a selective basis, to those most in need or who wish to take part (Mresource) reduce workload stress and perceptions of burden (Mreasoning) and prevent disengagement from the programme (O).

However, in those situations where family relationships are poor or damaged, those working in the field suggest, providing attachments to other adults can act as an important protective buffer, preventing social disengagement.

> "I think it is important you know, for people to have loving care and families and alternative things to do, and people wanting to know where they are and what they are doing, you know. Just someone that gives a shit, it doesn't even have to be a parent, if the parents don't … then just someone. Whether that's a favourite teacher or a youth worker or. . .just knowing that if I disappear of the face of the planet someone would look." (pp2).

Further support for this theory is provided by Resnick et al. (1997) who found that the impact of a lack of attachment or connectedness in one area (family, school, peer, community) can be lessened by strong attachment or connections in other areas.

This potentially protective mechanism is set out in the following programme theory:

CMOc16: Young people with poor family attachments are more likely to engage in risk behaviours (C), however, schools where connectedness is high (Mresource) can act as a protective buffer, decreasing the likelihood of risk taking behaviour (O) by providing the young person with an alternative secure bond (Mreasoning).

Family Norms

There is strong evidence that good family relationships can act as a buffer against negative peer influence and risk behaviour initiation, however the negative impact of behavioural modelling of parent behaviour must also be considered. As discussed earlier when defining prevalence of adolescent substance use, and the social determinants which influence uptake (Introduction chapter 3, p9, and chapter 4, p17), evidence shows that parental drinking and smoking within the family home has the biggest influence on adolescent alcohol and tobacco use (Ary et al, 1999; Viner et al., 2012; DiClemente, 2013). I propose that the visibility of the behaviour, parental attitudes towards use and/or conflicting messages received by young people may contribute to adolescent uptake. Despite this evidence, both parents and teachers, and perhaps even young people themselves tend to perceive peer influence as the factor most likely to lead to use. In relation to family based programmes, parent's substance use may therefore reduce programme effectiveness. Within the general population, these behavioural modelling effects are not found for drug use (Ary et al., 1999; DiClemente et al., 2001; Viner et al., 2012; DiClemente, 2013). It is possible that, as this is a more hidden behaviour, young people are less likely to see drug use, or the associated paraphernalia in and around the home, in the way they may see alcohol bottles, lighters or cigarette packets. Though this may differ for the most at risk families, where parental substance use is an issue.

CMOc17: Adolescent risk behaviour prevention programmes designed to change misperceptions of social norms (C) are less likely to be successful in changing attitudes and beliefs (O) if family norms contrast with social norms as adolescents are more likely to witness and normalise risk behaviours (Mresource) leading to a) behavioural modelling b) decreased belief in the programme messages c) reduced fear of consequences/punishment d) reduced fear of health consequences (Mreasoning).

Evidence from the vignettes (gathered in phase Four, p100) supports these propositions, particularly those of behavioural modelling, and reduced fear of consequences, with young people stating that seeing behaviours at home, such as smoking and drinking may increase the likelihood of young people taking up these behaviours. Reasons suggested for this included less fear of the consequences of being caught, and increased access to cigarettes and alcohol, with some young people stating that their first cigarette or alcoholic drink had been taken either from their parent's supply, or the parents of a friend. Suggested approaches to reduce these risks included telling parents to remove visual triggers, such as smoking and drinking in front of young people, and to limit access to substances, for example keeping cigarettes on their person, or in a bag, and keeping alcohol in a locked cabinet or undisclosed location.

In addition to communication between home and school about peer relationships and parental monitoring of adolescent free leisure time, positive peer association and constructive use of free leisure time can also be beneficial in reducing risk behaviour engagement.

5.3.2 Peer Relationships and Community Resources

Kristjansson et al. (2010) investigated the role of structured positive or healthy leisure time in the prevention or reduction of adolescent substance use. Based on previous research findings, which showed that adolescent engagement in risk behaviours in Iceland has been attributed boredom, and unsupervised activities such as parties, while abstinence from risk behaviours has been associated with parental monitoring and structured, supervised activities such as team sports (Sigfusdottir et al., 2008). Developed by the Icelandic centre for social research and analysis, in collaboration with health professionals, schools, community youth workers, parents and young people, the programme aimed to prevent or reduce adolescent engagement in substance use, through increased parental monitoring and provision of opportunities within the local community for participation in sports activities and community projects (Sigfusdottir et al., 2008). Community projects were seen as particularly important within this asset based model, as they allowed young people to identify and engage in activities they enjoy, rather than being told what to do.

Findings show a consistent pattern across the intervention period, with parental monitoring and youth participation in activities increasing from year to year, with tobacco, alcohol, other substance use, and attendance at unsupervised parties declining for those in the intervention arm of the trial (Kristjansson et al., 2010). These results may be partly attributed to the ongoing national media campaigns and school health classes being implemented in Iceland throughout the research, as part of the wider policy response to rising levels of adolescent substance use, as decreases were seen in both the experimental and control groups. However, as increases in parental monitoring, and decreases in substance use and party attendance were significantly greater in the experimental arm, the programme seems to have demonstrated some success.

Healthwise South Africa was designed to reduce substance use and use and risky sexual behaviours (Wegner et al., 2007: Smith et al., 2008; Caldwell et al., 2011; Tibbitts et al.,

2011; Weybright et al., 2016). The inclusion of risky sexual behaviours here allows further exploration common underlying causal mechanisms, alongside other risk behaviours and investigate how risk behaviours interact with each other, for example, alcohol use and sexual practices. Life orientation is a compulsory subject in 12th grade (age 17) in South Africa, and includes health promotion, wellness, and wellbeing as core learning outcomes. However, delivery of this curriculum differs greatly between schools, with poorer schools where risks are higher, less likely to deliver the classes, as is often the case regardless of location (Tibbitts et al., 2011). Based on the motivation-skills decision making model, in conjunction with the assets approach, Healthwise is a comprehensive programme which aims to reduce risk behaviour by increasing the influence of protective factors such as positive behaviours and attitudes, including skills to use leisure time in a positive way, as defined by the assets approach discussed in the theoretical framework (p106). Behaviour change techniques utilised by the programme include self-management skills, relationships, skills to avoid and refuse risk, and knowledge about substance use and use and risky sexual practices. The programme is delivered, in addition to standard curriculum, over 17 sessions delivered in 8th grade (Wegner et al., 2007). Initial fidelity and efficacy testing found a moderate positive effect on substance use and significant positive effects on perceptions of condom availability and knowledge of condom use on self-report measures (Smith et al., 2008). Based on these findings the Healthwise programme was then rolled out on a larger scale.

Further testing of the model by Tibbitts et al. (2011) found delayed onset of substance use and increased condom use across all intervention groups. However, given the increased national awareness of HIV and AIDS and media drives to increase safe sexual practices, this result may not be solely a result of participation in the programme, and wider contextual factors need to be kept in mind when interpreting the findings. Weybright et al. (2016) provide further support for the influence of healthy leisure time in reducing adolescent risk behaviour. However, they also highlight the need for understanding the contextual factors and mechanisms through which leisure time and risk behaviour engagement intersect.

CMOc18: Complex adolescent risk behaviour prevention programmes which provide links to and opportunities for participation in community based projects or teams (C) increase prosocial relationships (Mresource) and reduce engagement in risk behaviours (O) through the provision of structured semi-supervised activities which increase social engagement, self-esteem, feelings of self-worth, and allowing the development of future aspirations (Mreasoning).

Weybright et al. (2016) suggest that it is important to understand not only what young people are doing with their time, but how they are experiencing it (Is it enjoyed? Do they feel connected? Is there a sense of achievement?), and context in which the activity takes place (Is it available to all? Is it supervised? How much freedom do young people have?), positing that it is not simply those who engage in social activities, who are less likely to engage in risk behaviour, but those who experience organised social activities in a positive way.

In addition to this, similar to programme theory 15 relating to school connectedness, community resources can act as an important buffer or source of connectedness for those who have poor attachments, either at home, school or both, or who feel excluded from universal health education.

CMOc19: Complex adolescent risk behaviour prevention programmes delivered in community settings, which provide support and advice for health behaviour and risk prevention, particularly sex and relationships education (C), can help to reduce risk behaviour in those who feel disengaged from school, or excluded from the school health curriculum and community (Mreasoning), for example LGBTQ youth, acting as a protective buffer through the provision of a source meaningful attachment, as well as information and resources (Mresource).

This may be particularly salient to those of minority backgrounds or cultures, such as LGBTQ youth. The programme theory below relates to community settings as a buffer, however I address cultural differences later in part 5.4.2, (p178).

5.4 Personal Factors

In this subchapter, I move beyond factors introduced by the programme, and the wider social contexts in to which the programmes are delivered, to consider personal and individual characteristics, including gender, cultural influences, and age and developmental stage of the participants. Many of the factors discussed previously can be changed, manipulated or influenced through involvement with the programme. Personal factors remain fixed, and the purpose here is to consider how programmes can be changed or adapted to make them more sensitive to individual differences such as these.

5.4.1 Gender

As previously discussed when considering design, delivery, and, risk behaviour, the A-Pause programme implemented by Mellanby et al. (1995, 2001) was found to be more successful in reducing sexual risk behaviours in adolescents when implemented with both a teacher and peer facilitators. Programme success was further improved when delivered in split gender groups, particularly for females who engaged more openly with material, taking part in frank and honest conversations relating to knowledge and experience of relationships and sexual health and wellbeing. Observations taken by Mellanby et al. (2001) during programme delivery suggest that young men took longer than young women to settle down, and open up, displaying a tendency to make jokes, and show off at first. Though sex education tends to be delivered in gender split groups in schools, supporting evidence to explain this delivery style is not always evident; therefore, I have included the reasoning and supporting evidence here, in the following programme theory:

CMOC20: Complex adolescent risk behaviour prevention programmes which deliver sensitive subject matter, such as sex and relationships education (C) are most successful in changing behaviour (O) when delivered in gender split groups (Mresource), as young people are able to engage openly and honestly leading to greater participant engagement (Mreasoning).

Further to this, Mellanby found, the Apause programme was more successful in delivering information or education relating to social norms, reproductive health, and safe sexual practices, when delivered by someone of the same sex as the recipients.

CMOC21: Complex adolescent risk behaviour prevention programmes which deliver sensitive subject matter, such as sex and relationships education (C) are most successful in changing behaviour (O) when delivered by someone of the same sex as the recipients (Mresource), as young people feel more comfortable in talking openly and honestly, and have greater trust in and affinity with programme deliverers (Mreasoning), leading to greater participant engagement (Mreasoning2).

Further support for the consideration of gender differences in design and Implementation of multiple risk behaviour prevention programmes for adolescents comes from studies relating to both free leisure time, and family connectedness and management studies.

Throughout the implementation of the Healthwise programme a number of gender differences were observed, and, in some instances, steps taken to overcome them. In the earlier iterations of programme delivery, it was noted that the programme had some negative impacts, with females becoming sexually active sooner than those in control groups, while an increased likelihood to use cannabis was observed young men in the

experimental arm. Though it is noted within the public literature that the programme was adapted to address these issues, it is not made clear exactly what these changes were, and some gender differences remained in follow up studies. In a further evaluation of the Healthwise programme, entitled ‘Girls just want to know where to have fun’ Motamedi et al. (2016) found that programme success was mediated by experience of the leisure time component, with those rating it as a positive experience reporting more positive programme outcomes, particularly for alcohol consumption and tobacco use. Gender differences, Motamedi et al. (2016) suggest, arise from females taking more enjoyment from leisure activities, as parents who are concerned for their safety often heavily restrict the free time of young women.

Similarly, in exploring gender differences in prevention programmes with a family component, Caruthers et al. (2014) found that young women were more likely to report family conflict in relation to risk behaviours, while males who reported good family connectedness also reported a later sexual debut.

Many programmes implemented did not measure for, or report gender differences in programme findings, making it difficult to define contexts or mechanisms for these observed differences in a meaningful way. However, it may be beneficial for future policy makers, programme designers, and programme users to observe programme outcomes by gender, and make adaptions where necessary to accommodate differences in learning style, and life experiences of young males and females.

5.4.2 Culture

It is widely acknowledged that incorporating the voices of young people in the development of both policy and practice, when it concerns their health, wellbeing, and education is imperative in developing tools which are sensitive to their needs and experiences, and relevant to their social and cultural contexts (Weil et al., 2015). Within the field of multiple risk behaviour prevention for adolescents, a number of programmes have attempted, with varying degrees of success to acknowledge and address this within programme development and/or delivery, typically through engagement with a stakeholder panel which includes young people from the target population (Bond 2001; 2004; Patton, 2012; Newton et al., 2009; 2012; 2014). The purpose of these panels are to ensure that, while programmes are based on sound theoretical foundations, and may incorporate behaviour change techniques and strategies from previous empirically tested programmes, strategies are also included which are directly relevant to the target population and are sensitive to local cultures and resources. Furthermore, failure to acknowledge, and adjust for these contextual differences may explain why programmes are less successful when scaled up for universal delivery post-pilot testing. Recognition of these broader cultural issues contributed to the development of the following programme theory:

CMOC22: Complex adolescent risk behaviour prevention programmes which are culturally sensitive (C), and designed specifically within the intended population (Mresource), are most successful in engaging students and changing behaviours (O) than ready-made programmes which are parachuted in as students feel more valued, and the programme meets the learning needs of the population (Mreasoning).

Healthwise south Africa (Wegner et al., 2007) incorporated a qualitative exploration of these social and cultural contextual factors, consulting with young people, educators, and the wider community (including those running community projects and leisure pursuits) to

better understand barriers to meaningful engagement. Key areas highlighted by this research included cultural and religious differences in attitudes towards and beliefs around relationships and sexual practices, and difficulty in accessing community resources in areas of low socio-economic status. Barriers identified here included a lack of community resources, financial costs, and access to transport to and from activities. Similar difficulties in accessing programmes, or community resources outside of school were highlighted by both young people and professionals within this study.

Young people highlighted both the lack of availability of, and cost of accessing local community resources outside of school as a problem that was salient to them, represented succinctly in the following quote:

> *"There isn't a great deal of things that we can actually be involved in without being a heavy cost to them all the time, whether it's going swimming or you know doing any kind of sport really" (YPFG1).*

While professionals involved in community support noted that transport could place a significant barrier in the way of accessing resources, particularly for those from rural or isolated communities, or when accessing resources such as sexual health clinics, where they may not want to tell parents about their intention to attend. These issues are represented by the following quote:

> *"You can signpost people to the community service, but there is only one clinic one night a week, and if you live outside the area, how do you get there? Especially if you want to keep it confidential. Then they have got to get busses or ask parents for a lift. . . Mam take me to the clinic I have got something gammy going on! can you imagine? Not"* (PP4).

Suggested solutions to these issues included drop in clinics held within schools, and after school clubs rather than community resources. However, access ad financial cost issues remain.

A further solution suggested by one professional I interviewed, for those in rural communities, or those who are afraid to access services by themselves, was the peer

mentoring scheme. Schemes such as this provide young people with social issues access to a peer supporter. Peer supporters are typically similar in gender and culture, and in this instance, are mapped to the young person through "*responses to a personal interests' profile, similar to those used by dating agencies" (PP3).*

Peer supporters are then able to provide transport, or accompany the young person on public transport, and support them in accessing services. However, I was unable to find any supporting empirical data on the existence or use of these peer-mentoring schemes at the time of conducting this research.

Despite a promising move towards the inclusion of young people's voices, and attempts to overcome some of the barriers which limit or prevent access to resources, some minority groups feel disconnected, or excluded from current health and wellbeing, and risk reduction provision, particularly when delivered in a school environment, where classes are generic and follow a somewhat prescribed format. One such group highlighted during the course of my research was that of young people who are questioning about their sexuality or gender, or identify as belonging to the LGBTQ community. This was identified of being particularly salient in relation to relationships and sex education, though it can impact on other risk behaviours too as young people may feel disconnected from school, peers, and family where sexual orientation or gender is not accepted, leading to feelings of social isolation.

The World Health Organisation (WHO, 2006) states that sexual health is more than just the absence of disease, or the implementation of safe sexual practices, but involves a sensitive understanding of, and approach to, relationships, sexuality, and sexual practices, including the possibility of pleasurable sexual experiences. Using this definition of sexual health, Mustanski et al. (2015) argue, makes recognition and acceptance of sexual orientation and gender identity are key factors for inclusion.

Despite this, sex and relationships education, delivered in schools, continues to take a heteronormative approach. Many studies, particularly those developed in America, include questions such as 'when was your first heterosexual experience?' in data collection tools

(Abbott et al., 2015, McNeill, 2013), immediately excluding anyone who does not identify as heterosexual. Furthermore, typical sex and relationships education tends to focus on sexual and reproductive health, with the aim of reducing the spread of sexually transmitted infections and diseases, and underage pregnancy, rather than fulfilment in relationships, or pleasurable and safe sexual experiences (Pound et al., 2017).

Professionals, rather than young people themselves raised these issues, however, this may be because young people in this research were never asked directly about sex and relationships education, as it was feared this might cause embarrassment. In discussing these issues, professionals made statements such as:

> *"It just beggar's belief. teach you to read write add up and do crazy experiments but we will teach you fuck all about yourself, your body, and the world you live in. The realities that you are all going to experience we are not going to talk about those things. What about LGBT kids? Or kids who wouldn't class themselves as lgbt but actually enjoy or are curious about things?" (PP4).*

> *"There is an assumed heteronormativity to a lot of that stuff. and where does that leave our vulnerable young people who are questioning, I mean it is very easy to drop people in to a gay or straight category and, I don't, I never got anybody to explain, so when does that start to happen, you sort of know that but presumably, if we assume that most of our young people under the age of 16 are, have not had penetrative intercourse, which is probably true, but where does that leave those young people who are gay, or are vulnerable, and we know that their mental health suffers, their bullying and stuff is far more acute, if we always assume that heteronormativity, if we are not just more inclusive in our language. erm, but that needs confidence from teachers, that needs skills, that needs training, and that clarity of what it is we are trying to communicate, not just the school nurse coming in and saying if you have got any problems come and see me, oh and don't forget to use a condom" (PP1).*

Discussions with youth workers from a local community youth centre highlighted the important role community resources can play in bridging the gap between school provision, and the needs of young people from minority backgrounds, providing supportive groups such as regular LGBTQ youth clubs. However, issues with access such as

transport and confidentiality can still act as a barrier, and the need to attend an outside group can further impair school connectedness.

The purpose of this study is to explore what works, for whom, in what circumstances, and why in relation to the prevention of multiple risk behaviours in adolescents, and the scope of the review is too broad to do justice to this important issue here. However, the point remains to be made that risk behaviour prevention programmes, and the language used within them needs to be open and inclusive of these issues if they are to be truly successful in promoting healthy relationships.

5.4.3 Age

The developmental approach to defining adolescence provides an interesting perspective from which to consider variations in programme results (Onrust et al., 2016). As set out in the introduction, adolescence can be sub-divided in to three phases, early adolescence, mid-adolescence, and late adolescence. Each stage with its own physiological, psychological, and sociocultural changes, challenges, and needs (Steinberg, 2014). Furthermore, Ellickson et al. (2003) define three groups or stages of risk, non-users, experimenters, and users. Using measurements taken at baseline, non-users are those who have never engaged in a particular behaviour at all, experimenters are those who may have tried a behaviour at least once, but no more than a few times. Users are defined as those who regularly engage in a specific behaviour or behaviours.

Findings from Project Alert (Ellickson et al., 2003), which takes a skills, motivation, decision making approach to risk behaviour prevention, had the greatest significance for those in the non-users group, showing lower rates of initiation, and lower frequency rates in those who had begun experimenting with, or using tobacco or cannabis since beginning the programme. These results are supported by the theory underpinning the social norms approach (Ajzen and Fishbein, 1980), which states that behaviours which are no longer under volitional control are much more difficult to change. Given the highly addictive

propertied of tobacco, it would be fair to assume that those smoking cigarettes, or using cannabis in conjunction with tobacco products may already be becoming addicted, and therefore less able to choose to stop without additional treatment.

CMOC23: Complex adolescent risk behaviour prevention programmes which aim to reduce tobacco use (C) work best in delaying initiation, and therefore lifetime consumption at time of testing (O), when started prior to initiation (Mresource), when the choice to smoke is still volitional, rather than habitual (Mreasoning).

Further support for considering age of implementation, and level of risk (non-user, experimenter, or user) comes from the Healthwise south Africa programme (Tibbits et al., 2011) which found that greatest programme effects in delayed initiation, and in increasing safe sexual practices was among those who had not engaged in sexual activities at baseline. These findings suggest that something more than volition is contributing to programme outcomes. While these findings, along with rates of risk behaviour prevalence, and decreasing age of risk behaviour initiation globally, suggest it may be beneficial to implement risk prevention programmes from an early age, prior to initiation, there is some evidence to show that this is not the case for all risk behaviours. Results from The Climate Schools ecstasy module (Champion et al., 2015), implemented with young people aged 15 years, showed no significant results for initiation or frequency of use in comparison to controls. However, further interrogation of the data revealed that none of the participants in either the experimental or control arm had tried ecstasy at baseline, or 6 months follow up.

CMOC24: Complex adolescent risk behaviour prevention programmes which aim to reduce substance use, particularly class A drugs (C), are most effective in changing behavioural outcomes (O) when implemented later (aged 15+) (Mresource) when it has relevance in the lives of young people (Mreasoning).

That is not to say that starting younger is damaging, or has no effects, but effects cannot be realistically demonstrated at this stage.

Furthermore, given the broad definition of adolescence used here (10 – 24 years), the age at which behaviours are considered risky must also be considered (here risk is used to discuss normal use of, or engagement in a particular behaviour, not abuse). For example, engagement in any of the behaviours being investigated (alcohol consumption, use of tobacco and other substances, and sexual behaviours) at the younger end of the scale would be considered risky, however, post 16 years of age sex becomes legal, and while practicing safe sex remains important, abstinence is no longer a suitable approach. Similarly, with alcohol consumption and tobacco use post 18 years of age, use becomes legal, and abstinence approaches become unacceptable. At this point only substance use remains a risk behaviour from which we may reasonably encourage young people to abstain.

The majority of papers included in this review targeted risk behaviours in young people aged 12 to 14 years, which falls within early adolescence. Though reasons for recruiting participants within this age band are not cited within the published literature reviewed within this study, it would seem that this is considered the optimal age for implementation. However, programme effects remain small. Taken with the findings relating to dose and duration, and considering the changes in cognitive ability, and sociocultural needs during adolescence, it may be that programmes which take a stepped approach to implementation, starting prior to adolescence, and building up information and skills incrementally, as young people grow and develop, would be more successful in bringing

about behaviour change. I consider these propositions further, in light of supporting evidence and substantiating theory, the development of middle range theories in the following chapter.

Chapter 6
Middle Range Theories

The findings, presented in the form of programme theories or CMO configurations in the previous chapter, building and evidencing programme theories (p117), explore patterns in programme design, implementation, and delivery, as well as in the contexts in to which the programme is delivered, and the individual characteristics of all active agents, including programme deliverers, support networks, programme recipients, and their families and friends. Through conducting this review, I highlighted a number of factors that improve or inhibit a programmes potential to prevent or reduce adolescent risk behaviour. These include: training, adaption, support, and programme fidelity; the role and qualities of the programme deliverer, the approach and content of the programme, in relation to target behaviour, and programme deliverer; the positive and negative impacts of home and community environments; and the potentially mediating factors of gender, culture, and age.

Here I look across these themes, at a middle range level of abstraction, to identify potential explanatory theories, providing evidence from related substantive theory to support the claims made from this analysis, as discussed in Methods subchapter 3.6, Data analysis, (p103). Key themes identified during this phase, along with related substantive theories are summarised below:

- **Relationships** – Theories of leadership, collaboration, and collegiality, Attachment theory, primary socialisation theory, the family stress model, and social identity theory.
- **Health education, risk behaviour prevention, and behaviour change** – Social learning theory, social norms theory, information motivation skills decision making model, theory of planned behaviour, health education model.
- **Community, culture, and health Inequalities** – Problem behaviour theory, resiliency theory, social development model.

Though each of these themes are described individually, for the sake of clarity, the relationships between themes remain multiplicitous and interconnected (as demonstrated

in figure 4). These relationships are discussed further, highlighting the importance of understanding the role they play in future programme development and delivery, within the thesis discussion (p263).

