An evaluation of a school-based intervention to reduce risk behaviour in adolescents

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A thesis submitted for the degree of PhD Applied Psychology

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Date of submission September 2019

Abstract

Risk-Avert is a school-based programme established by The Training Effect and Essex County Council with the aim of reducing risk behaviour and improving emotional health, resilience and self-efficacy in adolescents. Prior to beginning Risk-Avert adolescents complete the Risk-Avert Screening Tool to assess their vulnerability to and engagement in risk behaviour. This research aimed to a) establish the validity and reliability of the Risk-Avert Screening Tool, and b) add to the evidence-base regarding the programme's effectiveness.

Study one used existing secondary data from completion of the Risk-Avert Screening Tool. Principal components analysis revealed more underlying components than the expected four-component structure and low internal reliability.

Study two involved year eight students from two schools with no previous involvement with Risk-Avert. Scores for the Risk-Avert Screening Tool were compared to those for other validated risk and wellbeing measures. Receiver Operating Characteristic analysis found that the Risk-Avert Screening Tool was accurate in identifying risk behaviour.

Study three was longitudinal and aimed to assess the impact of the Risk-Avert programme by comparing questionnaire scores pre- and post-completion. Although participants in the programme did not demonstrate reduction of risk behaviour between time one and time two, there was also no evidence of an increase. Conversely, non-participants of the programme appeared to increase their level of risk behaviour over the same period.

Study four utilised semi-structured interviews with nine staff members who had led the Risk-Avert programme. The interviews concerned the practicalities and impact of Risk-Avert. Analysis identified that interviewees generally felt the programme had positive impacts, but there was variation in how the Risk-Avert programme was implemented.

Overall, the Risk-Avert Screening Tool was found to be accurate in identifying risk behaviour and it appeared the Risk-Avert programme may have some preventive effect regarding risk behaviour, as suggested by both quantitative and qualitative findings.

Acknowledgements

Firstly, thank you to Mark Bowles at The Training Effect and Ben Hughes from Essex County Council, whose partnership led to this project.

Secondly, to my supervisors Dr Leanne Andrews and Dr Caroline Barratt, I simply could not have asked for better support during this process. Thank you both for your confidence, knowledge and encouragement.

I would also like to thank Tania at The Training Effect for facilitating recruitment. To the schools, teachers and students who were involved in this research, thank you for your time and effort. This would not have been possible without you.

Finally, to my family, who have supported me unconditionally. I love you and could not be more grateful.

Contents

1. Introduction

Risk-Avert is a school-based programme established by The Training Effect and Essex County Council in 2013 (The Training Effect, n.d.-a). It aims to reduce risk behaviour as well as improve emotional health, resilience and self-efficacy in adolescents via six sessions delivered in schools (Bowles, 2015; The Training Effect & Essex County Council, 2015). Typically, year eight students (12 to 13 years of age) are targeted for the programme via the Risk-Avert Screening Tool (The Training Effect & Essex County Council, n.d.), which assesses the extent to which young people are already partaking in risk behaviour or are at-risk of beginning to (Bowles, 2015).

This research project was prompted by the desire of The Training Effect and Essex County Council to obtain independent evidence of the effectiveness of the Risk-Avert programme and analysis of the Risk-Avert Screening Tool, as previous evaluation had only been conducted in-house. As such, Essex County Council agreed to fund a PhD studentship for the research to take place and worked alongside academics at the University of Essex to develop an initial research proposal. The original proposal for the research included the completion of psychometric testing of the Risk-Avert Screening Tool to assess reliability and validity, as well as a two-year follow-up of the risk behaviour of students from 25 schools that took part in the Risk-Avert programme in the 2014-15 academic year.

As the research student awarded the studentship following interview, I was drawn to the project due to a background in psychology and a keen interest in improving outcomes for young people. I had previously worked as an assistant on research projects regarding decision-making and following

some time working as an assistant psychologist in a mental health service wanted to further expand my research experience. Conducting research regarding the effectiveness of the Risk-Avert programme provided an ideal opportunity to follow my interests whilst broadening my skills as a researcher.

Although The Training Effect and Essex County Council were involved in the development of the original research proposal and subsequent plans for conducting the research were communicated to them and their feedback taken into consideration, decisions relating to the research were made ultimately by me alongside my academic supervisors. As such, the broader aims of the original research proposal were adhered to, but the specifics of methods and analysis were decided upon by me (in consultation with my supervisors) as circumstances evolved. The Training Effect provided information required for the development of the research such as typical timescales for various elements of the Risk-Avert programme, made available secondary data and facilitated initial contact with schools.

Overall, this thesis aims to establish the validity, reliability and accuracy of the Risk-Avert Screening Tool, as well as present evidence concerning the effectiveness of the Risk-Avert programme, particularly regarding the reduction of risk behaviour. It will start by exploring risk taking behaviour in adolescents and introducing relevant theory. In Chapter Two it will consider the available evidence for the effectiveness of school-based interventions targeting multiple risk behaviours.

In Chapter Three, secondary data will be used to explore the underlying structure and internal reliability of the Risk-Avert Screening Tool. Chapter Four will also focus upon the Risk-Avert Screening Tool and will present

research findings regarding the accuracy of the Risk-Avert Screening Tool's scoring, as well as evidence of convergent validity.

Chapter Five will move to considering the effectiveness of the Risk-Avert programme and presents the findings of a longitudinal study exploring the change in risk behaviour and other factors in both participants of the programme and non-participants. The same dataset will be further explored in Chapter Six, which considers how differences between participants and non-participants of the programme may influence participation in the programme and/or change in risk behaviour. Chapter Seven presents findings from semi-structured interviews of staff members who delivered the Risk-Avert programme, focusing on how the programme was delivered and the impact it had on students, staff and the wider school community. Chapter Eight provides the general discussion of the results presented in this thesis, as well as conclusions.

1.1 Adolescent risk-taking

The World Health Organisation (WHO) (2018a) defines adolescents as those individuals aged 10 to 19 years. In 2015, approximately 1.2 million adolescents worldwide died and the majority of those deaths were due to causes for which there are methods of prevention, the leading cause that year reportedly being injury caused by road traffic incidents (World Health Organisation, 2018a). The WHO (2018b) suggested that investing in adolescents brings multiple benefits to societies as healthy adolescents are more likely to become healthy adults who go on to be healthy and productive members of society that pass on their healthy habits to others.

Some exposure to hazards has been considered typical for individuals of that age, as they explore the world around them, pursue methods to cope with changing emotions and life circumstances, gain greater independence and seek to establish themselves as individuals (e.g. Baumrind, 1987; Coleman & Hagell, 2007; Jessor, 1991). Given that the health of adolescents has been expressed as a focus for an international organisation such as WHO, it is perhaps not surprising that there has been interest in the behaviours they exhibit that may prevent them from being healthy and leading full lives. Such behaviours have been termed “risk” or “risky” behaviours, “behavior that involves potential negative consequences (loss) but balanced in some way by perceived positive consequences (gain)” (S. Moore & Gullone, 1996, p. 347). Thus, risk behaviours are those which carry likelihood of either negative or positive consequences, although the exact nature of the consequences may not be known until after the fact. For example, driving recklessly may be fun and it could lead to admiration from peers, but it could also result in a criminal record, injury or even death but you will not know precisely which consequences you will be facing until the car has stopped.

Although some statistics seem to indicate an overall decline in recent years in the percentage of young people engaging in risk behaviours such as drinking alcohol or smoking cigarettes (Agalioti-Sgompou et al., 2015; Cabinet Office Horizon Scanning Programme Team, 2014), as well as this, seemingly principally as a result of either unchanged or increasing rates of death caused by injury, mortality rates within this age group have shown much less improvement over recent decades than those for younger children (Viner et al., 2011).

1.2 Factors associated with risk behaviour

As research regarding the prevalence of risk behaviour in adolescence has developed, alongside knowledge of the outcomes associated with such behaviour, researchers have theorised about the factors associated with increased levels of risk behaviour in adolescence. The following section will discuss empirical research that has explored the relation of adolescent risk behaviour and factors that fall into the broad categories of psychological factors, biological factors and social/environmental factors.

1.2.1 Psychological

1.2.1.1 Personality

Psychological theories of adolescent risk-taking explore the role of personality, mental health and cognition in risk behaviour. Research has found that personality traits or states such as high sensation-seeking, low self-esteem, impulsivity or egocentrism are related to increased risk-taking (e.g. Donohew et al., 2000; Frankenberger, 2004; Greene et al., 2000; McGee & Williams, 2000; Robbins & Bryan, 2004; Steinberg et al., 2008). However, results are mixed with some studies finding no or little connection between these factors and adolescent risk behaviour (e.g. Lavery, Siegel, Cousins, & Rubovits, 1993; Mullan & NicGabhainn, 2002). This may be due to individual differences such as gender in the influence of these factors on risk behaviour, for example Veselska et al. (2009) found that self-esteem was only related to increased risk behaviour in boys. There is also difficulty in measuring these traits or states too broadly, for example researchers have found that self-esteem within different areas of life relate differently to different risk behaviours (Wild, Flisher, Bhana, & Lombard, 2004).

1.2.1.2 Mental Health

In addition to personality states and/or traits, the relation between the psychological wellbeing or mental health of individuals and adolescent risk behaviour has been examined. Symptoms of anxiety have been linked to greater risk-aversion in young adults, particularly in the case of social anxiety (Lorian & Grisham, 2010; Maner et al., 2007). Studies of adolescents have displayed similar results, with symptoms of social anxiety found to be associated with less risk-taking behaviour (Pailing & Reniers, 2018). Substance use, smoking and other behaviours such as delinquency and truancy have been found to be positively associated with symptoms of depression (Bannink, Broeren, Heydelberg, van't Klooster, & Raat, 2015; Brooks, Harris, Thrall, & Woods, 2002; Fergusson, Goodwin, & Horwood, 2003; Testa & Steinberg, 2010). Some research has suggested that the relation of depressive symptoms to risk behaviour is not direct but instead occurs via factors such as hopelessness or risk perception (Curry & Youngblade, 2006; Testa & Steinberg, 2010). For example, those reporting more symptoms of depression have been found to be likely to perceive less risk and thus engage in more risk behaviour (Curry & Youngblade, 2006).

It has been proposed that individuals may use risk behaviours as a form of self-medication to help them cope with depressive symptoms and/or negative emotions and evidence supportive of this hypothesis has been presented for the use of marijuana and other drugs, as well as smoking, although the evidence regarding the use of alcohol in this capacity is mixed (Cooper, Frone, Russell, & Mudar, 1995; Hooshmand, Willoughby, & Good, 2012).

1.2.1.3 Decision-making

As well as an individual's personality and psychological wellbeing, researchers have considered cognitive processes that may impact the prevalence of risk behaviour among adolescents, namely decision-making. In a review of the literature Furby and Beyth-Marom (1990) describe five aspects of making a decision that could potentially differ between adults and adolescents, any of which may be in some way faulty or incorrect in adolescence but improved in adulthood, thus driving the differences in levels of risk-taking behaviour between the age-groups:

1) *Identifying the available options.* To choose between engaging in a risk behaviour or not, the individual needs to have the ability to identify that the risk behaviour is an option, but that it also has an alternative i.e. not engaging in the risk behaviour. If the individual sees no viable option except the risk behaviour, then they cannot choose to behave differently.
2) *Identifying the potential consequences of each option.* If the individual identifies that there is more than one option, i.e. risk behaviour or non-risk behaviour, the next step is to establish what might happen when the individual engages in either behaviour. This means thinking about the positive and negative outcomes of each behaviour. If the individual is unaware of the consequences of a risk behaviour, then they may choose that action because they see no reason not to do so.
3) *Evaluating how desirable the potential consequences of each option may be.* Any behaviour will have positive and negative consequences, some of which may be identified by the individual as more valuable

than others. If the individual understands that a risk behaviour could result in physical harm but may also gain them a lot of kudos from peers, and another non-risk behaviour in comparison would not gain them any approval from peers but would also keep them from harm, they then need to establish which consequence is more important to them. If the individual values peer approval above all else, they are more likely to choose the risk behaviour.

4) *Assessing how likely each of the potential consequences is.* Having identified the options, the consequences of the options, and how desirable those options are, next the individual needs to be able to assess the chance of any potential consequence happening. To continue the previous example, if the individual mistakenly thinks that the chance of harm is very small, they may choose a risk behaviour.
5) *Putting all the above together in accordance with a decision rule*. For example, choosing the option with the most desirable consequence. The final step of the decision-making process is to combine all the above information in a way that makes sense to the individual, typically according to a decision rule which may be something such as “I am going to choose the option with the least undesirable consequences”.

Furby and Beyth-Marom (1990) argue that given the above even a prosocial or non-risk behaviour could be viewed as risky to an adolescent, as every decision involves some subjective expectation of potential loss. If an adolescent chooses not to engage in the risky behaviour, they are potentially facing a loss of peer approval, peer criticism and/or a feeling of alienation from their social group. Their review of the decision-making literature

regarding adolescent risk behaviour reveals a lack of studies regarding most of the above aspects of decision-making in adolescents, particularly where adolescents have been compared to adults, and where research has been conducted the results have been mixed. For example, Cohn, Macfarlane, Yanez & Imai (1995) found that on average adolescent participants were more likely than adults to minimize the harm associated with the 14 different risks they studied (e.g. drunk driving, smoking), but also considered themselves more susceptible to the risks. Similarly, Millstein and Halpern-Felsher (2002) found that adolescents were more likely to provide a higher estimate of their own individual susceptibility to risk than adults. Although these results may suggest adolescents consider themselves more susceptible to negative consequences than adults do, other research has suggested adolescents and adults make the same mistakes when assessing the possibility of negative consequences. Quadrel, Fischhoff & Davis (1993) found that both adolescents and adults perceived that their own susceptibility to a risk was less than that of anybody else.

Some studies have also found that adolescents and adults do the same “correct” things, Beyth-Marom, Austin, Fischhoff, Palmgren & Jacobs-Quadrel (1993) found that both adolescents and their parents predicted the negative consequences of taking part in a risk behaviour. Yet further studies suggest that adults do display improved decision-making in comparison to adolescents, such as Halpern-Felsher and Cauffman (2001) who compared adults (mean age of 23.36 years) and adolescents in sixth, eighth, tenth or twelfth grade (aged approximately 11 to 18 years) in their ability to consider such factors as the risks, benefits and long-term consequences of a

behaviour. Although differences between the age groups varied across the decision-making factors assessed and the risk scenarios presented, they concluded that the adults were generally more adept decision makers than the adolescents.

Furby and Beyth-Marom (1990) suggest that the lack of and mixed nature of the research may be due to methodological difficulties in assessing certain aspects of decision-making, for example asking individuals what factors influenced their decision is not felt to be reliable. Overall, they promote the need to combine consideration of the role of decision-making processes in adolescent risk behaviour with consideration of other aspects of the social environment in which development takes place. Such social and/or environmental factors will be considered in the next section.

1.2.2 Social and/or environmental factors

1.2.2.1 Peers

As well as considering factors within the individual that may affect their propensity to engage in risk behaviour, researchers have looked to elements within their wider environment. In a phenomenon titled the “risky shift”, individuals of any age are expected to engage in more risk when in the presence of others than when alone (Vidmar, 1970; Vinokur, 1971). If this phenomenon holds true in adolescence, when individuals typically begin to spend more time with their friends (Larson & Richards, 1991) and place greater value upon their opinions (Sussman et al., 1994), then one could expect that adolescents would take greater risks in the presence of their peers. In accordance with this, research has demonstrated that the presence of peers has been found to increase the risk behavior of adolescents,

whereas the same pattern was not demonstrated in adults (Gardner & Steinberg, 2005). Some research has negated the idea of the risky shift, finding that the presence of others does not always mean increased risk, or that in some cases being around other people can even decrease risk (e.g. Pilkonis & Zanna, 1973; Zaleska, 1974). As a result, some researchers have theorised that instead of risk just increasing around others, the likelihood of increased risk depends upon the attitudes of the others and the individual as the behaviour or attitude of the individual moves to align with that of the others (Hogg, Turner, & Davidson, 1990). Thus, placing a child in a classroom with well-behaved peers may improve their behaviour. However, whatever the reason for the influence of peers on risk behaviour, it should be noted that some research has found individual differences in the effect of peers, for example that boys are more influenced by their peers than girls (Michael & Ben-Zur, 2007). It has also been reported that the impact of peers on risk behaviour may be influenced by the presence or absence of other types of support, such as that of family members or teachers. For example, Moore et al. (2018) found that there was an increased risk of cannabis use amongst Welsh adolescents who felt that their friends were more supportive (generally and not just of risk behaviour engagement), but only for those with lower family support.

1.2.2.2 Parents/carers & family structure

Peers are only one social unit that influences adolescents, a second is their parents and/or carers. Some researchers have explored how parents may negate risk behaviour by imposing supervision and monitoring or by contrast, create opportunity for risk-taking by failing to monitor or enforce boundaries

(Barber, 1992; Baumrind, 1987; Borawski, Ievers-Landis, Lovegreen, & Trapl, 2003; Kalina et al., 2013). For example, Moore, Rothwell and Segrott (2010) reported findings that alcohol consumption was significantly negatively related to parental monitoring and family closeness, such that alcohol consumption was less likely in adolescents who reported higher levels of those familial characteristics. Some research however has only asked about the adolescents' perceptions of how much they are monitored (e.g. Borawski et al., 2003; Kalina et al., 2013). Of course, there is some argument that a parenting style that is authoritarian can produce the opposite of the desired effect, causing rebellion against rules and thus potentially an increased propensity for engaging in risk behaviour (Baumrind, 1987). For example, Bronte-Tinkew, Moore and Carrano (2006) found that those with a father with an authoritarian style of parenting were more likely to engage in risk behaviour. Others have focused on how parents may model risk behaviour to their children who then emulate what is demonstrated to them (e.g. Beijers, Bijleveld, van de Weijer, & Liefbroer, 2017; Farrington, Jolliffe, Loeber, Stouthamer-Loeber, & Kalb, 2001; Green, Macintyre, West, & Ecob, 1991; Hill, Hawkins, Catalano, Abbott, & Guo, 2005; Seljamo et al., 2006).

Researchers have also considered the wider influence of family characteristics. For example, they have found that family structure can influence risk behaviour, namely that those from single-parent families were more likely to engage in risk behaviour (e.g. Blum et al., 2000). As well as the nature of the family structure, the role of family function has also been explored. For example, in those families where conflict among family members is more prevalent, risk behaviours referred to as delinquency and

conduct problems, as well as the consumption of alcohol, have been shown to be increased in comparison to those from families where conflict is less (e.g. Formoso, Gonzales, & Aiken, 2000; Juby & Farrington, 2001; G. F. Moore et al., 2010). Some research suggests that a reason for this may be that the parental involvement in families with high levels of conflict is less, as is parental monitoring (Ary et al., 1999). Some studies have also linked family socioeconomic status to risk behaviours, for example reporting that smoking was more likely in adolescents from families with lower socioeconomic status, but alcohol consumption was more likely in adolescents from families with higher socioeconomic status (G. F. Moore & Littlecott, 2015)

1.2.2.3 School

Alongside being at home with family or out with peers, typically adolescents also spend a lot of time at school. Academic failure or difficulty has been associated with increased risk behaviour (e.g. Maguin & Loeber, 1996). Similarly, increased connectedness to school has been shown to be associated with reduced risk behaviour (e.g. Brooks, Magnusson, Spencer, & Morgan, 2012; Resnick et al., 1997). For example, Brooks, Magnusson, Spencer and Morgan (2012) found that, for a group of 15-year olds, factors such as feeling connected to school and their wider community were associated with reduced participation in a set of risk behaviours that included smoking cigarettes and drinking alcohol. This sense of connectedness to school has been measured via questions that ask whether schools, among other things, offer support to adolescents, establish a place of safety and create a feeling that the views of adolescents are valued (e.g. Brooks et al., 2012).

The socioeconomic status of a school has also been linked to risk behaviour (independent of family socioeconomic status), such that risk behaviour typically decreases as school socioeconomic status increases (G. F. Moore & Littlecott, 2015; G. F. Moore et al., 2017). However, school socioeconomic status and family socioeconomic status have also been found to interact, for example those adolescents from families of high socioeconomic status were less likely to smoke if they attended a school of higher socioeconomic status, but the same did not hold true for adolescents from families of low socioeconomic status (G. F. Moore & Littlecott, 2015). As well as school, other aspects of the wider community have been shown to be associated with increased levels of risk behaviour among adolescents, such as neighbourhood socioeconomic disadvantage (e.g. Schneiders et al., 2003).