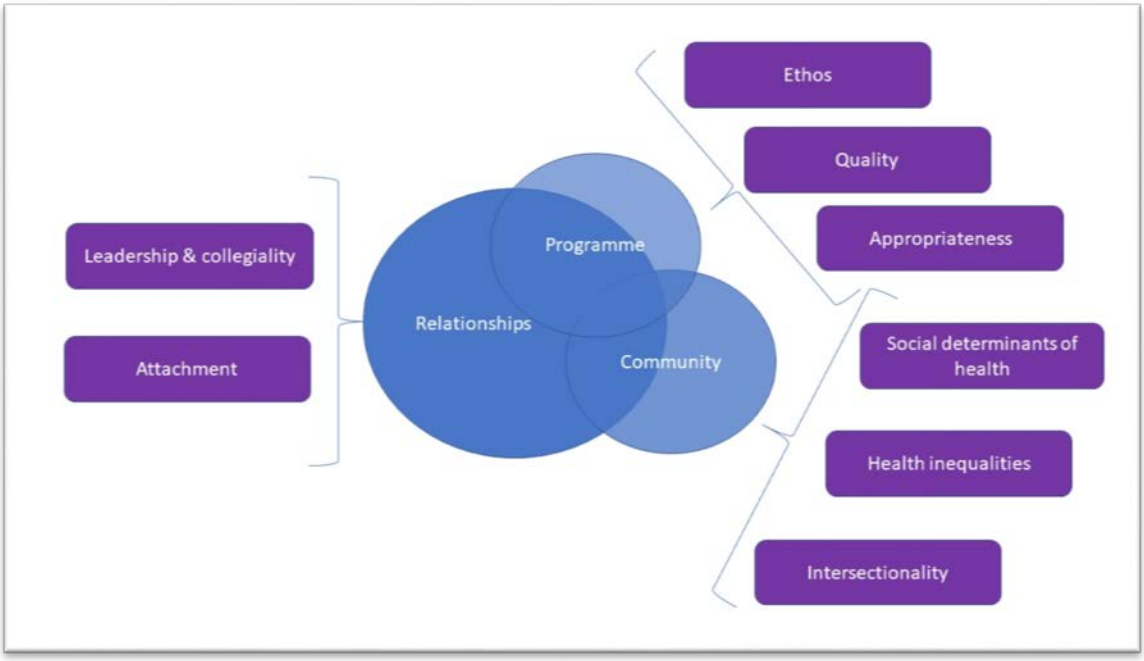

Figure 4: A diagram demonstrating the relationships between overarching, and middle range theories

6.1 Relationships

Across all of the programme theories, the role of relationships was the most commonly occurring theme. This theme goes beyond the expected impact of the relationship between programme deliverers and recipients, and familial and peer attachments, also taking in to consideration the relationships between programme and school leaders and staff, support networks and collaborative relationships between staff, and wider social connectedness within the community. Each of these relationships, presented below in figure 5, are considered in relation to relevant programme theories, in light of supporting substantive theory.

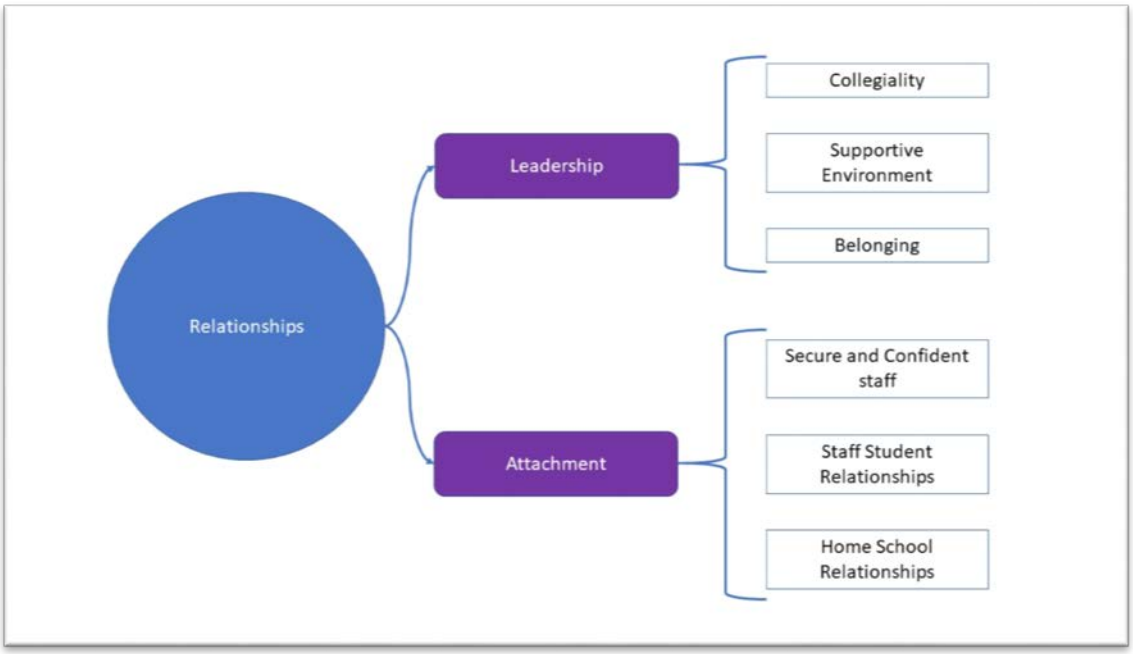

Figure 5: Diagram demonstrating the relationship between the overarching theme of relationships, middle range theories, and the programme theories they underpin

The role relationships can play in adolescent risk behaviour prevention is an important factor, which I suggest, needs to be considered right from the start, in programme planning and development. In the early planning stages of this research, prior to beginning data collection, while developing the scope and focus of this research project, the need to consider the role of the relationship between programme deliverer and programme recipients, both from stakeholder, and theoretical perspectives, became apparent. As

previously discussed, the initial question posed was ‘How, when, and in what circumstances do peer led interventions result in risky behaviour prevention strategies in adolescents?’.

Peer approaches to delivery were becoming increasingly popular for the delivery of health information to adolescents. However, it quickly became apparent to me, both from stakeholder feedback, and the existing literature within the field of peer intervention, that peer delivery was not acceptable to many young people, and that the rationale for peer intervention was largely based on assumptions about peer influence, with very little theoretical underpinning.

Further issues for consideration prior to delivery were highlighted when considering implementation fidelity in subchapter 5.11 of building and evidencing programme theories, (p120). Though the focus here was initially to adjudicate between theories relating to deliverer training and programme fidelity (PT1), and programme adaptability (PT2), the role of relationships became apparent during analysis of the supporting evidence. Key relationships highlighted here relate to those delivering the programme, and include support from those managing the programme, and school leaders (PT3), and the need for collaborative or collegial working, with shared responsibility, reduced workload, and increased confidence in carrying out the role (PT4), identified as potential causal mechanisms impacting on programme success.

6.1.1 Deliverer Support

Key theories identified, which relate to deliverer support, especially when delivered by teachers in schools, as so many of the studies included here were, are those which relate to leadership and collegiality. Though evidence for leadership and collegiality tends to stem from literature with a focus on education, I consider the impact on adolescent risk behaviour prevention programmes, in light of the evidence, here.

Leadership

Leadership within the school setting may be seen as serving two functions; one relating to business, audit, and accountability; and the other focussed more on development and support of the school community, from the students up (Anderson and Sun, 2017). The purpose here is to consider how the approach to, and quality of leadership style may impact on workforce engagement and performance, in turn impacting on student engagement, in risk behaviour prevention programmes, academic attainment, and wider school life.

Transformational leadership, considered the most effective leadership model for use in educational settings, is defined as "*working together towards a common or unifying interest"* (Gunter, 2001). Involving a merging of leader and staff motivation, Leithwood (1994) identified eight core constructs for transformational leadership: Building school vision, establishing goals, intellectual stimulation, support, behavioural modelling, high expectations, a productive school environment, and increased engagement. However, despite a positive move away from more a typical managerial style of instructional leadership, this leadership model has been criticised as overly prescriptive, and controlling, driven largely by governmental policy (Bottery, 2001).

Similarly, to the transformational model of leadership, Bush and Glover (2003) define leadership in relation to educational settings thus:

> *Leadership can be understood as a process of influence based on clear values and beliefs, leading to a 'vision' for the school. The vision is articulated by leaders who seek to gain the commitment of staff and stakeholders to the dream of a better future for the school, its students and stakeholders (p. 5).*

Moreover, Bush and Glover (2003) propose that leadership should be grounded in, and nurturing of, personal and professional values and beliefs, including: valuing every member of the school as an individual; taking a whole person approach to growth and development, inside and outside of the classroom; and recognising the role of trust, value, and praise in encouraging and supporting both staff and students. Considered in this way, leadership relates not to the skills and attributes of

one person (a head teacher for example), but to the interactions, attitudes and support networks within a system which provide security, and facilitate best practice.

Louis et al. (2016) suggest the key construct of this type of leadership is that of care, positing that student achievement is strongly mediated by social relationships between and among students, teachers, leaders, and parents. Based on this premise, Louis et al. (2016) propose that caring leaders and a supportive school community form the basis of successful working, and wellbeing for both staff and students.

Definitions of caring within the educational literature vary widely, however, common factors include empathy, respect, trust, and the cultivation of an environment where individuals feel secure, feel their needs are being met, and are able to grow and develop in their own right (Bass and Bass, 2009). Furthermore, Louis et al (2016) state, care begets care, with cared for staff, particularly teachers, better able to pass on care to colleagues and students.

However, Louis et al. (2016) argue, despite strong evidence for the positive impact of care on both academic attainment, and staff and student wellbeing, the approach remains underused in school policy and practice. Furthermore, the importance of caring leadership and collegial working for teachers and other school staff is often overlooked, with school leaders reverting to outdated, information transmission models of leadership in response to pressures to meet with attainment targets (Anderson and Sun, 2017).

Collegiality and Collaboration

In order to fulfil this caring approach to education, allowing teachers or programme deliverers to grow, develop and learn, Harris and Anthony (2001) suggest trust, respect, and support should not just come from leaders, but should occur also between colleagues. For the last decade, theories of leadership and collegiality, or collaborative working, have shown that leadership styles where practice is

managed, and instruction is provided in short, one off meetings is unsuccessful. Furthermore, this style of working can undermine teachers' expertise, leading to resentment and defensiveness from staff (Harris and Anthony, 2001).

Collaborative approaches suggest a very different approach in which staff are encouraged to learn from experience, and work collaboratively to solve problems that may occur in practice. Here there is a shift from teaching in isolation, to interaction, conversation, and a sharing of problems or issues (Harris and Anthony, 2001). Furthermore, the importance of collaborative leadership styles, a supportive environment, and a good teacher network, which allows for communication in and outside of school, were highlighted. While the importance of collegial working is recognised, it is often seen as difficult to implement, and is not a quick or short-term solution. The building of strong collegial bonds between staff at all levels takes time to cultivate and nurture, with time, resources, and adherence to current government policies seen as barriers to development (Harris and Anthony, 2001).

Despite this recognition in the literature, relating to education, teaching, and academic achievement, adolescent risk behaviour prevention programmes, delivered in school, tend to employ a more traditional format, whereby teachers delivering the programme take sole responsibility for delivery, and training or instruction for delivery take place in one short session. While it may be considered without the remit of the programme being delivered to influence existing leadership and working styles within the educational setting in which the programme is delivered, evidence from the literature, stakeholders, and theoretical underpinning suggests that support, collegiality, and reciprocity are key to improving deliverer engagement, and vital to programme success (Pearson et al., 2015).

The evidence presented here suggests two levels of change for consideration, in the shorter term, at the level of programme design, deliverer recruitment, and implementation, programme developers, and school leaders should take in to consideration the need for support and shared responsibility, while, in the longer term, policy level changes should consider the role of caring leadership, and collegiality for the benefit of staff and student wellbeing, and academic achievement.

As previously stated, good leadership, and collaborative working, leading to a caring school environment is not only seen to be beneficial for teachers, but also influences the teacher student relationship, and can directly impact on student engagement, attainment, and behaviour (Louis et al., 2016). Below I discuss the factors that influence this relationship, and the impact this has on programme success.

6.1.2 Deliverer – Student Relationships

The relationship between programme deliverer and recipients was highlighted as the most important factor by young people involved in this study, with deliverer role (PT5), and personal and professional qualities of the individual/individuals delivering the programme (PT6) causing much debate. While these are the issues most salient, and therefore most important to young people, it is important to consider these factors here in light of those highlighted above.

The issue of greatest concern to young people revolved around who should deliver health education, such as risk behaviour prevention programmes, to adolescents. As demonstrated when evidencing programme theory five (PT5), evidence from the first four focus groups suggested that adolescents would prefer not to receive this type of education from teachers, with professionals such as the school nurse being seen as more trustworthy, both in terms of information received, and in confidentiality. This proposition carried the most feeling with young people from focus groups 1 and 3. Both were mixed gender groups, from low socioeconomic status areas, with low perceptions of school connectedness, mediated, in this

instance, not by academic achievement, which was never discussed, but by relationships with, and trust in school staff. Participants in these groups felt strongly that teachers were there, not to care for them, but to tell them what to do.

This perception of the teachers' role can be related back to leadership styles. Here, the teacher becomes a middle leader with students as 'followers'. Evidence from young people suggests that teachers in this instance are employing an instructional leadership style, with the teacher positioned as expert, guiding student learning and behaviour. This relationship appears then to mimic that of school managers and teachers, with young people becoming defensive, and failing to develop and utilise their own skills for problem solving.

Further evidence of these propositions comes from observations made during data collection, and further investigation of school ethos and related policies. As previously discussed, young people in the final focus group (YPFG5) felt much more confident is discussing health issues with teachers, and expressed a preference for teachers as programme deliverers. Opinions in this focus group differed greatly from those in other focus groups, with teachers seen as approachable, caring, and trustworthy both in, and outside of the classroom. Looking to explain this somewhat surprising difference in attitudes, I examined school policy for this particular group, by looking at the school website and prospectus. The school in question identifies as a specialised sports college, with a holistic approach to education, placing health and wellbeing of all members of the school on an equal footing with academic achievement.

Theories of caring relationships provide support for the employment of teachers in the delivery of health education, identifying depth and duration of relationships as an enabling factor for engagement (Louis et al, 2016). Knowledge of individual needs, attentiveness, and increased opportunity for open and honest communication are identified as key to success.

However, Louis et al. (2016) recognise that education, particularly health education, or risk behaviour prevention programmes, can be delivered successfully by external agents, such as health professionals, who may not have this longevity, or personal knowledge of the young people. Relationship building here is dependent on the skills of the deliverer in fostering trust and encouraging open communication, and the willingness of the young person to engage with the material being delivered. From the adolescents' perspective, health professionals are perceived as having genuine regard for young people's health and wellbeing, being more knowledgeable on health related issues (informational trust), and as having greater commitment to maintaining confidentiality.

Louis et al (2016) substantiate this, citing trust as a further enabling factor, and a key concern for young people. Trust is defined as consisting of four core constructs; honesty, openness, benevolence, and competency. Louis et al. (2016) state that trusting relationships facilitate mutual regard, and take an approach which demonstrates care and respect. Furthermore, in order to engender trust, programme deliverers must demonstrate that they are acting in the best interests of the young person, and have the knowledge and skills required to do so in a meaningful way.

Unfortunately, in all but the final young people's focus group, many of the young people participating felt that trust was lacking from teacher – student relationships. This was particularly salient for those from areas of lower socioeconomic status, and in young people who were receiving little or no health education in school. A key factor, highlighted in the theoretical literature, for consideration in forming and maintaining good relationships between teachers and students is attachment (Woolf, 2011, Verschueren and Koomen, 2012, Riley, 2013). Here I apply attachment theory to the teacher – student relationship from two perspectives; adolescent attachment, and teacher attachment, motivation, and impact on pastoral care.

Defining Attachment

Bowlby (1963) defined attachment theory from two key perspectives. That of attachment behaviour, and the attachment bond. Attachment behaviours relate to proximity seeking, and behaviours that promote a response from the primary caregiver (typically the mother), such as smiling, babbling, and crying. Attachment behaviour, Bowlby (1963) states, is not a fixed reflex, but is adaptable to environment and context. This bond between caregiver and child serves a protective function, providing a secure base from which the child can explore their environment, and a secure haven to which the child can return, to be soothed and comforted, should the child become anxious, fearful, or overwhelmed.

In addition to these attachment behaviours, the attachment bond describes the formation of an affective relationship. Ainsworth et al. (1978) described the attachment bond, not as a mutual relationship between two people, but a bond one individual (the child) has to another individual, who is considered stronger, wiser, and able, and who is trusted to provide safety and guidance.

Ainsworth (1978) defined three categories of infant attachment; securely attached, insecurely attached, and avoidant or ambivalent. Securely attached infants demonstrated distress when left alone by the primary caregiver, and were soothed and content on their return. Insecurely attached infants similarly demonstrated distress at the primary caregivers' departure, but continued to be distressed or angry on return. Those categorised as avoidant or ambivalent seemed unperturbed by the caregivers' departure, remaining disinterested on their return.

Hazan and Shaver (1987) suggested these same patterns of attachment are demonstrated in adolescent and adult romantic relationships, proposing a portrait characterised by relational traits for each attachment style. Securely attached adults are self-confident, socially skilled, and interested in developing close and trusting relationships. Those who are insecurely attached are lacking in self-confidence, fear abandonment, and have difficulty trusting, though they may still be interested in developing relationships they may become angry if they feel trust has been breached.

Avoidant adults tend to be closed off, inhibited, and relatively socially unskilled. Though these traits are adaptive to individual experience and contexts, attachment styles provide an important insight in to the development of future relationships, and interpersonal interactions (Cooper et al., 1998).

Adolescent Attachment

Historically, research into attachment has tended to focus on parent child relationships, often in children of a much younger age, and the development of romantic attachments in later life. However, over the last two decades, researchers have begun to consider other attachment relationships throughout the life trajectory, with the impact on education and adolescent health and wellbeing becoming of key interest (Verschueren and Koomen, 2012). When applying attachment theory in this way, the first task is to explore to what degree, on what basis the teacher-student relationship may be considered an attachment relationship, and at what age these attachments occur. Following this, I will consider the relevance of these attachment relationships in adolescence, and the role they may play in adolescent risk behaviour prevention delivered in schools.

Empirical evidence suggests that the teacher-student relationship shares a number of common factors with the parent child-relationship, which imply, if not a fully-fledged attachment relationship, at least some degree of attachment bonding (Verschueren and Koomen, 2012). For example, Koomen and Hoeksma (2003) found that pre-school teachers provide a secure base from which very young children begin to explore the educational setting. As young people age, factors such as comfort seeking, and resistance avoidance also play a part in the relationship. However, the teacher-student relationship is not seen as unique or durable, in the way that familial attachments are, given that young people interact with many teachers throughout the school day, as teachers interact with many young people. Furthermore, the teacher – student relationship does not carry the same level of emotional investment in most cases, with teachers taking an instructional approach (verschueren and Koomen, 2012).

Hamre and Pianta (2001) suggest that attachment relationships begin at a young age, and play a significant role in developing strategies for coping with the social environment, and establishing a trajectory for academic and behavioural performance throughout the school years. Thus, Hamre and Pianta (2001) argue, the quality of relationships formed with teachers in the early years has the potential to impact on school connectedness, and thus academic performance.

By this definition, teachers may be seen to be acting in loco-parentis, assuming the role of main caregiver for a large proportion of the young person's waking day (Mohammed et al., 2014). Positive teacher-child relationships then, surpass the instructional educator-learner relationship, and should also provide care and support in emotional and behavioural development.

The importance of this attachment relationship becomes particularly salient in young people who may be considered vulnerable, or have poor familial attachments at home (Verschueren and Koomen, 2012; Hamre and Pianta, 2014). Here the issue becomes more complex, and somewhat dichotomous. As previously discussed in considering the role of parental involvement and attachment (PT16, p162), schools have the potential to act as a buffer for those with poor or damaged attachments at home, providing an alternate source of care and attachment (Resnick et al. 1997). However, it is also suggested that insecure parental attachment contributes significantly to adolescent problem behaviours, leading to rebellion, and association with deviant peers, which can be reflected in behaviour at school (Patterson et al., 1992). Evidence shows that teacher – student relationships, which are characterised by conflict, may result in the teacher constantly admonishing the young person in an attempt to improve their behaviour, thus further damaging the relationship, and affecting the young person's positive school experience (Hamre and Pianta, 2014). Further to this, Hamre and Pianta (2014) state suggest that these relationships should not result in young people being overly dependent, but should provide a secure base, promotes positive self-regard and the development of academic, behavioural, and social skills for success.

As previously mentioned, in considering Louis et al.'s (2016) four constructs of trust, as well as open honest communication, mutual regard, and competency, benevolence has been identified as an important factor in teacher – student relationships. Benevolence is defined as being kind, compassionate, and altruistic, acting for the good of others without the need for personal gain or reward (Dictionary, 2003). Riley (2013) investigated teacher motivation, and pastoral care from an attachment perspective, which provides an interesting additional insight, both in health education in general, and in relation to recruitment methods typically employed by adolescent risk behaviour prevention programmes. Findings from this study are discussed below.

Programme Deliverer Attachment

Riley (2013) begins with the supposition that pastoral care, meeting the personal, social, and emotional needs of students, begins with teacher self-care. Furthermore, Riley (2013) proposes, an awareness of one's own reasons for becoming a teacher is vital in sustainable good practice. The need to care for others, Riley (2013) states, is a strong motivator in entering in to an educational role. However, Watt et al. (2012) state that complex interactions between personality, experience, expectancies, and personal values and beliefs must also be considered. Using Attachment theory as an explanatory framework, Riley (2013) suggests that a conscious awareness of the desire to care, coupled with a more subconscious drive to be cared for themselves can motivate individuals to enter the teaching professions.

This need to both give and receive care is known as corrective emotional experience (CEE), and may be indicative, Riley (2013) argues, of an insecure attachment style, developed during the early years. While the importance of teacher–student relationships is widely acknowledged in the educational literature, focus tends to be on student attachment style, classroom management procedures,

and academic press (encouraging students to do well in their academic pursuits). Rather than understanding, and development of the relationship itself, or the complex interactions between the needs of both student and teacher, and the influence of the wider school environment (Riley, 2013). Riley (2013) suggests that conflict between student and teacher, which elicits an angry or overly punitive response from the teacher, may be a result of activation of the teachers' attachment behavioural response. Here, it is suggested, the teacher is unable to reconcile their need to care and be cared for, with the students challenging behaviour, which appears to reject or withdraw from the teachers' attempts to act in their best interests.

Further support for this argument comes from the work of Gregory and Ripski (2008) investigating punitive versus relational classroom management approaches. Findings showed that teachers using a relational approach, in which a trusting but authoritative relationship is formed between teacher and students reported less disruptive behaviour in class than those employing punitive measures, such as time out, to manage student behaviour. In addition to this, Bryk and Schneider (2002) found that measures of relational trust, including respect, personal regard, and trust between teachers, school management, and parents contributed significantly to improvements in behaviour and academic achievement. The importance of home-school relations was highlighted (p160), when considering the impact of home-school communication (PT13) and the role of parental involvement in programme success (PT14). Further consideration is given to this triadic relationship between child, home, and school below.

6.1.3 Home, School, Community and Adolescent Behaviour

Relationships discussed in this section explore theories relating to home – school communication, parental influence on adolescent behaviour, and the impact of social connectedness, both to school, and in the wider community setting.

As previously mentioned in considering home school communication (part 5.3.1, p161), in programme theory development and refinement, open channels of communication between parents or guardians, and school is important, and instrumental in both academic achievement and risk behaviour prevention. Dishion et al. (2002) stated that open channels of communication facilitate information exchange including knowledge of any problems at home or in school, discussions relating to worrying peer affiliations, and advice and support around risk behaviour and risk behaviour prevention. Further to this, Bryk and Schneider (2002) found that home school relationships which demonstrate respect, trust, and mutual regard can improve adolescent connectedness to school. Cappella and Hwang (2015) support these findings, stating relationships between school, home, and young people should not be seen as an additional strategy for adolescent behaviour change, but should function in a synergistic way which is acceptable and beneficial to all parties.

Cappella and Hwang (2015) provide further support, stating that adolescence is a critical period during which young people experience a large number of changes, both in their education, and in their social connections and attachments. Relationships in adolescence go through an intense period of renegotiation as young people strive for autonomy, becoming less dependent on parents, and forming closer peer relationships. Relationships with school, Cappella and Hwang (2015) state also change dramatically in this period, as young people move from primary to secondary (or middle to high) school. Perceptions of school

connectedness and motivation to engage with school is lowered, while confrontational or problematic behaviours increase.

While evidence shows that parental involvement during this period can act as a buffer, reducing the negative impact of these changes (Dishion et al., 2002; Bryk and Schneider, 2002), parental involvement declines during this time (Eccles and Harold, 1993, Cappella and Hwang, 2015).

Duell et al. (2017) state that home school communication supports both emotional and cognitive development in adolescence, promoting confidence and positive behaviour in and out of school. Epstein and Sheldon (2002) identified six domains of involvement which impact on adolescent behaviour, including truancy, risk behaviours and adolescent achievement; Parenting, communication, decision making, collaboration, encouraging learning at home, and volunteering in school. However, Epstein and Sheldon (2002) state, not all of these domains relate to behaviour, with aspects such as homework completion relating more to academic achievement.

Identifying barriers which prevent parents from being involved in school life, Duell et al. (2017) suggest a lack of understanding regarding the positive role, and importance, of home school communication, use of communication, such as only contacting parents when the young person is in trouble, parental confidence, and attitudes of staff towards parents as key factors. Issues such as staff attitudes, and only communicating when the young person is in trouble, Duell et al. (2017) state, can lead to parents feeling blamed or attacked, and taking a defensive position, in which they feel they are working against rather than in collaboration with school.

In addition to this, Wong and Hughes (2006) state that factors such as cultural differences and language barriers, socio economic status, and parents' academic ability and memories of school experience also impact on parental motivation for involvement. Furthermore, as previously stated, poor attachment or damaged family relationships can also create a barrier when seeking to increase parental

involvement both in school life, and in adolescent risk behaviour prevention programmes (Velleman et al., 2005), with those whose families are unable, or decline to participate feeling further isolated (PT15).

Given these issues, I suggest, it is not enough for risk behaviour prevention strategies to simply include home school communication as a behaviour change strategy, without giving consideration to methods of communicating with parents, and reducing barriers to involvement, to prevent further widening health inequalities for those living in poverty, dealing with additional issues, or belonging to an ethnic minority.

Cappella and Hwang (2015) suggest that processes of academic socialisation, including communicating parental academic and behavioural expectations, raising young people's aspirations for the future, and support in planning and goal setting for the future is vital in improving outcomes for young people. Furthermore, academic socialisation, which includes the home environment, and parents' relationship with children, rather than home – school communication alone, is more in line with the emotional and cognitive needs and abilities, and is more sensitive to individual needs. Therefore, it is suggested, programmes, which include an element of parental involvement, should focus on improving relationships at home, consideration of the impact of the home environment on adolescent behaviour. This includes internalising of attitudes and norms within the family home, and involving young people in making decisions about their own future, providing support, and encouraging them to see their behaviour as stepping stones towards the future they want for themselves (Cappella and Hwang, 2015)

In his book, Anna Karenina, Leo Tolstoy (1878, p1) states that

"*all happy families are alike, each unhappy family is unhappy in its own way" (Tolstoy, 1966)*.

While this may be an oversimplification when considering the role of family in adolescent behaviour, and the complexity of involving families in school life and risk

behaviour prevention programmes, it highlights the importance of considering the needs of each individual, rather than classifying adolescents as on homogenous group. The purpose here is not to dwell on the happiness of a particular family, but to remind those involved in working with young people that there is an important difference to be considered between those with positive family bonding, and those with poor or damaged relationships.

Two key theories are considered below, Primary socialisation theory, which primarily applies to those with secure family attachments; and Family stress theory, which is applied to those with poor family bonds, or where there are other barriers to meaningful parental involvement.

Primary socialisation Theory

Primary socialisation theory, with its foundations in social learning theory, posits that adolescent behaviours are learned, in the first instance, through observation and imitation of the behaviours of individuals within their social environment. Parents and other family members, as central attachment figures, within the social environment have the greatest capacity to influence adolescent health behaviours (Rew et al., 2013). Therefore, despite parents' potential to provide positive messages about health and education, and warnings about health risk behaviours, Rew et al. (2013) state, attitudes, beliefs, and behaviours modelled within the home are likely to be imitated, and internalised.

It is widely acknowledged within the literature that parenting styles that are warm and supportive are more successful in guiding adolescents to behave in a prosocial way (Rew et al., 2013, Cappella and Hwang, 2015). Primary socialisation theory acknowledges that parenting style, including parental monitoring and the degree to which the needs of the child are met by the parents is influential in adolescent behaviour. However, there is also an additional focus on social norms, and the way in which parental attitudes beliefs, and behaviours may impact on adolescent health

behaviours, the development of social skills, and feelings of social connectedness (Rew et al., 2013). Rew et al. (2013) consider the role of parental, and peer behaviours on adolescent health behaviours, and perceived social connectedness, using primary socialisation theory to explain predictors or mechanisms.

There is strong evidence to suggest that adolescents model health risk behaviours, particularly alcohol consumption and tobacco use, from their parents (Ary et al., 1999, Viner et al., 2012, DiClemente et al., 2013). Further evidence supporting the role of prosocial family norms comes from literature discussing the social determinants of adolescent health and wellbeing (Viner et al., 2012), as discussed in the introduction to this study (p1).

While research exploring the role of family norms in the development of health risk behaviours is well documented, research exploring the impact of prosocial or health promoting family norms is sparse. Rew et al. (2013) found that parental prosocial, and health promoting behaviours, such as religiosity, and daily health routine activities, such as daily tooth brushing, and healthy eating did not significantly impact on adolescent behaviour, such as safety, health behaviours, or stress management. However, this may result from the behaviours selected for focus, and the tool used which neglected to explore important factors such as communication within the family, parent responsiveness to adolescent needs, and perceived support and care regarding adolescent behaviour (Rew et al., 2013).

Day and Padilla-Walker (2009) explored the role of parental connectedness and involvement, examining the impact of both maternal and paternal attachments, arguing that understanding of both relationships is vital in understanding adolescent development and behaviour. Day and Padilla-Walker (2009) state that while mothers and fathers interact with their children in different ways, both maternal and paternal bonding, and involvement, can impact on adolescent behaviour, with those with at least one close parental bond better able to manage social interactions with others, and more confident in seeking support when needed. Furthermore, Day and Padilla-Walker (2009) suggest that maternal connectedness and involvement is more likely

to influence social skills such as communication, openness, and trust in others, while paternal connectedness and involvement is more strongly linked to norm setting behaviours. These differences in maternal and paternal bonding, as well as mechanisms for those from non-traditional families (one parent, same-sex couples) requires further research to fully understand the impact on adolescent behaviour, and behaviour change programmes.

While the evidence for the role of family norms, and the influence of prosocial norms is minimal, and, at times, unclear, I would suggest that taken with the evidence above, relating to attachment theory, and home school communications, this may be considered further evidence that it is the relationship, involvement, and communication with, and between adolescents, and the adults in their lives that is key to reducing or preventing risk behaviour, and in providing the social skills needed to engage meaningfully with health promotion or risk behaviour prevention initiatives. Furthermore, I suggest that good communication between school and parents, as well as between parents and their children, would demonstrate positive collaboration, in keeping with earlier theories of collegiality, in which adults are not there to tell young people what to do, but more that all parties are working together towards the common goal of happy, healthy, well rounded young people. Given then, the importance of relationships, particularly attachment bonds evidenced here, we must consider the role of schools, and of risk behaviour prevention programmes in supporting those for whom family functioning is impaired. To do this we must first understand how these bonds impact on adolescent development, and functioning within the family.

Family Stress Theory

Firstly, it is necessary to make clear from the outset that family stress theory does not relate only to those in which the parent – child bond, or family is severely or irreparably damaged, but also to those living within circumstances which impact negatively on family

functioning, and parents' ability to meet the needs of the child at that time (Boss et al., 2016).

Boss et al. (2016) suggest that factors such as: socioeconomic status; race, ethnicity, and culture; physical or mental ill health; employment or financial issues; and parental substance use can place stress on a family, and thus impair family functioning at any given time. While factors such as race, ethnicity, and culture are highlighted here, as a contributing factor in family stress, and as a potential barrier for school involvement, these issues will be considered further within Middle range theory development (p253), when exploring the impact of wider social factors on programme success. Furthermore, Boss et al. (2013) assert, not all stress on families results from negative contexts or situations, for example those in high pressure, or time consuming jobs may also struggle with family management and meaningful engagement in some aspects of their children's lives.

On this basis, Family stress is defined as "*a disturbance in the steady state of the family system*" (Boss et al., 2016, p2). As stated above, factors which create this disturbance can arise from the external environment (housing or employment issues) or from within the family unit (death, divorce, illness), or from a combination of both. Furthermore, differences between the impact of these factors, and their power in combination, needs to be considered on a case by case basis. In aiming to support young people, and prevent engagement in health risk behaviours, it is this destabilisation of the family unit, and the ways in which programmes, and the wider school environment can bolster the young person to reduce them impact on health and wellbeing, which is central to success.

Evidence suggests that family stress may contribute to adolescent uptake of risk behaviours, and as a barrier to adolescent risk behaviour prevention. As discussed previously, when considering the role of family in adolescent risk behaviour prevention (p160), Patterson et al. (1992) proposed that family stress theory, along with the Problem behaviour model, aid in understanding adolescent risk behaviour initiation as a result of

poor family management, conflict, and reduced parental monitoring which leads to increased association with ‘deviant peers’. In seeking to further understand the role of family functioning in adolescent risk behaviour engagement, Ary et al, (1999) proposed that increased unsupervised time, and lack of parental monitoring were the most significant contributing factors. However, Huebner and Howell (2003) suggest that, while parental monitoring is important, it is the open and honest communication, and commitment to involvement in the young person’s life which facilitates the effectiveness of this strategy, providing further support for the above findings.

Further to this, family stress may act as a barrier to adolescent risk behaviour prevention programme success, particularly where parental involvement is required as a programme component. As with family stress theory, difficulties in engaging parents in meaningful involvement may not necessarily result from negative circumstances, or poor relationships, but may be seen as increased burden, or unwanted interference, even when relationships are good, but demand on parents’ time and resources is high (Velleman et al., 2007; Connell et al., 2007).

In addition to understanding how family stress may influence adolescent risk behaviour engagement, and act as a barrier to parental involvement, it is important to consider how the inclusion of a family component may affect young people for whom family stress is high, and to consider how the programme can offer support on a case by case basis.

For example, for individuals where relationships are good, but there are barriers such as time, money concerns, or younger family member’s programmes may be able to reduce these barriers, by taking steps such as offering a range of dates and times, reimbursing any involved costs, and where possible providing a crèche or activities for siblings (Connell et al., 2007). In these circumstances, programmes may succeed in acting as a prompt for increased parental involvement, and improved family management techniques as desired. However, where parents are repeatedly unable to attend, either because of other commitments, or as a result of long term illness or difficulties, or where relationships between adolescents and their parents are severely impaired, the inclusion of family components may lead to young people feeling isolated or embarrassed, further adding to

their burden, leading to reduced engagement, or withdrawal from the programme (Velleman et al., 2007).

Further evidence for the role of relationships comes from Westhorp's (2013) paper on complexity consistent theory in realist research, which was developed under the title of The broken relationships theory. Westhorp (2013) developed the complexity-consistent theory through the investigation of early years, early interventions, to understand why programmes to support disadvantaged families failed to help those who were, most disadvantaged. Early years, early intervention programmes seek to reduce risk factors, and promote protective factors, targeting a number of behavioural factors, and with strong links to the social determinants of health (Westhorp, 2013).

This methodological piece of research involved combining data from a small empirical study, with knowledge gained from conducting a realist review of the existing literature. As previously discussed, both complexity theory, and realist methodologies view reality as comprising multiple layered or nested open systems in which change is generative, and context dependent.

Issues highlighted using the family stress theory to understand how family relationships, family functioning, and individual circumstances impact on adolescent risk behaviour, and the success of adolescent risk behaviour prevention programmes provide further evidence for the benefit of strong, supportive relationships between programme deliverers, particularly teachers, and young people, and the potential for schools to act as a buffer where family functioning, or indeed other social connections, are impaired (Resnick et al., 1997).

Theories of adolescent social connectedness, including bonds to school, and connections within the wider community are considered below.

Social Connectedness and the Impact on Adolescent Health and Wellbeing

Along with family attachments, and individual relationships between young people and their teachers, and those involved in programme delivery, adolescents' connectedness both to school, and in the wider community have also been shown to impact on adolescent health and wellbeing, and to influence engagement in health risk behaviours (Bond et al., 2007). Negative school experiences, Bond et al. (2007) argue, impact not only on academic achievement and future employment prospects, but also on current and future health and wellbeing. Social connectedness within school is defined as perceived belonging, and engagement in learning and broader school activities, as well as relationships with staff and peers.

As previously stated when considering adolescent risk behaviour prevention programmes which take a school connectedness or whole school ethos approach (p140), social connectedness is underpinned by theories of attachment (Bowlby, 1989), positing that adolescent resilience, and development of coping strategies, are contingent on the support available to them within their immediate environment, and confidence in seeking, and utilising support when needed. Furthermore, Patton Patton et al. (2000) propose open communication, trust, and perceptions of genuine care are central to feelings of social connectedness, and self-worth.

The social development model (Catalano et al., 2004) builds on this further, positing that connectedness to family, peers, school and community, along with positive socialisation serve a protective function against engagement in health risk behaviours. The social development model brings together aspects of attachment theory, primary socialisation theory, and social learning theory, and proposes that adolescent behaviours are learned within social environments, and mediated by consistent and predictable patterns of socialisation within those environments. Catalano et al. (2004) provide four key processes through which socialisation of young people occurs:

1. Perceived opportunity for engagement in activities and interactions with others
2. Skills for involvement and interaction

3. Actual involvement and interaction
4. Perceived reward from involvement and interaction

These four key processes, Catalano et al. (2004) state, are relevant to both prosocial and antisocial behaviours. Where these processes are consistent, Catalano et al. (2004) suggest, attachment bonds, and feelings of connectedness develop and grow.

Adolescent risk behaviour prevention programmes which adopt a social connectedness approach, such as The Gatehouse project (Bond et al., 2004), based on these principles, aimed to promote adolescent health and wellbeing, and reduce health risk behaviours though the development of positive and supportive social environments. Strategies typically used within these programmes include changes within school policy (such as addressing bullying, and the provision of extra-curricular activities), development of social skills, and delivery of health related information through the wider curriculum, parental involvement, strong classroom management and rule enforcement, and increased links with the wider community (Patton et al., 2002; Bond et al., 2004; Chapman et al., 2013). The aim of these programmes is to increase trust and communication between adolescents, school staff, and peers, and to facilitate meaningful involvement in school life, and activities within the wider community (PT10).

However, despite strong theoretical foundations, the effectiveness of school connectedness programmes remains moderate at best, having no greater impact than other approaches taken to prevent, or reduce, engagement in multiple risk behaviours in adolescence (Chapman et al., 2013). Key limitations, as defined by programmes themselves, as well as those highlighted in this research, which may contribute to this are discussed below.

A key limitation, highlighted by Chapman et al. (2013) is that while the aim of the programme is to strengthen connections within school, particularly relationships between teachers and students, strategies used tend to focus on strong leadership, rule setting and consistent enforcement of rules, and respectful behaviour towards the teacher within the

classroom. Given the definitions of leadership, and core constructs for positive teacher – student relationships discussed earlier in this chapter, this approach to building relationships may be seen as overly authoritarian, overlooking important factors such as trust, open communication, and mutual regard. In addition to this, strategies to increase engagement in school life, and outcome measures designed to measure school engagement, tend to focus on academic achievement and involvement in extra-curricular activities such as school sports teams. This approach to increasing social connectedness within schools also poses a number of potential issues.

As stated by Goodenow (1993) adolescent engagement within school, effort, and academic achievement are influenced by a range of internal and external factors including differences in skills and abilities, self-esteem, socio-economic status, and home life. However, Goodenow (1993) argues, social connectedness is dependent not only on opportunity to engage and achieve, but also on a perceived sense of belonging. Belonging is defined here as

'*the extent to which students feel personally accepted, respected, included, and supported by others in the school social environment' (p80).*

Here connectedness within school refers to the degree to which young people feel valued and accepted as they are, regardless of academic ability. Adolescent risk behaviour prevention programmes, taking a social connectedness approach, which focus on academic achievement and involvement in extra-curricular activities, therefore run the risk of further isolating those young people who have strengths outside of traditional academic or educational pursuits. Furthermore, focusing on engagement in classroom activities, involvement in extra-curricular activities, and academic achievement puts the onus to build connections within school largely on young people, rarely considering what schools, teachers, and programme deliverers can do to facilitate, develop, improve or maintain positive relationships with students, or factors which may act as a barrier to building connections.

The aim of the research was to understand the negative impacts of interventions, observed in some cases within a number of studies. The empirical research was conducted within a small community family support centre, supporting families with a child aged 5 years or under. A mixed methods approach was used to analyse a programme which focusses on improving parent child relationships. Early programme theories were developed around attachment issues, and family strengths. Formal theory was then applied, again similarly to my own research, in order to understand differences in outcome for different subsets of the population. This led to the development of a four layered framework, which focussed on attachment theory, social judgements, social capital, and social exclusion. These four factors were seen as being interlinked, with each impacting on the way in which other factors are experienced. Similarly, Westhorp (2013) hypothesised that disadvantaged families were more likely to have attachment issues, and that resolution of these issues would improve the immediate environment for the child, aiding development, and improving future outcomes later in life. These four factors shared three important constructs, they are all based on systems theory, they all address aspects of relationships, and they all describe mechanistic actions which generate, or impact on intervention outcomes.

6.2 Programme Ethos, Programme quality, and Behaviour change

In subchapter 6.1 (p189), I explored the cross-cutting theme of relationships, which was prevalent throughout the findings of this study. Here, I apply substantive theory to explain why some approaches to multiple risk behaviour prevention, and the strategies employed therein, are more successful in reducing risk behaviours than others, taking in to account contextual factors, and interactions between programme and relationships with programme deliverers, school, family, and the wider community.

The themes of programme ethos, programme quality, and appropriateness of both timing, and methods of delivery are considered key factors which impact on programme success. As demonstrated in the diagram below (see figure Six), these themes are discussed in relation to programme theories, such as interpretation of underpinning theory, programme fidelity, mode and agent for delivery, participant readiness, and adaption based on stakeholder consultation.

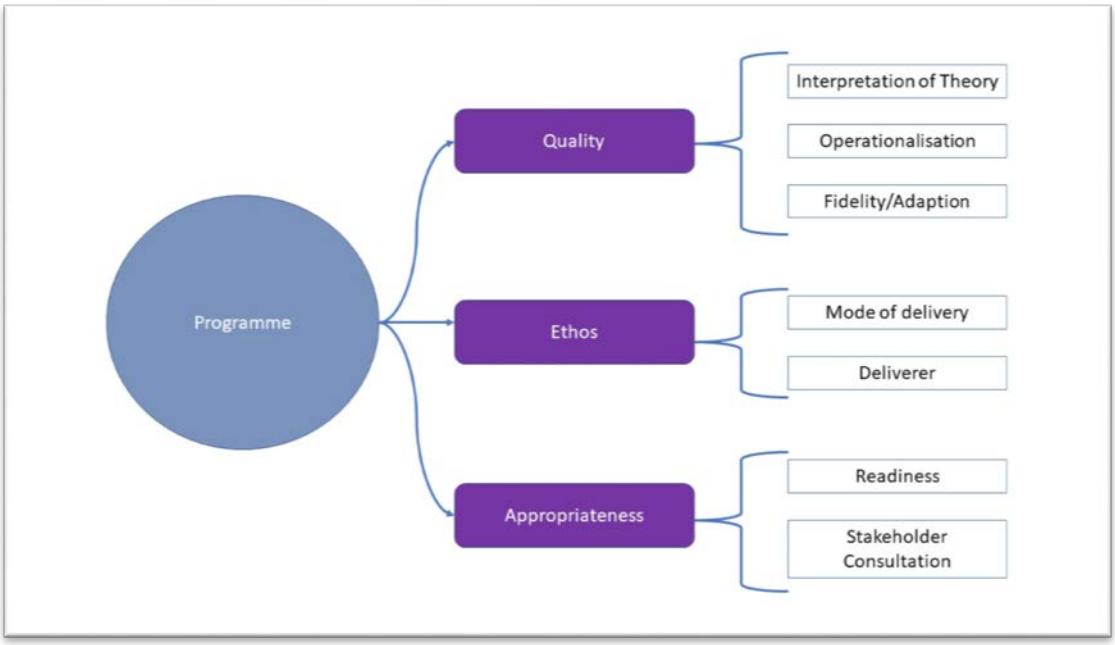

Figure 6: A diagram showing the impact of programme quality, ethos, and appropriateness

I begin by considering the differences between two theoretically similar approaches, the Motivation-skills-decision making model, such as The Life Skills programme (Botvin et al., 1980,, Botvin et al., 1990a, Botvin, 2000b), Project Alert (Ellickson et al., 1993, Ellickson et al., 2003), and Project D.A.R.E (Ennett et al., 1994), and the Harm minimisation approach (Marlatt, 1996, Newton et al., 2014b, Newton et al., 2012, Newton et al., 2010, Newton et al., 2009b, Teesson et al., 2012, Teesson et al., 2014, Vogl et al., 2014, Champion et al., 2016). I consider how differing strategies are used to operationalise theoretical concepts underpinning multiple risk behaviour prevention programmes for use with adolescents (PT8), resources used within the programme (PT7), and agent and methods for delivery, with a specific focus on interactions between approach and target behaviours, and relationships between programme deliverers and recipients.

Following this, I draw comparisons between stand-alone programmes, such as those above, and those which take a whole systems approach to implementation (Dooris, 2006, Shackleton et al., 2016, Patton and Temmerman, 2016). Here I consider how implementation differs, focusing on differences in leadership and collaboration, involvement of families, and the development of relationships inside and outside of school.

Theory supporting the role of stakeholder involvement is also considered. In addition to this, the impact of factors such as dose, duration, age at the time of delivery, and stakeholder involvement is also considered in relation to theories of health education and adolescent development.

6.2.1 Underpinning Theory and Application in Practice

As set out during the formulation of the theoretical framework (p106), both the Motivational-skills-decision making model (Botvin, 1980; 1990; 2000; Ellickson et al.,1993; 2003; Ennett et al., 1994; 2004), and Harm reduction approach (Marlatt, 1996; Newton et al., 2009; 2012; 2014; Teeson et al., 2012; Champion et al., 2013, 2015; Teeson, et al., 2014; Vogl et al., 2014) are based predominantly on social learning theory (Bandura, 1969) and the social development model (Catalano and Hawkins, 1996). A brief description of each of these theories is given below. The way in which each approach interprets and applies these theories in practice will then be considered.

Social Learning Theory

Social learning theory (Bandura, 1969) states that processes of socialisation, specifically that of identificatory learning, can be used to explain behaviour acquisition. Bandura (1969) posited that a complex range of behaviours are observed, and acquired through observation of others within our social environments. Furthermore, Badura (1969) suggests, social learning theory can be applied to transmit prosocial behaviours, or modify behaviours which may pose a risk. Here social learning theory does not apply to reward and punishment or consequences of engaging in a particular behaviour, but the utilisation of a stimulus or stimuli who can be trusted to model desired behaviour, and to provide a reasonable rationale for maintaining the desired behaviour (Bandura, 1969).

Akers et al. (1979) examined the role of social learning theory in relation to deviant behaviours in adolescence. Deviant behaviours were defined as engagement in alcohol

consumption, and substance use. Akers et al. (1979) suggest that, though behaviours are initially acquired through observation of modelled behaviours, it is the balance between perceived reward and punishment or negative consequences which leads to repeated engagement or behaviour maintenance in adolescent deviant or health risk behaviours. Here the focus tends towards the influence of peers, and family members for the acquisition of deviant behaviours, with rewards including social status, and the initial benefits of experimentation associated with alcohol and cannabis use, such as reduced inhibitions. Punishment or negative consequences are attributed to negative effects of the substance (though this is often not immediate enough to deter), disapproval from parents, and other adult members of the community such as teachers and church leaders, and consequences associated with law and criminal activity (Akers, 1979). Furthermore, Akers et al. (1979) state, positive reward, in the form of parental approval, and educational achievement within school may provide reinforcement for abstinence.

The Social Development Model

The Social development model (Catalano and Hawkins, 1996) builds on the principles of social learning theory, taking in to account social contexts, and incorporating evidence relating to risk and protective factors which may mediate or moderate adolescent risk behaviour engagement. The social development model combines aspects of Control theory and social learning theory in an attempt to understand the aetiology, patterns of use, and maintenance of both prosocial and antisocial behaviours in relation to social relationships, such as those with family, peers, school, community (Catalano and Hawkins, 1996). As previously stated, when discussing social connectedness (p115), the social development model posits that socialisation, and therefore behaviour acquisition, occurs as a result of four key processes, relating to opportunity, involvement and interaction, social skills, and perceived benefits of engagement. Where socialisation processes are consistent a bond is formed with the socialising agent, and the ability to influence behaviour is strengthened (Catalano and Hawkins, 1996). Adapted from control theory, this bond is hypothesised to take on the role of an attachment relationship, with

commitment to behaviours which are congruent with the beliefs and norms of the socialising unit or group. It is proposed, therefore, that individuals' behaviour will be prosocial or antisocial depending on the predominant attitudes, beliefs, and behaviours of the socialising group. Unlike control theory alone, the social development model recognises the role of positive attachments on negative behaviours, as well as positive ones. That is to say that where there is a positive bond to a socialising agent, typically a parent or peer, who engages in undesirable behaviours, such as alcohol consumption, or tobacco use, the risk of the young person engaging in the behaviour is increased.