1.2.2.4 Media

A further factor to consider is the role of the media. The consumption of alcohol-related advertising has been shown to be associated with the initiation and/or increasing of alcohol consumption (P. Anderson, De Bruijn, Angus, Gordon, & Hastings, 2009). Exposure to sexual content in the media has been linked to individuals beginning to have sexual intercourse at an earlier age (J. D. Brown et al., 2006; Collins et al., 2004). Several reviews of the literature have concluded that there is a positive association between watching violence in the media and aggressive or violent behaviour in adolescents (e.g. C. A. Anderson et al., 2003; Bushman & Huesmann, 2006). Technological advances in recent decades have meant that video-media can now be consumed on several different devices, not just a television set, with

the BBC reporting that one study conducted by research company Childwise in the United Kingdom found that 60% of the approximately 2000 young people surveyed were watching television on a phone, laptop or tablet computer (Coughlan, 2016). Arguably, these portable devices could be more difficult to monitor and control regarding media consumption than more traditional forms of accessing media such as magazines or standard television sets, thus presenting an issue for those wishing to police an adolescent's exposure to factors that may increase their propensity for risk behaviour.

1.2.3 Biological – DNA, hormones and the "adolescent brain"

Although much research has focused upon psychological and social/environmental constructs in relation to adolescent risk behaviour, another stream of research has been exploring the biological underpinnings of decisions and risk-taking. There is growing consensus that the brain continues to develop well into adolescence. This is evidenced by differences in the physical structures of the brain i.e. grey matter and white matter, as well as the way that the areas of the brain communicate, between the brains of adolescents and the brains of children or adults (Doremus-Fitzwater, Varlinskaya, & Spear, 2010; Gogtay & Thompson, 2010; Paus, 2010; Schmithorst & Yuan, 2010; Wahlstrom, Collins, White, & Luciana, 2010; T. White, Su, Schmidt, Kao, & Sapiro, 2010). This has led some to argue that adolescence should not be considered "over" until individuals reach the age of around 20-25 years (e.g. Sawyer, Azzopardi, Wickremarathne, & Patton, 2018). The idea that brain development is incomplete prior to the age of 25 years has interesting practical implications, for example there has been

debate regarding the culpability of adolescents when they commit criminal acts (Beckman, 2004). It has been argued that adolescents cannot be said to have complete control over their behaviour when it is the case that their biology, something which is outside of their direct control, is potentially affecting their information processing, decision-making and subsequently their behaviour (Beckman, 2004).

Several theorists (e.g. Casey, Jones, & Hare, 2008; Dahl, 2004; Ernst, Pine, & Hardin, 2006; Spear, 2013; Steinberg, 2008) have proposed that those areas of the brain associated with cognitive control and self-regulation (termed the cognitive control network and typically thought to be represented in the pre-frontal cortex), the processes that enable us to weigh-up consequences and stop ourselves from making bad decisions, develop slower than the areas of the brain that deal with psychosocial factors such as our emotions (termed the socio-emotional network). Increases in neurotransmitters such as dopamine at the time of puberty are considered to make the socio-emotional network more prominent during adolescence. Steinberg (2008) and others have proposed that this dissimilarity between the development of the two brain areas can lead to risk behaviour, as psychosocial factors such as peer pressure or an emotional driver for a risk behaviour become much more influential at puberty, whereas self-regulation develops much more slowly. As such, the cognitive-control network is less likely to be able to override the socio-emotional network and this may lead to behaviours driven by emotion rather than reason.

Support for this theory has come from studies such as that conducted by Chein, Albert, O'Brien, Uckert and Steinberg (2011), which investigated

differences in the brain activity of adolescents and adults during a driving task and found that the areas of the brain associated with rewards demonstrated greater activity in adolescents when they were playing the game, particularly when they were playing the game in front of their peers. They also found that those areas of the brain associated with cognitive control demonstrated less activation in adolescent participants than in the adult participants. They concluded that this suggests that the increased levels of risk-taking by adolescents in the presence of peers is due to the increased salience of potential rewards associated with making the risky decision. However, others have questioned whether differences between adults and adolescents in studies such as these may be due to differences in the experience that adults and adolescents have with and their subsequent processing of visual simulations (Sercombe, 2010). Reports that have explored rates of risk behaviour in different age groups have also found that differences in rates of risk behaviour between adults and adolescents disappear when they take into account wider social factors, such as poverty (Males, 2007, 2009). For example, Males (2009) reported statistics that appear to show that adults and adolescents from impoverished areas display similar patterns of risk behaviour when each is compared to their wealthy counterparts, suggesting that there is a significant role for the circumstances to which individuals are exposed in determining their level of risk behaviour, not only fundamental differences in age or biology.

As well as this, there are theorists who attest that the concept of the adolescent brain is a falsehood (e.g. Epstein, 2007; Males, 2009; Sercombe, 2010). Males (2009) suggests that the concept of the adolescent brain is

biodeterminist and lacking in scientific rigor. They cite statistics obtained from the National Center for Injury Prevention and Control (2008) that appear to demonstrate that adolescents do not engage in certain risk behaviours (suicide, drug overdose and accidents) more than adults, as would be predicted by the adolescent brain theory, suggesting that researchers have instead been choosing behaviours and age ranges that appear to support their theories. Sercombe (2010), speaks to methodological difficulties with studies of the adolescent brain, such as their use of small samples, as well as issues with interpretation, such as overgeneralisation of results, misapplication of causation, and bias for interpreting results in ways that are detrimental to young people. Males (2009) proposes that the popularity of the concept of the adolescent brain is perhaps due to it framing young people as a social problem that needs to be managed and that this is of interest for some as, for example, it focuses attention away from inequality in society, and provides reason for funding the management of young people and imposing stricter controls on young people.

Although the role of the adolescent brain in risk-taking behaviour may be debated, other biological factors besides the development of the brain and central nervous system have been implicated as influencing the prevalence of risk behaviour in adolescence. In particular, links have begun to be investigated between genes and risk behaviour in adolescence, such as alcohol use (Blomeyer et al., 2008; Nilsson et al., 2005). As well as this, some researchers have explored the possibility that changes in hormones at puberty, particularly sex hormones such as testosterone, may play a role in

the risk behaviour demonstrated by young people, although perhaps still via their influences on the brain (Sisk & Zehr, 2005).

1.2.4 Individual differences: gender & ethnicity

In 2017 the Centre for Longitudinal Studies at University College London published a briefing reporting the initial findings from the Age 14 sweep of the Millennium Cohort Study (Centre for Longitudinal Studies, 2018). These findings explored not only the prevalence of risk behaviour among adolescents in the United Kingdom, but also the relation between prevalence and individual differences such as gender, ethnicity, and other aspects of the adolescents' lives. Regarding gender, they report that all types of risk-taking activity (they measured activities such as smoking, alcohol drinking and theft) were more prevalent in boys than girls. Boys were likely to be younger than girls when they first had alcohol, were more likely to have experimented with substances more generally, or assaulted another person with a weapon, were more likely to have had involvement with the police, to have engaged in sexual activity, gambled and higher numbers of boys than girls reported having been involved in physically hurting another person e.g. hitting or pushing them.

The above data is consistent with research which has consistently identified males as more likely to take risks than females. For example, Sorenson (2011) identified disparities in injury-related mortality rates between men and women at most ages, with men being more likely to die of injury than women. A meta-analysis of 150 studies comparing risk-taking in men and women found that risk-taking behaviour was more prevalent in male participants than females, although it was also identified that the difference

between the genders did depend upon the behaviour studied as the gender difference was more prevalent with some risk behaviours than others (Byrnes, Miller, & Schafer, 1999). Similar findings were reported by Villanueva and Carrizales (2009), who identified that risk was only more prevalent in men than women for the category of reckless driving. In the case of other risk categories, there were no significant differences between the genders. Some researchers have begun to explore the reasons for such differences in risk-taking between the genders. Some propose that men take more risks because this is congruent with gender-stereotypes and social learning (Booth & Nolen, 2009; Helgeson, 2012). It has also been proposed that the genders perceive risks differently, with girls considering consequences more than boys (Helgeson, 2012; Morrongiello & Rennie, 1998).

Regarding ethnicity, the main reported finding from the Age 14 sweep of the Millennium Cohort Study (Centre for Longitudinal Studies, 2018) was that some risk behaviours were less prevalent among ethnic minorities. For example, 94% of Bangladeshi participants reported that they had never experimented with substances, whereas this was the case for only 44% of their white British peers. This is consistent with reports of other surveys, which have identified that ethnic minorities were less likely to engage in risk behaviours such as substance use or violence than their ethnic majority counterparts (Fuligni, 1998). Contrary to this, Black African and Black Caribbean participants of the Age 14 sweep of the Millennium Cohort Study (Centre for Longitudinal Studies, 2018) reported higher prevalence of having physically harmed another person in comparison to their white British peers and other studies have suggested that adolescents of multiple ethnicities are

more likely to engage in risk behaviours than adolescents of single ethnicity (Unger, Palmer, Dent, Rohrbach, & Johnson, 2000).

Given the broad range of individual differences that may influence risk behaviour in adolescence, as well as conflicting findings, it is difficult to pinpoint only one that is key. This becomes even more difficult when you consider the role of psychological, biological, social and environmental factors, not only on influencing biological developments and individual differences, but also in influencing risk behaviour in their own right. As these factors cannot be considered in isolation, many researchers have developed theories that seek to explain and/or predict adolescent risk behaviour by using a combination of factors. Such theoretical frameworks will be discussed in the following sections.

1.3 Theoretical frameworks applicable to risk behaviour

As research regarding the prevalence of risk behaviour in adolescence has developed, alongside knowledge of the outcomes and potential drivers associated with such behaviour, researchers have theorised about what leads to risk behaviour in adolescence. In the literature, the experiences and attributes described above that are considered to contribute to adolescents' likelihood of engagement in risk behaviour have been termed risk factors (Coleman & Hagell, 2007). There is general agreement that the higher the number of risk factors present the more likely a negative outcome is (Appleyard, Egeland, van Dulmen, & Sroufe, 2005). Often, the risk factors are grouped into individual factors (those factors related to the person), family factors (those factors related to the person's family) and community factors (those factors related to the person's community) (Coleman & Hagell, 2007).

However, the research regarding risk factors revealed that there are cases where even those who seem to be fighting against all odds, having been bombarded with risk factors, will still fare well compared to similarly at-risk peers (e.g. Ferguson & Horwood, 2003; Werner & Smith, 1992). As such, protective factors were identified and are those aspects of an individual's life that reduce the impact of risk factors encountered by the individual, such as having supportive parents or going to a good school. Protective factors are also often grouped into individual, family and community categories (Coleman & Hagell, 2007).

Two theories that explicitly refer to risk and protective factors in seeking to explain the development of adolescent risk behaviour are Problem Behavior Theory (Jessor, 1991; Jessor & Jessor, 1977) and the Social Development Model (Catalano & Hawkins, 1996). The following section will discuss several theoretical frameworks, some of which are applicable to many types of behaviour and others that have been applied specifically to adolescent risk behaviour.

1.3.1 Theory of Reasoned Action/Planned Behaviour (Ajzen, 1991; Fishbein & Ajzen, 1975)

The Theory of Reasoned Action is a psychological theory developed by Fishbein and Ajzen (1975) to enable better understanding of under which conditions a person's attitude toward a particular behaviour may predict whether or not they choose to engage in that behaviour. Their theory postulates that three constructs aid the prediction of behaviour: attitude, subjective norm and intention. Namely, they felt that how a person felt about a behaviour (on a simplistic level, whether it's good or bad, their attitude toward

it) and how they understand others to feel about it (the subjective norm) predicts the extent to which they are determined to engage in a behaviour (their level of intention), and that intention subsequently predicts the actual behaviour undertaken (Fishbein & Ajzen, 1975). The underlying model of the Theory of Reasoned Action has been supported in numerous studies involving application across various topic areas, including cyberbullying (Doane, Pearson, & Kelley, 2014), the use of social networking sites (Peslak, Ceccucci, & Sendall, 2012) and teen sexual behaviour (Gillmore et al., 2002).

Ajzen (1991) later extended the Theory of Reasoned Action to include a fourth construct: perceived behavioural control. This construct was added to capture an individual's level of belief that they can in fact engage in or stop a behaviour i.e. how much control they perceive they have over a given behaviour. Perceived behavioural control can influence behaviour both directly and indirectly, via influencing an individual's intention (Ajzen, 1991). The Theory of Planned Behaviour, much like the Theory of Reasoned Action, has been applied to numerous behaviours with supportive results, including gambling (Flack & Morris, 2017) and condom use (Albarracin, Johnson, Fishbein, & Muellerleile, 2001). The Theory of Reasoned Action (Fishbein & Ajzen, 1975) and the Theory of Planned Behaviour (Ajzen, 1991) have been used as the basis for behavioural interventions, for example programmes that have aimed to improve how young people behave in regard to their diet and nutrition (Hackman & Knowlden, 2014).

However, despite the apparent capability of the model there have been concerns raised regarding its validity and utility (e.g. Sniehotta, Presseau, & Araújo-Soares, 2014), although the overall usefulness of the theory and the

validity of arguments such as those proposed by Sniehotta, Presseau and Araújo-Soares (2014) is the subject of some debate (e.g. Ajzen, 2015; Conner, 2014; Trafimow, 2015) . One systematic review found that the Theory of Planned Behaviour was less predictive as the length of time between measurement increased and if the outcomes were not measured using self-report (McEachan, Conner, Taylor, & Lawton, 2011). Overall, the review reported that the Theory of Planned Behaviour was found to account for only 19.3% of variability in behaviour, in which case the clear majority of variability in behaviour (80.7%) was not accounted for by the theory (McEachan et al., 2011). As well as this, the Theory of Planned Behaviour is ineffective in explaining why somebody may fail to perform a behaviour having formed an intention to do so, individuals termed “inclined abstainers” (Orbell & Sheeran, 1998). Several such inconsistencies between the empirical evidence and the Theory of Planned Behaviour have been identified, for example, contrary to the theory beliefs have been found to be a better predictor of behaviour than intentions (Araújo-Soares, V., Rodrigues, A., Presseau, J, & Sniehotta, F. F., 2013). In their criticism of the Theory of Planned Behaviour, Sniehotta and colleagues (2014) argue that in order to accommodate these discrepancies within the framework of the Theory of Planned Behaviour, researchers have begun to expand the theory, thus demonstrating that the Theory of Planned Behaviour in its original form is no longer considered enough to explain behaviour and behaviour change. Regardless of the successes or otherwise of the Theory of Planned Behaviour, such general behaviour theories are only a useful starting point in exploring the specific category of risk behaviour, particularly within a specific

life stage (adolescence). Thus, researchers have moved beyond general theories to those specific to adolescent risk behaviour. Such theories will be discussed in the next section.

1.3.2 Theoretical frameworks specific to adolescent risk behaviour

The biopsychosocial model of adolescent risk-taking proposed by Irwin and Millstein (1986) is a hypothetical model designed to demonstrate how one may integrate the many psychological, social, environmental and biological factors that influence an adolescent's experience and behaviour (please refer to Figure 1.1 below for a depiction). The model proposes that biological maturation (e.g. the age at which an individual reaches puberty) affects four psychosocial factors: an individual's cognitive scope (how they view risk), self-perceptions (how the individual views themselves physically and psychologically), perceptions of their social environment (the influence of peers and family) and their personal values (for example, how important it is to them to be independent). These psychosocial factors then affect an individual's risk perception, for example how they weigh-up costs and benefits of a behaviour, and the characteristics of their peer group, for example how old they are comparatively and whether they hold largely prosocial or antisocial attitudes, and subsequently an individual's likelihood of engaging in risk behaviour can be predicted. An example provided by Irwin and Millstein (1986) is that of a young female that reaches puberty earlier than her peers and may feel different from peers the same age as her, feel excluded, and struggle with her own sense of self-worth. As a result, she may seek out older peers that physically appear more like her. Older peers may encourage engagement in behaviours more typical of their point of development rather

than her own. She may understand the potential downfalls of this, for example being reprimanded or falling physically unwell, but if she places great value on feeling accepted by this group, she may perceive that the benefits of taking part in the behaviour outweigh any costs. The interrelated effects of these biological and psychosocial factors in this case would be predicted to lead to an increased likelihood of risk behaviour.

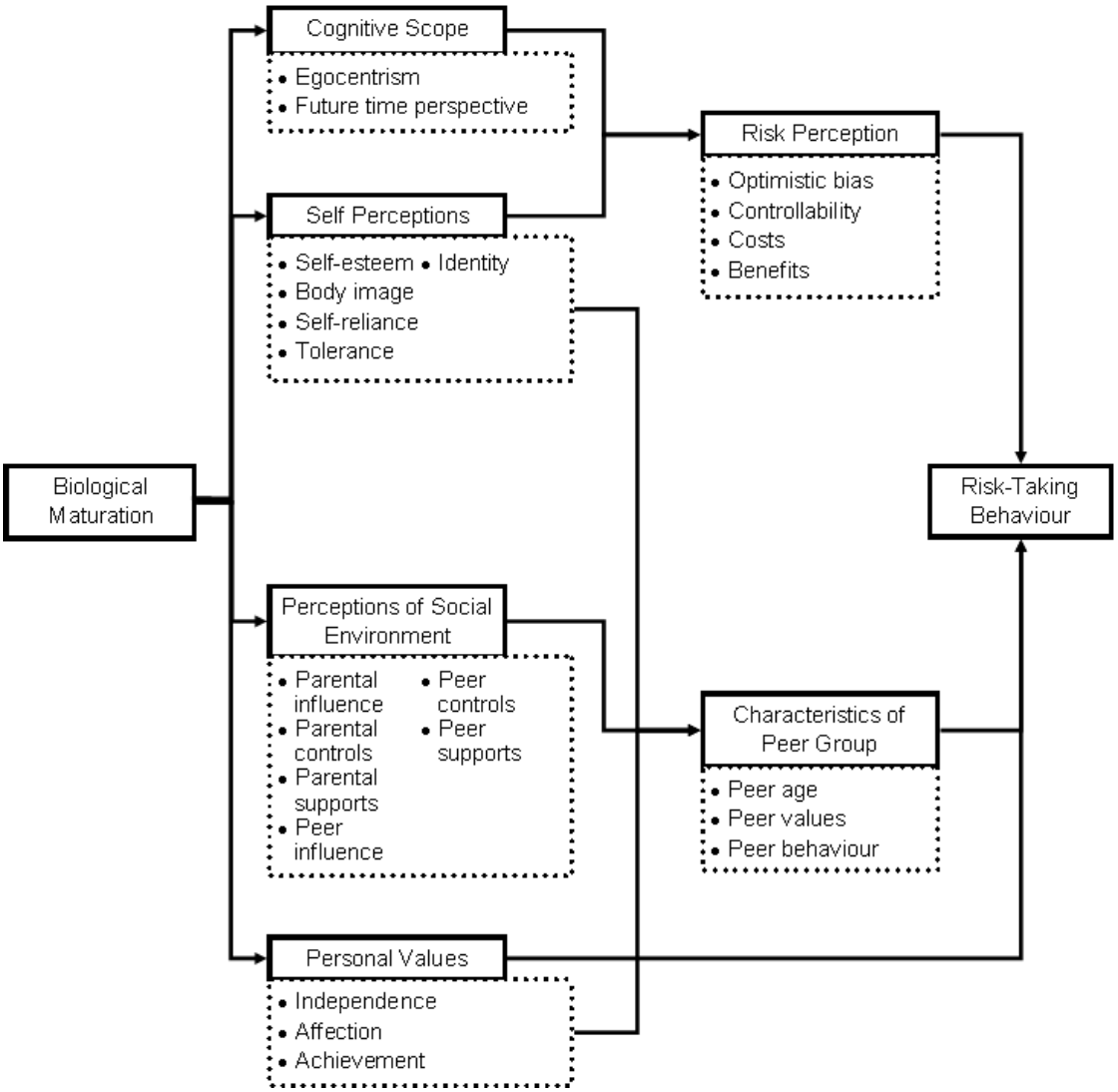

Figure 1.1 The biopsychosocial causal model of adolescent risk behaviour. Reproduced from (Irwin & Millstein, 1986, p. 89S)

Although the biopsychosocial model of adolescent risk behaviour proposed by Irwin and Millstein (1986) is a hypothetical model designed to demonstrate

how one may integrate the many psychological, social, environmental and biological factors that influence an adolescent's experience and behaviour, other models have similarly attempted to combine biological, social/environmental and personality factors in a measurable framework. Two such theories are Problem Behavior Theory (Jessor & Jessor, 1977) and the Social Development Model (Catalano & Hawkins, 1996).

1.3.3 Problem Behavior Theory (Jessor & Jessor, 1977)

Problem Behavior Theory (Jessor & Jessor, 1977) seeks to combine biological, social/environmental and personality factors within one theory to explain the development of risk behaviour (please see Figure 1.2 for a depiction). It refers to instigating and controlling factors, later reformulated as risk or protective factors (Jessor, 1991), that either encourage or discourage risk behaviour respectively. These factors operate within five domains: biology/genetics, social environment, perceived-environment, personality, and behaviour and it is the number of risk or protective factors across the five domains that determines whether an adolescent is more or less likely to engage in risk behaviour, or in the language of Problem Behavior Theory to be more or less unconventional i.e. those with a high number of risk factors and few protective factors would be considered more likely to engage in risk behaviour than those with a high number of risk factors alongside a high number of protective factors.