Programmes which have their foundations in Social learning theory, and the social development model aim to build on prosocial bonds and protective factors, providing young people with the knowledge and skills needed to make decisions about, and engage in prosocial behaviours, to manage situations where opportunities arise to engage in antisocial or health risk behaviours, and to engage in their social environments (home, school, community) in a meaningful and beneficial way (Greenberg et al., 2003).

However, many of the programmes included in this review appear to take a selective approach to development and delivery when applying theory in practice. This anomaly in translating theory in to practice, I suggest, occurs on two levels. Firstly, in developing programme models from theoretical and empirical literature, and secondly in translating programme models in to practice on an individual, programme to programme basis. The following subchapter considers evidence from implementation science which describes how different levels of theory can be applied in the development of health promotion and health risk prevention strategies.

Applying Theory in Practice

Early health promotion, and risk prevention, programmes were typically empirically driven, with little consideration given to underpinning theories, described by Eccles et al. (2005) as a trial and error approach. More recently however, implementation science has begun

to recognise the importance of evidence based practice, with greater inclusion of theories, models, and frameworks with the aim of guiding the development and implementation of behaviour change programmes, increasing understanding of how and why programmes work, and evaluating implementation (Nilsen, 2015).

Nilsen (2005) defines five categories of theories, models, and frameworks which are used within implementation science and behaviour change approaches:

- **Classic theories –** originating from psychology, sociology, and organisational theoretical approaches. These theories aim to explain aspects of implementation prior to implementing the programme.
- **Process models –** explain the steps taken to translate research in to practice.
- **Determinant frameworks –** specify specific determinants which act as barriers or facilitators to programme implementation.
- **Implementation theories –** developed to understand, explain or evaluate aspects of implementation post-delivery.
- **Evaluation frameworks –** provide a framework from which to evaluate aspects of a programme to better understand causal mechanisms.

While many of the programmes included within this study applied theory across a number of these levels, identifying the important characteristics of theories, and operationalising them in a way that facilitates behaviour change appeared to be problematic, with few programmes giving a full scientific rationale for the inclusion of specific theories or techniques within a programme (Eccles, 2005).

As defined when considering the complexity of implementing social programmes designed to reduce or prevent multiple risk behaviours in adolescence (p44), and when formulating the theoretical framework for this review (p106), implementation chains are long, and programmes pass through the hands, hearts and minds of many people before reaching the intended recipient (Pawson et al., 2004), in this case young people. As a result of this programmes are open to interpretation, and misinterpretation, at numerous time points.

Where programmes are designed, developed, and implemented on an ad hoc basis, without clear guidance from underpinning theories or models, this incongruence between underpinning theories, programme models, and behaviour change techniques may begin to impact on programme outcomes.

Eccles et al. (2005) states that evidence based programmes which utilise theory should begin by identifying core components of the theories included in the programme. These constructs, Eccles et al. (2005) state, should be predictive of motivational factors, or behavioural outcomes of the programme. Furthermore, they should relate to both modifiable behaviours, such as motivation, intention, knowledge, and social skills, and unchangeable or external factors such as age, personality, and social relationships. Eccles et al. (2005) propose that, only when the appropriate constructs have been identified, should programme design, including resources for, and methods of, delivery be undertaken. Furthermore, Eccles and colleagues (2005) suggest, theoretical underpinning should be applied in interpretation of programme findings, in an attempt to better understand causal mechanisms and contextual factors which may have contributed to programme outcomes. However, the majority of papers included within this review, when discussing or attempting to explain programme outcomes, tend to fall back on common limitations such as implementation fidelity, age of participants at the time of intervention in relation to typical age of behaviour onset, and variations in what defines the control group.

Here, I will discuss how theory is interpreted by key approaches and models in the prevention of multiple risk behaviours in adolescence, and how approaches or models are interpreted and operationalised by individual programmes.

6.2.2 Approaches, Models and Their Application in Practice

As previously stated, both the Motivation-skills-decision making model, and the Harm minimisation approach were developed from theories of social influence, primarily social learning theory, and the social development model. The two approaches to programme

development work on the premise that inoculation against negative social influences, along with opportunity to engage in prosocial activities, will reduce the risk of later behaviour initiation (Sussman et al., 2004). Social influence approaches, Sussman et al. (2004) state, predominantly rely on health risk related information provision, along with social skills training, and motivation to engage in self-directed behaviour change.

The Harm minimisation approach was, in fact, developed from the Motivational-skills decision making model (Newton et al., 2009), however, the two approaches differ significantly in the way in which theory is interpreted, and methods for programme delivery. Each of these approaches is described in detail below in relation to the operationalisation of underpinning theoretical constructs, programme content, and programme deliverer. Each of these factors are considered in relation to evidence highlighted within the building and evidencing of programme theories, and substantiating evidence regarding the impact of deliverer-student relationships as discussed in the previous subchapter.

Applying the Motivational-Skills-Decision Making Model in Practice

The Motivational-skills-decision making model, based on Botvin's (1980) Life skills programme, focuses on providing information relating to socially desirable behaviours, correcting beliefs around social norms, and the dangers and consequences of involvement in health risk behaviours, alongside skills training designed to increase motivation to abstain from health risk behaviours, develop and practice refusal skills, improve communication and assertiveness, and encourage engagement in prosocial activities, including education (Botvin, 1990).

Tasks involved in the delivery of programmes based on The motivation-skills-decision making model typically include: situational role plays, in which health and risk behaviours are modelled and young people are supported in making decisions about their behaviour choices; assertiveness and refusal skills, developing the skills needed to avoid or refuse

risk behaviours when opportunities for participation arise; and tasks designed to raise self-esteem, build confidence, and develop social skills to encourage the development of prosocial bonds (Botvin et al., 1990a, Ellickson et al., 1993, Ellickson et al., 2003, Ennett et al., 2011, Vadrucci et al., 2016).

Despite being the most commonly used approach for programme development, The motivation-skills-decision making model has been widely criticised as being to absolutist, with early programmes, such as The life skills programme (Botvin., et al 1980; 1990), and Project D.A.R.E being seen as overly focused on abstinence, and skills for refusal (Ellickson et al., 2003, Longshore et al., 2007), potentially leading to participant disengagement.

During the development and testing of Project Alert, and later Alert plus, Ellickson et al. (2003), and Longshore and colleagues (2007) attempted to overcome some of the limitations of implementation, with the aim of improving programme outcomes. Key changes to the curriculum included the introduction of cognitive measures, such as intentions to use, and peer reactions to use and non-use, increased duration, and young people's perceptions of the programme, with a focus on moving away from language pertaining to abstinence, instead using terms such as risk behaviour reduction.

Despite this change in language away from use of the word abstinence, information provided within the programme continued to focus on social acceptability, legal and health consequences of risk behaviour engagement, and the correction of misperceptions around social norms, while skills training continued to promote refusal skills, motivation and commitment to risk behaviour avoidance, and decision making between prosocial and antisocial behaviours. This mismatch between underpinning theory, and the methods of programme delivery was a commonly occurring issue throughout the early phase of the research synthesis, and, I suggest may contribute to failure to improve programme outcomes.

For example, the motivational-skills-decision making model (an example of a process model) is based on propositions made by social learning theory, and the social

development model (classic theories), as defined in the previous chapter. Interpersonal, social, and contextual factors are recognised within these theories, in considering the role of self-esteem, family, peers, and wider social contexts as facilitators or barriers, both to engagement in health risk behaviours, and in risk behaviour prevention. However, definitions of the motivational-skills-decision making model typically focus, not on barriers and facilitators to behaviour change, or building positive relationships, but on what can be done to change behaviour through the application of theories of social influence.

While information about health risk behaviour, and tasks designed to develop social skills are important, and, as shown previously (p140), desired by young people, I suggest, based in the evidence presented, the judgemental overtones of the programme, combined with lack of attention to social contexts and relationships, around those delivering and receiving the programme, contributes to the modest outcomes typically achieved by programmes using this approach. This proposition is supported by Pearson et al. (2015) who hypothesised that interactions between programme content, the way in which it is delivered, and programme deliverer, including belief in the programme, relationship with the young people involved in the programme, and mannerisms when interacting with young people may further impact on programme outcomes.

Project D.A.R.E (Ennett et al., 1994) provides strong evidence for this hypothesis. Project D.A.R.E (Drug abuse resistance training) is defined from the outset, and by name, as being focussed on abstinence and resistance, with Ennett et al. (1994) stating the purpose of the programme as being "*to keep kids off drugs" (p1394).* The D.A.R.E programme, developed in the 1980's by the Los Angeles police department, delivered a substance use prevention curriculum to young people in their final year of elementary school (aged 10 – 11 years). Targeting alcohol consumption and tobacco use, as well as drug use, the programme, consisting of seventeen weekly lessons, delivered within schools, using behaviour change strategies from the Motivational-skills-behaviour change model as defined above, with the explicit purpose of teaching kids to refrain from substance use (Ennett et al., 1994). The programme was delivered by specially trained police officers, with substantial training in both delivery of the programme, and classroom management

skills. Already the language within the programme, by developers, and one can therefore assume programme delivers, given the programme was developed and delivered by the LAPD, is shown to be overly authoritarian and judgemental in nature, with the focus of both information, and tasks delivered within the programme are designed with abstinence in mind.

Furthermore, it is acknowledged by the programme developers themselves that the use of police officers as agents for programme delivery may have impacted negatively on programme outcomes (Ennett et al., 1994), though it is largely attributed to training, and lack of teaching skills. Given the evidence presented in the previous chapter, regarding relationships, with their foundations in trust, mutual regard, and open communication (p194) I suggest that, given the role of the programme deliverer, coupled with having no relationship between deliverer and recipients prior to programme involvement, young people may have felt wary about sharing personal information with law enforcement officers, and may not trust the officers motives for involvement, further impeding open and honest conversation.

It is clear to see here how the combined limitations of programme approach, content, agent for delivery, and attitude towards those receiving the programme may have impacted on programme outcomes, as, despite being delivered at scale across America, and heralded as the best approach to adolescent substance use prevention, no significant results were found by Project D.A.R.E in either immediate effects, or long-term outcomes (Lynam et al., 1999, West and O'Neal, 2004).

Project Alert (Ellickson et al., 1993; 2003), was also built on the Motivational-skills-decision making model, implementing the same curriculum, and behaviour change techniques as Botvin's (1980; 1990) Lifeskills programme, and Ennet et al's (1994) Project D.A.R.E. However, within Project Alert (Ellickson et al., 1993; 2003) the impact of agent for delivery on programme outcomes was given greater consideration. Project Alert (Ellickson et al., 1994; 2004) was initially introduced with two experimental arms based on programme deliverer; external health professionals, and teachers, with peer facilitators,

with later iterations focussing on delivery by external health professionals with peer facilitators (St Pierre et al., 2005).

The inclusion of peers as programme deliverers is based on the assumption that friends seek advice from friends, and therefore may accept health information delivered by their peers more readily (Mellanby et al., 2000). Evidence for the success of programmes employing peers for programme delivery, Mellanby and colleagues (2000) suggest, is minimal, and programmes using this method of delivery have been widely criticised. Key criticisms of this approach centre on informational trust, confidentiality, and lack of experience in classroom management.

Project Alert attempted to overcome some of these limitations through paired delivery, teaming peer facilitators with experienced teachers (Ellickson et al., 1994; 2004). Early iterations of Project Alert (Ellickson et al., 1994) were implemented in 30 schools across America, with seven lessons delivered in grade seven (age 12 to 13), and an additional three booster sessions delivered in grade eight (age 13 to 14). Classroom sessions were designed to encourage interaction, and were adaptable to levels of knowledge in individual classrooms, though skills training was delivered in a uniform fashion across all participating schools. While some small significant effects were seen in uptake of both tobacco, and cannabis in both experimental arms of the study, these results were limited to those in lowest risk groups (as shown when considering the impact of age of delivery, p196) who had not yet used these substances. Furthermore, Ellickson et al. (1994) found a negative effect on alcohol consumption, and tobacco use, whereby use was seen to increase in those in the experimental arms of the study who had already begun to partake in these behaviours. All programme effects were diminished by grade 9 (aged 14 to 15 years), with ratings of self-esteem dropping significantly as young people transitioned from middle to high school.

Here the programme gives some consideration to the role of programme deliverer and social influence, using observational measures to monitor interactions between programme deliverers and students. However, while there was a small positive increase in findings from teacher-peer led delivery, in comparison to the health professional led arm,

differences between these two groups were not significant. As a result of this, discussion of findings in relation to social relationships was limited.

Later iterations of Project Alert (St Pierre et al., 2005) explored the effectiveness of the Motivational-skills-decision making model when delivered by trained health professionals, recruited from an outside agency, in collaboration with peer facilitators, with the aim of building on previous knowledge and further improving programme outcomes. However, these later iterations of the programme failed to find any positive impact of the programme on substance use, in comparison to treatment (standard health education) as usual controls.

Interestingly, the most significant outcome, from both iterations, lasting beyond the duration of the study were ratings of increased self-esteem, confidence, and problem solving skills in those recruited as peer facilitators supporting teachers in delivery of the programme (Ellickson et al., 2004). Given the additional training and support provided in preparing both peers and teachers to work collaboratively in programme delivery, and considered in light of the evidence presented here so far relating to collaboration, student-teacher relationships and the benefits of working together towards a common goal, as well as the influence of positive socialisation, I suggest these findings are not as surprising as they may first appear.

Furthermore, in comparing the results of early iterations of the programme, particularly in relation to teacher-peer led programmes (PT9), with those in later iterations in which peers were paired with health professionals, I suggest it may be that there is something unique about the teacher-peer relationship which impacts on programme outcomes for some behaviours, at relevant stages of adolescent development, and behaviour initiation.

For example, modelling of collaborative working, and the development of trusting relationships between teachers and peer facilitators may increases student trust in teachers, and perceptions of mutual regard, while reducing feelings of judgement created by programme messages of abstinence and refusal. However, this hypothesis would require further investigation.

Applying The Harm Minimisation Approach – An Alternative Interpretation of The Motivational-Skills-Decision Making Model.

As previously stated, the harm minimisation approach (Marlatt, 1996; Newton et al., 2009; 2012; 2014; Teeson et al., 2012; Champion et al., 2013, 2015; Teeson, et al., 2014; Vogl et al., 2014) was developed using the same theoretical underpinnings, and behaviour change strategies as the Motivation-skills-decision making model (Newton et al., 2009). However, in developing the climate for schools' programme Newton et al. (2009) reinterpreted the basic constructs defined by the Motivation-skills-decision making model, with the aim of delaying risk behaviour initiation, and reducing the risks associated with engagement in risk behaviours. While abstinence is seen as the golden standard of adolescent risk behaviour prevention (Marlatt, 1996), Newton et al. (2009) acknowledge that many young people are likely to experiment with behaviours such as smoking, drinking, sex, and use of illicit substances at some point in their lives. The purpose of programmes taking a harm minimisation approach then, is to reduce risk through the provision of information and resources which encourage, and enable young people to remain safe, and to consider the safety of others around them when making decisions about, or engaging in health risk behaviours.

In developing the initial content for the intervention, Newton et al. (2012) identified three core components from social influence approaches, which are successful in adolescent risk behaviour interventions; information provision, normative content, and skills development. However, the way in which these components were operationalised within programme strategies differs greatly between traditional social influence approaches, as discussed above, and those taking a harm minimisation approach to adolescent risk behaviour.

Information provided within harm minimisation programmes, Newton et al. (2012) state, must be accurate and credible, developmentally relevant, and based on outcomes which are immediately relevant to the student or programme recipient. Furthermore, somewhat unusually for adolescent risk prevention programmes, Newton et al. (2012) suggest both

positive and negative effects and consequences of engaging in risk behaviours should be discussed.

Already it can be seen here that the language used within the programme takes a step away from the judgemental overtones of more traditional approaches, providing young people with all of the information needed to make their own, well informed decisions regarding risk behaviours, and allowing young people to weigh benefits, such as reduced inhibitions, feelings of euphoria, enjoyment, or increased social status, against legal, social, psychological and physiological consequences.

The second component to be reinterpreted was that of normative beliefs. Normative content typically refers to delivering information which aims to correct misperceptions around engagement in a behaviour, or particular set of behaviours within a specific population (McNeal et al., 2004), in this case adolescents. In addition to this, the harm minimisation approach posits that, while the majority of young people do not engage in health risk behaviours, those who do, do so in ways which do not place them at risk of harm (Newton et al., 2012). On this basis, strategies which address social norms advocate making safer choices, and awareness of procedures to maintain the safety of self, and others within the social environment.

This willingness to accept that young people are likely to experiment with some substances, and to provide information which enables young people to keep themselves safe, demonstrates a level of trust, and genuine regard for the health and wellbeing of young people which may contribute to the high levels of engagement, and significant positive effects achieved by The climate for schools' programme.

The final component focuses on social skills development. Historically, this element has typically focused on skills for refusal and resistance, such as assertiveness, along with skills for developing prosocial relationships. Within the harm minimisation model, this component blends resistance skills with practical skills which can be utilised to reduce related harms. Furthermore, young people are encouraged to think about sources of negative influence in their social environments, including peers, families, schools and

communities, and develop plans which aid in negotiating these pressures while maintaining relationships and social standing (Newton et al., 2012). This approach to skills development acknowledges the influence, both positive and negative, of wider social relationships, and the importance social connections, and ranking within individual communities for young people. Recognition, and acceptance of the individual, and the relationships that are important to them, demonstrates value of the individual as they are, increasing feelings of self-worth, and social connectedness (Goodenow, 1993).

In developing The climate for schools' programme, additional consideration was given to timing, duration, and developmental readiness; contextual factors, including embedding the programme in schools, and staff willingness, time and resources for implementation; collaboration; and stakeholder input (Newton et al., 2012).

The climate for schools' programme, developed in collaboration with key stakeholders, including teachers, students, and health professionals, was initially designed to reduce adolescent engagement in alcohol consumption, and tobacco use (Newton et al., 2009). Later iterations were then developed to reduce adolescent risk in relation to ecstasy (Newton et al., 2012), new emerging drugs, and psychoactive substances (Champion et al., 2013; Vogl et al., 2014) and mental health and wellbeing, targeting anxiety and depression, and their impact on health and education outcomes (Teeson et al., 2014).

The programme was designed and delivered in a way which allowed modules to be embedded within schools' existing health and personal development curriculum, with support from the wider school environment. Implementing the programme in this way, Newton et al. (2009) proposed, reduced workload for teachers delivering the modules, and allowed for continued development of the programme as young people grow and develop.

Each module, presented as an internet based cartoon teen drama, which builds week by week, along with interactive classroom sessions, guided by a programme handbook containing up to date information, and structured lesson plans, was delivered in six weekly

sessions. Each module was developed to provide relevant, developmentally appropriate messages to young people, with each module aiming to build on knowledge gained though participation in the previous modules (Newton, 2009). As with Botvin's (1980; 1990) Life skills programme, and Project Alert (Ellickson et al., 1993; 2003), The climate for schools' programme targets the inoculation phase, prior to behaviour initiation, allowing young people to utilise information provided, and apply learned skills, within their own lives in a meaningful way (Newton et al, 2012).

Taking evidence from Botvin's (1980; 1990) Life skills programme, and Ennet et al.'s (2003) Project D.A.R.E, Newton et al. (2009; 2012) state that successful implementation requires that all programme components are delivered as intended, and with consistency across all schools. The use of computers for delivery provides a medium which ensures lessons are delivered sequentially, and that all of the content is delivered in its entirety in each session. Furthermore, computer based programmes are interactive, and fun, further increasing adolescent engagement with programme content (Newton et al., 2012). Furthermore, consultation with stakeholders during the development of the web based modules, particularly with young people themselves, allows for tailoring of programme content to ensure relevance and feasibility (Lustria et al., 2013). According to the Elaboration likelihood model (Hawkins et al., 2008), when young people perceive information to be personally relevant, motivation to engage with material, and belief in programme messages are strengthened, increasing the likelihood that young people will act on programme messages.

Furthermore, Portnoy et al. (2008) found that computer based programmes contributed to behaviour change on a number of theoretically relevant mediating, including self-efficacy, knowledge, attitudes and beliefs, perceived social norms, and motivation and readiness to change, as well as changes in health behaviour, such as alcohol consumption, use of tobacco and other substances, and risky sexual practices.

Lau et al. (2011) support this hypothesis, suggesting that computer based interventions, particularly when delivered in combination with a face-to-face component, are most effective in engaging adolescents in health behaviour programmes (PT7). Findings from The climate for schools' programme support this hypothesis, with results consistently showing increased knowledge, decreased intentions to use substances, delayed initiation, and decreased use for tobacco, alcohol, and cannabis (Newton et al., 2009; Newton et al., 2012; Mitchell et al., 2013).

However, in considering the limitations of this approach, Lustria et al. (2013) warn that the influence of social connectedness, and impact of sociocultural factors on programme engagement, and behaviour change should not be overlooked. This proposition is supported by the evidence presented within this review, whereby stakeholders, including professionals and young people, expressed the need for, and importance of a broader whole school approach which promotes healthy lifestyles of staff and students (see p104).

Whole School Ethos – Applying a Systems Approach to Adolescent Health and Wellbeing

Although there is strong evidence that stand alone/ one-off programmes, such as those described above, can have a positive impact on adolescent health, and risk behaviour outcomes, such as knowledge, intentions to use, and risk behaviour, evidence of programme effectiveness is patchy, and programme effects are often short term. Furthermore, these behaviours do not occur within a vacuum, and the impact of the wider social environment, in which programmes are embedded, must also be considered. Here, I focus on defining the whole school approach, consider the underpinning theories, and discuss methods for implementation in relation to adolescent risk behaviour prevention, giving consideration to causal mechanisms and contextual factors in light of the evidence presented within this research thus far.

The whole settings approach to health and wellbeing has developed rapidly over the last two decades, with settings such as schools being recognised as social structures which

provide access to, and factors of influence for, specific populations, in this case young people (Dooris et al., 2006). The whole school approach was developed on the foundations of the Ottawa charter, which states that “Health is created and lived by people within the settings of their everyday life; where they learn, work, play, and love." (The Ottawa Charter, 1986). As previously stated, the school environment provides an ideal setting for the implementation of adolescent health promotion and risk behaviour prevention, given this is where young people spend the majority of their waking day (Pearson and Wilkinson, 2013).

Rowe et al. (2007) identified two key constructs on which the majority of whole school approaches are based:

1) Structures, such as school environment, school organisational approaches, teaching methods, and school policy changes, and the extent to which these represent school values.
2) Processes which aim to increase inclusiveness, involving all members of the school community, including collegial relationships between all members, and encouraging active participation in school activities.

It is this through this combination of structures and processes, Rowe et al. (2007) argue, that social connectedness is nurtured. As previously discussed in relation to The social development model, an theories of attachment (p194), social connectedness refers to the degree to which adolescents feel a sense of belonging and acceptance, both in school, and within the wider community. Resnick et al. (1997) defined school connectedness as the quality of caring relationships or bonds the young person has within the school environment, commitment to and aspirations for prosocial and academic achievement, and the degree of involvement in broader social activities (PT10).

Theory underpinning school connectedness programmes draws from Attachment theory, Control theory, and The social development model (Catalano et al., 2004), with three core constructs for increasing social connectedness identified from the early theoretical literature; social support, belonging, and engagement (McNeely and Falci, 2004). Here it is posited that when young people receive empathy, praise, and attention in a clear and consistent way a sense of belonging, based on value and self-worth, is developed, leading to increased engagement in school activities.

However, programmes such as The gatehouse project (Patton et al., 2000; Bond et al., 2004; Hawe et al., 2015), and the Seattle Social Development Project (Hawkins et al., 2001), focused on strengthening connectedness to school in order to improve educational and health outcomes, and reduce or prevent engagement in risk behaviours. Behaviour change techniques within these programmes include changes to school policy, such as tackling bullying and truancy, classroom management training for teachers, rule setting in collaboration with students, academic expectations, delivering health information and social skills training, in existing health classes, and across the general curriculum, and encouraging participation in both academic and broader social pursuits (Bond et al., 2004, Hawkins et al., 2001). Broader factors designed to increase social connectedness include home-school communication, parental involvement in aspects of school life, and signposting to, or joint working with social projects within the community, such as sports teams and youth groups (Bonell et al., 2007).