The biology/genetics domain would include such risk factors as having a history of addiction in the family. The social environment domain concerns objective concepts reflecting the quality of the environment in which the adolescent is residing, for example the level of poverty and amount of

resources. The perceived-environment domain is made up of concepts such as social controls (social norms, rules and regulations), models (individuals or groups that model risk or prosocial behaviour) and support (from individuals or groups e.g. family, friends, peers). Theoretically, risk factors for engaging in risk behaviour within this system include such things as a desire to please peers, poor parental supervision, and perceived parental approval of risk

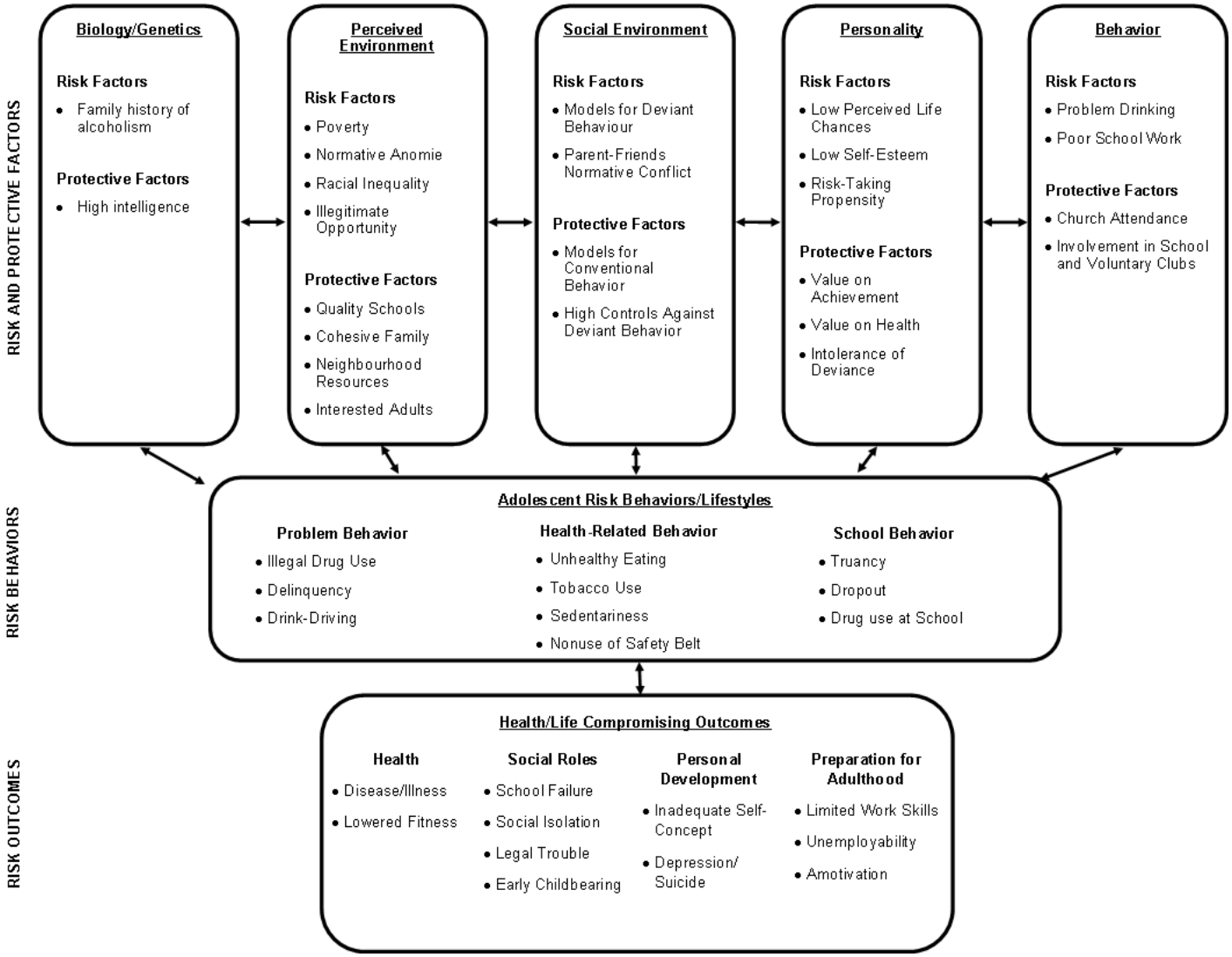

Figure 1.2 Problem Behavior Theory. Reproduced from Jessor (1991, p. 602)

behaviour. The personality system reflects the values, expectations, beliefs and attitudes that an individual develops across their growth because of their exposure to new experiences. Theoretically, risk factors for engaging in risk behaviour within this system include feeling disconnected from society and having low self-esteem. The behaviour system includes both risk and prosocial behaviours (termed conventional behaviours in Problem Behavior Theory). It is theorised that risk behaviours are interrelated such that if an individual engages in one risk behaviour such as smoking cigarettes, they are also more likely to engage in any other risk behaviour. Thus, engagement in risk behaviour is in itself a risk factor for engaging in more risk behaviour, whereas engaging in prosocial (or conventional) behaviours such as completing homework would be considered a protective factor. The proposal of correlations between engagement in different risk behaviours has been supported in several studies (e.g. Farrell, Danish, & Howard, 1992). Donovan, Jessor and colleagues have suggested that correlations between different risk behaviours, as well as findings of a single factor underlying such correlations, may reflect a problem behaviour syndrome (e.g. Donovan & Jessor, 1985; Donovan, Jessor, & Costa, 1988).

The concepts proposed within Problem Behavior Theory have been found by the authors and their colleagues to be applicable to a range of behaviours including drinking alcohol, risky driving and contraceptive use (e.g. Costa, Jessor, Fortenberry, & Donovan, 1996; Costa, Jessor, & Turbin, 1999; Donovan, Jessor, & Costa, 1999; Jessor, 1987; Jessor, Turbin, & Costa, 1997). Problem Behavior Theory has since its conception also been successfully applied to health behaviours such as regularly engaging in

exercise (Donovan, Jessor, & Costa, 1991). In this case, the basic theory remains the same, but with health-compromising behaviour and health-enhancing behaviour replacing problem behaviour and prosocial behaviour respectively, although of course some health-compromising behaviours would also be considered problem behaviours, for example smoking cigarettes.

The assertion of Problem Behavior Theory that risk behaviours are interrelated such that if an individual engages in one risk behaviour they are also more likely to engage in any other risk behaviour, the problem behaviour syndrome model, is perhaps the most contentious aspect of the theory. One review of studies conducted by Guilamo-Ramos, Litardo and Jaccard (2005) identified that different types of risk behaviour were on average not even moderately correlated, suggesting that, contrary to the proposals of Problem Behavior Theory, variation in risk behaviour is better explained by factors unique to each behaviour rather than one or more common factors. Some researchers have suggested that the problem behavior syndrome is relevant but reflected differently in different groups of adolescent and/or risk-taker (Sullivan, Childs, & O'Connell, 2010; Willoughby, Chalmers, & Busseri, 2004). Several studies have identified multiple factor structures underlying problem behaviour in groups of adolescents, rather than a single factor as implied by the problem syndrome model (e.g. Gillmore et al., 1991; Tildesley, Hops, Ary, & Andrews, 1995; H. R. White & Labouvie, 1994).

1.3.4 Social Development Model (Catalano & Hawkins, 1996)

Unlike Problem Behavior Theory (Jessor & Jessor, 1977), the Social Development Model (Catalano & Hawkins, 1996) seems to make no explicit predictions as to the relations between different risk behaviours, although

early participation in antisocial behaviour could be framed as an individual constitutional factor. The Social Development Model combines elements of control theory (Hirschi, 1969), social learning theory (Bandura, 1977) and differential association theory (Matsueda, 2001; Sutherland & Cressey, 1970) to explain how the same processes can lead to either prosocial or antisocial behaviour. Like control theory (Hirschi, 1969), the Social Development Model proposes that socialising in prosocial groups and feeling a sense of affiliation to such groups will lead to an individual adopting similar prosocial behaviours and beliefs. Unlike control theory however the Social Development Model also proposes that this would work similarly for antisocial behaviour, namely socialising within antisocial groups would lead to the adoption of antisocial behaviours. Such behaviours are learned via mechanisms proposed by social learning theory (Bandura, 1977), that is, individuals are rewarded or punished for engaging in particular behaviours and this either encourages or discourages that behaviour. Differential association theory (Matsueda, 2001; Sutherland & Cressey, 1970) proposes that this learning and socialisation is the same regardless of whether an individual is learning prosocial or antisocial behaviour. Ultimately, the Social Development Model asserts that young people learn how to behave from the groups and institutions with which they socialise. The degree of socialisation is dependent upon the young person feeling there are opportunities for them to be involved with these groups/institutions, how much they interact with the groups/institutions, whether they have the social and physical skills to take part in any interactions, and how they feel their participation will be supported or discouraged. If these four things are present consistently over time then the

young person will feel bonded to the group or institution and wish to follow their norms, behavioural or otherwise (please see Figure 1.3 for a depiction of the general model). As a result of this antisocial behaviour is proposed to occur via three means: 1) the young person does not have the skills, opportunities, or encouragement to engage in socialisation that encourages prosocial behaviour, 2) a young person perceives that the benefits of antisocial behaviour outweigh the costs and/or, 3) the processes of socialisation actually bond a young person to antisocial groups or institutions and so they adopt antisocial beliefs and behaviours to conform with the norm (Catalano & Hawkins, 1996).

As the means by which antisocial behaviour occurs is explicitly stated, the Social Development Model has been used to guide the development of interventions including the Seattle Social Development Project, which involved a longitudinal study of 808 students from 1985. The project aimed to increase protective factors and reduce risk factors that may lead to prosocial or antisocial behaviour by improving the social bonding of five to 10-year-old children. The parents and teachers of the children were instructed on methods of developing positive social bonding such as enforcing rules, monitoring their own attitudes to behaviour and helping children to form bonds to social groups that value prosocial behaviour (Hawkins et al., 2007). A summary of the research findings from Hawkins et al. (2007) regarding the outcomes of the Seattle Development Project concludes that positive effects were found from second grade (seven to eight years old) right through to the age of 21 years old. These positive effects were concluded to include outcomes such as higher levels of academic achievement, less heavy

drinking, and fewer sexual partners for those that took part in the intervention compared to those who did not. However, positive intervention effects were not found in African American girls or boys in the second grade (approximately seven to eight years old) when compared to their European American peers (Hawkins, Von Cleve, & Catalano Jr, 1991). There were also differences between boys and girls in the variables for which change was identified in the sixth grade (approximately 11 to 12 years old) following intervention (O'donnell, Hawkins, Catalano, Abbott, & Day, 1995), suggesting that factors such as gender and ethnicity may play a role in the effects of the intervention.

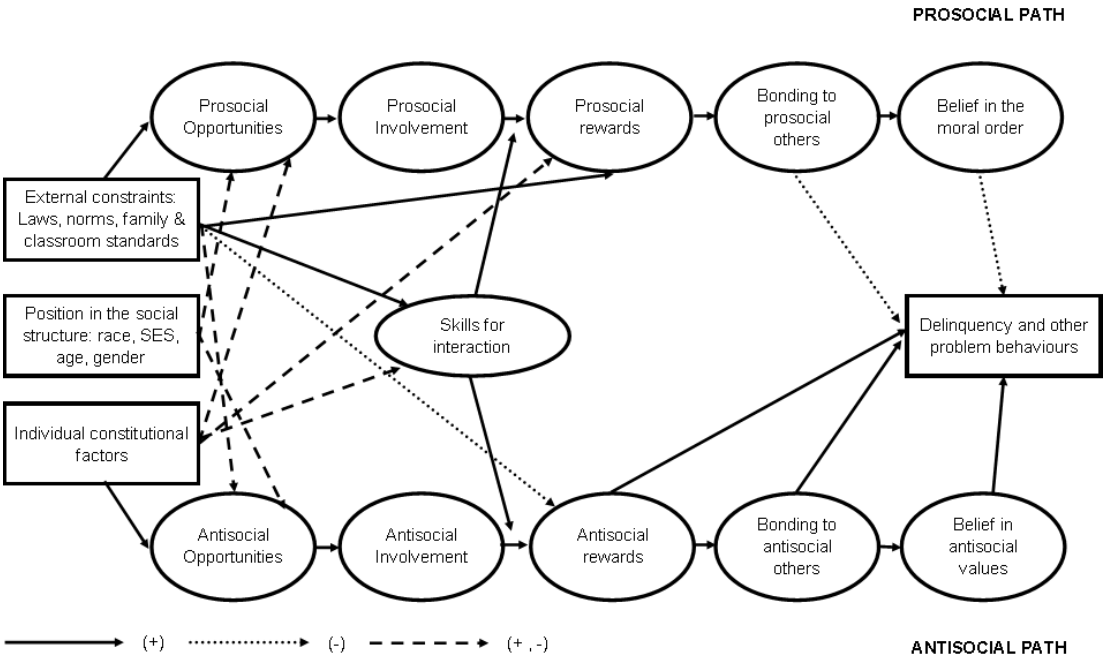

Figure 1.3 The Social Development Model: General Model. Reproduced from (Hawkins et al., 2007, p. 166)

1.3.5 Summary of theoretical frameworks applicable to risk behaviour

In summary, the previous sections outlined several theoretical frameworks that could be applied to adolescent risk behaviour. They proceeded from the more general i.e. the Theory of Planned Behaviour (Ajzen, 1991) to those specifically developed to explain and predict the development of adolescent risk behaviour, namely Problem Behavior Theory (Jessor & Jessor, 1977) and the Social Development Model (Catalano & Hawkins, 1996). Although each has its pros and cons and individual variations in predictors, underlying factors and interrelations between constructs, it is also clear that there are several similarities between all the frameworks. All of them refer to an element of peer influence, be it via social norms (as in the Theory of Planned Behaviour), or bonding to pro/antisocial others (as in the Social Development Model) or perceived-environment (social controls; as in Problem Behavior Theory). Similarly, both Problem Behavior Theory and the Social Development Model acknowledge the role of social learning and the modelling of prosocial or risk behaviour in the adoption of such behaviour, although this is less evident in the Theory of Planned Behaviour. Whilst the Theory of Planned Behaviour is the only framework to explicitly refer to attitudes and their relevance to behaviour, both Problem Behavior Theory and the Social Development Model include constructs that would allow for the accommodation of attitudes within the framework (the personality system and individual constitutional factors respectively). Finally, both Problem Behavior Theory and the Social Development Model capture the role of social constructions, such as rules and regulations, as well as the influence of social environments, such as schools.

The theoretical frameworks included here typically focus on the internal processes of the individual, with some acknowledgement of their wider social environment, but other theories have focused more so on the role of social processes and systems in the development and maintenance of adolescent risk behaviour. It is beyond the scope of this thesis to include all such theories; however, some examples are included within the work of Pound and Campbell (2015) who categorised the explanations of adolescent risk behaviour provided by sociological theories into nine groups. For example, one category suggested that adolescent risk-taking is due to “habitus” or social norms within particular social structures and another that risk behaviour is due to being isolated from relevant social groups or structures (Pound & Campbell, 2015). Enhancing the climate of, connectedness to and support provided within social systems such as schools has been applied to the reduction of adolescent risk behaviour, as in the case of the Gatehouse Project which focused upon improving attachments (Bond et al., 2004; Patton et al., 2000).

1.4 Approaches to reducing risk behaviour in adolescents

Theories such as those described above, which ultimately define the role of both risk and protective factors in driving adolescent risk behaviour, can be used in designing interventions to address risk behaviour, by trying to alter or improve upon one or more of these factors and/or processes (Blum & Mmari, 2005; Hawkins, Catalano, & Miller, 1992).

The Department for Education commissioned a report, published in 2013, that investigated how to reduce adolescent risk behaviour (Chowdry, Kelly, & Rasul, 2013). The report acknowledged that many attempts to reduce

risk behaviour among young people have focused upon the idea that they must be lacking some knowledge of the consequences. Thus, in this case the approach was termed a consequences approach, although it has also been referred to as an information-deficit approach (e.g. Perry & Staufacker, 1996). The idea is that if young people are provided with information regarding the potential negative impact of a behaviour then they will be less likely to partake in it. However, Chowdry, Kelly and Rasul's (2013) exploration of research regarding interventions relying upon such approaches found that although they can increase adolescents' knowledge of the consequences of risky behaviour, they are unlikely to cause a change in the behaviour of young people and so do not reduce incidents of risk behaviour. They also refer to Flay and Collins (2005), who found that an information-deficit approach can increase all areas of knowledge regarding a behaviour, not just the negative consequences, and this may have unintended effects such as making adolescents more curious about the positive results of a risk behaviour or better able to find the means to engage in a given risk behaviour.

Chowdry et al. (2013) acknowledge that in contrast to information-deficit approaches, other interventions have used a social norms approach. This approach implies that young people engage in risk behaviour because they do not understand how many of their peers are truly engaging in a given behaviour i.e., they feel that they are abnormal because their peers are all supposedly engaging in a behaviour that they are not. The aim of interventions using this approach is to make sure that young people are not overestimating the number of their peers partaking in a risk behaviour and thus feel increased pressure to take part themselves. However, some have

argued that social norms approaches may have a negative boomerang effect in that those who actually underestimate the prevalence of a behaviour, or do not engage in the behaviour, may feel the need to move toward the norm (e.g. Schultz, Nolan, Cialdini, Goldstein, & Griskevicius, 2007) and this would potentially increase the occurrence of a risk behaviour and/or lead to its initiation. The report by Chowdry et al. (2013) found that evidence for the effectiveness of social norms approaches on adolescent risk behaviour is mixed and any such programmes are typically better at correcting the misperceptions they aim to address rather than causing a change in behaviour. They presented several reasons for the mixed results regarding the effectiveness of social norms approaches, including that evaluations of programmes have failed to include control groups and have had difficulty disentangling the effects of the social norms approach specifically from other aspects of the programme, as social norms approaches are not typically delivered in isolation.

The same report (Chowdry et al., 2013) suggests that equally as important as the approach taken in intervention for adolescent risk behaviour is the design of the intervention, i.e. whether it's interactive or passive, and the timing of the intervention. They refer to research by Tobler et al. (2000) which revealed that interactive interventions, those that involve greater opportunity for discussion and active learning, were typically better at causing behaviour change than their passive counterparts, although the latter can still improve understanding. Chowdry et al. (2013) also suggest that deciding on when in an adolescent's development to implement an intervention is subject to a number of considerations, particularly given that effects of risk behaviour

interventions were found to be relatively short-lived. As such, they suggest that someone planning an intervention will need to weigh-up whether it is more important to target a young person before they have initiated a behaviour, although any effects of the programme may then have worn-off by the time an opportunity to engage in the risk behaviour arises, or whether the risk of behaviour initiation is less important than the young person's ability and opportunity to put into practice what they learn.

As well as the nature of an intervention (i.e. interactive or passive) and its timing, a person planning to provide an intervention must decide who it shall be offered to. Typically interventions are divided into three categories: universal – an intervention delivered to an entire group of people regardless of their behaviour; selective – an intervention delivered to only those felt most vulnerable to experiencing the behaviour of interest in the future; and indicated – an intervention delivered to those already demonstrating the behaviour of interest (The Institute of Medicine cited in Springer & Phillips, 2007). For the purposes of this discussion, selective and indicated interventions will be jointly referred to as "targeted" interventions.

The choice of using a universal or targeted intervention may be based upon the calculation of the cost versus benefit of each approach (Dodge, 2020). Universal interventions may be more costly to implement as the number of participants is higher. However, targeting an intervention requires some form of screening of participants, which potentially requires additional resources and may miss people who could benefit. This means that universal interventions may be considered easier to deliver, although there is also the potential for a universal programme to be too broad to be of help to

individuals with more specific needs, whereas a targeted programme may be tailored to the needs of a group of people. However, being chosen to partake in a targeted programme may carry stigma, something that is not the case for universal interventions as they are offered to everybody (Dodge, 2020). Typically the stigma is a result of being labelled as somebody requiring the intervention and may cause individuals to disconnect from or resent those giving them the label, or create a situation where the individual chooses to align themselves even more so with the behaviours, expectations and/or people associated with the label (e.g. Evans, Scourfield, & Murphy, 2015; Wiggins et al., 2009). Other iatrogenic effects of intervention participation may occur due to “deviancy training”, where spending time in a group where a behaviour is the norm promotes that behaviour and thereby increases the likelihood of it (Dishion, McCord, & Poulin, 1999), although some researchers have failed to find results supportive of the concept of deviancy training (e.g. Weiss et al., 2005).

MacArthur et al. (2018) conducted a review of 70 studies of interventions targeting multiple risk behaviour in adolescents, including 28 that were considered to assess universal school-based interventions. They found that the school-based interventions were more effective in preventing behaviours such as substance use and antisocial behaviour than those targeted predominantly at the level of the family or individual. Examples of interventions that have been devised thus far to target adolescent risk behaviour include the Gatehouse Project (Bond et al., 2004; Patton et al., 2000), the Aban Aya Youth Project (Flay, Graumlich, Segawa, Burns, & Holliday, 2004; Segawa, Ngwe, Li, Flay, & Aban Aya Coinvestigators, 2005),

Learning Together (Bonell et al., 2018) and the SEHER (Strengthening Evidence base on scHool-based intErventions for pRomoting adolescent health) programme (Shinde et al., 2018).

All of these interventions included school-based elements, for example a social development curriculum (Flay et al., 2004; Segawa et al., 2005), the introduction of restorative practice (a form of conflict resolution and/or prevention) (Bonell et al., 2018), improving the school climate (Shinde et al., 2018), providing a school-based adolescent health team and improving the social and learning environment of the school (Bond et al., 2004; Patton et al., 2000). All the interventions also included some element concerned with providing students with education, most often regarding management of social and/or emotional issues (Bond et al., 2004; Bonell et al., 2018; Flay et al., 2004; Patton et al., 2000; Segawa et al., 2005; Shinde et al., 2018).

The behaviours targeted by each of the interventions varied. The Aban Aya Youth Project was found to reduce behaviours such as violence, sexual encounters, substance use and school-related delinquency but only in boys (Flay et al., 2004). The Learning Together intervention was found to have significant effects on bullying, but not aggression (Bonell et al., 2018). The SEHER project had statistically significant effects on outcomes such as bullying victimisation and sexual health knowledge when delivered by counsellors. However, no intervention effect was found when the programme was delivered by teachers (Shinde et al., 2018). Those who took part in the Gatehouse Project were found to report reductions in substance use (e.g. drinking alcohol or smoking) when compared to the control group (Bond et al., 2004). Overall, although these interventions had in common that they

included school-based elements, the nature of those elements, as well as the targeted behaviours, differed and the findings of the evaluations were diverse.

1.5 Conclusions

This chapter has reviewed the empirical literature regarding factors associated with risk behaviour in adolescents. These factors were found to fall broadly into several categories: psychological (e.g. personality, decision-making), social/environmental (e.g. school, peers, family) and biological (e.g. DNA, hormones, the brain). Whilst the research is mixed regarding any individual factor and there is debate about the importance placed upon some (e.g. Males, 2009), several theories have been presented that have attempted to combine factors in a way that explains and/or predicts risk behaviour. The theories discussed in this chapter were the Theory of Planned Behaviour (Ajzen, 1991), the biopsychosocial model (Irwin & Millstein, 1986), Problem Behavior Theory (Jessor & Jessor, 1977) and the Social Development Model (Catalano & Hawkins, 1996). The risk and protective factors identified in research and theories has led to interest in how they could be applied in the creation of interventions designed to reduce risk behaviour (e.g. Blum & Mmari, 2005; Hawkins, Catalano, & Miller, 1992), as well as what methods of intervention may be most beneficial (e.g. Chowdry et al., 2013). Notable examples of interventions already devised include the Gatehouse Project (Bond et al., 2004; Patton et al., 2000), the Aban Aya Youth Project (Flay et al., 2004; Segawa et al., 2005), Learning Together (Bonell et al., 2018) and the SEHER programme (Shinde et al., 2018) but this raises the question: what other interventions are currently available for risk behaviour in

adolescents? The following chapter will explore this question via a literature review.

2. School-based interventions targeting multiple risk behaviour in adolescence: A systematic review

2.1 Introduction

The previous chapter reviewed the empirical literature regarding psychological, social/environmental and biological factors that are associated with risk behaviour in adolescents. The risk and protective factors identified in research have been applied in the creation of interventions designed to reduce risk behaviour (e.g. Blum & Mmari, 2005; Hawkins et al., 1992). This has raised interest regarding what methods of intervention may be the most likely to bring about improvement in adolescent risk behaviour or prevent the adoption of or worsening of risk behaviour (e.g. Chowdry et al., 2013).

Interventions designed to reduce risk behaviour in adolescents have typically focused upon addressing one specific risk behaviour at a time (e.g. Ellickson, McCaffrey, Ghosh-Dastidar, & Longshore, 2003; Ennett, Tobler, Ringwalt, & Flewelling, 1994). However, there is evidence that risk behaviours do not occur in isolation but instead often cluster together, that is, individuals who engage in one risk behaviour are also more likely to engage in other similar risk behaviours (Basen-Engquist, Edmundson, & Parcel, 1996; Neumark-Sztainer, Story, Dixon, & Murray, 1998; van Nieuwenhuijzen et al., 2009; Wiefferink et al., 2006). As such, it has been suggested that interventions could address multiple risk behaviours simultaneously, thus potentially maximising outcomes whilst reducing costs (e.g. Basen-Engquist et al., 1996; van Nieuwenhuijzen et al., 2009; Wiefferink et al., 2006). One programme that is designed to reduce risk behaviour in adolescents, Risk-Avert, has taken this approach and targets risk reduction in general, rather than focusing upon a specific risk behaviour (The Training Effect, n.d.-b). The

Training Effect and Essex County Council developed Risk-Avert to be delivered in schools to year eight students (aged between 12 and 13 years) (Bowles, 2015; Essex County Council & The Training Effect, 2014).

As well as considering the risk behaviour(s) targeted by an intervention, participants of an intervention may be targeted with similar consideration (see section 1.4, page 43 for detailed discussion). Risk-Avert contains both universal and selective components as some elements of the programme are delivered to the entire year group (universal) and other components are only delivered to those deemed comparatively most vulnerable to engaging in risk behaviour (selective) (The Training Effect, n.d.-b; The Institute of Medicine cited in Springer & Phillips, 2007). Whilst some individuals that take part in the full Risk-Avert programme may already be exhibiting risk behaviour, consideration is given to whether taking part in a different intervention or receiving some other form of support may be more beneficial (Bowles, 2015).

Given that the focus of this thesis is the evaluation of the Risk-Avert programme, this literature review focused upon identifying interventions of a similar nature i.e. that target risk reduction in general, rather than focusing upon a specific risk behaviour, are school-based and have been evaluated regarding their effect on more than one type of risk behaviour. This will allow for comparison of the Risk-Avert programme to other school-based programmes, for example facilitating the identification of any aspects of the Risk-Avert programme that may be unique. This literature review will also provide wider context regarding the effectiveness of school-based interventions for reducing risk behaviour when considering results reported

later in this thesis concerning the effectiveness of the Risk-Avert programme. Specifically, the aim was to address the following question: What is the evidence for the effectiveness of school-based interventions that aim to reduce multiple risk behaviour in adolescence?

2.2 Method

2.2.1 Eligibility criteria

Studies were chosen on the basis that they were available in the English language and were of an experimental or quasi-experimental design (a randomised controlled trial or controlled trial) or cohort study design. The intervention they evaluated was required to meet the following criteria:

1. The intervention had been conducted no earlier than 1990. Given that this literature review focused upon school-based interventions, consideration was given to the rate of educational reform and restructuring in past decades and the impact this may have had on the nature and success of intervention in schools. The year 1990 was chosen as an appropriate cut-off as it encompassed almost three decades of intervention and coincided with important educational changes such as the introduction of the National Curriculum in 1988 and Ofsted in 1992 in the United Kingdom.
2. Measured outcomes of the intervention assessed multiple risk behaviour. For the purpose of this review a study was considered to focus upon multiple risk behaviour if it assessed individually as an outcome the reduction of risk behaviour(s) within at least two of the following categories a) substance use (i.e. alcohol, drugs, smoking) b) violence c) sexual health d) delinquent behaviour (e.g. stealing,

vandalism, truancy) e) physical health (e.g. obesity, nutrition, physical safety).

3. The intervention was school-based i.e. the intervention was delivered to students within a school environment.
4. The school in which the intervention took place was traditional i.e. not an alternative school such as a specialist school for individuals with special educational needs and disabilities, and thus the intervention was not delivered exclusively to adolescents that were offenders or identified as belonging to a clinical population.
5. The intervention was delivered to adolescents (aged 10-19 years, as defined by the World Health Organisation (2018a), attending a middle school or high school equivalent.
6. The intervention was delivered in a country considered an “advanced economy” according to the International Monetary Fund World Economic Outlook Database for October 2018. It was felt by the author that interventions delivered in such countries would be most generalizable to the United Kingdom.

2.2.2 Information sources

This systematic review utilised EBSCOhost to search the following databases: CINAHL Complete, E-journals, MEDLINE with Full Text, PsycARTICLES, PsycINFO. As well as this, the following databases within the Web of Science Core Collection were searched: Science Citation Index Expanded (1970-present), Social Sciences Citation Index (1900-present), Arts & Humanities Citation Index (1975-present), Emerging Sources Citation Index (2015-present).

2.2.3 Search

The search of all databases was conducted on the 29th January 2019 using the following sequence of keywords: (“risk behav*” OR “risk tak*” OR “problem behav*” OR devian* OR delinquen*) AND (adolescen* OR teen* OR preteen OR "young-pe*" OR juvenile OR "high school" OR "secondary school" OR "middle school") AND (interven* OR program* OR course OR prevent*) AND (evaluation OR effectiveness). In all databases the search was limited to the English language. Searches in Web of Science were limited to articles, whilst searches in EBSCOhost were limited to academic journals. Descriptions of these options suggested to the author that they were comparable. Searches in EBSCOhost also limited results to those using a population of human participants. This option was not available in Web of Science.

2.2.4 Risk of bias

Risk of bias was assessed using the Effective Public Health Practice Project Quality Assessment Tool for Quantitative Studies (Armijo-Olivo, Stiles, Hagen, Biondo, & Cummings, 2012). Using this tool, the quality of studies is judged as strong, moderate or weak (indicating a weak, moderate or strong chance of bias respectively) on the basis of ratings given for selection bias, study design, confounders, blinding, data collection method and withdrawals and dropouts. The global rating is determined by counting the number of weak ratings given across the aforementioned categories. If no weak ratings are given then a global rating of strong is assigned, one weak rating equals a global rating of moderate and two or more weak ratings equals a global rating of weak.

2.2.5 Study selection

See Figure 2.1 for a flow-diagram detailing the study selection process. The initial search (combining both search engines) identified 4696 results. Two hundred and sixty-nine results were found to be duplicates, leaving 4427 results. The titles and then abstracts of these results were screened for relevance. As well as having to meet the eligibility criteria, any whose abstracts did not refer to the intervention being potentially school-based, either by explicitly stating it was school-based, or referring to students or teachers, or indicating the assessment of school-related outcomes, were excluded. Thus, 126 articles remained. Following the examination of full-articles, fifteen met eligibility criteria and were included in the review.

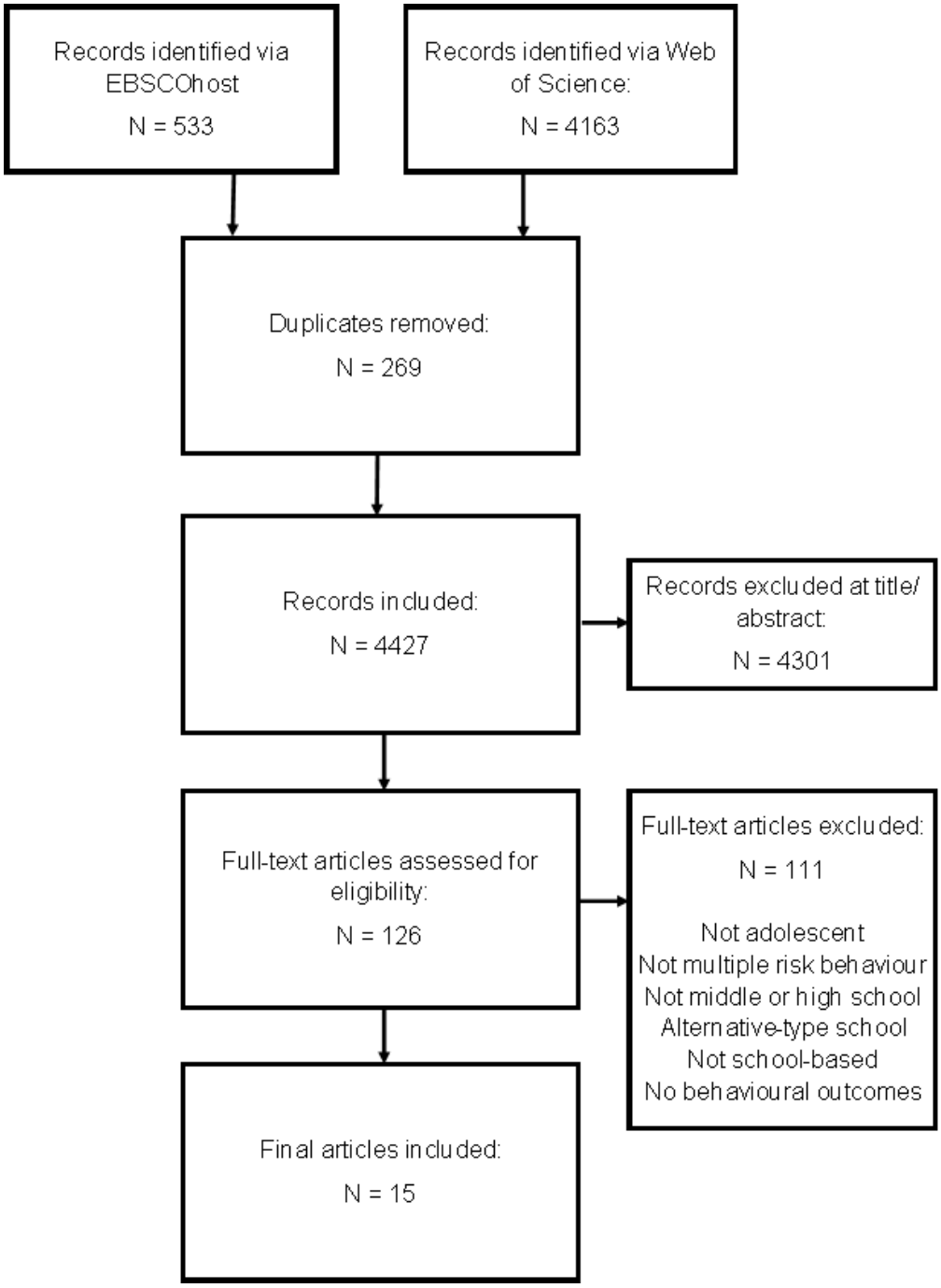

Figure 2.1 – Diagram of study selection

2.2.6 Data extraction

Data was collected from each study regarding the name of the intervention, the length and nature of the intervention, the country the intervention was run in, the risk behaviours that the intervention focused upon, the design of the study, the nature of the control group, the sample size and demographics of

participants, the outcomes and associated measures, attrition rates, the length of the follow-up period, and who delivered the intervention (e.g. a teacher).

2.3 Results

2.3.1 Study characteristics

Table 2.1 outlines the main characteristics of each study included in this review. The majority of studies were of a controlled trial design (Boyer, Shafer, & Tschann, 1997; Chapman, Buckley, Sheehan, & Shochet, 2013; Cho, Hallfors, & Sánchez, 2005; Densley, Adler, Zhu, & Lambine, 2017; Harrington, Giles, Hoyle, Feeney, & Yungbluth, 2001; McNeal Jr., Hansen, Harrington, & Giles, 2004; Peters et al., 2013; Shek & Yu, 2012; Skarstrand, Sundell, & Andreasson, 2014; Zask, van Beurden, Brooks, & Dight, 2006). One study utilised a cohort design (Shek, 2006) and four other studies were randomised controlled trials (RCTs; Allen, Philliber, Herrling, & Kuperminc, 1997; Bannink et al., 2014; Lewis et al., 2013; Shetgiri, Kataoka, Lin, & Flores, 2011).

Table 2.1 – Summary characteristics table for included studies

Author	Intervention	Duration	Type	Targeted Behaviour	Location	Study Design	Sample Size	Age	Risk Behaviour Assessed	Follow-up period	Main Findings
Shek (2006)	P.A.T.H.S.	Tier 1 - 20 hrs per yr – full 10 hrs per yr - core	Universal	PYD	Hong Kong	Cohort	546	Not stated	Drug use Alcohol use Delinquency	Baseline PI	• No effect on substance abuse or delinquency PI • Negative effect on alcohol use, deceiving others and using obscene language PI
Shek & Yu (2012)	P.A.T.H.S.	Tier 1 - 20 hrs per yr – full 10 hrs per yr - core	Universal	PYD	Hong Kong	CT	2850 IG 3640 CG	Secondary 1 *(approx. 12yrs)*	Substance use Delinquency	Baseline PI 1yr 2yr	• IG significantly slower increase in delinquent behaviour and substance use than CG
McNeal et al. (2004)	All Stars	22 sessions	Universal	Substance SA Violence	Kentucky, USA	CT	1822	12yrs (Mode)	Smoking Alcohol use Drug use Sexual activity	Baseline PI	• Positive effect on alcohol use, smoking and inhalant use (for teacher delivery) • No significant effect on marijuana use or SA (for teacher delivery) • No significant effect for any outcome for specialist delivery
Harrington et al. (2001)	All Stars	Not described – format but not content varies according to version	Universal	Substance SA Violence	USA	CT	916 IG 739 CG	12yrs (Mode)	Substance use Sexual activity Violence	Baseline PI 1yr	• No significant main effects reported • Significant three-way interaction – teacher delivery at 1yr African American violence decreased, White violence increased and Hispanic remained stable
Cho, Hallfors & Sanchez (2005)	Reconnecting Youth	55 core sessions 24 booster sessions	Indicated	Delinquency Substance	USA	CT	Site A – 269 IG 263 CG Site B – 346 IG 340 CG	9^{th}-11^{th} grade *(approx. 14-17yrs)*	School attendance Hard drug use Alcohol use Delinquency	Baseline PI 6m	• No positive effects at 6m • Positive effect on delinquency PI • Site A – positive effect on alcohol use and smoking PI • Site B – negative effect on alcohol use and smoking PI

Author	Intervention	Duration	Type	Targeted Behaviour	Location	Study Design	Sample Size	Age	Risk Behaviour Assessed	Follow-up period	Main Findings
Chapman et al. (2013)	SPIY + Connectedness Component	8 sessions	Universal	Injury Prevention	Canberra, Australia	CT	77 IG 196 CG	13.6yrs (Mean) Follow-up	Risk-taking Injury Alcohol use	Baseline 6m	• Violence risk-taking at 6m significantly predicted by membership of IG (reduced in IG, increased in CG), but no other significant outcomes reported
Shetgiri et al. (2011)	Not stated	1 session weekly Academic year	Indicated	Violence Substance	California, USA	RCT	40 IG 46 CG	14.4yrs (Mean) IG 13.9yrs (Mean) CG	Fighting Alcohol use Drug use Smoking Police contact Suspension/ Expulsion Truancy	Baseline 4m 8m	• No significant effect on any outcome when adjusted for baseline
Peters et al. (2013)	Multiple Choice 4 U	10 sessions	Universal	Substance SA Physical	Netherlands	CT	568 IG 539 CG	13.5yrs (Average) Baseline	Smoking Alcohol use Safe sex Nutrition	Baseline PI 4m	• Positive effect on smoking PI and 4m • Positive effect on recent sexual activity PI • No effect on alcohol use PI • Positive effect on alcohol use 4m • No effect on nutrition PI or 4m
Zask et al. (2006)	RRISK	Seminar day	Universal	Alcohol Drug use Driving Celebrating	New South Wales, Australia	CT	1245 IG 1461 CG	15-17yrs	Alcohol use Drug use Driving Celebrating	Baseline 1yr	• Positive effect on selected celebratory behaviours reported 1yr, but no other significant effects reported
Bannink et al. (2014)	E-health4Uth (with/without consultation)	1 45-minute session (consultation condition involved meeting with school nurse)	Universal (Consult is indicated)	Alcohol use Smoking Drug use Condom use	Netherlands	RCT	392 IG (no consult) 430 IG (consult) 434 CG	15.9yrs (Mean)	Alcohol use Smoking Drug use Condom use	Baseline 4m	• Intervention-only had a positive effect on condom use (only for Dutch ethnicity), but no other significant intervention effects reported • Intervention plus consultation demonstrated negative effect on drug use for boys, but no other significant effects were reported