This suggests that while the whole school approach is underpinned, and guided by strong theoretical evidence, translation of these theoretical underpinnings in to practice is often much less comprehensive than recommended. In keeping with the findings previously discussed, programmes which take a whole school approach can be incredibly difficult to implement, and a number of limitations have been highlighted which may impact on programme outcomes, and the way in which those outcomes are interpreted.

The most prevalent limitation in delivering these types of intervention programme is the level of complexity involved in embedding the programme at a number of levels, with a broad range of behaviour change techniques, mediating variables, and outcome measures (Bond et al., 2004). Issues associated with this complexity include time and resources for implementation, staff readiness and willingness to engage with, and deliver the programme, and the maintenance of support networks throughout the delivery period.

As a result of this complexity, and the limitations therein, programmes which aim to increase social connectedness often overlook the more difficult to implement factors of relationship building, such as trust, respect, and mutual regard, instead focussing on classroom management policy, such as clear and consistent discipline, along with opportunity for, and commitment to, participation and attainment in academic pursuits. Here it seems the role of the teacher is to form secure attachment bonds with young people by being consistent in their approach within the classroom, acting as a fair, but authoritative figure, reducing ambivalence or unpredictability, and maintaining an atmosphere in the classroom which facilitates learning. However, in exploring the impact of teaching style on adolescent trust, and teacher-student relationships, Gregory and Ripski (2008) found that it was not discipline which most improved behaviour within the classroom, but genuine regard for the individual, suggesting teachers who were rated as liked by their pupils were much less likely to report problem behaviours. What is more, Gregory and Ripski (2008) suggest, that perceived regard increased trust, and reduced behavioural issues across the board, regardless of gender, culture, or background of the student.

A further limitation frequently raised by those appraising the social connectedness approach to adolescent health and wellbeing is that the overriding focus on academic achievement and engagement in wider school activities puts the onus to, and responsibility of building connections largely on the shoulders of young people. This approach to attachment is problematic for several reasons, and on a number of levels when considered in light of the evidence presented so far. For example, those with poor attachments with family or peers may lack the experience, confidence, motivation, self-

esteem, or social skills required to put themselves forward or actively participate in activities without additional support.

In addition to this, focusing on participation, engagement, and academic achievement, rather than the development of relationships, and providing social support, may further isolate those with lower academic ability, or who struggle with achieving and maintaining grades as a result of broader social issues, such as socioeconomic status, poverty, or problems at home (Shackleton et al., 2016).

Bonell et al. (2014) suggest that these shortcomings in programme delivery, and the way theory, and theoretical process models are translated in to practice is as a result of two misguided ideas or misperceptions. Firstly, the belief that promoting attainment on the one hand, and health and wellbeing on the other is a zero sum game. Drawing on game theory and economic theory, this describes a situation in which gain in one dimension results in losses made in the other. Therefore, time spent improving health and wellbeing of students is often seen as taking away from academic achievement (Bonell et al., 2014). Secondly that academic achievement is the single most important factor in terms of educational or school based outcomes, and wider economic growth.

However, contrary to these mistaken beliefs, evidence shows that education, and health and wellbeing are synergistic, with those with a good level of education having greater health and wellbeing, and more importantly those who feel supported in school, and in better health achieving better academic attainment (Bradley and Greene, 2013). There is strong evidence, both within the literature and from the evidence presented within this study, to suggest that a more comprehensive whole school approach to adolescent behaviour, delivered not only through the curriculum, but incorporating the entire range of school systems, would be beneficial (Bonell et al., 2014).

A small number of programmes have included elements of wider social influence, such as peer affiliations (Cappella and Hwang, 2015), family functioning and parenting style (PT14) (Hawkins (Hawkins et al., 1999, Hawkins et al., 1992, Battistich et al., 2000, Catalano et al., 2003, Catalano et al., 2004, Li and Lerner, 2011), and community

activities (PT18) (Sigfúsdóttir et al., 2008, Kristjansson et al., 2010, Caldwell et al., 2011, Motamedi et al., 2016, Smith et al., 2008, Wegner et al., 2008, Weybright et al., 2016), alongside traditional school approaches, consisting of either The motivation-skills-decision making model, or school connectedness approaches to adolescent health and wellbeing and/or adolescent risk behaviour. The findings of each of these programmes, and related programme theories are discussed at length when considering the impact of the wider social environment (5.3, p160).

However, as previously stated, there are a dearth of studies which incorporate all of these elements, along with wider school processes. Nor do any of the studies cited within this exploratory research give consideration to promoting or maintain the health and wellbeing of school leaders, teachers, or other school staff within the programme. While the health and wellbeing of school staff may, at first, seem like an issue for an entirely separate investigation, or programme, evidence within the literature, and within this study have shown that factors such as caring and empathetic leadership, good collegial working relationships between staff, as well as between staff and students, teacher security and attachment, modelled behaviour, and teaching style can impact significantly on student engagement, connectedness within school, and problematic behaviour. Therefore, it is fair to assume that whole school programmes which support the health and wellbeing of staff as well as students may be more successful in reducing adolescent risk behaviour.

Though the idea of health promoting schools is not a new one, and there is strong evidence for this approach from theoretical, and editorial literature, such as discussion pieces, and recommendations for future policy and practice (Weare, 2015, Lewallen et al., 2015, Shackleton et al., 2016, Turunen et al., 2017), there is very little empirical evidence for the effectiveness of this approach to whole school programmes. Literature discussing the Health promoting schools approach is considered below, along with strengths and weaknesses of the approach, and recommendations for further development prior to implementation are discussed below, taking in to account the evidence presented here.

Given the initial purpose of the research was to explore what works, for whom, in what circumstances, and why, in the prevention of complex multiple risk behaviour prevention

programmes for use with adolescents, exploring the healthy schools approach, with its focus on health promotion may seem somewhat outside of the remit of this research. However, in order to truly consider what impact school context has on programme outcomes, it is first necessary to understand what the broader aspects of that context, which occur outside of the classroom setting, are, why they are important, and what impact they may have.

Dooris et al. (2006) identify two key theories which underpin this whole settings approach; The Ecological model of health promotion, which posits that health is influenced by a complex array of environmental, organisational, and personal factors, and Organisational theory which views schools as complex, dynamic systems, acknowledging the role of interactions between various systems and components within the setting.

The healthy school approach refers to multi-system, multi-component programmes which incorporate every aspect of the social environment in addressing adolescent health and wellbeing (Weare, 2015). This whole systems approach goes beyond the delivery of a programme within a setting, recognising that place and context are in themselves important, modifiable determinants of health and wellbeing (Dooris et al., 2006). The health promoting schools approach therefore takes a step away from more traditional health promotion and risk behaviour prevention programmes, rejecting the problem focused deficit model of health, instead seeking to unlock potential within the school environment to promote health and wellbeing for both staff and students.

In addition to this, the whole systems approach goes beyond the constraints of the setting in which the programme is implemented, to consider the role of social, contextual and interpersonal factors, across a range of levels and domains from the wider environment. For example, individuals are situated within schools, which are located within neighbourhoods, which are situated within a region, constituting nested settings, in which each layer functions independently and interconnectedly (Dooris et al., 2006). On this basis it is recommended that those taking a whole settings approach implement a range of interconnected interventions and programmes to promote healthy lifestyles within day to day living.

This proposition is supported both within the literature, and by primary data collected from key stakeholders, including teachers, school nurses, and young people. The majority of stakeholders felt strongly that more joined up working across school system, and the incorporation of elements such as Physical Education, and the provision of healthy meal choices in the school canteen would improve perceptions of, and trust in schools' regard for pupils' health and wellbeing.

As previously stated, the healthy schools approach has long been regarded, by those in the health sector, as an essential framework for improving adolescent health outcomes, though it has not been received as well by those in the education sector (Lewallen et al., 2015). However, Turunen (2017) argues that schools provide a major means to improving the health and wellbeing of young people, and therefore must recognise the need for a synergistic approach between adolescent health and education. Furthermore, Turunen et al. (2017) states, schools, as a central part of their surrounding communities, provide a unique opportunity to reduce inequalities in health, focusing on helping every child to fulfil their potential, and to lead as healthy, and fulfilling a lifestyle as possible.

As many as 34,000 health promoting schools were identified throughout Europe in the school year 2012 – 2013, however, levels of implementation differ greatly between and within participating countries (Turunen, 2017). This may be as a result of differences in national policies which support the implementation of healthy schools' programmes. While it is recognised that the central purpose of schools is educational achievement, and health promoting policies are typically implemented with the aim of improving attainment and future competencies in making healthy decisions, the current political context is seen as one in which the relationship between health, physical and cognitive development, school connectedness and participation, and educational outcomes is recognised. Furthermore, given the rising rates of mental health concerns, such as stress, anxiety, and depression, in both staff and students, now is the ideal time for changes to be made in policy and

practice which promote the health and wellbeing of all school members (Lewallen et al., 2016; Turunen, 2017).

Lewallen et al. (2016) propose eight key areas for change in delivering a whole school approach:

- Health education
- Physical education
- School health services
- Healthy and safe school environment
- Counselling, psychological, and social services
- Family and community involvement
- Health promotion for staff
- Nutrition services.

Many of these components are representative of those identified as important by stakeholders within this study. Lewallen et al. (2016) state that health education is most effective when delivered, within the wider programme, by trained teachers, and takes a motivation-skills-decision making approach to delivery. However, more in keeping with the evidence presented here, is the recommendation by Dooris et al. (2006) that whole school programmes deliver a range of interventions and strategies within the broader healthy schools' environment, with programme deliverers selected depending on target behaviour. For example, while there is strong evidence, discussed within the introductory chapters to this study, for the clustering of the risk behaviours included in this study (Jessor, 1991, Brener and Collins, 1998, De Looze et al., 2015), empirical evidence presented when considering design, deliverer, and risk behaviour (p147) suggests that programmes targeting risky sexual behaviours are more successful when delivered in collaboration with peer facilitators (Mellanby et al., 2001), while components which incorporate parents improve programme outcomes for alcohol consumption and tobacco use (Ary et al, 1999; Viner et al., 2012; DiClemente, 2013). Taken together, the theoretical, empirical, and

primary evidence suggests that health education, and skills training should be delivered within a broader healthy settings approach.

Further to this, the healthy settings approach, which recognises the layered and multifaceted nature of factors which impact on adolescent health behaviours provides clear theoretical evidence supporting the inclusion of components based within the wider community (Lewallen et al., 2016; Shackleton et al., 2016; Turunen, 2017). Several programmes were identified within this study which incorporated community based components, such as The Icelandic model of adolescent risk behaviour prevention (Sigfusdottir et al., 2008, Kristjansson et al., 2010), and Healthwise South Africa (Wegner et al., 2007: Smith et al., 2008; Caldwell et al., 2011; Tibbitts et al., 2011; Weybright et al., 2016), with strong theoretical links to parental monitoring, prosocial peer relationships, social connectedness, and future aspirations. However, these programmes tended to focus only on these community based elements in evaluating programme effectiveness with little, or no consideration given to other elements within the school environment, such as the health and wellbeing of school staff, physical activity and nutrition within school, or agent for delivery, approach to, or delivery methods for health education.

In addition to considering the role of various components in preventing specific adolescent risk behaviours, and who is most effective in delivering them, developmental theories of adolescent development, supported by the evidence from empirical studies, suggest that age and developmental fit are also important factors which contribute to the success or failure of programmes in relation to specific behaviours.

6.2.3 Age for Delivery, Adolescent Development, and Programme Relevance

The age at which adolescent risk behaviour prevention programmes are delivered is an important consideration, across a number of levels, in investigating what works, for whom, in what circumstances and why (PT23). The vast majority of programmes included within

this review are delivered to adolescents between the ages of 12 and 14 years of age, typically drawing on the age of risk behaviour initiation in deciding the age for implementation (Onrust et al., 2016). However, calculating the optimal age at which programmes should be delivered, to ensure greatest effect, Onrust et al. (2016) state, requires consideration of developmental stages of adolescence, and readiness for implementation as well as age of onset of the target behaviours. In programmes, such as those included in this review, which target multiple risk behaviours simultaneously, calculating the optimal time for implementation becomes even more complex. Here, I consider how theories of adolescent development, and readiness can further understanding of why programmes may be effective for some but not for others, and why behaviour change is often short lived, and how this knowledge could inform the development of future intervention programmes.

Adolescent Development and Risk Behaviour Prevention

As previously discussed within the opening chapters of this thesis, definitions of adolescence within the literature cover a broad age range, covering a period in which a great deal of social, physical, psychological, and cognitive changes occur. The developmental approach to understanding adolescence, and risk behaviour prevention provides two key ways in which adolescence, and risk behaviour can be categorised to aid in understanding why risk behaviours typically occur at a particular age, developmentally relevant barriers to engagement, and ways in which prevention programme design can capitalise on these aspects of the different developmental phases to improve programme outcomes. Each of these developmental theories, and the ways in which they may influence programme outcomes are considered below.

Stages of Adolescent Development

Steinberg (2014) defined three stages of adolescent development, early, middle, and late adolescence, each with different physiological, psychological, cognitive, and sociocultural

changes emerging in each phase. As previously stated, the majority of programmes included within this review were delivered to young people aged 12 to 14 years, which falls within the early adolescence stage of development.

Early adolescence is often defined within the literature as a time of rule and limit testing, and experimentation, in which young people move from seeking approval of adults to seeking the time of their peers (Spano, 2004), supporting the supposition that this may be the ideal time for intervention. However, aspects of development such as self-awareness, self-esteem, social connectedness, cognitive development, and rates of maturity may impact on programme success.

In terms of cognitive development, young people in the early stage of adolescence are intensely focused on the here and now, with thoughts of the future extending to the next day, or next week. Anything beyond this is perceived as too distant to be of immediate concern. As a result of this young people tend to see themselves as invulnerable (Spear, 2000, Coupey et al., 2002, Spano, 2004). This presents an immediate problem for multiple risk behaviour prevention programmes delivered to young people within this developmental stage which take the typical Motivational-skills-decision making approach as information regarding future health and legal consequences may go unheeded.

Levels of maturity may also act as a barrier to meaningful engagement, particularly in relation to programmes targeting the development of romantic relationships and risky sexual behaviour. It is widely acknowledged that girls reach sexual maturity at a younger age than boys (Coupey et al., 2002; Spano, 2004), with boys more likely to become embarrassed discussing issues of an intimate nature, resorting to showing off, or making a joke of the information being delivered. Furthermore, early adolescence has been identified as a time of anxiety and low self-esteem in relation to sexual activity centring on self-exploration, masturbation, increased awareness of the physical self and perceived faults or shortcomings and a lack of understanding of what is ‘normal’ (Spano, 2004).

These anxieties, Spano suggests are intensified for those who are unsure of their own sexuality or who feel they may not be heterosexual. Unfortunately, as previously discussed, programmes delivering sex and relationships education tend to take a biological approach, discussing subjects such as sexual health, pregnancy, and contraception, with very few discussing how to manage feelings, or developing feelings, and none that were identified within this study approaching more sensitive subjects such as self-discovery, masturbation, or sexuality.

In addition to this Onrust et al. (2016) found that, while the majority of programmes targeting early adolescence take a social learning approach to prevention, including knowledge, social skills, and refusal training, evidence suggests that programmes which focus on relationship building, challenging perceptions of social norms, and parenting or family elements are most successful when implemented with this age group. These findings fit with the dramatic changes in social relationships which occur during early adolescence.

Further to this, Onrust et al. (2016) found that resistance and refusal strategies were most successful when implemented during late adolescence (aged 17 years+), when young people have reached a level of autonomy that increases free time, and opportunity for substance use, at a time when parental monitoring is significantly decreased. This supports the evidence from the harm minimisation programme (Newton et al., 2015) which found that modules targeting the use of substances such as ecstasy, psychostimulants, and new emerging drugs were not effective when implemented with young people aged 15. Reasons given for this were that use of these substances was low at baseline, and remained low at follow up for both experimental and control groups. These findings provide further support for propositions made by the whole settings approach, which suggests that intervention programmes should be ongoing, delivering interconnected strategies throughout education as subject matter becomes relevant.

Factors such as self-esteem, confidence, and the shift in social relationships which, typically occur during in early adolescence are considered further here in relation to how ready young people are to participate, and engage in behaviour change programmes, and how this may impact on programme outcomes.

Readiness for Change

As demonstrated within this review, there are a large number of programmes for multiple risk behaviour prevention in adolescence. However, studies have found wide variation in programme effectiveness, with the majority of programmes fairing badly at follow-up, suggesting programme effects are typically not maintained, despite strong theoretical foundations, and attention to ensuring programme fidelity. While these factors can be attributed to a range of individual and programmatic barriers or limitations, as presented thus far, adolescent motivation, confidence, and willingness to engage with the programme are highlighted as key to further understanding programme effectiveness (Becan et al., 2015).

Drawing on models of addiction, and cessation, such as the theory of planned behaviour (De Leeuw et al., 2015), readiness to change refers to the individuals' motivation to engage with the intervention, along with behavioural intentions, and perceived pros and cons of participating in targeted behaviours (DiClemente et al., 2013). A number of factors impact on readiness, including: personal circumstances; confidence, and self-efficacy; Beliefs, attitudes, norms and influences of social networks, including family and peers; current health and perceives health consequences, and commitment to change (Apodaca and Longabaugh, 2009). While these models are typically used in behaviour cessation for those who have already begun to use, they provide a framework of factors for consideration prior to, and during implementation of prevention programmes with young people.

The transtheoretical model (TTM) (Prochaska and Velicer, 1997) proposes a number of stages through which those contemplating behaviour change progress; starting with pre-

contemplation (unawareness), progressing through contemplation (becoming aware), preparation (forming of attitudes, beliefs, and intentions), to action (making decisions about desired behaviour and acting on them), and maintenance (internalisation of programme messages and self-directed healthy behaviours post programme). Successful progression through these stages requires the young person to recognise that engagement in risk behaviours has negative consequences, to be motivated to make healthy decisions, and to moderate behaviours to protect from negative consequences or harms associated with engagement (Becan et al., 2015).

While the majority of programme considered in this review include components which address factors such as confidence and motivation, timing, resources, and duration of the programme itself do not allow for eliciting, understanding or dealing with individual barriers which may delay participant readiness.

For example, those who are low in self-esteem, are being bullied, have problems in their home lives, or are struggling with school may not feel motivated to engage with programme components, or even to demonstrate the level of self-care required to recognise that risk behaviours such as alcohol consumption, tobacco and substance use are harmful, and act on information and skills in a proactive way.

Furthermore, serious consideration needs to be given to social relationships surrounding the young person. Drawing on evidence from studies of the social determinants of health, rates of risk behaviour prevalence, and the findings presented within this study, I suggest that poor social connectedness, with peers, school (including school leaders, teachers, and other staff), parents, and those within the wider social environment may act as a barrier. Each of these relationships has the potential to influence risk behaviour engagement, readiness for change, and programme engagement and outcomes. These potential barriers to engagement differ from one context or setting to another, such as the difference highlighted within the findings of this study, between programme implementation, and relationships between students and programme delivery, teachers and wider school staff in health promoting schools, and schools with a more traditional approach to education, and from person to person at an individual level.

Stakeholder consultations undertaken throughout programme development and delivery have been shown to increase programme success by highlighting, preparing for, and addressing some of these barriers which arise within a specific context or setting. Theoretical underpinnings of stakeholder collaboration are considered below

6.2.4 Stakeholder Consultation

Stakeholder consultation was included in a number of programmes within this study (Bond et al., 2001; 2004; Patton, 2012; Newton et al., 2009; 2012; 2014). Stakeholder panels typically consisted of school leaders, teachers and school administration staff, students, psychologists, and public health professionals, ensuring that programme strategies are acceptable, relevant, and sensitive to local context, culture and resources (PT2). While the main focus of stakeholder consultations in the programmes included in this review was to meet the needs of the young people receiving the programme, the technique has been employed in other areas, such as tackling bullying in schools, in a way which also considers the needs, and expertise of those involved in delivering the programme (Skaar et al., 2016).

Theoretical evidence in support of stakeholder engagement utilised in this way is based on two key models; the concerns based adoption model (Hall and Hord, 1987), and collaborative strategic planning (Stollar et al., 2006).

The Concerns Based Adoption Model

The concerns based adoption model, or CBAM is a robust theoretical model of stakeholder engagement in the design and implementation of programmes designed to bring about change within an educational setting (Anderson, 2015). The purpose of the model is to understand processes of change from the point of view of teachers and other staff implementing new intervention strategies. The model also provides a framework to

consider how processes of programme implementation are affected by those involved in programme delivery (Anderson, 2015).

Though school leaders, teachers, and other school staff involved in programme delivery are often included in stakeholder consultation groups, the relationships between these individuals, their needs, and the way in which their attitudes, beliefs, and approach to programme delivery impacts on programme delivery, engagement, and outcomes is rarely considered.

In keeping with the realist approach, the CBAM considers behavioural change as a process, rather than an event, and recognises that change is a personal experience, undertaken by individuals, which involves developmentally relevant growth in feelings, knowledge, skills (Anderson, 2015). Furthermore, the model acknowledges that programmes designed to facilitate change should be implemented at both an individual and contextual level (Skaar et al., 2016).

Anderson (2015) defines three dimensions for conceptualising change; Stages of Concern, Levels of Use, and Innovation Configurations.

Stages of concern is described as the degree to which teachers or programme deliverers feel interested in and motivated to engage in the programme. Anderson (2015) defines seven stages of involvement:

1. **Awareness –** Teachers are aware of, but have little knowledge of, or interest in the programme.
2. **Informational –** Teachers are interested in learning more about the programme and implications of implementation.
3. **Personal –** anxieties about ability to implement the programme, concerns about appropriateness and concordance with one's own beliefs, and consideration of personal costs and benefits of involvement.

4. **Management –** achieved when the teacher or programme deliverer begins to take control of programme delivery, adapting the programme to fit the needs of their own cohort.
5. **Consequence –** consideration of the potential impacts of the programme, and how adaptions might lead to improved outcomes.
6. **Collaboration –** Interest in working with other members of staff to further improve outcomes and reduce burden.
7. **Refocusing –** decisions are being made about embedding, making major adaptions, or replacing the programme, based on observed outcomes.

It is important for programme success to ensure that those involved with the programme progress through these stages as smoothly as possible, and that any issues encountered are dealt with as soon as they arise. This requires input from stakeholder such as teachers, and good support and leadership so that those delivering the programme feel able to raise concerns, and discuss matters relating to programme implementation.

Where stages of concern pertain to teacher or deliverer attitudes, beliefs, and concerns leading up to, and throughout implementation, Level of use refers to patterns of behaviour as teachers and /or programme deliverers prepare to use, begin to use, and become accustomed to implementing the programme (Anderson, 2015). Levels of use is also described on seven levels:

1. **Non-use –** Teachers, staff or programme deliverers have little knowledge of methods for implementation and do not implement the programme.
2. **Orientation –** more information is sought but the programme is not yet implemented.
3. **Preparation –** deliverer is preparing to begin delivery.
4. **Mechanical –** implementation has begun but deliverer struggles with logistics of delivery (time, resources) and implementation of new skills.

5. **Routine use –** deliverers become accustomed to use, focus then becomes student centred.
6. **Integration –** the programme becomes embedded in school ethos through collaboration.
7. **Renewal –** deliverers, teachers, and school leaders commit to making permanent change or discarding programme dependent on outcomes.

Within programmes, deliverers do not always pass through each of these levels, with many struggling to progress past mechanical issues of implementation, such as finding time within their schedule to implement change. Furthermore, those implementing programmes may fail to implement all components of the programme as intended, or make changes to the programme without consideration of the impact this may have on programme outcomes.

In regard to both stages of concern, and levels of use, training and support from programme developers, and school leaders tends to drop off at around stage four (Management/mechanical) when programme implementation begins. This creates issues in which mechanical issues are not addressed or are perceived as the sole responsibility of the deliverer, increasing work burden and preventing successful progression to later levels. As a result of this the shift in focus from one's own needs to the needs of the student, and subsequent programme outcomes may be delayed or impaired.

The term Innovation configurations was coined in recognition that programme deliverers rarely implement programmes in exactly the same way, despite the focus on implementation fidelity in staff training (Anderson, 2015). These innovation configurations typically reflect the degree to which the programme is adhered to, and consideration of whether adaptions made are in keeping with the aims of the programme.

The purpose of the CBAM model is not to provide a best fit method for implementation, but to provide a framework through which needs of programme deliverers, and the impact

programme deliverers can have on programme processes, student engagement, and programme outcomes. Stakeholder engagement provides a supportive network in which programme deliverers are given the opportunity to express, discuss, and resolve issues as they arise.

Collaborative Strategic Planning

Collaborative strategic planning (CSP) is a team based collaborative approach which aims to promote synergy between innovative programmes and the specific needs, contexts, and cultures of the environment or setting in which it is implemented (Stollar et al., 2006). The process involves five steps, beginning with problem identification or needs assessment, giving consideration to the need for the programme, relevance of programme components, and ability of staff in implementing the programme (Skaar et al., 2016). Once the needs have been assessed and problems identified, planning and mapping processes can begin in order to facilitate programme development or adaption (Stoller et al., 2006). Stakeholder feedback and programme development does not end at implementation, but continues in a cyclical manner, addressing problems on a case by case problem as they arise. Once a plan has been formulated, strategies for implementation must be clearly communicated to all of those involved in delivery, and adherence to, and success of programme adaptions should be monitored throughout to ensure positive programme outcomes (Skaar et al., 2016).

A key issue in reviewing papers which included stakeholder consultation is that adaptions made, and impact on programme outcomes is rarely reported. Therefore, while it is possible to note that programmes which include stakeholder guidance are more successful than those that don’t, it is not possible to reflect on what it is that is improved. On this basis, future programmes should not only include stakeholder feedback from the outset, but should report on adaptions made to the programme as a result of stakeholder feedback, and the impact these changes had on engagement with the programme, and programme outcomes, making clear the rationale for any reform.

Furthermore, while stakeholder guidance can provide valuable insight in to local contextual issues, local resources, and needs of the school, year group, or class, broader sociocultural factors from the wider community, such as socioeconomic status and deprivation, culture, race, and religion, and individual factors such as sexuality and gender need to be considered in more depth as evidence within the findings shows these may impact significantly on engagement within the programme.

6.3 Community, Culture, and Health Inequalities

As discussed previously, (Ch 6.s, p215), it is widely acknowledged within the empirical and theoretical literature, that incorporating the voices of stakeholders, including those involved in designing, implementing, delivering, and receiving the programme, improves programme outcomes. The aim of these stakeholder consultations is to ensure programmes are directly relevant to the target population and are sensitive to local cultures and resources. Key tasks include identifying the most prominent problems, or areas of greatest need within each setting, and implementing strategies to bring about change, both within the classroom and at the whole school level. Stakeholder panels typically consist of programme managers, school leaders, teachers and school administration staff, psychologists, public health professionals, and students.

However, despite the promising move towards consideration of the contextual, social, and cultural needs of those involved in the programme, the impact of wider sociocultural determinants of health, such as socioeconomic status, neighbourhood effects, community resources, ethnicity and cultural norms, and gender and sexuality are often neglected in programme design and implementation.

Each of these broad health determinants have been shown to impact on a range of factors throughout this review, including risk behaviour initiation, school connectedness, educational attainment, home school communication, and programme engagement. As each of these factors have been shown to impact on programme success, I suggest that careful consideration of the potential impact of each of these factors should be undertaken from the outset on a case by case basis, particularly in areas of deprivation, or where target populations are culturally diverse.

The purpose of this chapter is not only to consider these factors individually, but to investigate how these social determinants of health intersect, reinforcing barriers to health promotion and risk prevention programmes or initiatives, and further widening health inequalities as shown in the diagram below (See figure seven).

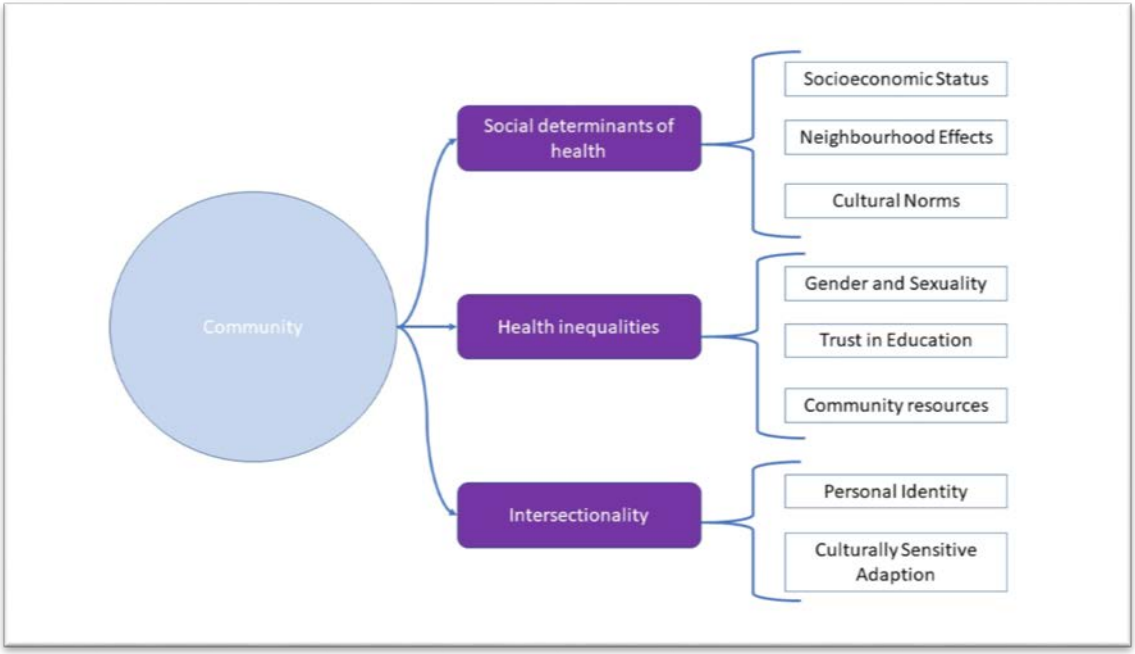

Figure 7: Diagram showing the impact of health inequalities, and sociocultural factors on programme success

6.3.1 Socioeconomic status, deprivation, and community resources

Until recently the socioeconomic status of adolescents, and adolescent inequalities in health has received little attention, with studies focused on adulthood, and the impact on young children (Currie et al., 2008). Typical measures of socioeconomic status include income, education, and occupation. As young people are still in school, and are not on the job market measures of adolescent socioeconomic status is typically based on that of their family. However, young people are often reluctant to provide this information, making it difficult to explore how socioeconomic status impacts on the lives of adolescents. As discussed in the introduction to this review, when discussing the impact of the social determinants of health at a structural or national level, the impact on adolescents is not immediately clear (Goodman et al., 2003), however, it is acknowledged that poverty and deprivation can impact on more proximal determinants of health, such as education, and access to community resources.

In exploring underlying mechanisms and contextual factors which underpin programme successes and failures, socioeconomic status is a theme which has emerged recurrently, impacting on a range of factors within programmes, including home school relationships, family stress, and access to services and resources within the community. The impact of socioeconomic status on relationships, including school connectedness, home school communication, and family stress theory were discussed earlier in this chapter. The purpose here is to understand how socioeconomic status, and deprivation impacts on availability of, access to, and engagement in community based projects or resources designed to reduce or prevent adolescent risk behaviour.

Galster (2012) describes these local environmental and sociocultural constructs as neighbourhood effects. Neighbourhood effects include the availability, proximity, accessibility and quality of local resources which support healthy lifestyles, including health institutions, schools, recreational areas, and community projects, and attitudes, beliefs and social norms within the local environment which may impact on health choices.

The impact of socioeconomic status, and deprivation on adolescent health can be considered on two levels (Elgar et al., 2016), the individual or personal level, and the wider environmental level.

At the personal or individual level, socioeconomic status can act as a barrier to engagement in community projects, particularly where there are costs associated with participation, such as travel to the venue, weekly subs, or costs for refreshments. Furthermore, Elgar et al. (2016) suggest that adolescent perceptions of status may further impact on health, with young people having lower future aspirations, or believe that they are unable to make things better for themselves.

However, this individualistic understanding of the impact of socioeconomic status on health assumes that resources are available, if not always accessible. In areas of deprivation these services or projects are not always available in the local community, and where they are, may not always have the resources to cope with the number of young

people wishing to access the programme, or to provide the level of support required to demonstrate change within a behaviour change programme (Bolland, 2003, Elgar et al., 2016). Where programmes delivered within in schools are signposting to these community resources, such as in The harm minimisation approach (Newton et al., 2009) or whole settings approaches (Weare, 2015; Lewallen et al., 2015; Shackleton et al., 2016; Turunen, 2017) special attention should be paid to developing an awareness of the local area, including deprived neighbourhoods, and the impact these community focused components may have on individuals leaving in these areas. For example, Galster (2012) states that, while socialisation with prosocial peers can have a positive impact on young people, when participation in community programmes is meaningful, and well resourced, in situations where there is perceived competition for resources, or where continued access to resources is perceived as being dependent on achievement, individuals from poorer backgrounds may feel disengaged or excluded from the programme based on their own perceptions of ability and self-worth in comparison to wealthier or more deserving peers.

6.3.2 Race, ethnicity, and culture

As the current population continues to diversify, the need to understand the role of race, ethnicity and culture on adolescent development is becoming increasingly important (Rivas-Drake et al., 2014). Adolescence is a period in which personal concepts of identity and belonging are formed, and comparisons between personal cultural experiences, and those of others. Personal identities relating to race and ethnicity comprise of two core constructs; cultural background, including norms, beliefs, and attitudes; and social experiences, such as racial discrimination, or social exclusion.

As programmes designed to reduce or prevent multiple risk behaviours in adolescence expand to include wider social environments, including community services and

resources, the need to consider programme adaption based on race, culture and ethnicity has become increasingly prevalent.

As with socioeconomic status, and gender and sexuality, there is a wide range of empirical evidence demonstrating the effects of race, ethnicity, and culture on engagement in risk behaviours during adolescence (Blum et al., 2012). However, in programme development, delivery, and analysis, the impact of cultural factors is often overlooked, with adolescents within a particular setting being treat as one homogenous group.

The purpose of including community components in adolescent risk behaviour programmes is frequently cited as increasing social connectedness, and encouraging engagement in semi-structured prosocial activities (Sigfusdottir et al., 2008; Kristjansson et al., 2010; Wegner et al., 2007: Smith et al., 2008; Caldwell et al., 2011; Tibbitts et al., 2011; Weybright et al., 2016). However, the majority of empirically tested programmes are tested primarily with white, middle class youth, with those involved in programme development or stakeholder consultation already engaged, and confident in school (Castro et al., 2004). As a result of this significant barriers such as language, representation within programmes, opportunity for participation. Furthermore, Castro et al. (2004) argue, cultural adaptions should go beyond surface structures such as language, and representation within the programme, to really understand the cultural traditions and nuances of those from ethnic minorities. This process requires understanding and cultural competence in programme developers, and in those implementing the programme.

6.3.3 Gender and sexuality

Statistics show that one in 20 young people aged between 16 and 24 years of age identify as non-heterosexual, such as lesbian, gay, bisexual, pansexual, asexual, or questioning, increasing to 1 in 2 or 50% when gender identities are also considered (Office for national statistics, 2017). These statistics relate to the way in which young people identify, rather

than sexual attraction or activity, and include gender identities such as transgender, bigender, agender, and genderfluid, as well as sexual identities.

Despite this dramatic change in the way young people identify themselves, programmes promoting adolescent health and wellbeing, or aiming to reduce or prevent adolescent risk behaviour often fail to include relevant information, skills, or resources. This was identified as being particularly salient in programme components delivering relationships and sex education, though it can impact on other risk behaviours too as young people may feel disconnected from school, peers, and family where sexual orientation or gender is not accepted, leading to feelings of social isolation.

For example, Blosnich et al. (2014) found that those who identify as LGBTQ are more likely than their heterosexual peers to engage in substance use, including alcohol and tobacco, take greater sexual risks, including a greater number of partners, and greater frequency of unprotected sex, have higher incidences of self-directed harm, and are rated as having poorer mental health.

In addition to this there is a growing consensus among young people that sex and relationships education should answer their questions and concerns about sexuality, and provide general information about relationships, self-discovery and sexuality, allowing them to explore their feelings from an informed standpoint (Kirby, 2011).

As discussed within the findings of this review, this movement is supported by the World Health Organisation (2006) who state that sexual health is more than just the absence of disease, or the implementation of safe sexual practices, but involves a sensitive understanding of, and approach to, relationships, sexuality, and sexual practices, including the possibility of pleasurable sexual experiences.

However, attempts to broaden the delivery of sex and relationships education has typically caused controversy, both in the media, and the local community (typically from religious leaders, and parents), and has historically met with opposition. Common concerns include

the premature sexualisation of young people, and adolescents' susceptibility to suggestion or influence (Abbott et al., 2015).

As a result of this conflict, and lack of agreement around what should be covered by sex and relationships education, programme design has typically been driven by political movements, and moral and health based messages thought to be relevant at the time. The majority of programmes implemented within the United Kingdom were developed in the 1980's resulting in programmes which guided sexual behaviour based on a moral rhetoric, and relating to health concerns such as increasing rates of underage pregnancy, and transmission of sexually transmitted infections, as well as the rising prevalence of HIV and AIDs (Abbott et al., 2015).

These programmes have since become the foundations for a plethora of sexual health programmes aiming to control adolescents' sexual behaviour, and promoting abstinence based messages which approach sex as a means to reproduction within a committed, heterosexual relationship. Until very recently, sex and relationships education was not compulsory, allowing schools and other sexual health services to continue to deliver this somewhat outdated curriculum. This has resulted in those identifying as LGBTQ receiving sex and relationships education with no direct relevance to them, and leading to feelings of exclusion. Furthermore, Abbott et al. (2015) state, the inherent heteronormativity in sex and relationships education risks exacerbating social issues such as homophobia, and bullying.

6.3.4 Health Inequalities and Intersectionality

The National Institute for Health (NIH) and Centre for Disease Control define health inequality as:

> *"a chain of events signified by a difference in: (1) environment, (2) access to, utilization of and quality of care, (3) health status, or (4) a particular health outcome that deserves scrutiny. (CarterPokras and Baquet, 2002: 427)"*

Margaret Whitehead (1991) provided a somewhat broader definition, stating that:

> *"differences in health which are not only unnecessary and avoidable but, in addition, are considered unfair and unjust."*

Here the definition is made between behaviours or circumstances which are entered in to voluntarily, and factors which impact on health which are entirely out of control, such as socioeconomic status and deprivation, race and ethnicity, culture, and sexuality and gender.

In considering the impact of these sociocultural factors, there is a trend within current research to focus on one domain, and the potential for social exclusion within that domain, without consideration of other interrelated factors (Vera and Feagin, 2007). Furthermore, a key issue in trying to understand the underlying mechanisms that result in health inequalities is that there are significant variations in identity both within and between cultural groups (Vera and Faegin, 2007). If issues relating to community, culture, and health inequalities are to be addressed we need to understand not just impact on health and wellbeing for each cultural domain, but the complex interactions between them.

Intersectionality theories argue that axes of inequality, such as gender, race, ethnicity, class, and sexuality are inseparable, and should not be considered in a stratified manner, but as interconnected constructs which interact with, and impact on each other (Black and Veenstra, 2011). Studies of intersectionality do not provide an explanation, but provide a framework for consideration in research, in health promotion, and in policy which captures the complexities of lived experience. Intersectionality, Black and Veenstra (2011) argues, is founded on theories of power, particularly in relation to racism, sexism, and classism, and heterosexism or heteronormativity.

Intersectionality theorists posit that our identities remain with us in everyday social interactions, suggesting that interconnected identities should be considered in any social analysis. Furthermore, theorists argue that, while each of these axes of inequality are interrelated, different identities may be more prevalent, or take greater priority depending on the situation we find ourselves in (Black and Veenstra, 2011).

Intersectionality provides a novel approach to understanding the impact of these sociocultural factors on health and health inequalities, making no a-priori assumptions about power dynamics between these social categories (Hankivsky and Christoffersen, 2008). Furthermore, intersectionality goes beyond the supposition that numerous causal mechanisms may contribute to adolescent behaviour, to stipulate that complex interactions between a range of social influences are always active in our day to day lives, the decisions we make, and barriers we experience in living a healthy lifestyle. Recognition of these complex interactions, Hankivsky and Christofferson (2008) argue is vital in research, policy and practice.

6.3.5 Cultural adaptions, fidelity and fit

Recognition of the sociocultural categories that contribute to our social identities, and the complex interactions between them presents a problem for multiple risk behaviour prevention strategies which brings us back to the dichotomous tension between programme adaption and fidelity, as highlighted in programme theories one to three within this review (p120 - 127). This fidelity adaption tension, Castro and colleagues (2004) state, is based on two competing aims:

1. To design universal multiple risk behaviour prevention programmes, and implement them with fidelity.
2. To develop programmes which are sensitive and adaptive to the culture and needs of the local community.

Furthermore, programmes which are not culturally sensitive exclude all those who belong to a minority population, reducing programme relevance and therefore programme engagement, ultimately leading the programme to fail. However, if programmes are delivered with poor fidelity, allowing adaptions to be made on an ad hoc basis, a culturally diverse programme may be appealing, but may fail, or even increase adolescent risk behaviours, if not strongly grounded in theoretical and empirical evidence (Castro et al., 2004). The challenge then is to produce evidence based programmes, which are adapted in response to local culture and context in a scientific way. Additional support, and where

necessary further training, should be offered to those delivering the programme to ensure adaptions are delivered as and when relevant, as scientifically as possible. Furthermore, cultural adaptions should be analysed and reported along with other programme outcomes, allowing programme developers and users to monitor the impact of adaptions on programme outcomes, and potentially informing future research, programme development and implementation, practice, and policy.

Chapter 7
Discussion

In the introduction to this thesis (Ch 1.5, p29), I stated that multiple risk behaviour prevention programmes aimed at adolescents, to reduce risk behaviours such as alcohol consumption, tobacco and substance use, and risky sexual behaviours, tend to be moderate in their effects, and often fail in replication. Furthermore, I highlighted the mismatch between existing policies for adolescent risk behaviour prevention, which fall in to individual behavioural silos and the evidence supporting programmes, which target multiple risk behaviours. Realist reviews go beyond typical efficacy studies, seeking to understand what works, for whom, in what circumstances, and why, through intra-programme, inter-context comparisons. The literature presented within the introduction of this review highlighted key issues in the current evidence exploring multiple risk behaviour prevention in adolescents, including: poor alignment between current policy and guidelines for the delivery of adolescent risk behaviour prevention programmes and evidence from empirical literature; programmes which are problem/solution focussed, and programmes which are based on assumptions or generalisations about the target population, rather than sound theoretical evidence. This results in programmes which are poorly implemented, with wide variations in programme effectiveness.

The purpose of this study was to investigate for whom, in what circumstances, how, and why complex multiple risk behaviour prevention programmes succeed or fail when implemented with adolescents.

The overall aim of this review was:

- To utilise a theory driven approach to identify factors which influence the success or failure of complex adolescent risk behaviour prevention programmes in reducing adolescent risk behaviours.
- To produce a set of refined programme theories of causal mechanisms and contextual factors which operate within strategies to facilitate change across short, medium and long term outcomes.

- To produce guidelines based on the evidence synthesis for consideration in future development and use of adolescent risk behaviour prevention programmes in research, policy, and practice.

The first two aims of the project were met through engaging with realist methodologies, to produce, evidence, and refine programme theories. Evidence was sought from empirical and theoretical literature, along with primary data in order to review programme theory integrity, adjudicate between rival theories, and explore the integrity of programme theories across comparative settings or groups.

Here, I discuss the programme theories, and subsequent development of middle range theories, in relation to the research questions, to produce a refined set of theories, as defined by the final project aim, which provide guidance for the development of future research, policy, and practice.

As previously stated, the findings from the review are presented at two levels. The programme theories, presented as a range of context mechanism outcome configurations which explicitly explore what works, for whom, in what circumstances, and why, in relation to the prevention of multiple risk behaviours in adolescence. Followed by understanding of the theories at a more abstract level, exploring the theoretical underpinnings of these findings. This second level of understanding goes beyond the scope of the vast majority of the existing literature, providing theoretical evidence to explain why observed patterns of behaviour, and the subsequent impact on outcomes occurs. Further to this, understanding at this more abstract level allows knowledge gained from this review to be applied to other problems, programmes, or new situations. The diagram below, repeated from the beginning of the middle range theories section (p189), demonstrates how each of these overarching theories are interconnected, with actions in each domain influencing factors from other domains.

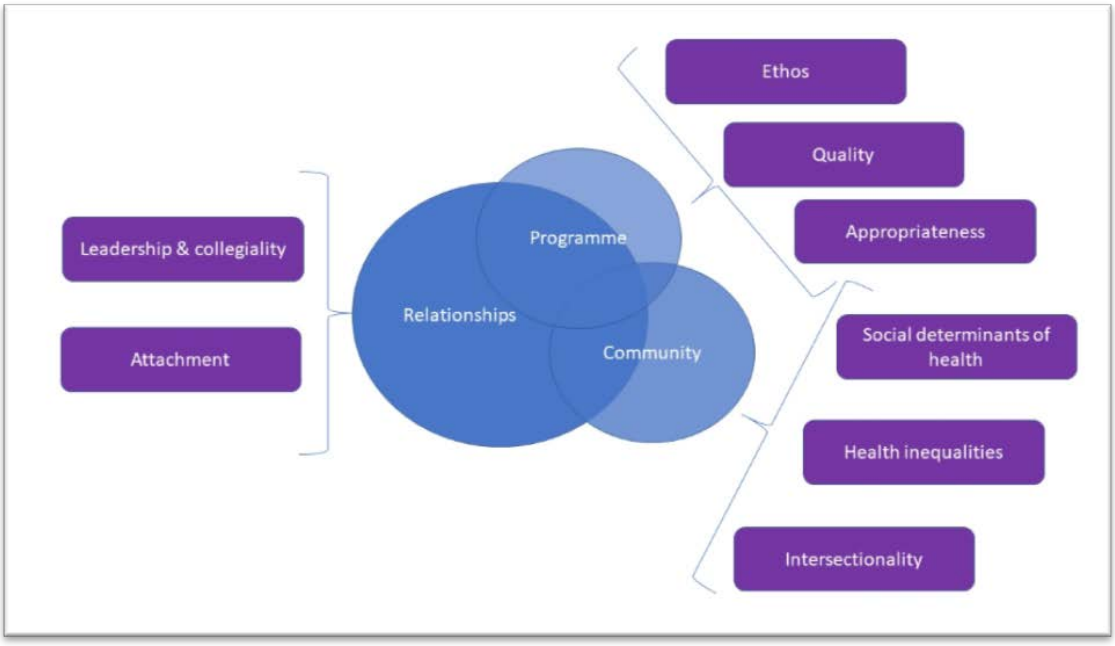

Figure 8: A diagram demonstrating the relationships between overarching, and middle range theories

Candidate theories, presented within this review, provide some explanation of why observed patterns of behaviour, and subsequent variations in programme outcomes, may occur. Moving systematically from programme design and implementation, through programme delivery and engagement, to wider contextual factors, candidate programme theories identified include implementation fidelity and adaptability, deliverer support and resources, programme ethos and quality, school ethos, relationships between programme, programme deliverer and target behaviour, home school relationships, home life, community and culture, and individual factors such as gender and sexuality.

Evidence from the current literature, exploring why programmes typically produce only moderate outcomes, and frequently fail in replication, tends to focus on implementation fidelity, suggesting that failure of programme deliverers to adhere to programme protocol, and lack of compliance to programme strategies account for these disappointing results. However, consideration of evidence which led to the development of candidate theories around deliverer support, programme, school, and community ethos, and the influence of personal and interpersonal factors such as race, religion, culture, sexuality and gender, suggests that this view is an oversimplification. It ignores the layered and multiplicitous

complexities of the social environment in which young people live, grow and develop, and in to which multiple risk behaviour prevention programmes are introduced. Below I suggest key aspects for consideration in the delivery of future programmes designed to reduce multiple risk behaviours in adolescents.

7.1 Recommendations for Future Policy Development and Programme Delivery

Based on the findings presented in the programme evidencing and refinement chapter (p117), I suggest that multiple risk behaviour prevention programmes designed for use with adolescents are most successful when delivered by teachers, in schools that take a whole settings, synergistic approach to both education, and adolescent health and wellbeing. The whole settings approach should incorporate good quality, caring and supportive leadership, joined up working across all aspects of school life, and a genuine regard for staff wellbeing and development, as well as that of the student. A key focus within this should be that of relationships, both within school, and within the broader social context.

Programmes delivered within this positive context should provide information, skills, and signposting to local resources in a way which is non-judgemental, and allows young people to be autonomous in decision making about their health, both now and in the future. Furthermore, programmes should be sensitive and adaptable to personal and sociocultural factors which may Impact on an individual's behaviour, or additional support needs, incorporating familial and/or community based support where required. Programme deliverers should be mindful not to add to, or cause further burden in their approach. Programmes implemented in this way provide the opportunity to take a long term approach to adolescent health and wellbeing, beginning in pre-adolescence, and delivering components which build on previous knowledge and skills, throughout adolescence.

Where relationships between adolescents and school or teachers are poor, then programmes may be less successful. In these cases, programmes may be more successful when delivered by a respected health professional such as the school nurse or outside organisation. However, programme effectiveness may still be affected, as other

factors such as perceived care, trust, connectedness, and knowledge of, and respect for, personal and cultural individual differences may be impaired or overlooked.