Author	Intervention	Duration	Type	Targeted Behaviour	Location	Study Design	Sample Size	Age	Risk Behaviour Assessed	Follow-up period	Main Findings
Boyer et al. (1997)	Not stated	3 sessions over 3 consecutive days	Universal	STD/HIV infection	USA	CT	210 IG 303 CG	13-17yrs	Condom use Sexual risk Alcohol use Drug use	Baseline 4w	• No significant effect on condom use, number of sexual partners, condom use in the previous month, alcohol use or drug use
Skarstrand, Sundell & Andréasson (2013)	Strengthening Families Programme 10-14 (Swedish version)	Seven weeks grade 6 5 weeks in grade 7	Universal	Alcohol use Drug use	Stockholm, Sweden	CT	371 IG 216 CG	12yrs	Alcohol use Tobacco use Drug use NBB	Baseline 3yrs	• No significant effect on alcohol, tobacco or illicit drug use, or norm-breaking behaviours
Densley et al. (2017)	Growing Against Gangs and Violence	6 lessons over 5 weeks	Universal	Gang involve Delinquency Violence	London, United Kingdom	CT	193 IG (PI) 168 CG (PI)	12-14yrs	Gang membership Delinquency Violent offending	Baseline PI 1yr	• No significant effect on gang membership (frequency or variety), delinquency (frequency or variety) or violent offending
Allen et al. (1997)	Teen Outreach	Academic year (once a week)	Self-selecting	Pregnancy School failure	USA	RCT	342 IG 353 CG	Grades 9-12 *(approx. 14-18yrs)*	Teenage pregnancy School failure School suspension	Baseline PI	• Significant positive effects on course failure, school suspension and teenage pregnancy
Lewis et al. (2013)	Positive Action	140 15-20-minute lessons (Grades K-6) 70 20-minute lessons (Grades 7 and higher)	Universal	Aggression Violence Bullying DB	Chicago, USA	RCT	1170 students total 7 schools IG 7 schools CG	Grades 3-8 *(approx. 8-14yrs)*	Bullying DB Violence	Baseline Grade 8	• Positive effect over time on engaging in bullying (girls only), disruptive behaviour and violent behaviour

Note: Study designs presented are those determined by the risk of bias assessment, age ranges presented in italics reflect typical age of the grade for reference and were not presented in the articles

P.A.T.H.S. = Positive Adolescent Training through Holistic Social Programmes – P.A.T.H.S. to adulthood: A Jockey Club Youth Enhancement Scheme, *SPIY* = Skills for Preventing Injury in Youth, *RRISK* = Reduce Risk Increase Student Knowledge

PYD Positive Youth Development, *Substance* Substance use (drugs, alcohol or smoking), *Del* Delinquency, *SA* Sexual Activity, *PI* Post Intervention, *PB* Problem Behaviour, *Inc* Including, *Physical* Physical Health, *DB* Disruptive Behaviours, *NBB* Norm-breaking Behaviours, *Gang Involve* Gang Involvement, *RCT* Randomised Controlled Trial, *CT* Controlled Trial, *IG* Intervention Group, *CG* Control Group

Studies conducted in the USA were most prevalent (Allen et al., 1997; Boyer et al., 1997; Cho et al., 2005; Harrington et al., 2001; Lewis et al., 2013; McNeal Jr. et al., 2004; Shetgiri et al., 2011). Two of the studies were conducted in Australia (Chapman et al., 2013; Zask et al., 2006). The Netherlands (Bannink et al., 2014; Peters et al., 2013) and Hong Kong (Shek, 2006; Shek & Yu, 2012) were each represented by two studies. The United Kingdom (Densley et al., 2017) and Sweden (Skarstrand et al., 2014) were each the location for one study.

Only two studies (Cho et al., 2005; Shetgiri et al., 2011) evaluated interventions that were indicated and thus targeted individuals already exhibiting a problem. The methods chosen by each of the studies for identifying adolescents were similar. Cho, Hallfors and Sánchez (2005) focused upon low grades, high levels of absence and/or referral from school professionals. Shetgiri, Kataoka, Lin and Flores (2011) also allowed the schools to identify participants on the basis of high levels of absence and low grades, but as well as this they had to consider how many times a student had been disciplined for poor behaviour at school and the instability of their home life. Neither study reported assessing level of risk behaviour using a specifically-designed screening tool. Bannink et al. (2014) evaluated a universal programme, but one condition involved an additional indicated element for which participants were invited to a nurse consultation if they reported suicidal thoughts, a suicide attempt or had emotional problems as defined by their score on the Strengths and Difficulties Questionnaire (Goodman, Meltzer, & Bailey, 1998). Although Allen, Philliber, Herrling and Kuperminc (1997) conducted a RCT and so participants were randomly

assigned to intervention or non-intervention groups, participants originally elected to take part in the programme, thus they could be described as self-selecting, although some of them will have eventually been assigned to the non-intervention group.

The outcome measured most frequently was substance use – all but three studies (Allen et al., 1997; Densley et al., 2017; Lewis et al., 2013) included at least one outcome measure indicative of substance use (either drug use, smoking, or alcohol). Where the information was provided (Bannink et al., 2014; Boyer et al., 1997; Chapman et al., 2013; Densley et al., 2017; Harrington et al., 2001; Lewis et al., 2013; McNeal Jr. et al., 2004; Peters et al., 2013; Shek & Yu, 2012; Shetgiri et al., 2011; Skarstrand et al., 2014; Zask et al., 2006), all of the samples typically included a somewhat even split of males to females. This was not the case in the study described by Allen et al. (1997), where the vast majority (86%) of participants were female.

Regarding participant ethnicity, two studies contained samples in which those described as white participants were the majority (Harrington et al., 2001; McNeal Jr. et al., 2004). Both Bannink et al. (2014) and Peters et al. (2013) reported that the majority of their samples were of Dutch ethnicity. However, several studies did not report the ethnicity of their participants (Chapman et al., 2013; Shek, 2006; Shek & Yu, 2012; Zask et al., 2006) and Skarstrand, Sundell and Andreasson (2014) did not describe ethnicity explicitly but reported that the majority of their participants were born in Sweden. Those studies that evaluated indicated interventions (Cho et al., 2005; Shetgiri et al., 2011) had majority Latin/Latino participants. It should be noted that Shetgiri et al. (2011) had specifically targeted a school with a high

percentage of Latino students. The majority ethnicity represented in Boyer, Shafer and Tschann's (1997) sample was Chinese (30%), followed by Latino (20%). Both Lewis et al. (2013) and Allen et al. (1997) studied samples of majority Black or African American participants, whilst Densley, Adler, Zhu and Lambine (2017) studied a sample of participants in which White and Black participants were similarly represented (for example, 28.4% White and 30.7% Black in Wave 1).

The nature and extent of the interventions varied greatly, from one 45-minute session (Bannink et al., 2014) or a day-long seminar (Zask et al., 2006) to a weekly session across the entire academic year (Allen et al., 1997; Shetgiri et al., 2011). These variations may account for similar disparity regarding the effectiveness of the interventions. It is of note that almost all the studies relied exclusively on self-reports of risk behaviour. The exception to this were Cho et al. (2005), Shetgiri et al. (2011), Lewis et al. (2013) and Allen et al. (1997), who also collected behavioural data from sources such as schools e.g. regarding attendance or suspensions.

Five studies (Allen et al., 1997; Cho et al., 2005; Lewis et al., 2013; Peters et al., 2013; Shek & Yu, 2012) reported positive effects on two risk behaviour categories. Cho et al. (2005), Peters et al. (2013) and Shek and Yu (2012) assessed substance use in the form of alcohol use and smoking. The second outcomes measured were delinquency (Cho et al., 2005; Shek & Yu, 2012) and sexual activity (Peters et al., 2013). Allen et al. (1997) reported positive effects on rates of teenage pregnancy and school failure. Whilst Lewis et al. (2013) evaluated violence, disruptive behaviour and bullying, they reported positive effects on bullying only for girls.

2.3.2 Intervention characteristics and study findings

The Multiple Choice 4 U intervention evaluated by Peters et al. (2013) focused upon teaching in regard to two risk behaviours (smoking and sexual activity) with the aim that this teaching would transfer to behaviour regarding risk behaviours that weren't explicitly taught in the intervention curriculum. Although the study showed no effect on the nutrition-related behaviours at post-intervention or four-month follow-up, a positive effect was found for alcohol use at four-month follow-up. Positive effects were also found post-intervention for both risk behaviours focused upon within the intervention period. This positive effect was maintained for smoking at the four-month follow-up, but not for sexual activity (Peters et al., 2013).

Allen et al. (1997) evaluated the Teen Outreach programme which included partaking in voluntary community service and classroom-based sessions over the course of an academic year. They found that those who participated in the Teen Outreach programme had lower rates of teenage pregnancy, school failure and school suspension upon programme completion compared to those in the control group. This finding held even when taking into account any differences in behaviour prior to the programme as well as sociodemographic factors such as ethnicity (Allen et al., 1997).

The Positive Action programme was evaluated in the study by Lewis et al. (2013). It typically includes a programme implemented in the classroom that is focused upon personal understanding and improvement as well as activities conducted with the community, teachers, counsellors and families. However, this study only had the resources to implement the school-based/curricular element of the programme. Unlike other evaluations

considered in this review, the study conducted by Lewis et al. (2013) also included students younger than the adolescent age-range, thus there are some difficulties in comparing this evaluation to the others. Students who attended schools that implemented the intervention were found to report lower rates of disruptive behaviour, bullying and violent behaviour in comparison to the control group. However, some of these effects were determined by gender, as the significant effect on rates of bullying was evident in girls only. Similarly, parentally reported rates of bullying behaviour were lower in the intervention group than the control group, but only for boys (Lewis et al., 2013).

Whilst Cho et al. (2005) report positive effects across two different risk behaviours, the effects reported are dependent upon the school. The Reconnecting Youth programme aimed to decrease rates of school deviance and drug use via 55 or more sessions focused upon improving factors such as decision-making and self-esteem. Although a positive outcome for delinquency was reported post-intervention across the entire sample, the effect on alcohol use and smoking was shown to differ across the two different school sites included in their sample. Whereas a positive effect was reported for Site A, a negative effect on alcohol use and smoking, that is a worsening of these risk behaviours, was reported post-intervention for Site B (Cho et al., 2005). It is of note that the school sites differed regarding their location (Site A Southwest vs. Site B Pacific Coast of the United States), ethnic majority (Site A 87% Hispanic vs. Site B 40% Asian/Pacific Islander) and students qualifying for free or reduced-cost lunch (Site A 90% vs. Site B

61%) (Cho et al., 2005), any or all of which could play a role in the differing results found regarding programme effectiveness across the sites.

Shek (2006) also reported negative effects of the intervention studied – P.A.T.H.S. (Positive Adolescent Training through Holistic Social Programmes). This was described as a universal intervention focused on improving factors such as resilience and self-efficacy, as well as an additional indicated element for those demonstrating higher levels of need (Shek, 2006; Shek & Yu, 2012). In the 2006 cohort study, increased incidences of risk behaviour were found post-intervention for alcohol use, deceiving others and using obscene language. However, given that the study reported by Shek (2006) was of a cohort design, it is difficult to distinguish between the effects of the intervention and the typical development of risk behaviour. The study reported by Shek & Yu (2012) also evaluated the P.A.T.H.S. programme using a controlled trial. They found that the intervention group demonstrated a significantly slower increase in delinquent behaviour and substance use when compared to the control group. Thus, perhaps providing some insight into the increase in risk taking behaviour found in Shek (2006).

Several studies included in this review found positive effects for risk behaviours in only one category (Bannink et al., 2014; Chapman et al., 2013; Zask et al., 2006). Bannink et al. (2014) evaluated the E-health4Uth programme, with and without an additional meeting with a school nurse. They found that completing the one-session intervention that includes an online questionnaire and subsequent viewing of online messages regarding health and wellbeing topics had a positive effect only on condom use and only for those of Dutch ethnicity. However, at 79.3% of the intervention group, the

sample size of the Dutch group was much larger than the non-Dutch, thus differences in the statistical significance of effects for each group could reflect differing levels of statistical power. Additionally, Bannink et al. (2014) found that drug use was more likely at follow-up among those boys who attended the intervention plus an additional consultation in comparison to the control group.

Zask, van Beurden, Brooks and Dight (2006) reported positive effects of engaging in the Reduce Risk Increase Student Knowledge (RRISK) programme, a seminar day focused upon encouraging safe behaviour regarding drug and alcohol use and safe driving and additional in-school activities, on some behaviours at one-year follow-up. For the younger cohort these behaviours were the percentage of attendance at parties where they had a) made a reciprocal agreement with a friend of maintaining each other's safety and b) planned a safe method of returning home, and for the older cohort the behaviours were the percentage of attendance at parties where a) there was a way for parents/guardians to contact the adolescent and b) they had planned a safe method of returning home.

Chapman, Buckley, Sheehan and Shochet (2013) reported that partaking in the Skills for Preventing Injury in Youth (SPIY) intervention significantly predicted violence risk-taking at the six-month follow-up. There was a reduction in this risk behaviour in the intervention group (-2.2% change), but an increase in the control group (13.7% change). SPIY is focused on promoting safer behaviours related to vehicle use, violence and alcohol use in a series of 50-minute session delivered weekly over eight weeks by school staff (Chapman et al., 2013).

Five of the fifteen studies (Boyer et al., 1997; Densley et al., 2017; Harrington et al., 2001; Shetgiri et al., 2011; Skarstrand et al., 2014) reported no significant main effects on any of the risk behaviour outcomes measured. These studies evaluated the Growing Against Gangs and Violence (Densley et al., 2017), All Stars (Harrington et al., 2001) and the Strengthening Families Programme 10-14 (Swedish version) (Skarstrand et al., 2014) interventions. Two studies failed to state the name of the intervention they were evaluating (Boyer et al., 1997; Shetgiri et al., 2011). It should be noted that three of the studies (Boyer et al., 1997; Densley et al., 2017; Shetgiri et al., 2011) that reported no statistically significant main effects were among the four studies included in this review with the smallest numbers in their intervention group. For example, Shetgiri et al. (2011) had only 40 participants in their intervention group and 46 in their control group and themselves acknowledged that their study may have been underpowered for detecting small differences.

In regard to the negative results of Shetgiri et al. (2011), this was the case when analyses of change at eight-month follow-up took into account the baseline results for each outcome. The unadjusted results showed significantly higher rates of truancy in the intervention group relative to the control group at the eight-month follow-up, but no other significant effects for the risk behaviour outcomes (Shetgiri et al., 2011).

The results of the Harrington, Giles, Hoyle, Feeney and Yungbluth (2001) study were contradictory to that of McNeal Jr., Hansen, Harrington and Giles (2004), who also evaluated the All Stars intervention. However, it must be noted that Harrington et al. (2001), unlike McNeal Jr. et al. (2004), did not

explicitly report the number of sessions planned/delivered. As well as this, there were differences in the training provided to both specialists and teachers between the two studies, for example 30 hours of training over one week for specialists reported in Harrington et al. (2001) but two days training reported in McNeal Jr. et al. (2004).

All Stars focused on reducing adolescent substance use and sexual activity by influencing factors such as students' connection to school and commitment to avoiding the use of substances (McNeal Jr. et al., 2004). McNeal Jr. et al. (2004) found that alcohol use, smoking and inhalant use decreased when the programme was delivered by teachers. But the effects did not carry over to a condition in which specialists who were trained and brought in from outside the school delivered the programme instead of teachers. This suggests that the type of instructor may influence the effectiveness of an intervention and reinforces the need to exercise care when deciding who will deliver an intervention to young people.

2.3.3 Theoretical basis

Five of the fifteen studies contained information at least suggestive that the interventions under study were based upon a risk and/or protective factor approach and thus targeted risk and/or protective factors found to be associated with adolescent risk behaviour (Chapman, Buckley, Sheehan, & Shochet, 2013 - Skills for Preventing Injury in Youth; Densley, Adler, Zhu, & Lambine, 2017 - Growing Against Gangs and Violence; Harrington, Giles, Hoyle, Feeney, & Yungbluth, 2001 - All Stars; McNeal Jr., Hansen, Harrington, & Giles, 2004 - All Stars; Shetgiri, Kataoka, Lin, & Flores, 2011). Only Chapman et al. (2013) explicitly referred to the intervention being based

upon the work of Jessor and colleagues (2003; see section 1.3.3, page 34 for description of Problem Behavior Theory as an example of a risk and/or protective factor approach). The P.A.T.H.S. programme evaluated in the work of Shek and Yu (2012) and Shek (2006) is explicitly stated to have been based upon the Positive Youth Development approach (e.g. Catalano, Berglund, Ryan, Lonczak, & Hawkins, 2002). Although the theoretical basis of the Teen Outreach programme examined in the study reported by Allen et al. (1997) is not examined in the article, there is other literature suggestive that the Teen Outreach programme is also a Positive Youth Development programme (e.g. DeBate et al., 2018).

The Theory of Planned Behaviour (Ajzen, 1991; see section 1.3.1, page 29 for further explanation of this theory) is mentioned in two of the studies (Chapman et al., 2013; Peters et al., 2013 - Multiple Choice 4 U). Cognitive behaviour theory is also named as having informed Skills for Preventing Injury in Youth (Chapman et al., 2013) and the unnamed intervention studied by Boyer et al. (1997), although the latter is only evident in other literature (e.g. Molbert, Boyer, & Shafer, 1993). Other theories referred to in the included studies include social-cognitive theory (Bandura, 1986) and the theory of triadic influence (Flay & Petraitis, 1994) as informing Multiple Choice 4 U (Peters et al., 2013). The theory of triadic influence (Flay & Petraitis, 1994) is also stated as informing Positive Action (Lewis et al., 2013), alongside Self-esteem Enhancement Theory (DuBois, Flay, & Fagen, 2009). The biopsychosocial vulnerability model (Kumpfer, Trunnell, & Whiteside, 1990), the resiliency model (Richardson, Neiger, Jensen, & Kumpfer, 1990) and a family process model (Conger et al., 1991) are cited as

informing Strengthening Families Programme 10-14 (Swedish version) (Skarstrand, Sundell, & Andreasson, 2014). Reconnecting Youth is described as “guided by a theoretical framework based on strain, social learning, and control theories (Eggert, Thompson, Herting, Nicholas, & Dicker, 1994)” (Cho, Hallfors, & Sánchez, 2005, p. 364). Whilst not explicitly stating connections to theory, the studies of Bannink et al. (2014 - E-health4Uth) and Zask et al. (2006 - Reduce Risk Increase Student Knowledge) explain that the interventions examined were based upon previous research.

Overall, the theoretical frameworks on which the interventions were based varied greatly. Not only does the variety of theoretical frameworks drawn upon suggest little agreement as to how change in adolescent risk behaviour occurs, it also demonstrates how challenging it would be for one study to measure all the possible mechanisms of change. Thus, indicating the inherent complexity of these interventions.

2.3.4 Risk of bias within studies

The risk of bias for each study was assessed. The component and global ratings are detailed in Table 2.2. The majority of the studies referred to randomisation but failed to state the method for randomisation (Chapman et al., 2013; Cho et al., 2005; Densley et al., 2017; Harrington et al., 2001; McNeal Jr. et al., 2004; Shek & Yu, 2012; Skarstrand et al., 2014) and thus were judged to be controlled trials as per the guidance. However, as controlled trials are also rated as a strong design, only the cohort study (Shek, 2006) scored less than strong for its design.

A failure to fully describe the blinding procedures amounts to a moderate rating for every study. Although, this is perhaps typical of such

intervention studies, where blinding is more difficult given that requiring attendance at a programme session clearly indicates which condition a participant is in. The majority of studies (Boyer et al., 1997; Chapman et al., 2013; Harrington et al., 2001; McNeal Jr. et al., 2004; Peters et al., 2013; Shek, 2006; Skarstrand et al., 2014) did not make any reference to the validity of the measures used and thus could not score well for data collection method. The exception to this were Allen et al. (1997), Bannink et al. (2014), Cho et al. (2005), Densley et al. (2017), Lewis et al. (2013) and Shetgiri et al. (2011). Zask et al. (2006) referred to items being taken from existing validated measures but did not provide sufficient detail regarding this process. Three studies (Boyer et al., 1997; Chapman et al., 2013; Skarstrand et al., 2014) failed to report reliability statistics such as Cronbach's alpha. The majority of studies (Boyer et al., 1997; Chapman et al., 2013; Cho et al., 2005; Densley et al., 2017; Harrington et al., 2001; McNeal Jr. et al., 2004; Shek, 2006; Shek & Yu, 2012; Zask et al., 2006) also failed to describe with sufficient detail the number of participants that withdrew from the study and/or the reasons for withdrawal either at post-intervention or later follow-up stages.

Those studies judged to be strong for confounders (Allen et al., 1997; Bannink et al., 2014; Boyer et al., 1997; Densley et al., 2017; Lewis et al., 2013; McNeal Jr. et al., 2004; Peters et al., 2013; Shek & Yu, 2012; Shetgiri et al., 2011; Skarstrand et al., 2014) had attempted to control for the effects of the majority of possible confounders, if not at the study design stage, then during the analysis of the results. However, four studies (Chapman et al., 2013; Cho et al., 2005; Shek, 2006; Zask et al., 2006) failed to do this, resulting in a weak rating. Peters et al. (2013) explicitly referred to having

encountered difficulty in ensuring the absence of contamination or assessing the level of contamination after the fact as it relied upon retrospective report, although attempts had been made to account for this in the analysis of the data.