While the majority of these findings remain true for all behaviours included in this review, some differences were highlighted in relation to sex and relationships education. Firstly, it became apparent that programmes which combined information on social norms with the delivery of social skills for managing personal relationships were most effective in changing young people's attitudes, beliefs, and intentions relating to initiation of intimate relationships. Furthermore, evidence shows the most successful programmes were delivered by teachers with peer support from young people aged 16 to 17 years. In addition to this, programmes were seen as more acceptable, and programme engagement was greatest, when sex and relationships components were delivered to single sex groups, by teachers and peer supporters of the same sex as the young people receiving the programme.

These findings are in keeping with the theoretical underpinnings of whole settings, whole child or health promoting settings approaches which stipulate that, while common underpinning causal mechanisms of a range of behaviours can be addressed throughout programme delivery, a range of programme deliverers should be used to implement various aspects of the programme in order to increase programme success. Moreover, evidence suggests that while overall programmes are developed to be universal, certain aspects of the programme, such as the involvement of parents or families, should be delivered in a targeted way. Identification of personal circumstances which may require further support can be undertaken through a combination of staff knowledge of young people, and of the wider environments in which they are embedded, stakeholder involvement in programme design and delivery, and through providing the young people with the opportunity to consider and communicate of their own personal needs.

During the second and final stage of this review, substantiating theoretical evidence was sought, and applied to these programme theories to provide an evidenced explanation of these theories. Three key areas for consideration were highlighted as a result of this process; Relationships; Programme ethos and quality; and sociocultural influences and health inequalities. These three core programme theories provide areas for change and improvement, not just in the prevention of multiple risk behaviour in adolescence, but in health and wellbeing promotion or poor health behaviour programmes in general. These overarching theories combine to provide a novel insight in to the limitations of current adolescent risk behaviour prevention programmes, and highlight key areas for consideration in the development of policy for health and wellbeing in educational settings. The development of this contribution to knowledge is discussed further following consideration of the strengths and weaknesses of this review.

7.2 Strengths and Limitations of the project

This study utilised realist methodologies to understand how, in what circumstances, for whom, and why multiple risk behaviour prevention programmes succeed or fail in reducing or preventing risk behaviours in adolescence. The approach taken was novel in two respects. It combined elements of realist synthesis and realist evaluation in the methodological framing of the research, and it incorporated stakeholder consultations as primary data.

Typically, a realist synthesis would consist of retroductive exploration of the existing literature, guided by stakeholder consultation and based on the seven core underpinning principles set out by Pawson and colleagues (2004), as set out within the methodology chapter (p42). However, through reading to familiarise myself with realist methodologies, and in attempting to understand the complex nature of programmes designed to prevent multiple risk behaviours in adolescents, I found that aspects more commonly used in realist evaluation, particularly those defined by the VICTORE mnemonic (Pawson, 2013), fit well alongside those core underpinning principles, and provided an extra tool with which to explicate complexity. Further to this, I made the decision to incorporate stakeholder consultations as primary data. Though primary data collection is also more commonly employed within realist evaluation, I feel that inclusion here provides a rich source of data, allows for transparency in the formulation and evidencing of programme theories, and gives greater strength to the voices of stakeholders involved in my research. This novel approach constitutes a key development in realist methodologies, providing a template for an interplay between primary and secondary data only possible within a realist mode of analysis, and which maximises the transparency, usefulness and therefore validity of the resulting analysis.

The range of data and data collection methods used to capture stakeholder opinion within this thesis lends strength to the research findings, providing opportunity for both young

people and professionals involved in the development and delivery of programmes to contribute meaningfully to the explanatory endeavour. In particular, individual interviews with professional stakeholders allowed for continued guidance as programme theories were developed and refined, and allowed targeting of questions based on their expertise.

The use of focus groups to collect data from young people, enabled the facilitation of discussion around health behaviour, health promotion, and health risk prevention, as well as within group and between group comparisons of opinion and lived experience.

From an ethical viewpoint, focus groups can be less intimidating than individual interviews, allowing young people to contribute only when they feel they have something they wish to say. This was further facilitated by the inclusion of pen and paper tasks, and use of post it notes to collect data from those who were not comfortable speaking to the group. With school nurses, where experiences and expertise were similar, the focus group format encouraged rich and thoughtful discussions about how health promotion and health risk prevention could be developed to be more effective.

A key limitation in this phase of the research was the way in which data was collected in collaboration with another project (see Methods, Phase 4, p90). While there were positives to this approach, such as reduced burden on young people and professionals within the local area, and reduced time and cost in organising and facilitating focus groups, there were some limitations too. As data from the focus groups was intended to inform both projects, questions were kept quite broad, with a focus on health, health behaviours, health promotion, and health risk prevention. As a result of this, more specific aspects of developing programme theories were not directly addressed with school nurses.

To compensate for this, a set of vignettes were designed and used with young people, with youth group leaders facilitating discussions. This approach was thought to be most beneficial as young people are able to express themselves without providing a personal

frame of reference, with a known and trusted adult rather than a researcher, allowing open and honest discussion, and reducing the risk of embarrassment or discomfort in discussing some potentially sensitive subjects. While there are clear benefits, as highlighted here, this approach runs the risk of missing out on some elements of discussions, and of over reliance on the youth leaders interpretation. Furthermore, physical cues which are useful in interpretation of findings, such as body language and tone of voice, may be missed. Every effort to make sure these limitations were reduced or avoided were taken, through discussions between myself and youth group leaders, both prior to and after discussions with young people. In addition to this it became apparent during the final stages of analysis, that some programme theories, or aspects of programme theories were not as well evidenced as others, and that more elements could perhaps have been covered by the vignettes, including key findings highlighted during consideration of substantiating theory. While the inclusion of substantiating theory to explore observed demi regularities, and the relationships both within and between programme theories and programme outcomes itself lends strength to the findings of this thesis, it may have been beneficial to seek the opinion of young people on my interpretation of these findings. Therefore, given the evaluative nature of the vignettes, it may have been more advantageous to conduct this phase of the research after data analysis and synthesis, or as part on a realist evaluation upon completion of the initial synthesis.

7.2.1 Personal Challenges

Adoption of a realist methodology provided the tools to explore underpinning causal mechanisms, the contexts in which they are active, and the impact this has on programme outcomes. However, where extraction of mechanistic, and contextual factors has seemed relatively straightforward in evaluating simple interventions or strategies, such as Tilley's (1993) study which explored the role of CCTV in reducing car crime in car parks, with mechanisms which were intuitive and easily defined, multiple risk behaviour prevention

programmes, tend to be complex open systems, which are prone to influence from actors, both in and surrounding the programme. Furthermore, settings in to which programmes are delivered, such as schools, and the stratified nature of the social contexts in which they are embedded, render the abstraction process even more difficult. The most difficult challenge I experienced, during the early stages this review was distinguishing between mechanisms, contexts, and outcomes. This process became yet more problematic where context mechanism outcome configurations (CMOc's) were part of a chain, where predefined mechanisms, contexts or outcomes could be redefined as a different factor in the following step. For example, in programme theory chains discussing programme fidelity (p120), the initial outcome of '*increased adherence to the intended programme delivery strategy'* becomes the context in the next iteration. This led to a hesitancy in committing to paper my initial hunches or candidate programme theories, making it difficult to track these early though processes and evidence trails.

Furthermore, as a relative newcomer to the realist approach, the iterative processes undertaken in carrying out the review are time consuming, and at times somewhat overwhelming. However, these difficulties are fairly common within realist research, described by Greenhalgh (2004) as 'the swamp', through which the realist researcher must wade in search of evidence.

Managing, and learning to be comfortable with, this period of uncertainty, was key to formulating early hunches or candidate programme theories, supported by constant referral to the theoretical framework from which research questions were developed, and around which evidence was being gathered. Despite these challenges early on, the refined programme theories produced were strongly evidenced, drawing on primary data, empirical research, and substantiating theory to explain why the observed outcome patterns or demi-regularities occurred.

7.3 Unique Contribution to Knowledge

The unique contribution to knowledge of this work can be articulated in three main points:

- **The consideration of multiple behaviours, programmes, and settings concurrently**

While a number of programmes have aimed to reduce or prevent multiple risk behaviours in adolescence, as discussed within the thesis introduction, empirical evidence within the existing literature tends to focus on programme efficacy, benefits of specific programme elements or 'ingredients for success', and issues with replication and scalability. Those which do look beyond programme effectiveness often tend look at a specific programme, or consider commonly highlighted limitations of programme delivery such as implementation fidelity, and programme deliverer. Few, if any, of the existing studies within the literature go beyond this to consider underpinning causal mechanisms, or the impact of the wider context in to which the programme is delivered. Furthermore, where causation is addressed, it tends to be with the goal of justifying changes to a programme or use of a programme within a specific setting. Here I look across a range of behaviours, programmes, and settings concurrently to explore common, context dependent, causal factors which may underpin programme success or failure.

- **The integration of primary and secondary data**

Within this review, as discussed when considering the research design, I took a unique approach, blending exploratory principles from realist synthesis, using secondary data from the literature, and techniques more typically found in realist evaluation, incorporating stakeholder consultation as primary data. This novel approach to conducting a realist review, incorporating data from broad range of strands, strengthens the claims made within programme theories, providing transparency in how programme theory development and refinement was undertaken, while giving a real voice to stakeholders, particularly young people, within the research findings.

- **The explanatory theories developed in this thesis.**

Further to the unique approach taken above, the application of substantive theory to understand why these patterns may occur, and the complex relationships between them, is unique to the realist approach and has not previously been undertaken in the investigation multiple risk behaviour prevention in adolescents.

The key findings of this review are that multiple risk behaviour prevention programmes are more likely to succeed in reducing or preventing multiple risk behaviour in adolescents when taking a synergistic, whole systems approach to adolescent health and wellbeing within educational settings, considering relationships both within and surrounding the programme, and accounting for wider social contexts such as culture, socio-economic status, intersectionality, and health inequalities. In addition to this, programmes should be strongly grounded in theory, giving consideration to all relevant aspects of those theories during programme development, prior to implementation. These findings build on the existing knowledge within literature, and provide guidance for future policy and practice, as well as a starting point for future research.

These recommendations are considered in the chapter 7.4 (p277).

7.4 Implications for Future Research

In light of the findings of this research, it is recommended that future research focuses on the three key areas highlighted within the Middle range theory chapter (p186), building upon the unique contribution to knowledge I make with this research. As previously stated, these areas for future consideration and development are: relationships; programme quality, ethos and readiness; and community, culture, and health inequality. Further to this, given the potential of these abstract middle range theories for application in other areas, consideration of these factors in relation to the broader subject of health and wellbeing in schools may also be beneficial.

Given the breadth of evidence and strength of stakeholder feeling regarding relationships, both within, and surrounding the intervention, three key research questions are suggested within this area:

- How do differences in leadership and teaching styles impact on staff and student health and wellbeing?
- How are whole school approaches implemented, and what are the factors which contribute to success, or failure, in practice, such as collaborative working, and support in adopting and adapting programmes to suit specific school cultures or contexts?
- How can genuine care, respect, and trust be fostered or improved amongst all active agents involved in programme delivery? What impact does feelings of care, respect, and trust have on outcomes such as health and wellbeing, attainment, and risk behaviour engagement?
- How do schools interact with parents/guardians? What works well in fostering good relations between home and school? Consideration here should also be given to how social environments, cultures, and inequalities impact on these

relationships, and the extent to which they are considered and/or incorporated in to practice.

A key aspect of this refers to the effects of misunderstanding, misinterpretation, and/or partial implementation of underpinning theories during the development of models or approaches on which adolescent risk behaviour prevention programmes are designed.

Research questions which could be explored in this area include:

- In what way do existing health promotion/health risk prevention programmes utilise underpinning theories in programme development? How does this impact on programme success or failure?
- How is decision making tracked and evidenced during the intervention development process? Could empirical evidence provide detailed explanations, which are evidence based, for the inclusion or omission of theoretical constructs?
- How can theoretical frameworks be developed and used to improve the way in which theory is used in programme development?

Based on the findings presented in this thesis, and the future research suggested here, I propose that conducting a realist evaluation to explore the impact of school ethos would be a logical next step. Conducting such an evaluation, across a range of schools, would facilitate the drawing of comparisons between those schools with a synergistic approach to education and health and wellbeing, and those with a more traditional educational approach, on factors such as leadership, collaboration, and relationships, and their impact on both health and educational outcomes. Observing the degree of success of programmes (such as PSHE) introduced in to these differing settings would further build on the knowledge gained from this review.

In addition to this, more traditional methods of evidence synthesis, such a systematic review, may be undertaken to explore specific research questions relating to how theory is utilised in the development of programmes, such as those designed to prevent multiple

risk behaviour in adolescence, and how the way in which theory is used impacts on programme outcomes.

Given the benefits highlighted within this thesis, in combining methods from both realist synthesis and realist review in order to fully evidence programme theories, and in combining realism with other related methodologies, further consideration of the use of complimentary methodological and theoretical approaches, such as the complexity-consistent approach (Westhorp, 2013), would also be beneficial in further developing the scope of realist methodologies.

7.5 Discussion

Risk behaviour such as tobacco use, alcohol consumption, substance use, and risky sexual behaviours are a key contributing factor in adolescent morbidity, with the potential to impact on health and wellbeing throughout the lifespan. Typical adolescent risk behaviour prevention programmes tend to have moderate effects at best, often failing to maintain effects at follow up, when replicated or rolled out at scale. A realist methodological approach was used to explore what works, in what circumstances and why in the prevention of multiple adolescent risk behaviours, giving consideration to personal, interpersonal, and socio-cultural factors both within and surrounding the programme. Findings suggest that complex multiple risk behaviour prevention programmes are most successful in reducing or preventing risk behaviour in adolescents when strongly grounded in theory, paying close attention to relationships both with and surrounding the programme, and wider contextual factors, such as family, community, culture, socioeconomic status, intersectionality, and health inequalities. While these findings were produced using a novel approach, as set out in this thesis, the concept is by no means a new one, bringing to mind the old adage ‘It takes a village to raise a child’ (origin unknown).

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Appendices

Appendix One: Programme Theory Development

Early literature searching in phase one led to the development of a list of potential areas for investigation, categorised as context, mechanisms, and outcomes. Those relating to

Context	Mechanism	Outcome
Peer Groups	Perception Beliefs Affiliation Trust Modelling	Engagement Changes in beliefs/behaviours Decreased risk Improved health

peer interventions are shown below.

As my understanding of the realist methodology began to develop, these initial themes or ideas were reformulated as if then statements, for example:

If adolescent risk behaviour prevention programmes are delivered by peer facilitators, then they are more likely to succeed, as young people are more likely to relate to, and trust in information as a result of perceived affiliation with those delivering the information.

Further reading around realist methodologies led to these statements being transformed into context mechanism outcome configurations, as shown in the example below:

Risk behaviour prevention programmes work better (O) when the programme is delivered by a peer educator (C) as participants are more likely to identify with peer beliefs (M1) or have greater trust in peer delivered information (M2).

These initial programme theories formed the basis for initial enquiry with stakeholder consultations, beginning with the Young person's advisory group (YPAG). As discussed within my thesis, the majority of young people, from the outset, voiced strong concerns

about peer intervention and delivery. Key issues arising from discussions included trust; both in the reliability of the information received, and in confidentiality, level of training, and reason for taking part in programme delivery. Furthermore young people expressed a preference for delivery by a qualified health professional.

This information served a number of purposes within the research, broadening the focus of the research beyond peer intervention to include other programme types, consideration of the issues raised (Trust, training, deliverer attitudes and beliefs, and training) and conducting closer interrogation of primary empirical studies within the literature which made comparisons between peer, health professional, and teacher led delivery. Exploration of these issues led to the development of further programme theories relating to programme fidelity (training and support, concordance with deliverer beliefs) as discussed in programme theories 1 to 3, programme deliverer (programme theories 5 and 6), and the role of peer facilitators in relation to aspects of programme content, such as social norms (programme theory 9).

While programmes delivered by peers alone were not strongly advocated by young people, or well supported by empirical evidence within the literature exploring programme delivery, content, and design, the inclusion of peer facilitators alongside those delivering the programme (typically teaching staff) was found to improve programme outcomes when tackling sensitive subjects such as sexual practices, and where programmes utilised a social norms approach. Therefore the programme theory which was developed from exploration of the literature exploring the role of peers was as follows:

CMOc9.1: Complex adolescent risk behaviour prevention programmes which aim to reduce sexual risk behaviours (C) are more likely to delay initiation of behaviour (O) when a social norms element is included (resource) as young people's misperceptions between perceived and actual prevalence among peers are challenged and corrected (reasoning).

CMO9.2: Complex adolescent risk behaviour prevention programmes, which take a social norms approach to sex and relationships education (C), are most successful in changing attitudes and beliefs (O) when delivered with peer facilitators (adult led delivery with additional peer support) (resource), as young people relate to peers more easily facilitating engagement in open, honest conversation (reasoning).

Development of these new programme theories was guided by further literature searching, and stakeholder interviews (phase two), and primary data collection from young people and school nurses (phase three). As well as contributing to the formulation of new programme theories, data collected in these phases was used to continually refine programme theories, investigating contributing contextual and mechanistic factors which may explain programme findings. Vignettes were then used, in phase four, to further test aspects of these newly developed programme theories.

This excerpt of my research tracking document, which was maintained throughout the research period, shows the development of only one programme theory, demonstrating how each phase of data collection contributed to formation, refinement, evidencing, and testing. However, the methods described here were used similarly in the development of all programme theories presented within this review.

Appendix Two – Professional Stakeholder Information Sheet

Faculty of Health & Life Sciences

Participant Information Sheet

You are being invited to take part in this research study. Before you decide it is important for you to read this leaflet so you understand why the study is being carried out and what it will involve.

Reading this leaflet, discussing it with others or asking any questions you might have will help you decide whether or not you would like to take part.

Name of Researcher: Christina Cooper

Name of Supervisor: Dr Monique Lhussier

Project Title: Risky behaviour prevention in adolescents: What works, for whom, in what circumstances, and why? A realist enquiry.

What is the Purpose of the Study

The aim of the project is to investigate for whom, when and in what circumstances prevention strategies succeed or fail in reducing risk behaviours (Substance use, smoking, alcohol consumption and risky sexual behaviours) in adolescents. The purpose of the research is to explain how, when, and why behaviour change occurs. The findings of the research will be used to guide policy and practice in future intervention development and delivery, in order to increase the chances of success.

Why have I been invited?

You or your organisation have been invited to take part in the research as you have been identified as having expertise or experience directly relevant to young people, health behaviours and risk prevention. You are therefore in a position to help us understand what might happen / how adolescents might react to a particular intervention. For example, it could be that the literature shows that some adolescents prefer interventions delivered by peers, while others prefer interventions which are adult led - you might be able, from your experience, to describe which is more likely to happen in your area and why.

What will I have to do?

Participation in the research will involve meeting once every three months to discuss the research and guide the development and refinement of our understanding to ensure they remain relevant to both young people and those involved in working with them. Discussions will take the form of group and/or individual informal discussions depending on your preference and availability. Meetings will take place in an agreed location which is most suitable to you and will last for approximately 1 hour. Sessions may be recorded to aid analysis. Your permission to do this will be sought at each meeting.

What are the possible disadvantages of taking part?

You will be asked to give up some of your time. Approximately 1 hour every three months over the two-year research period. However, you are able to withdraw from the study at any point without giving a reason.

What are the possible benefits of taking part?

By taking part in the study you will be helping to guide the research in the understanding of emerging theories, the development of new theories, and in adjudication between conflicting theories in relation to underlying mechanisms of causation.

Will my taking part in this study be kept confidential and anonymous?

Yes. All responses will be recorded confidentially and no personal details will be included in transcripts of the interview, or in any research reports. It may, however, be necessary to include your profession to facilitate better understanding of your viewpoint.

How will my data be stored?

All paper data, including the typed up transcripts from your interview and your consent forms will be kept in locked storage. All electronic data; including the recordings from your interview will be stored on the University U drive, which is password protected. All data will be stored in accordance with University guidelines and the Data Protection Act (1998).

What will happen to the results of the study?

We will share the findings from this study with:

- Yourselves as participants in this study
- Northumbria University, in the form of the PhD thesis
- Results may also be disseminated by the researcher via peer reviewed journal articles, conferences, and informal presentations.

Under no circumstances your name and details will appear on any of these.

Who is Organising and Funding the Study?

I am carrying out this study for my PhD in public health at Northumbria University. The research has been funded in collaboration with Fuse centre for translational research.

Contact for further information:

Researcher: Christina.cooper@northumbria.ac.uk

Research Supervisor: Monique.lhussier@northumbria.ac.uk

Appendix Three – Professional Informed Consent

Faculty of Health & Life Sciences

INFORMED CONSENT

Project Title: Risky behaviour prevention in adolescents: What works, for whom, in what circumstances, and why? A realist enquiry.

Principal Investigator: **Christina Cooper**

	please tick or initial where applicable
I have carefully read and understood the Participant Information Sheet.	☐
I have had an opportunity to ask questions and discuss this study and I have received satisfactory answers.	☐
I understand I am free to withdraw from the study at any time, without having to give a reason for withdrawing, and without prejudice.	☐
I agree to take part in this study.	☐
I would like to receive feedback on the overall results of the study at the email address given below. Email address……	☐

Signature of participant..... Date..... (NAME IN BLOCK LETTERS).....……
Signature of Parent / Guardian in the case of a minor .....
Signature of researcher..... Date..... (NAME IN BLOCK LETTERS).....……

Appendix Four - Sample Interview Schedule

Could you tell me a little bit more about what you do, and what experience you have in relation to health information programmes and/or young people?

Thinking first about training and delivery of a programme, who, in your experience usually provides this? Is it done well enough? What would you change?

What benefits are there for those delivering the programme?

There is often an issue with deliverers deviating from the intended programme in the literature. What is your experience of adherence to the programme? Is it a problem? Should adherence be rigid or adaptable?

Thinking about those schools in less well of areas, is time and resources more of a problem? How might this be tackled?

Typically, how well are staff supported in the delivery of these programmes?

Who do you feel is best placed to deliver health information to young people? What are the possible benefits of using a peer deliverer? What are the potential negatives?

What are they key characteristics you would look for in e programme deliverer? What are the key skills?

Consultation with young people suggests that they prefer to receive health information for a professional such as a school nurse or outside organisation, rather than from teachers or peers. Have you any experience of this?

Programmes are typically delivered in school, what do you feel are the potential pros and cons of this?

Young people have stated a preference for programmes which contain relevant, local information, not just information on prevalence and risks, but practical applicable advice on a ‘what to do if . . . level. There is some evidence to support this in the literature;

however the approach does not seem to be widely used. Have you had any experience of this approach?

How do you feel about the use of e health/m health resources to support the programme?

What, in your opinion, is the best age to begin delivering this information? Should it be delivered over a short block, or staggered, with new concepts and issues being introduced as age increases? What is the standard practice for the delivery of health information in schools in this area currently?

In your opinion what are the most important factors in successful implementation of such programmes?

- Content/model
- Training
- Delivery – adherence
- Deliverer- relationship
- Support
- Home/community elements
- YP resources

Focus on educational achievement rather than holistic care in schools currently- how do you think these impacts on health care information delivery? Untested module – no reward for trying hard- time could be better spent on studies. How could this be tackled?

What role does the home school relationship play in these programmes?

How does the young person's relationship with their parents' impact on programme outcomes?

How does parents' behaviour influence the behaviour of the young person?

Appendix Five – Young Persons Focus Group Information Group

Project title: Learning from Young people to support the development of training tools for school nurses to promote healthy lifestyles

Participant Information Young People and parents/guardians

You are being invited to take part in this project. Before deciding to do this it is important to read this leaflet to understand why the study is being carried out and what it will involve.

Reading this leaflet, discussing it with others or asking any questions might help with a decide on whether or not to part.

What is the Purpose of the Study

The study aims to develop training and educational resources to support school nurses work more effectively with adolescents around health promotion. The resources will include the development of a training pack for school nurses alongside an educational film and an APP for young people to access. Northumbria University as a key partner in the project, will carry out an initial scoping of the views both young people and School Nurses (SN's) on what would be useful, for whom, and in what circumstances, to inform the development of the resources including the APP and the film. The final part of the project will be an evaluation of the training delivered and the resources developed from both the adolescents and the SN's perspective

Do I have to take part?

No. It is entirely your decision on whether to take part in the study. I am giving this information sheet to help you make that decision. If you do decide to take part, remember that you can stop being involved in the study whenever you choose, without telling me why. Deciding not to take part, or leaving the study at any point will not affect the standard of services received from the school nurses or weight management services.