Four studies included in this review (Boyer et al., 1997; Chapman et al., 2013; Shek, 2006; Zask et al., 2006) were scored as weak overall in regard to protection against the risk of bias. As would be expected, the majority of RCTs included in this review (Allen et al., 1997; Bannink et al., 2014; Shetgiri et al., 2011) scored strongly, as did a controlled trial (Peters et al., 2013) that fell-short of the RCT on selection bias and data collection method, but still avoided any weak ratings. There was only one RCT that failed to obtain an overall score of strong (Lewis et al., 2013). This was because of obtaining a weak rating for withdrawals and dropouts due to less than 60% of participants completing the study.

Overall, the studies conducted by Shetgiri et al. (2011), Bannink et al. (2014), Peters et al. (2013) and Allen et al. (1997) were found to be methodologically strongest. The findings of each of these studies were mixed, as Shetgiri et al. (2011) found no statistically significant effects of the intervention (not named) and Bannink et al. (2014) found a statistically significant positive effect of the E-health4Uth programme on only one type of risk behaviour (condom use). Whilst both Peters et al. (2013) and Allen et al. (1997) found statistically significant positive effects on two or more risk behaviours for the Multiple Choice 4 U and Teen Outreach programmes respectively.

Table 2.2 – Summary of risk bias analysis results (including the component ratings and global rating) for each study

Study	Selection Bias	Study Design	Confounders	Blinding	Data Collection Method	Withdrawals and Dropouts	Global Rating
Shek (2006)	Weak	Moderate	Weak	Moderate	Weak	Weak	Weak
Shek & Yu (2012)	Moderate	Strong	Strong	Moderate	Weak	Weak	Moderate
McNeal et al. (2004)	Moderate	Strong	Strong	Moderate	Weak	Moderate	Moderate
Harrington et al. (2001)	Strong	Strong	Strong	Moderate	Weak	Moderate	Moderate
Cho, Hallfors & Sanchez (2005)	Moderate	Strong	Weak	Moderate	Strong	Strong	Moderate
Chapman et al. (2013)	Weak	Strong	Weak	Moderate	Weak	Weak	Weak
Shetgiri et al. (2011)	Strong	Strong	Strong	Moderate	Strong	Moderate	Strong
Peters et al. (2013)	Moderate	Strong	Strong	Moderate	Moderate	Moderate	Strong
Zask et al. (2006)	Weak	Strong	Weak	Moderate	Moderate	Moderate	Weak
Bannink et al. (2014)	Strong	Strong	Strong	Moderate	Strong	Moderate	Strong

Study	Selection Bias	Study Design	Confounders	Blinding	Data Collection Method	Withdrawals and Dropouts	Global Rating
Boyer et al. (1997)	Moderate	Strong	Strong	Moderate	Weak	Weak	Weak
Skarstrand, Sundell & Andréasson (2013)	Strong	Strong	Strong	Moderate	Weak	Strong	Moderate
Densley et al. (2017)	Moderate	Strong	Strong	Moderate	Strong	Weak	Moderate
Allen et al. (1997)	Moderate	Strong	Strong	Moderate	Strong	Strong	Strong
Lewis et al. (2013)	Moderate	Strong	Strong	Moderate	Strong	Weak	Moderate

2.4 Discussion

This systematic analysis sought to assess evidence for the effectiveness of school-based interventions that aim to reduce multiple risk behaviour in adolescence. Fifteen studies were included in the review following screening and selection processes using eligibility criteria. All but five of the studies were of a controlled trial design (Boyer et al., 1997; Chapman et al., 2013; Cho et al., 2005; Densley et al., 2017; Harrington et al., 2001; McNeal Jr. et al., 2004; Peters et al., 2013; Shek & Yu, 2012; Skarstrand et al., 2014; Zask et al., 2006). Of those five studies that were not controlled trials, one study utilised a cohort design (Shek, 2006) and four other studies were randomised controlled trials (Allen et al., 1997; Bannink et al., 2014; Lewis et al., 2013; Shetgiri et al., 2011).

Overall, the review of the literature revealed a great deal of variation, thus meaning that any conclusions must be drawn tentatively. The variation could be seen in such factors as intervention duration, the demographics of participants, and chosen outcomes and measures. For example, only two studies (Cho et al., 2005; Shetgiri et al., 2011) evaluated interventions that were indicated-only rather than universal and although Bannink et al. (2014) evaluated a universal programme, one condition involved an additional indicated element.

The effectiveness of the interventions in reducing multiple risk behaviour also varied. Five studies (Allen et al., 1997; Cho et al., 2005; Lewis et al., 2013; Peters et al., 2013; Shek & Yu, 2012) reported positive effects across two risk behaviour categories. However, the majority of studies reported either no effects (Boyer et al., 1997; Densley et al., 2017; Harrington

et al., 2001; Shetgiri et al., 2011; Skarstrand et al., 2014) or positive effects in only one risk behaviour category (Bannink et al., 2014; Chapman et al., 2013; McNeal Jr. et al., 2004; Zask et al., 2006). Three studies reported negative effects on risk behaviour (Bannink et al., 2014; Cho et al., 2005; Shek, 2006), that is an increase in risk behaviour following involvement in the intervention. However, in the case of one of these studies (Shek, 2006), the cohort design makes it difficult to distinguish between the effects of the intervention and the natural development of risk behaviour. It is of note that almost all of the studies with the exception of Cho et al. (2005), Shetgiri et al. (2011), Lewis et al. (2013) and Allen et al. (1997) exclusively used self-reports of risk behaviour, which may be somewhat unreliable given that they depend on participants accurately remembering and then reporting their behaviour.

As regards risk of bias, four studies included in this review scored as weak (Boyer et al., 1997; Chapman et al., 2013; Shek, 2006; Zask et al., 2006). Three RCTs included (Allen et al., 1997; Bannink et al., 2014; Shetgiri et al., 2011) and one controlled trial (Peters et al., 2013) scored strongly and the remaining seven studies (Cho et al., 2005; Densley et al., 2017; Harrington et al., 2001; Lewis et al., 2013; McNeal Jr. et al., 2004; Shek & Yu, 2012; Skarstrand et al., 2014) scored as moderate. A consistent potential source of bias in this selection of studies was the data collection method, as many studies (Boyer et al., 1997; Chapman et al., 2013; Harrington et al., 2001; McNeal Jr. et al., 2004; Peters et al., 2013; Shek, 2006; Skarstrand et al., 2014) did not make any reference to the validity of the measures used. As well as this, none of the studies fully described blinding procedures, which resulted in none of them scoring strongly in that category. However, difficulty

in blinding is typical of intervention studies like those described here, as requiring attendance at a session indicates which condition a participant has been assigned to.

Consideration of the risk of bias assessments alongside study characteristics and study findings revealed no apparent relationships between the strength of study design, risk of bias ratings, intervention duration, intervention type, study location or sample size and the main study findings (such as whether they reported a significant intervention effect). The exception to this being that no study that reported positive effects across two risk behaviour categories (Allen et al., 1997; Cho et al., 2005; Lewis et al., 2013; Peters et al., 2013; Shek & Yu, 2012) was evaluated as weak regarding their global rating on the risk of bias assessment, they were all considered to be moderate or strong.

Given that, in the United Kingdom, schools are expected to provide some form of education regarding personal, social, health and economic issues (typically referred to as PSHE education) (Department for Education, 2019), which would encompass many interventions aimed at reducing risk behaviour, there is considerable need to identify which programmes are effective. This is especially the case in view of the significant cost, both monetarily and in terms of other resources such as staff time, that some programmes could present. Although tackling multiple risk behaviours via one programme seems cost-effective, this review has found mixed evidence regarding the impact of such interventions. Greater consideration should be given to establishing the value of these programmes if schools are going to be encouraged to spend resources on implementing them. However, this

review has identified several weaknesses across the studies that in turn reveal some of the difficulties with trying to evaluate interventions of this type. Often, if descriptions of recruitment were provided then many more schools and/or teachers were spoken to than agreed to take part, suggesting that there may be some bias in the sample, and there were always several confounding variables to consider, with differing levels of ease in attempting to account for them. Blinding was not described in any study given that attending a programme session indicates to the participant which condition they are in. As well as this, many studies did not describe the validity of their measures, perhaps because it was necessary for them to pick and choose items from other measures in order to suit the risk behaviours they had chosen to evaluate. Ideally, both the reliability and validity of measures should have been tested, even if individual items had been chosen from measures previously demonstrated to be reliable and/or valid, as such items may not hold the same reliability and/or validity when used in new ways or with new samples.

2.5 This thesis

This thesis broadly aims to assess the validity and accuracy of the Risk-Avert Screening Tool and the effectiveness of the Risk-Avert programme. This is important given that the literature review identified mixed evidence regarding the impact of school-based interventions targeting multiple risk behaviour in adolescents. This research will explore the usefulness of the programme as well as its individual elements given that there is a need to ensure that schools are making a sound investment of time and resources. Thus, a

mixed-methods approach will be used to explore the following research questions:

1. What is the underlying factor structure of the Risk-Avert Screening Tool? Does it align with the intended four risk factor groupings: individual, family, school, and community?
2. Does the Risk-Avert Screening Tool possess internal reliability and convergent validity?
3. Is the Risk-Avert Screening Tool accurately identifying at-risk students? Is the current cut-off score appropriate?
4. Do those students that take part in the programme demonstrate reduced risk in comparison to those who do not?
5. How is the programme currently utilised in schools? How do those that facilitate the programme feel about its effectiveness?

A mixed-methods approach was selected in order to attempt to answer the research questions in the most comprehensive manner possible. It was felt that using qualitative methods would provide greater context for and insight into quantitative findings, for example potentially capturing information from staff that was not evident from the self-report measures completed by students. Research questions one through four will primarily be addressed using quantitative methods. Questions one and two, i.e. the factor structure, reliability and validity of the Risk-Avert Screening Tool, will be addressed in the first two studies reported in this thesis (Chapter Three and Four respectively), which focus exclusively upon analysis of the Risk-Avert Screening Tool. The third research question, concerning the accuracy of the Risk-Avert Screening Tool, is addressed only in the second study (Chapter

Four). The reduction of risk among participants of the Risk-Avert programme will be examined in a third study which focuses upon the comparison of outcomes of those who participate in the Risk-Avert programme and those who do not (Chapter Five and Six). The fourth and final study (Chapter Seven) will use qualitative methods to address research question five and explore staff views of programme effectiveness, as well as how the Risk-Avert programme is implemented within schools. As well as addressing the fifth research question, information regarding the use of Risk-Avert within schools and staff views of effectiveness (collected using qualitative methods) will be used to inform discussion of the findings of quantitative analyses conducted in the previous studies.

3. Exploring the Factor Structure of the Risk-Avert Screening Tool

3.1 Introduction

The Training Effect and Essex County Council began the Risk-Avert programme in 2013 (The Training Effect, n.d.-a). It is designed to reduce risk behaviour in young people by improving their comprehension and perception of, and ability to appropriately deal with, risk (Essex County Council & The Training Effect, 2014), as well as improve their emotional health, resilience and self-efficacy (M. Bowles, personal communication, 16 August 2019). Risk-Avert comprises of a six-session programme (The Training Effect & Essex County Council, 2015) delivered in school by teachers or other school staff members with varying levels of knowledge and experience (Essex County Council & The Training Effect, 2014). The programme is completed in school year eight (when young people are aged between 12 and 13 years of age) and is an indicated programme, whereby a specific measure – the Risk-Avert Screening Tool (The Training Effect & Essex County Council, n.d.) is used to identify students to take part (Bowles, 2015). This chapter explores the underlying factor structure and internal reliability of the Risk-Avert Screening Tool.

The Risk-Avert Screening Tool is an online tool completed by the entire year group and used to assess vulnerability to and engagement in risk behaviour (Essex County Council & The Training Effect, 2014). A total score is calculated from which students are classified into low, medium or high-risk and those adolescents scoring in the medium range are considered most suitable for taking part in the full Risk-Avert programme (Bowles, 2015). However, any individual invited to partake in Risk-Avert has the right to

decline and it is suggested during training for the programme that school staff members implementing the programme will use their own judgement and experience of students as well as the results of the Risk-Avert Screening Tool when determining appropriate participants (Bowles, 2015). For example, an individual may be suggested as a participant for the Risk-Avert programme by the Risk-Avert Screening Tool, but a school staff member may have additional knowledge of their ability to work in a group setting that means they are not considered an appropriate participant at that time.

Although a total score is used to classify adolescents as low, medium or high-risk, the Risk-Avert Screening Tool is split into four distinct sections that cover individual factors, school factors, family factors and community factors. These sections are intended to reflect the categories into which risk and/or protective factors are often organised within the literature (Essex County Council & The Training Effect, 2014), namely community, individual/peers, school and family (e.g. Beyers, Toumbourou, Catalano, Arthur, & Hawkins, 2004; Brooke-Weiss, Haggerty, Fagan, Hawkins, & Cady, 2008; Jackson, Haw, & Frank, 2010; Resnick et al., 1997; Thomas et al., 2008).

This study aimed to investigate the underlying structure and internal reliability of the Risk-Avert Screening Tool (The Training Effect & Essex County Council, n.d.). Given the current overt structure and design of the Risk-Avert Screening Tool, which was intended to align with the division of risk and protective factors often employed by other researchers (e.g. Beyers et al., 2004; Brooke-Weiss et al., 2008; Chapman et al., 2013; Resnick et al., 1997; Thomas et al., 2008), it is hypothesised that the underlying structure of

the Risk-Avert Screening Tool will consist of four components reflective of the four sections into which the screening tool is currently divided.

3.2 Method

3.2.1 Participants

Participants were 3124 individuals from 16 schools in Essex, England who were screened by The Training Effect between June 2014 and January 2015 for participation in the Risk-Avert programme in the 2014/2015 academic year. Specific data regarding age was not available, however given the dates of completion and the fact that the Risk-Avert programme is completed in school year eight (Bowles, 2015) it can be deduced that all of the participants will have been aged between 11 and 13 years. Of the 3080 participants who did indicate their gender 1506 (48.2%) were female and 1574 (50.4%) were male.

3.2.2 The Risk-Avert Screening Tool

In the 2014/2015 academic year the Risk-Avert Screening Tool (The Training Effect & Essex County Council, n.d.) was presented as 16 numbered questions in four sections (see Appendix A). The 16 questions amounted to 27 items as several questions were composed of multiple items. Some items were adjusted from those contained in the Communities That Care Youth Survey (Arthur, Hawkins, Pollard, Catalano, & Baglioni Jr, 2002; University of Washington, 2014) (M. Bowles, personal communication, 18 May 2016). The four sections into which the items were grouped were entitled, in the order in which they appear, “About you”, “About school”, “About your family” and

“About your community”. They will hereafter be referred to as the “Individual”, “School”, “Family” and “Community” subscales respectively.

The Individual subscale consisted of nine items that focused upon the individual’s personal behaviour. The School subscale consisted of four items that focused upon the individual’s perception of and experience of school. The Family subscale consisted of nine items focused upon family structure and parental rules and perceptions. The Community subscale consisted of five items focused upon the individual’s level of supervision and perception of where they live.

Response options varied across items, with some requiring a yes or no response, whilst others required response on a three- or four-point Likert-type scale. The scoring of the items as assigned by the developers, The Training Effect in association with Essex County Council, was specific to each item with an increasing score indicating an increasing level of risk. Note that item seven (“have you got a social networking profile?”) from the Individual subscale was non-scoring, as were item 14 (“think of where you live most of the time, who lives with you?”) and item 21 (“if you are out with friends, do you have a curfew?”) from the Family subscale. A total score was calculated for each participant by adding the points obtained across all of the items (Bowles, 2016). Total scores could range between zero and 146 and were categorised as low-risk (scores between zero and 13), medium-risk (scores between 14 and 44) and high-risk (scores above 45) (Bowles, 2016; M. Bowles, personal communication, 15 March 2016). Please see Appendix B for details of the items, as well as their associated response options and

scoring as designed by The Training Effect in association with Essex County Council.

3.2.3 Procedure

This study used existing secondary data collected by The Training Effect prior to the beginning of the Risk-Avert programme during the academic year 2014/2015. Whilst the Risk-Avert Screening Tool is intended to be completed online, some schools did not have the resources for this and so eight schools (52.2% of participants) used hard copies that were then sent to The Training Effect for input and scoring (M. Bowles, personal communication, 15 March 2016). The resources for Risk-Avert provided by The Training Effect and Essex County Council and accessible online via the Risk-Avert School Portal included instructions regarding administration of the Risk-Avert Screening Tool (The Training Effect & Essex County Council, 2014, see Appendix C). Such information was also explained during training sessions provided to the schools prior to them running the Risk-Avert programme (M. Bowles, personal communication, 15 March 2016).

3.2.4 Ethics

Ethical approval for the use of the secondary data was requested from and granted by the University of Essex (see Appendix D). The data was anonymised by The Training Effect before being provided for analysis. The anonymised data was then stored on password-protected computers.

3.2.5 Plan for analysis

The underlying structure of the Risk-Avert Screening Tool was examined via principal components analysis and internal reliability analysis.

3.3 Results

Analyses were conducted using the scoring assigned by the developers (The Training Effect and Essex County Council) to the Risk-Avert Screening Tool for the 2014/2015 academic year. The application of this scoring system resulted in some items having less response categories in analysis than presented to participants. For example, participants may have been presented with four response options for an item, however the scoring applies the same score to three response options and zero to the fourth (The Training Effect & Essex County Council, n.d.), thus essentially creating a dichotomous item.

An exception to the use of this scoring was in the case of item five ("how often do you drink energy drinks?"). Responses for this item were dichotomised by the researcher to bring the scoring in line with that of the other items in the Individual subscale and allow inclusion of the item in the principal components and internal reliability analyses. Thus, scoring of the first response category, "never", remained the same (zero points), but "once a week" was rescored from three points to five points to align with the scoring of "more than once a week". This combining of the two response categories into one created a second response category for the purpose of analysis entitled "once a week or more".

Item seven ("have you got a social networking profile?") and item 21 ("if you are out with friends do you have a curfew?) were originally non-scoring items, but for these analyses for item seven a positive response was assigned a score of one as it was felt that having a social networking profile did indicate the potential for increased risk. For item 21, a positive response

was assigned a score of zero as it was felt that having a curfew presented less potential for increased risk than not having one. These changes allowed for the inclusion of these items in the principal components and internal reliability analyses. There was no data available for item 14 (“think of where you live most of the time, who lives with you? [or who spends time with]”) for any participant as this was not collected by The Training Effect (M. Bowles, personal communication, 5 February 2016).

3.3.1 Descriptive statistics

Table 3.1 summarises the frequency of responses for each item, as well as the number of missing responses, ordered by response type. It is of note that missing responses only apply to those schools who used hard copies, as the online version of the Risk-Avert Screening Tool does not allow for question omission (M. Bowles, personal communication, 16 March 2016). The missing responses are shown as a proportion of the entire sample, irrespective of method of completion.

The pattern of responses was as expected, with most participants endorsing answers thought to indicate lower risk. For example, only 4.8% of students reported having been arrested or excluded from school and only 2.9% reported having ever tried a cigarette. Items eight and nine each had 330 missing responses (10.6%), this is expected due to participants being asked to move on to the next section if they did not have a social networking profile. Item 22 (“what time are you expected home?) also has a seemingly high proportion of missing responses (316; 10.1%) but this appears to largely reflect that, in the case of the paper-based completions where omissions were possible, those whose responses to item 21 (“if you are out with friends,

do you have a curfew?") indicated that they did not have a curfew subsequently omitted item 22. The final item, item 27 ("how many times a week do you go out with friends without parents or other adults?"), had a higher proportion of missing responses (173; 5.5%) when compared to the other items, this may be indicative of misunderstanding of the question, participant fatigue or some other issue with administration of the tool.