What will happen if I am interested in taking part?

Before attending the focus group we will need to ensure you have read and understood this information sheet and signed the consent forms. It is important that your parents/carers are aware that you are taking part in this project and would advise you to talk to them about it. If you are under 16 we will need to gain consent from your parents to make sure they are also happy for you take part in the focus group. We can send them this information sheet and the consent forms by email or post. If you or your parents need more information we can arrange a telephone call to provide this and answer any questions.

If you would like to take part, I will contact you to arrange for you to attend a focus group with 6-8 other young people. The focus group will be held in a location central

to all those attending this may be a local youth club, school or health building. We will go through the information again at the start of the focus groups to make sure you are still happy to participate. IF YOU ARE UNDER 16, YOU WILL BE ASKED TO COME TO THE FOCUS GROUP WITH YOUR SIGNED PARENTAL CONSENT FORM, OTHERWISE YOU WILL NOT BE ALLOWED TO TAKE PART. The focus group will be very informal and no one will be put on the spot. We hope to have flip charts and pens and make it fun and relaxed. The researcher will be asking the group a number of questions to get views on what would help young people make healthy choices and what might be some of the barriers. For example do the group think public information on healthy eating and exercise is helpful to young people? What kinds of things would help young people choose healthy options? The focus groups will last approximately 45 minutes.

What are the possible disadvantages of taking part?

You will be asked to give up some of your time to attend a focus group for about 45 minutes. Although we are planning a fun session, talking about our health and wellbeing can sometimes be upsetting. The group will be run by two health and social care professionals who are experienced at asking young people their views on health choices and behaviours. If anyone feels upset or would like to leave the focus group for any reason, they can spend some time outside of the group with one of the focus group staff. They will have information and advice they can share with you about any concerns or worries you might have about anything that has been discussed in the focus group they can arrange for you to be able to go home if you don't wish to re-join the group

You are also able to withdraw from the study at any point without giving a reason.

What are the possible benefits of taking part?

By taking part in the study you will be helping to inform research, and develop training for school nurses and the development of tools for young people to support healthy eating The information you give us will support us to develop these resources which will include an APP, film, and teaching materials which will hopefully help us to provide better support for young people.

Will my taking part in this study be kept confidential and anonymous?

Yes your name will not be written on any of the data we collect; including the typed up versions of your focus group discussion, and your name will not appear in any reports or documents resulting from this study. We may use anonymous quotes from your recordings to support the resources including the APP, film, teaching materials and any reports. The data collected from you in this study will be confidential. The only exception to this confidentiality is if the researcher feels that you or others may be harmed if information is not shared.

It is important to remember that although the research team will treat your data as confidential and anonymous, this is a focus group and other people are part of the discussion and will hear what you say. We will agree ground rules at the start of the focus group where we will ask that what is shared in the group is kept within the group, but we cannot guarantee the other group members will follow these ground rules.

How will my data be stored?

All paper data, including the typed up transcripts from your interview and your consent forms will be kept in locked storage. All electronic data; including the recordings from your interview will be stored on the University U drive, which is password protected. All data will be stored in accordance with University guidelines and the Data Protection Act (1998). **The data collected as part of this study will be submitted for academic publications from July 2016**

What will happen to the results of the study?

We will share the anonymized findings from this study with:

- Yourselves as participants in this study will be asked if you would like a brief report and where to send this at the end of the focus group
- School and Public Health Nurse Association (SAPHNA)
- Northumbria University teachers and researchers
- Local NHS Trusts
- School nurses through journal publications
- To support the development of the APP, Film and training for school nurses
- To support the future education of school nurses at Northumbria University

Who is Organising and Funding the Study?

Burdett Nursing fund is funding the project and its is being led by the School and Public Health Nurse Association (SAPHNA).

Who has reviewed this study?

Before this study could begin, permissions were obtained from Northumbria University ethics committee and the Northumbria Health Care Research and Governance team approval. The Faculty of Health and Life Sciences Research Ethics Committee at Northumbria University have reviewed the study in order to safeguard your interests, and have granted approval to conduct the study.

Contact for further information:

Researchers: Vicky Gilroy/Christina Cooper

Faculty of Health and Life Sciences,
Northumbria University
Coach Lane Campus, East
Newcastle NE7 7XA

Appendix Six – Young Peoples Focus Group Informed Consent

northumbria UNIVERSITY NEWCASTLE

Faculty of Health & Life Sciences

Project Title: Learning from young people to support the development of training tools for school nurses to promote healthy lifestyles

Principal Investigator: Vicky Gilroy

	please tick or initia where applicabl
I/we have carefully read and understood the Participant Information Sheet.	☐
I/we have had an opportunity to ask questions and discuss this study and I have received satisfactory answers.	☐
I/we understand I am free to withdraw from the study at any time, without having to give a reason for withdrawing, and without prejudice.	☐
I agree to insert name if parent consenting take part in this study.	☐
I /we understand that by taking part in this study I may be exposed to situations that may generate some psychological distress that may become apparent during and/or after the study has finished. I accept the small risk of experiencing psychological distress as part of this research	☐

I /we understand that if the researcher is concerned about the safety and welfare of a young person under the age of 16 they have a duty of care to report these concerns and take appropriate action to ensure that safety is maintained. This may require them to refer to another agency

I/we hereby confirm that I give consent for the following recordings to be made:

Recording	Purpose	Consent
voice recordings	to capture the discussions and enable development of resources	

I understand that other individuals may be exposed to the recording(s) and be asked to type up the discussions. My name or other personal information will never be associated with the recording(s).

Tick or initial the box to indicate your consent to ☐

I understand that some of my anonymous quotes may be used in the APP, Film training materials and reports

Tick or initial the box to indicate your consent to ☐

Signature of participant..... Date.....……..

(NAME IN BLOCK LETTERS).....……

Signature of Parent / Guardian in the case of a minor

..... Date

Signature of researcher..... Date.....……..

(NAME IN BLOCK LETTERS).....……

Appendix Seven – Young People 's Focus Group Schedule

This sheet will be used by the researcher to guide the focus group with the young people

Each focus group will start with introductions and clarification of understanding of the purpose of the focus group and continued consent to participate.

Ground rules need to be agreed by the group to ensure all members feel safe and secure to speak openly in the confidence that what they say is stays in the group.

The focus group will be facilitated using open questions to encourage debate it will be important for the research to draw in those quieter young people so each one as a chance to speak.

The lead will explain that although we are planning a fun session, talking about our health and wellbeing can sometimes be upsetting. . If anyone feels upset or would like to leave the focus group for any reason, they can spend some time outside of the group with one of the focus group staff. They will have information and advice they can share with you about any concerns or worries you might have about anything that has been discussed in the focus group they can arrange for you to be able to go home if you don't wish to re-join the group.

The group may start with an approach that works round each member asking them to give a view or comment later the conversation should be less directed.

Use the following questions as prompt for discussion

1. **Do the young people think there is a problem with weight in their age group?**
2. **Why do they think this is/ is not an issue?**
3. **Ask the young people to reflect back on any advice or information they may have had on healthy eating / exercise? If they have not had any ask them to think about how they would want help or how we could help a friend?**
4.
    - What was the nature of the advice?
    - Who gave it? What do they think were the good/bad things about this person delivering the information?
    - How was it delivered? (Taught/discussion/interactive tasks)
    - How might this impact on the way information/advice is applied?
    - What was helpful about the information advice?
    - What would make it better?
    - Is this approach specific to healthy eating and exercise or would it work for other health risk behaviours (smoking, alcohol and substance use, sexual behaviours)?
5. **If they were to give a message to school nurses on how to support a young person to make healthy choices what would they say?**
6. **What kinds of things do they think would help them with diet and exercise?**
7. **Do they think parents should be involved with the programme? How might communication between home and school affect healthy behaviours? Do parents health behaviours influence the choices they make?**
8. **Allow time for any other comments to be made before the end of the session**
9. **Reconfirm where the Young people can get support if being part of the group as raised any issues for them.**

Appendix Eight – School Nurses Information Sheet

Project title: Learning from Young people to support the development of training tools for school nurses to promote healthy lifestyles

Participant Information School Nurses

You are being invited to take part in this project. Before you decide to do this it is important for you to read this leaflet so you understand why the study is being carried out and what it will involve.

Reading this leaflet, discussing it with others or asking any questions you might have will help you decide whether or not you would like to take part.

What is the Purpose of the Study

The study aims to develop training and educational resources to support school nurses work more effectively with adolescents around health and wellbeing. The resources will include the development of a training pack for school nurses alongside an educational film and an APP for young people to access. Northumbria University as a key partner in the project, will carry out an initial scoping of the views both young people and School Nurses (SN's) on what would be useful to inform the development of the resources. The final part of the project will be an evaluation of the training delivered and the resources developed from both the adolescents' and the SN's perspective

Do I have to take part?

No. It is entirely up to you whether you would like to take part in the study. I am giving you this information sheet to help you make that decision. If you do decide to take part, remember that you can stop being involved in the study whenever you choose, without telling me why. Deciding not to take part, or leaving the study at any point will not affect your employment in any way and is entirely voluntary.

What will happen if I take part?

I will contact you to arrange for you to attend a focus group with 8-12 other SNs. We will ask you to sign a consent form should you agree to take part. The focus group will be held in a location central to all those attending; this may be a local youth club, school or health building. We will go through the information again at the start of the focus group.. The focus group will be very informal and you will not be put on the spot. We hope to have flip charts and pens and make it fun and relaxed. The researcher will be asking the group a number of questions to get your views on what would help you support young people make healthy choices and what you feel might be some of the barriers. The focus groups is unlikely to last any longer than 45 minutes.

What are the possible disadvantages of taking part?

You will be asked to give up some of your time to attend a focus group for about 45 minutes. However, you are able to withdraw from the study at any point without giving a reason.

What are the possible benefits of taking part?

By taking part in the study you will be helping to inform training for school nurses and the development of tools for young people to support healthy eating.

Will my taking part in this study be kept confidential and anonymous?

Your name will not be written on any of the data we collect; including the typed up versions of your focus group discussion, and your name will not appear in any reports or documents resulting from this study. We may use anonymous quotes from the recordings in the APP, film, training materials and reports. The data collected from you in this study will be confidential. The only exception to this confidentiality is if the researcher feels that you or others may be harmed if information is not shared.

It is important to remember that although the research team will treat your data as confidential and anonymous, this is a focus group and other people are part of the discussion and will hear what you say. We will agree ground rules at the start of the focus group where we will ask that what is shared in the group is kept within the group, but we cannot guarantee the other group members will follow these ground rules.

How will my data be stored?

All paper data, including the typed up transcripts from the focus group and your consent form will be kept in locked storage. All electronic data; including the recording from your focus group will be stored on the University U drive, which is password protected. All data will be stored in accordance with University guidelines and the Data Protection Act (1998).

What will happen to the results of the study?

We will share the anonymized findings from this study with:

- Yourselves as participants in this study **this will be through a brief report School and Public Health Nurse Association (SAPHNA)**
- Northumbria University teachers and researchers
- Local NHS Trusts
- Other school nurses through journal publications
- To support the development of the APP, Film and training for school nurses
- To support future education of school nurses at Northumbria University

Who is Organising and Funding the Study?

Burdett Nursing fund is funding the project and it is being led by the School and Public Health Nurse Association (SAPHNA)

Who has reviewed this study?

The Faculty of Health and Life Sciences Research Ethics Committee at Northumbria University have reviewed the study in order to safeguard your interests, and have granted approval to conduct the study. We have also got permission from Northumbria Health Care NHS Trust Research and Governance Team.

Contact for further information:

Researchers: Vicky Gilroy/Christina Cooper

Faculty of Health and Life Sciences,
Northumbria University coach Lane Campus, East Newcastle

Appendix Nine – School Nurse Informed Consent

northumbria UNIVERSITY NEWCASTLE

Faculty of Health & Life Sciences

Project Title: Learning from young people to support the development of training tools for school nurses to promote healthy lifestyles

Principal Investigator: Vicky Gilroy

please tick or initia
where applicabl

I/we have carefully read and understood the Participant Information Sheet.	☐
I/we have had an opportunity to ask questions and discuss this study and I have received satisfactory answers.	☐
I/we understand I am free to withdraw from the study at any time, without having to give a reason for withdrawing, and without prejudice.	☐
I agree to insert name if parent consenting take part in this study.	☐
I /we understand that by taking part in this study I may be exposed to situations that may generate some psychological distress that may become apparent during and/or after the study has finished. I accept the small risk of experiencing psychological distress as part of this research	☐

I /we understand that if the researcher is concerned about the safety and welfare of a young person under the age of 16 they have a duty of care to report these concerns and take appropriate action to ensure that safety is maintained. This may require them to refer to another agency

I/we hereby confirm that I give consent for the following recordings to be made:

Recording	Purpose	Consent
voice recordings	to capture the discussions and enable development of resources	

I understand that other individuals may be exposed to the recording(s) and be asked to type up the discussions. My name or other personal information will never be associated with the recording(s).

Tick or initial the box to indicate your consent to ☐

I understand that some of my anonymous quotes may be used in the APP, Film training materials and reports

Tick or initial the box to indicate your consent to ☐

Signature of participant..... Date.....……..

(NAME IN BLOCK LETTERS).....……

Signature of Parent / Guardian in the case of a minor

..... Date

Signature of researcher..... Date.....……..

(NAME IN BLOCK LETTERS).....……

Appendix Ten – School Nurses Focus Group Schedule

This sheet will be used by the researcher to guide the focus group with the school nurses.

Each focus group will start with introductions and clarification of understanding of the purpose of the focus group and continued consent to participate.

Ground rules need to be agreed by the group to ensure all members feel safe and secure to speak openly in the confidence that what they say is confidential.

The focus group will be facilitated using open questions to encourage debate it will be important for the research to draw in those quieter young people so each one as a chance to speak.

The group may start with an approach that works round each member asking them to give a view or comment later the conversation should be less directed.

Use the following questions as prompt for discussion

1. **How do you see your role is in supporting the prevention of obesity in young people?**
2. **Do you feel equip to carry out the role effectively?**
    - If group start discussing capacity and workload acknowledge this but move on **to what tools do they need training and support with**
    - **Who is responsible for delivery of health care information? Do they have support from other staff/managers around obesity?**
3. **Have they had any training with YP in this area?**
    - What was the training – did it cover theoretical basis of what works and why in relation to health behaviour change?
    - Who delivered it
    - Duration/intensity (length of time/number of sessions)
    - Is training generic /universal or specific to local area?
    - What helped their practice
    - What could be improved
4. **If they were to design a training / tool kit to support school nurses work more effectively with young people what would they include?**
5. **Any other comments**
6. **Confirm what will happen next in the project and how to get feedback**

Appendix Eleven – Vignettes

Adolescent risk behaviour prevention

Vignettes

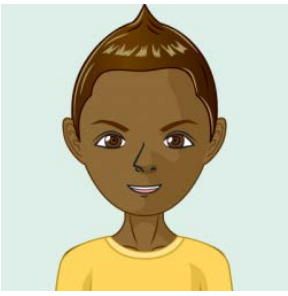
Adam is a 13-year-old boy attending his local secondary/high school. This year his year group are being given health education classes aiming to reduce smoking, alcohol and substance use, and promote health behaviors, such as safe sex and healthy eating. The classes are taught in school, by a teacher, who has had some training. Classes will run for 6 months of the year, once a fortnight, giving 12 classes in total.

After a few sessions Adam and his friends discuss how they are feeling about the classes.

I don't like these classes being taught by the teacher. It would be better if it was a professional or the school nurse. It's embarrassing, we have to see them every day, and they probably just want to see who the bad kids are. It might not stay confidential.

Ali agrees with Adam.

Yeah, I'd prefer a professional too. I think they will have had more training, they will know what they are talking about.



I would rather talk to a teacher. We already know them. I trust them more than I would trust a stranger. It just feels safer.

Stephen does not agree.

Questions

1. Who would you be more likely to agree with?
    - Adam
    - Ali
    - Stephen
2. Why?

When Adam gets in from school his mum is often drinking a glass of wine while she cooks dinner, often continuing into the evening with dad. Dad smokes too. His parents are happy and seem well. Adam doesn't know if he should be worried about them, or if school are just over exaggerating the consequences.

Ali is often at home alone. Her mum frequently works late, often eating out with colleagues in the evening. Dad does not live at home. Ali often hangs out with friends in the evening, and at weekends. They are older than her, and Adam has seen them drinking. He is worried that Ali may be drinking too.

Questions

1. How could Adam's home life effect how he feels about what he is being taught at school?
2. What might help Adam?
3. Why do you think Ali might be drinking?
4. What could be done in school to help her?

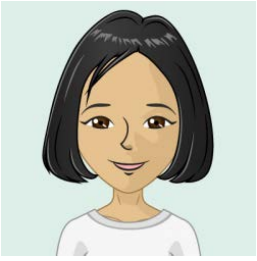
The first module delivered in the health programme looks at the impact of alcohol use and misuse. These classes are designed to prevent teenagers from drinking. This is done by: showing young people the difference between how many of their classmates they think drink alcohol, and how many actually do (usually not anywhere near as many as teenagers expect it to be); providing

information on the effects, dangers, and consequences of alcohol use and misuse; and providing training, skills and strategies to help teenagers say no.

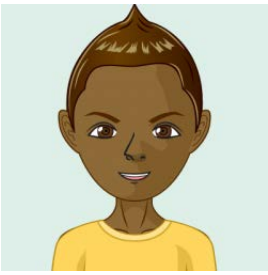
I like learning about staying healthy, and what happens if you do drugs, or drink or whatever, but this 'just say no' approach doesn't tell me how to stay safe if I do do something. I would like to know more about where to get help.

Rachel agrees with Adam.

I want them to give us resources we can use. Local services. Maybe even a website or app where I can find things out for myself.



Stephen would also like more practical information.



I would like them to teach us practical skills, like first aid. I want to know what I can do to keep myself and my friends safe.

Questions

1. What do you think would be most useful to these people?
2. Should this information be delivered by the teacher, or should the young people be encouraged to find it for themselves?
3. Would it be useful to be taught practical skills such as when to get help/ first aid/ calling 999?
4. If you were in these classes what would you want to be included?

Participant Information Sheet

You are being invited to take part in this research study. Before you decide it is important for you to read this leaflet so you understand why the study is being carried out and what it will involve.

Reading this leaflet, discussing it with others or asking any questions you might have will help you decide whether or not you would like to take part.

Name of Researcher: Christina Cooper

Name of Supervisor: Dr Monique Lhussier

Project Title: Risky behaviour prevention in adolescents: What works, for whom, in what circumstances, and why? A realist enquiry.

What is the Purpose of the Study

The aim of the project is to investigate for whom, when and in what circumstances prevention strategies succeed or fail in reducing risk behaviours (Substance misuse, smoking, alcohol consumption and risky sexual behaviours) in adolescents. The purpose of the research is to explain how, when, and why behaviour change occurs. The findings of the research will be used to guide policy and practice in future intervention development and delivery, in order to increase the chances of success.

Why have I been invited?

You are invited to take part in the research as you have been identified as being the leader of an active youth group which provides health advice and guidance to young people. You are therefore in a position to help us understand what might happen / how adolescents might react to a particular intervention. For example, it could be that the literature shows that some adolescents prefer interventions delivered by peers, while others prefer interventions which are adult led - you might be able, from your experience, to help us find out which is more likely to happen in your area and why.

What will I have to do?

Participation in the research will involve two meetings between me and yourself, and a discussion between yourself and the young people about risk behaviour prevention, based on a set of vignettes (see attached) without the presence of the researcher. The first meeting will last approximately one hour and will involve you talking through the vignettes with the researcher and deciding how you would like to collate young people's views. For example whether it would be useful for you to

take notes. You will then discuss the vignettes with the young people who want to take part, guided by the questions included in the vignettes, this will take approximately one hour. The second meeting will last approximately an hour and will involve you feeding back the results of the discussion to the researcher.
I hope that the vignettes, and the fact that I will not be present will help reduce any embarrassment or discomfort the young people may feel, and also to protect their anonymity. Meetings between yourself and I may be recorded to aid analysis. Your permission to do this will be sought at each meeting.

What are the possible disadvantages of taking part?

You will be asked to give up some of your time. Approximately three hours, one hour for each meeting with the researcher and one hour discussing the vignettes with young people. However, you can withdraw from the study at any point without giving a reason.

What are the possible benefits of taking part?

By taking part in the study you will be helping to guide the research, and through talking about the Vignettes, may help me to understand what some of the young people you work with think about risky behaviours, and how they can best be reduced or prevented.

Will my taking part in this study be kept confidential and anonymous?

Yes. All responses will be recorded confidentially and no personal details will be included in transcripts of the interview, or in any research reports. The fact that you, rather than the young people directly, will be participating in this research means that young people's comments will be totally anonymous to me.

How will my data be stored?
All paper data, including the typed-up transcripts from your interview and your consent form will be kept in locked storage. All electronic data; including the recordings from your interview will be stored on a password protected University drive. All data will be stored in accordance with University guidelines and the Data Protection Act (1998).

What will happen to the results of the study?

We will share the findings from this study with:

- **Yourselves as participants in this study**
- **Northumbria University, in the form of the PhD thesis**
- Results may also be disseminated by the researcher via peer reviewed journal articles, conferences, and informal presentations.

Under no circumstances your name and details will appear on any of these.

Who is Organising and Funding the Study?

I am carrying out this study for my PhD in public health at Northumbria University. The research has been funded by Fuse, the centre for translational research in public health.

Contact for further information:

Researcher: Christina.cooper@northumbria.ac.uk

Research Supervisor: Monique.lhussier@northumbria.ac.uk

Appendix Thirteen – Youth Workers Informed Consent

Faculty of Health & Life Sciences

INFORMED CONSENT

Project Title: Risky behaviour prevention in adolescents: What works, for whom, in what circumstances, and why? A realist enquiry.

Principal Investigator: **Christina Cooper**

	please tick or initial where applicable
I have carefully read and understood the Participant Information Sheet.	☐
I have had an opportunity to ask questions and discuss this study and I have received satisfactory answers.	☐
I understand I am free to withdraw from the study at any time, without having to give a reason for withdrawing, and without prejudice.	☐
I agree to take part in this study.	☐
I would like to receive feedback on the overall results of the study at the email address given below. Email address……	☐

Signature of participant..... Date..... (NAME IN BLOCK LETTERS).....
Signature of Parent / Guardian in the case of a minor .....
Signature of researcher..... Date..... (NAME IN BLOCK LETTERS).....

Appendix Fourteen - Ethical approval

Phase One and Two

Dear Christina

Following independent peer review of the above proposal, I am pleased to inform you that Faculty approval has been granted on the basis of this proposal and subject to compliance with the University policies on ethics and consent and any other policies applicable to your individual research. You should also have recent Disclosure & Barring Service (DBS) if your research involves working with children and/or vulnerable adults.

The University's Policies and Procedures are available on the ELP; Organisation name: HLS0002: Research Ethics and Governance

All researchers must also notify this office of the following:

- Any significant changes to the study design, by submitting an 'Ethics Amendment Form'
- Any incidents which have an adverse effect on participants, researchers or study outcomes, by submitting an 'Ethical incident Form'
- Any suspension or abandonment of the study;

Yours sincerely

_____

Dr Nick Neave BA (Hons), Cert Ed, Ph.D.
Reader in Psychology, Department of Psychology, Faculty of Health & Life Sciences
Faculty Director of Ethics

Phase Three

Dear Vicky

Faculty of Health and Life Sciences Research Ethics Committee

Submission Code: HLS-PHW151617

Title: Learning from Young people to support the development of training tools for school nurses to promote healthy lifestyles

Following independent peer review of the above proposal, I am pleased to inform you that Faculty approval has been granted on the basis of this proposal and subject to compliance with the University policies on ethics and consent and any other policies applicable to your individual research. You should also have recent Disclosure & Barring Service (DBS) if your research involves working with children and/or vulnerable adults.

The University strongly advises that the supervisor accompany the student.

All researchers must also notify this office of the following:

- Any significant changes to the study design, by submitting an 'Ethics Amendment Form'
- Any incidents which have an adverse effect on participants, researchers or study outcomes, by submitting an 'Ethical incident Form'
- Any suspension or abandonment of the study;

We wish you well in your research endeavours.

Yours sincerely

J. Reynolds

Dr Joanna Reynolds

Faculty Ethics Coordinator: Department of Public Health and Wellbeing

Phase Four

Dear Monique,

I have read the reviewer's comments and your response to the coordinator's letter and feel that you have responded appropriately to the ethical issues raised. I approve this submission, and will communicate this decision to the ethics coordinator

Good luck with your research

Best wishes

Dr Nick Neave BA (Hons), Cert Ed, Ph.D.

Associate Professor, Department of Psychology, Faculty of Health & Life Sciences

Faculty Director of Ethics