Table 3.1 - Frequency of responses for each item of the Risk-Avert Screening Tool

Item	Yes	No			Missing
1. Have you done risky things, even if they were a little dangerous?	1962 (62.8%)	1154 (36.9%)			8 (.3%)
2. Have you done something dangerous because someone dared you to do it?	811 (26%)	2302 (73.7%)			11 (.4%)
3. Have you ever been arrested or excluded from school?	150 (4.8%)	2965 (94.9%)			9 (.3%)
4. Have you ever tried a cigarette?	91 (2.9%)	3027 (96.9%)			6 (.2%)
7. Have you got a social networking profile?	2396 (76.7%)	653 (20.9%)			75 (2.4%)
8. Do you add people to your Facebook/Twitter account who you have not met?	574 (18.4%)	2220 (71.1%)			330 (10.6%)
9. Have you ever regretted about sharing something online?	450 (14.4%)	2344 (75%)			330 (10.6%)
11. Do you feel safe at school?	2753 (88.1%)	359 (11.5%)			12 (.4%)

Item	Yes	No			Missing
12. Have you been bullied recently at school?	1021 (32.7%)	2097 (67.1%)			6 (.2%)
21. If you are out with friends, do you have a curfew?	2269 (72.6%)	771 (24.7%)			84 (2.7%)
	Before 8pm	**After 8pm**			**Missing**
22. What time are you expected home?	2306 (73.8%)	502 (16.1%)			316 (10.1%)
	Never	**Once a week or more**			**Missing**
5. How often do you drink energy drinks? (Dichotomised)	1419 (45.4%)	1684 (53.9%)			21 (.7%)
	None	**Once or more**			**Missing**
6. In the past year, on how many occasions have you had a few sips of a drink containing alcohol, without adult supervision?	2449 (78.4%)	642 (20.6%)			33 (1.1%)
	Good, I like it/It's okay	**I don't like school**			**Missing**
10. What do you think about school?	2758 (88.3%)	357 (11.4%)			9 (.3%)
	Happy/ Okay	**Sad**			**Missing**
13. How do you feel most days?	2985 (95.6%)	127 (4.1%)			12 (.4%)
	Very wrong/ Wrong	**A little bit wrong**	**Not wrong at all**		**Missing**
15. How wrong do your parents feel it would be for you to smoke cigarettes?	3036 (97.2%)	59 (1.9%)	15 (.5%)		14 (.4%)

Item	Very wrong/ Wrong	A little bit wrong	Not wrong at all		Missing
16. How wrong do your parents feel it would be for you to drink alcohol regularly?	2637 (84.4%)	392 (12.5%)	87 (2.8%)		8 (.3%)
17. How wrong do your parents feel it would be for you to smoke cannabis?	3088 (98.8%)	12 (.4%)	16 (.5%)		8 (.3%)
18. How wrong do your parents feel it would be for you to steal something worth more than £5?	3039 (97.3%)	62 (2%)	15 (.5%)		8 (.3%)
19. How wrong do your parents feel it would be for you to draw graffiti on walls or buildings?	2940 (94.1%)	151 (4.8%)	24 (.8%)		9 (.3%)
20. How wrong do your parents feel it would be for you to pick a fight or bully someone?	2952 (94.5%)	131 (4.2%)	31 (1%)		10 (.3%)
	NO!/No	**Yes**	**YES!**		**Missing**
23. Do you live near lots of empty and abandoned buildings?	2926 (93.7%)	143 (4.6%)	41 (1.3%)		14 (.4%)
24. Is there lots of graffiti in your area?	2771 (88.7%)	258 (8.3%)	83 (2.7%)		12 (.4%)
25. Is there lots of fights and gangs in your area?	2706 (86.6%)	310 (9.9%)	93 (3.0%)		15 (.5%)
26. Do you think there is crime and/or drug dealing in your area?	2502 (80.1%)	450 (14.4%)	156 (5%)		16 (.5%)

	None	Once	Three times	Five or more	Missing
27. How many times a week do you go out with friends without parents or other adults?	483 (15.5%)	986 (31.6%)	825 (26.4%)	657 (21%)	173 (5.5%)

3.3.2 Principal components analysis

Exploratory principal components analysis was conducted to assess the underlying structure of the Risk-Avert Screening Tool. Given the differing number of response options between items and subscales the Risk-Avert Screening Tool had to be analysed in two halves. The scoring of the Individual and School subscales resulted in most items becoming dichotomous and so these subscales were analysed together. Items 21 (“if you are out with friends, do you have a curfew?”) and 22 (“what time are you expected home?”) from the Family subscale were analysed alongside the Individual and School subscales as they were dichotomous.

The scoring of the Family and Community subscales resulted in most items having three response categories, thus these subscales were analysed together. Item 27 (“how many times a week do you go out with friends without parents or other adults?”) from the Community subscale was not included in the analyses as the response options did not correspond with those of any other item (it is scored as four response categories instead of the three categories for the other items).

For both principal components analyses missing data were excluded listwise and an orthogonal rotation (varimax) was applied. All analyses were first conducted with oblique rotation (direct oblimin) and as correlations between components did not exceed .32 (Tabachnick & Fidell, 2014) an

orthogonal rotation was deemed appropriate given that it is considered more straightforward to interpret.

3.3.2.1 Dichotomous items of the Individual, School and Family subscales

Analysis of data from 2436 participants across the 15 dichotomous items included in the Individual, School and Family subscales of the Risk-Avert Screening Tool revealed four components with eigenvalues exceeding one (accounting for 44.74% of the variance, 54% nonredundant residuals). The scree plot is presented in Figure 3.1. Although the scree plot could be interpreted as supporting a four, three or two-component solution the four-component solution was preferred following comparison of variance accounted for, nonredundant residuals and agreement between the scree plot and eigenvalues for each of the solutions.

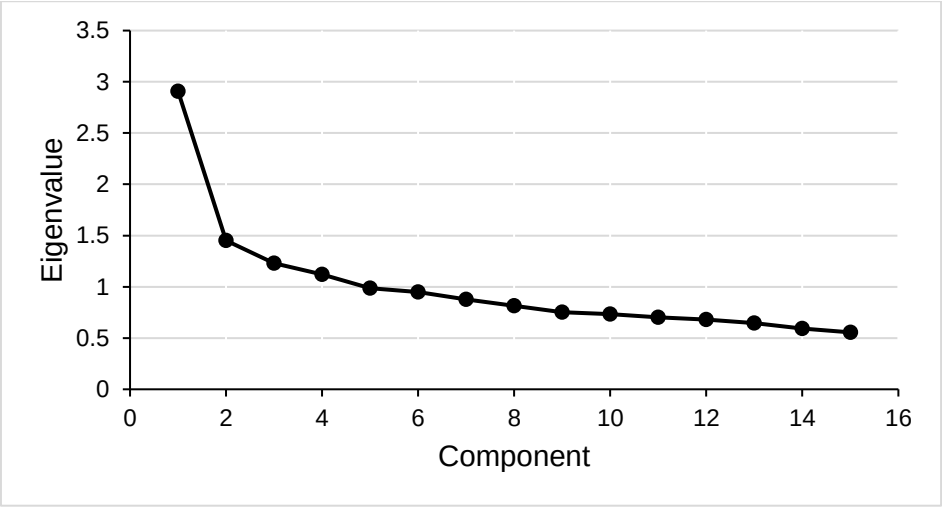

Figure 3.1 - Scree plot of dichotomous items in the Risk-Avert Screening Tool

Table 3.2 shows the initial eigenvalues, variance accounted for and component loadings (after rotation). Examination of the factor loadings revealed that all the items loading upon component two were originally assigned to the School subscale and the two items loading upon component

four were originally assigned to the Family subscale. Although item 22 (“what time are you expected home?”), which was included in the Family subscale, also cross-loaded on component one with items of the Individual subscale, the loading for component one was smaller than that for component four and the content of the item suggested it should be included in the Family subscale. A similar decision was taken for item 12 (“have you been bullied recently at school?”), which was included in the School subscale but cross-loaded on component four. As the loading for component four (the Family subscale) was lower than that for component two and the item content explicitly referred to school the item was included in the School subscale. Thus, these findings support the current organisation of the items within two separate subscales of the Risk-Avert Screening Tool.

The items that formed the Individual subscale were shown to load upon two separate components. Upon review of these items it seemed to the researcher that the items loading upon component three may be indicative of behaviour that, when compared to that indicated by the other items in the Individual subscale, is considered the most concerning (e.g. being arrested). This new subscale will hereafter be referred to as the Uncommon Adolescent Risk Behaviour subscale. The items that loaded on component one appeared to be indicative of behaviours that are perhaps perceived as more acceptable or typical of adolescents (e.g. performing a dare). Although item five (“how often do you drink energy drinks?”) and item nine (“have you ever regretted about sharing something online?”) cross-loaded on component four (the Family subscale) as well as component one, the loading of each item on component one was higher than the cross-loading and it was felt that the

content of the items better related with others that loaded upon component one. This subscale will hereafter be referred to as the Normative Adolescent Risk Behaviour subscale. Thus, the two components appeared to reflect two different levels of perceived severity of risk. However, it should be noted that this analysis revealed items with low communalities (such as item five), which was suggestive that much of the variance of those items was not represented by the extracted components.

Table 3.2 - Initial eigenvalues, percentage of variance accounted for and component loadings (after rotation) as identified by principal components analysis of the dichotomous items of the Individual, Family and School subscales of the Risk-Avert Screening Tool

	Component				
	1	**2**	**3**	**4**	
Eigenvalue	2.91	1.45	1.23	1.12	
Percentage of variance	19.39	9.68	8.19	7.47	
Item					**Communality**
2. Have you done something dangerous because someone dared you to do it?	**.61**	.15	.29	-.01	.48
1. Have you done risky things, even if they were a little dangerous?	**.59**	.05	.18	-.09	.38
7. Have you got a social networking profile?	**.55**	-.07	-.23	-.06	.37
8. Do you add people to your Facebook/Twitter account who you have not met?	**.55**	.07	-.03	.21	.36

	Component				
	1	**2**	**3**	**4**	
6. In the past year, on how many occasions have you had a few sips of a drink containing alcohol, without adult supervision?	**.52**	.11	.21	.24	.37
5. How often do you drink energy drinks?	**.44**	.001	.05	**.32**	.30
9. Have you ever regretted about sharing something online?	**.41**	.23	.14	**-.32**	.34
11. Do you feel safe at school?	.07	**.71**	.09	.02	.52
13. How do you feel most days?	.02	**.70**	.02	.07	.50
10. What do you think about school?	.08	**.61**	.11	.28	.47
12. Have you been bullied recently at school?	.13	**.49**	-.05	**-.42**	.45
3. Have you ever been arrested or excluded from school?	.07	.09	**.78**	.01	.62
4. Have you ever tried a cigarette?	.14	.05	**.76**	.10	.61
21. Do you have a curfew?	.02	.23	-.03	**.66**	.49
22. What time are you expected home?	**.30**	.05	.23	**.54**	.44

Note: Factor loadings greater than .30 are highlighted in bold

3.3.2.2 Family and Community

Analysis of data from 3078 participants across 10 items originally assigned to the Family and Community subscales of the Risk-Avert Screening Tool revealed two components with eigenvalues exceeding one. The scree plot (see Figure 3.2) was also supportive of this solution, which accounted for

46.43% of the variance (48% nonredundant residuals). Table 3.3 shows the initial eigenvalues, percentage of variance accounted for and component loadings (after rotation).

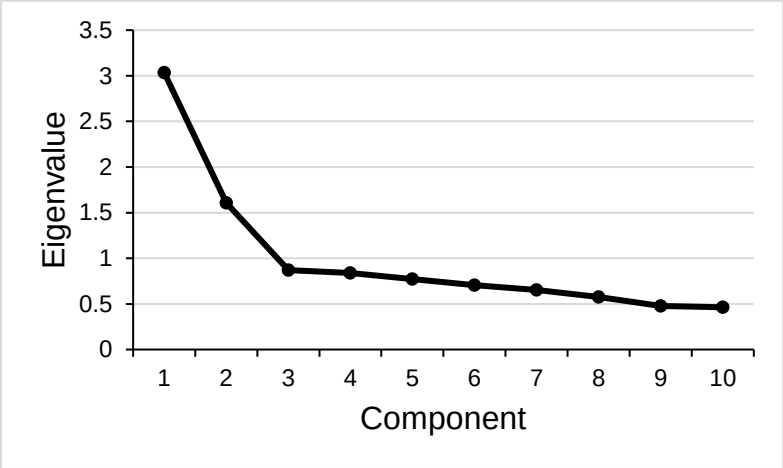

Figure 3.2 - Scree plot of items in the Family and Community subscales

Examination of component loadings revealed that all of the items loading upon component one were originally assigned to the Family subscale, whilst all those loading on component two were originally assigned to the Community subscale. Thus, the analysis supported the current organisation of the items contained within the Family and Community subscales of the Risk-Avert Screening Tool. However, as with the previous principal components analysis, it should be noted that this analysis also revealed items with low communalities (such as item 16), suggesting that most of the variance of those items was not represented by the extracted components.

Table 3.3 - Eigenvalues, percentage of variance accounted for and component loadings as identified by principal components analysis of the Family and Community subscales of the Risk-Avert Screening Tool

	Component		
	1	**2**	
Eigenvalue	3.04	1.61	
Percentage of variance	30.36	16.07	
Item			**Communality**
17. How wrong do your parents feel it would be for you to smoke cannabis?	**.74**	.03	.54
15. How wrong do your parents feel it would be for you to smoke cigarettes?	**.72**	.05	.52
18. How wrong do your parents feel it would be for you to steal something worth more than £5?	**.67**	.08	.45
19. How wrong do your parents feel it would be for you to draw graffiti on walls or buildings?	**.61**	.20	.40
20. How wrong do your parents feel it would be for you to pick a fight or bully someone?	**.54**	.17	.32
16. How wrong do your parents feel it would be for you to drink alcohol regularly?	**.48**	.11	.24
25. Is there lots of fights and gangs in your area?	.09	**.79**	.63
26. Do you think there is crime and/or drug dealing in your area?	.06	**.78**	.61
24. Is there lots of graffiti in your area?	.12	**.74**	.56
23. Do you live near lots of empty and abandoned buildings?	.22	**.57**	.37

Note: Factor loadings greater than .30 are highlighted in bold

3.3.3 Internal reliability

Cronbach's alpha was used to examine the internal reliability of each subscale of the Risk-Avert Screening Tool, as identified by the principal

components analysis. Both the Family (six items) and Community (four items) subscales were shown to have satisfactory reliability, α = .63 and α = .71 respectively. The analysis revealed that removing item 16 (“how wrong do your parents feel it would be for you to drink alcohol regularly?”) would further improve the reliability of the Family subscale to α = .67. The two dichotomous items of the Family subscale (item 21 “do you have a curfew?” and item 22 “what time are you expected home?”) were analysed separately and were shown to have very poor reliability, α = .19. The School subscale (four items) was shown to have poor reliability, α = .49. The analysis revealed that removing item 12 (“have you been bullied recently at school?”) would improve the reliability of the School subscale to α = .53.

The two subscales that were identified by the principal components analysis to be within the Individual subscale were tested separately. The first subscale “Normative Adolescent Risk Behaviour” (seven items) was shown to have poor reliability, α = .42, as was the second subscale “Uncommon Adolescent Risk Behaviour” (two items), α = .46. When the subscales were combined (nine items), reliability was marginally improved α = .51 and analysis did not reveal any items for which removal would improve the reliability of the subscale. Overall, this analysis suggests that the School subscale and the Individual subscale may currently be comprised of items that do not measure the same underlying construct.

3.3.4 Correlations

A score for each of the original four subscales was calculated for each participant by summing the scores obtained for the items in that subscale. The original four subscales were used as, although the principal components

analysis revealed more subscales, the original subscales reflected how the Risk-Avert Screening Tool was being utilised in practice and the Individual subscale demonstrated better internal reliability when treated as one subscale rather than two. The scores used were those assigned by the developers (The Training Effect and Essex County Council) except in the case of item five ("how often do you drink energy drinks?"), item seven ("have you got a social networking profile?") and item 21 ("if you are out with friends do you have a curfew?), as explained previously (see section 3.3, page 88). Additionally, scores for items 21, 22 (both from the Family subscale) and 27 (from the Community subscale) were not included in the total score for their respective subscales as they had not been included within the same principal components analyses as other items in the subscale.

The subscale scores were subjected to correlational analyses using Spearman's rho, alongside items 21, 22 and 27 in order to determine the relation between these items and each subscale score. A non-parametric correlational analysis was conducted because visual analysis of histograms and tests of skewness/kurtosis revealed non-normal data. Table 3.4 shows the correlation coefficients obtained (and sample size below). Although all the coefficients were statistically significant at $p < .01$, it must be considered that the sample size was large, and most of the correlations were low. It is of note that item 27 ("how many times a week do you go out with friends without parents or other adults?") originally specified as part of the Community subscale, correlated highest with scores for the Individual subscale ($r_s = .34$) as did item 22 ("what time are you expected home?"; $r_s = .29$) originally specified as part of the Family subscale, although both correlations would be

considered small. These positive associations suggest that those who have a later curfew and those who socialise more often with friends without adult supervision are also more likely to engage in risk behaviours such as smoking or drinking alcohol. Item 21 ("if you are out with friends, do you have a curfew?") correlated highest with scores for the Family subscale, an expected result as it too is a part of the Family subscale, although the correlation is again small (r_s = .20). This positive association suggests that those who do not report having a curfew also feel that their parents are less likely to perceive risk behaviours such as smoking cannabis or stealing as wrong.

Table 3.4 - Correlation coefficients demonstrating the relationship between scores for the Individual, School, Family and Community subscales, and items 21, 22 and 27

	School	**Family**	**Community**	**27. Time with friends minus adult supervision**	**21. Do you have a curfew?**	**22. Time of curfew**
Individual	.22** 2662	.33** 2661	.26** 2663	.34** 2554	.13** 2628	.29** 2467
School		.17** 3074	.22** 3078	.09** 2929	.08** 3020	.09** 2790
Family			.21** 3078	.16** 2930	.20** 3019	.21** 2792
Community				.19** 2937	.13** 3023	.17** 2795
27. Time with friends minus adult supervision					.07** 2892	.29** 2681
21. Do you have a curfew?						.22** 2782

Note: Sample size for each correlation is presented below the correlation coefficient, ** p < .01

3.4 Discussion

The aim of this study was to assess the underlying structure and internal reliability of the 2014/2015 version of the Risk-Avert Screening Tool (The Training Effect & Essex County Council, n.d.). The results demonstrated that the items included in the School, Family and Community subscales loaded on components in such a way that was consistent with the organisation of the 2014/2015 version of the Risk-Avert Screening Tool. However, it must be noted that some subscales were analysed separately due to differing response options within subscales. For example, all the items included in the original Family subscale could not be included in one analysis and so although the items analysed together loaded on the same component, it is not known whether all items included in the original subscale would have loaded on the same component had it been possible to include them in one analysis. Contrary to the organisation of the 2014/2015 version of the Risk-Avert Screening Tool, the items included in the Individual subscale loaded on two separate components.

It should be noted that the two items of the Individual subscale that loaded on a different component were also two of three items included in the analysis that were assigned the highest score by the developers (15 for yes and 0 for no). To ensure that factor loadings were not influenced by this scoring, a second principal components analysis was performed with all items scored such that presence of risk = 1 and absence = 0. This analysis revealed a very similar pattern of component loadings, suggesting that they were not a result of the scoring assigned by the developers of the Risk-Avert Screening Tool.

The two components identified as underlying the Individual subscale appeared to the researcher to be indicative of two different levels of perceived severity of risk behaviour i.e. those risk behaviours that are considered most unacceptable, in contrast to those which are considered more acceptable or typical of adolescents. This finding although originally unexpected does, upon consideration of the literature, seem to be conducive with features of Problem Behavior Theory (Jessor & Jessor, 1977) which combines biological, social/environmental and personality factors to explain the development of risk behaviour. It refers to risk or protective factors within five domains: biology/genetics, social environment, perceived-environment, personality, and behaviour, that either encourage or discourage risk behaviour (please see section 1.3.3, page 34, for further discussion of the theory). The framework of Problem Behavior Theory (Jessor & Jessor, 1977) has been developed over the years to include a wider variety of behaviours (Donovan et al., 1991; Jessor, 1987, 1991, 2014). As such, some researchers have made distinctions between problem behaviours and health-compromising behaviours, whilst acknowledging that some behaviours may fall in both categories (e.g. Donovan et al., 1991; Turbin, Jessor, & Costa, 2000). Whilst problem behaviours are taken to be those behaviours which are contrary to the cultural norms and as such may be restricted or penalised (Donovan et al., 1988, 1991; Jessor, 1987), health-compromising behaviours have been described as “those that compromise health, but that do not necessarily violate social or legal norms or result in societal sanctions” (Turbin et al., 2000, p. 116). These definitions appear to be consistent with the initial observations of the researcher regarding the items loading upon the two

components and as such, the subscales named “Normative Adolescent Risk Behaviour” and “Uncommon Adolescent Risk Behaviour” following the analysis could be conceptualised as health-compromising behaviours and problem behaviours respectively, in keeping with the definitions used by other researchers (Donovan et al., 1988, 1991; Jessor, 1987; Turbin et al., 2000).

The one item appearing in exception to this conceptualisation is item six, which loaded upon health-compromising behaviours rather than problem behaviours even though the purchase and consumption of alcohol by adolescents is restricted in the United Kingdom (GOV.UK, 2016). However, this could be due to the wording of the item as it is dissimilar to the wording of items used by other researchers when exploring Problem Behavior Theory (Jessor & Jessor, 1977), which appear to ask about more excessive drinking than that suggested by item six (e.g. Donovan & Jessor, 1985; Donovan et al., 1991; Turbin et al., 2000).

For the most part, except in the case of the two components identified in the Individual subscale, the principal components analysis revealed an underlying structure consistent with the current design of the Risk-Avert Screening Tool and its subscale divisions. This in turn means that it largely aligns with the risk factor domains employed by other researchers (Beyers et al., 2004; Brooke-Weiss et al., 2008; Jackson et al., 2010; Thomas et al., 2008); individual/peers, school, family and community.

It seems that the Risk-Avert Screening Tool would benefit from further development that may include removing or rewording items. This was revealed during examination of item wording as well as by the low Cronbach’s alpha statistics. In addition to item wording and inclusion, the current scoring

of the Risk-Avert Screening Tool presented several issues during analysis, namely that items within the same subscale could not be analysed together due to differing scoring and/or response options. Also, the method currently employed by the developers to add additional weight to certain items of the Screening Tool that are thought by them to represent greatest risk or potential for risk, whereby they have increased the score for a positive response to certain items in comparison to other items (e.g. having been arrested or excluded scores 15 points but having done something dangerous because you were dared to scores only one point), has not been verified. It should be considered whether changing scores, response options or item wording would improve the usability and reliability of the tool and its component subscales as well as aiding evaluation.

The next chapter will focus upon evaluating the validity and reliability of a revised version of the Risk-Avert Screening Tool in a sample of students with no experience of the Risk-Avert programme. This will include assessing the accuracy of the Risk-Avert Screening Tool's cut-off score.

4. Exploring the validity of the Risk-Avert Screening Tool

4.1 Introduction

The previous chapter investigated the underlying structure and internal reliability of the Risk-Avert Screening Tool (The Training Effect & Essex County Council, n.d.), using data from the 2014/2015 academic year. It was found that the School, Family and Community subscales each loaded on separate components as would be expected, however the Individual subscale loaded on two components rather than one. As well as this, the internal reliability of the subscales was shown to generally be low. This chapter will further explore the structure, reliability and validity of the Risk-Avert Screening Tool given changes made to the measure between the 2014/2015 and 2016/2017 academic years. This will include assessing the accuracy of its scoring and comparing it to other adolescent risk measures.

Over the years since Risk-Avert was first established in 2013 (The Training Effect, n.d.-a) the Risk-Avert Screening Tool, used to identify participants, has undergone several changes. These have included altering the order of questions, removing questions, changing response options and adjusting the tool's scoring. Such changes have been prompted by examination of student responses to the tool as well as feedback received from those that have used the Screening Tool, for example regarding how accurate the scores were, or which questions were not felt to be revealing (Bowles, 2016).

Whilst all changes were made with the overall aim of bettering the Risk-Avert Screening Tool (Bowles, 2016) and thus also likely improving its accuracy and validity, any evidence of this has thus far been anecdotal in

nature. For example, in a report of the pilot of the Risk-Avert programme one year seven teacher is quoted as saying “yes, the screening tool was good, there wasn’t many surprises” (Essex County Council & The Training Effect, 2014, p. 7) and in a survey of professionals outlined in the same report it was stated that the majority of respondents felt the Risk-Avert Screening Tool identified those students already known to the school. Although the previous chapter of this thesis examined the underlying structure of the 2014/2015 version of the Risk-Avert Screening Tool, given changes made to the Risk-Avert Screening Tool by the 2016/2017 academic year and that previous analyses did not focus upon its accuracy, it was felt appropriate to explore the validity and accuracy of the revised Risk-Avert Screening Tool in a new sample.

Thus, this study aimed to evaluate the validity of the Risk-Avert Screening Tool and its associated scoring. Specifically, scores obtained for the Risk-Avert Screening Tool 2016/2017 version were compared to those obtained for other validated risk and wellbeing measures. Where increased scores indicate increased risk, it would be expected that scores on the Risk-Avert Screening Tool would positively correlate with those obtained for the other risk measures. As well as this, students scoring above the cut-off for the Risk-Avert Screening Tool and a second validated risk measure will be compared, with the expectation that the measures will have identified the same students as “at-risk”.

4.2 Method

4.2.1 Participants

Participants were 279 individuals from two schools in Norfolk, England. The schools were recruited on the basis that they had no previous involvement with the Risk-Avert programme. Of the 277 individuals that indicated their age, they all fell in the range of 12-13 years as was expected from a sample of year eight students. The mean age for the entire sample was 12.62 years (SD = .49). All individuals indicated their gender: 148 individuals (53%) identified as male; 127 individuals (45.5%) identified as female and four individuals (1.4%) identified as other. Of those that identified as other the gender descriptions provided included “female/agender”, “transgender” and “unidentified”. Only one individual failed to indicate their ethnic group. The majority (270 individuals; 97.1%) of the sample identified as white. Most of the sample (268 individuals; 96.1%) also indicated that English was their first language. These statistics are summarised for each school in Table 4.1.

Table 4.1 - Sample size and characteristics by school

	N	Mean (SD) Age	Gender			First Language - English	Ethnic Group - White
School A	91	12.43 (.50)	Female	Male	Other	89 (97.8%)	89 (97.8%)
			36 (39.6%)	53 (58.2%)	2 (2.2%)		
School B	188	12.71 (.46)	Female	Male	Other	179 (95.2%)	181 (96.8%)
			91 (48.4%)	95 (50.5%)	2 (1.1%)		

4.2.2 Measures

The measures were combined into one questionnaire alongside questions regarding demographics (see Appendix E for demographic questions).

4.2.2.1 Risk behaviour

The Risk-Avert Screening Tool 2016/2017 version (see Appendix F; The Training Effect & Essex County Council, n.d.) consists of the same four sections as those of the 2014/2015 version (see Appendix B; The Training Effect & Essex County Council, n.d.) used in the previous chapter: “About you”, “About school”, “About your family” and “About your community”. As before, they will hereafter be referred to as the “Individual”, “School”, “Family” and “Community” subscales respectively. Unlike the 2014/2015 version which contained 16 numbered questions amounting to 27 items, the 2016/2017 version contained 17 questions (e.g. “have you ever done something dangerous because someone dared you to do it?”, “have you ever tried a cigarette?”) amounting to 25 items as several questions were composed of multiple items. Changes made to the subscales and items between the two versions will be explained below in relation to each subscale. These changes were made by the developers of the Risk-Avert Screening Tool (The Training Effect and Essex County Council) prior to the beginning of this research project and thus without the involvement of the researcher.

The Individual subscale consisted of 11 items that focused upon the individual’s personal behaviour. Note that item eight (“have you got a social networking profile?”) was non-scoring. In comparison to the 2014/2015 version, additional questions were added to this subscale regarding ever having tried an electronic cigarette and ever having felt pressured to share something online. As well as this, an additional response option was added to the energy drinks question in the 2016/2017 version. Previously respondents could choose from “never”, “once a week” or “more than once a week” and in

the updated version they could choose from “never”, “occasionally”, “once a week” or “more than once a week”. Additionally, item three became “have you ever been excluded from school”, rather than “have you ever been arrested or excluded from school?”.

The School subscale consisted of the same four items as in the 2014/2015 version, with only a change to the time frame of the bullying question (from “recently” to “in the last 2 months”) as well as the description of bullying provided. The Family subscale consisted of six items focused upon parental perceptions of risk behaviour, these are the same items and response options as in the 2014/2015 version. The question regarding who the individual lives with was removed in the 2016/2017 version and the question regarding having a curfew moved from the Family subscale to the Community subscale.

The Community subscale of the 2016/2017 version consisted of four items focused upon the individual’s level of supervision, rather than descriptions of where they lived as in the 2014/2015 version. The question regarding frequency of time spent with friends remained the same, but items regarding descriptions of where they lived were removed in favour of the addition of questions regarding whether they had a curfew and the time of their curfew, as well as an item asking whether they had ever been arrested. Note that item 15 (“if you are out with friends, do you have a curfew?”) was non-scoring.

Response options still varied across items in the 2016/2017 version and scoring remained specific to each item with an increasing score indicating an increasing level of risk. Please see Appendix F for the scoring of each

item. Total scores can range from zero to 158 and are categorised for the 2016/2017 version as low-risk (scores between 0-29), medium-risk (scores between 30 and 59) and high-risk (scores above 60). This represents an increase in category boundaries in comparison to the 2014/2015 version, for which total scores were categorised as low-risk (scores between zero and 13), medium-risk (scores between 14 and 44) and high-risk (scores above 45) (Bowles, 2016; M. Bowles, personal communication, 15 March 2016).

The Adolescent Risk Behavior Screen (ARBS) (see Appendix G; Jankowski, Rosenberg, Sengupta, Rosenberg, & Wolford, 2007) contains nine items that consider an individual's attitudes toward, involvement in or exposure to a variety of adolescent risk behaviours, including drug and alcohol use (e.g. "during the past 12 months, how many times were you in a physical fight?"). Scores for each item are summed to create a total score (that can range from nine to 30) and increasing scores are considered to demonstrate increasing risk (see Appendix G for specific item scoring). Jankowski et al. (2007) recommend a cut-off score of 17, whereby individuals scoring higher than this are considered most likely to be partaking in multiple risk behaviours. During development, the ARBS was shown to have a good degree of accuracy in categorising adolescents aged 14-18 years according to the amount of risk behaviour they engaged in (ROC values ≥ .91). This level of accuracy was shown to be maintained across samples of both males and females (Jankowski et al., 2007). One study found scores on the ARBS to correlate highly (r = .78) with scores of impulsivity as assessed by the Barratt Impulsivity Scale version 11 (Patton, Stanford, & Barratt, 1995) in a small sample of 21 adolescents aged 14-17 years (M. R. G. Brown et al., 2015).

The Multiple Problem Behavior Index (MPBI) (see Appendix H) in the form used in Jessor and colleagues' (2003) study and detailed in Jessor, Costa and Turbin (n.d.) is divided into three subscales entitled according to the risk behaviour they assess; delinquent behavior (10 questions), cigarette smoking (three questions) and problem drinking (six questions). Scores can be generated for Delinquent Behaviour (ranging from 10 to 50), Smoking Involvement, Drinking Status, Negative Consequences of Drinking (ranging from zero to 20) and Problem Drinking (see appendix H for specific item scoring and subscale formulae). Increasing scores indicate increasing levels of a given behaviour in a subscale. Items consider the frequency and impact of an individual's risk behaviour (e.g. "have you had a drink of beer, wine, or liquor more than two or three times in your life – not just a sip or taste of someone else's drink?", "during the past six months, how often have you cheated on tests or homework?"). The reliability of this measure has been reported to be α = .69. The reliability of the Delinquent Behaviour, Cigarette Smoking and Problem Drinking subscales were reported as α = .84, α =.79 and α =.71, respectively (Jessor et al., n.d.). The questionnaire of which the MPBI was a part was originally designed to be suitable for use with adolescents and young adults aged 13-22 years (Jessor & Jessor, 1977). The validity of the MPBI has been demonstrated mostly in regard to Problem Behavior Theory (Jessor & Jessor, 1977) constructs (e.g. Jessor, Van Den Bos, Vanderryn, Costa, & Turbin, 1995).

4.2.2.2 Wellbeing

The Strengths and Difficulties Questionnaire (SDQ) self-report version for age 4-17 (see Appendix I; Goodman et al., 1998) assesses both positive and negative behaviour in adolescents over the previous six months. It consists of 25 items (e.g. “I think before I do things”, “I take things that are not mine from home, school or elsewhere”) rated according to how true they have been of the individual over the previous six months. This amounts to five items for each of five subscales; the Hyperactivity scale (items 2, 10, 15, 21 and 25, α = .69), the Emotional Problems scale (items 3, 8, 13, 16, 24, α = .75), the Conduct Problems scale (items 5, 7, 12, 18, 22, α = .72), the Peer Problems scale (items 6, 11, 14, 19, 23, α = .61) and the Prosocial scale (items 1, 4, 9, 17, 20, α = .65) (Goodman et al., 1998). Scores on each scale can range from zero to 10 and scores for the first four of these subscales can be summed to create a total difficulties score, where “not true” scores zero, “somewhat true” scores one and “certainly true” scores two. Thus, the total difficulties score can range from zero to 40. Items 7, 11, 14, 21 and 25 are reverse-scored (Goodman et al., 1998). It should be noted that all following analyses reflect the data after missing data within the SDQ was dealt with per standard procedure for the measure (Youthinmind, 2016). Thus, if at least three items in a subscale had been completed by the participant a total score for that scale was calculated using the following formula: (sum of item scores/number of completed items) x the number of items in the scale. The subsequent score was rounded to the nearest whole number.

The Short Mood and Feelings Questionnaire (SMFQ) (see Appendix J; Angold et al., 1995) contains 13 items. It assesses the presence of

depressive symptoms in children and adolescents aged six to 17 years by asking that they rate the extent to which the items have been true of them over the previous two weeks (e.g. “I thought I could never be as good as other kids”). Scores for all the items can be summed to create a total score ranging from zero to 26, where “not true” scores zero, “sometimes” scores one and “true” scores two. The SMFQ has been shown to demonstrate good internal reliability, α = .85 and the ability to discriminate between clinical and non-clinical samples (Angold et al., 1995).

The Screen for Childhood Anxiety Related Emotional Disorders (SCARED) (see Appendix K; Birmaher et al., 1999, 1997) contains 41 items (e.g. “I worry about other people liking me”, “when I get frightened, I feel like passing out”). It assesses symptoms of anxiety experienced by individuals aged eight to 18 years and asks that they rate the extent to which the items have been true of them over the previous three months. Scores for all the items can be summed to create a total score ranging from zero to 82 (“not true or hardly ever true” scores zero, “somewhat true or sometimes true” scores one and “very true or often true” scores two), where 25 or more may suggest an anxiety disorder. Scores can also be broken down further into five subscales; Panic Disorder (items 1, 6, 9, 12, 15, 18, 19, 22, 24, 27, 30, 34, 38), Generalized Anxiety Disorder (items 5, 7, 14, 21, 23, 28, 33, 35, 37), Separation Anxiety (items 4, 8, 13, 16, 20, 25, 29, 31), Social Anxiety Disorder (items 3, 10, 26, 32, 39, 40, 41), and Significant School Avoidance (items 2, 11, 17, 36). A meta-analysis reported that each of the subscales and the total score of the SCARED measure consistently demonstrated good internal reliability. The mean α statistic was shown to be .91 for the 41-item measure, with mean values of α

= .81, α = .84, α = .62, α = .72 and α = .80 for the Generalized Anxiety Disorder, Panic Disorder, Significant School Avoidance, Separation Anxiety, and Social Anxiety Disorder subscales respectively (Hale, Crocetti, Raaijmakers, & Meeus, 2011).

4.2.3 Design

This research project was of a cross-sectional design. Data collection took place in March and April of the 2016/2017 academic year.

4.2.4 Procedure

Year eight students were asked to complete a questionnaire formed from the measures listed above. This data was collected using paper copies in accordance with the preference of the schools. The schools were asked to have the students complete the questionnaires within as short a time-frame as possible and to discourage students from conferring during questionnaire completion.

4.2.5 Ethics

Ethical approval was requested from and granted by the University of Essex (see Appendix L) and Norfolk County Council (see Appendix M). The schools were offered Personal, Social, Health and Economic (PSHE) teaching materials provided by The Training Effect as a token of thanks for their participation. Permission was first sought from a member of school leadership. Following this, the school sent letters provided by the researcher to all parents or guardians of potential participants, asking for them to "opt-out" if they were not happy for their child to engage in the research (see

Appendix N). Assent was sought from all adolescents involved at the time of questionnaire completion (see Appendix O).

The data was pseudonymised by the schools prior to it being received by the researchers. ID numbers were assigned by the school to each individual. Only the school retained the information regarding the ID number assigned to each individual, this ensured that only the school was able to identify an individual, which was necessary for reasons of student support and pastoral care (see further explanation below). However, the school did not have access to the raw data/responses provided by any individual. To ensure the confidentiality of adolescents' responses they were asked to seal their questionnaire in an envelope before placing it in a taped cardboard box that was only opened by the researcher. The pseudonymised data was stored on password-protected computers or in a locked cabinet on university premises.

All of the measures included in the questionnaire were chosen to be age appropriate and avoid topics thought to be unnecessarily sensitive for the purpose of the current study. However, the pastoral care system within the school was made aware of the research taking place, in order that they could appropriately manage any individuals that may be affected by the content of the measures. Whilst the measures chosen were not expected to identify cases of high-risk, if an individual's answers were believed to demonstrate a risk of harm to themselves or others this information was passed to the school to be dealt with according to their procedures.

4.2.6 Plan for analysis

Non-parametric independent-samples tests were conducted across all measures to assess whether samples for each of the two schools could be appropriately combined. The underlying structure of the Risk-Avert Screening Tool was examined via principal components analysis and internal reliability analysis. The data resulting from participants' completion of the Risk-Avert Screening Tool and the ARBS was subjected to Receiver Operating Characteristic (ROC) analysis to assess the tool's accuracy. This allowed for the establishment of a cut-off score and/or the validation of the currently used cut-off score, whereby individuals scoring this value or above can be said to be engaging in notable levels of risk behaviour. The need to minimise cases of false positives (where an individual is incorrectly identified by the tool) was also considered when identifying the cut-off score. Correlational analyses of the Risk-Avert Screening Tool and all risk and wellbeing measures were performed to test convergent validity.

4.3 Results

Analyses involving the Risk-Avert Screening Tool were conducted using the scoring assigned by the developers (The Training Effect and Essex County Council) for the 2016/2017 academic year, unless otherwise stated in the explanation of each analysis. As in the previous chapter, the application of this scoring system resulted in some items having less response categories in analysis than presented to participants (see section 3.3, page 88 for a further example).

4.3.1 Descriptive statistics and independent-samples tests

The average score and dispersion for each measure and subscale were calculated for each school (see Table 4.2). Exploration of the data revealed the violation of assumptions for the use of parametric tests, e.g. normality, for some measures/subscales. The Kolmogorov-Smirnov statistics for all measures and subscales were statistically significant at $p < .05$. It should be noted that statistically significant test statistics are common in large samples, but in this case were corroborated by other methods such as visual analysis of histograms. Thus, to maintain consistency across analyses, the median was used as the average score for all subscales, alongside non-parametric tests.

Table 4.2 - Average scores and dispersion for each measure and subscale by school

	School A				School B			
	N	**Median**	**IQR**	**Min-Max**	**N**	**Median**	**IQR**	**Min-Max**
Risk-Avert Screening Tool: Total	62	12	5.75-27.25	0-58	143	16	4-26	0-105
Risk-Avert Screening Tool: Individual	69	8	1-16.5	0-61	163	3	0-16	0-67
Risk-Avert Screening Tool: School	87	0	0-5	0-26	176	0	0-8	0-26
Risk-Avert Screening Tool: Family	87	0	0-0	0-28	180	0	0-2.25	0-30
Risk-Avert Screening Tool: Community	83	2	2-4	0-10	178	4	2-6	0-21
SCARED: Total	71	16	10-32	0-81	162	12	5-21.25	0-70
SCARED: Panic Disorder	77	3	1.5-6	0-25	176	1	0-4	0-24
SCARED: Generalized Anxiety Disorder	76	4.5	2-8.75	0-18	178	2	0-6	0-18
SCARED: Separation Anxiety	79	3	1-5	0-16	178	1.5	0-4	0-15

	School A				School B			
	N	**Median**	**IQR**	**Min-Max**	**N**	**Median**	**IQR**	**Min-Max**
SCARED: Social Anxiety	77	5	2-9	0-14	174	4	2-6	0-14
SCARED: Significant School Avoidance	79	1	1-2	0-8	182	1	0-2	0-7
SMFQ	84	5	2-9	0-26	179	2	0-5	0-25
ARBS	81	11	9-12	9-19	172	10	9-12	9-22
SDQ: Total	69	11	7-16	0-35	184	10	6-14	1-30
SDQ: Emotional Problems	71	3	1-5	0-10	184	2	2-4	0-10
SDQ: Conduct Problems	71	2	1-4	0-8	184	1	1-3	0-8
SDQ: Hyperactivity	69	4	2.5-6	0-9	184	4	2-6	0-10
SDQ: Peer Problems	71	2	1-4	0-10	184	2	1-3	0-8
SDQ: Prosocial	71	7	6-9	2-10	181	7	6-9	0-10
MPBI: Delinquent Behaviour	82	12	10-13.25	10-29	183	11	10-14	10-37
MPBI: Smoking Involvement	87	0	0-0	0-3	183	0	0-0	0-6
MPBI: Negative Consequences of Drinking	38	0	0-0	0-4	82	0	0-0	0-3
MPBI: Problem Drinking	78	0	0-0	0-4	178	0	0-0	0-6

Note: SCARED = Screen for Childhood Anxiety Related Emotional Disorders, SMFQ = Short Mood and Feelings Questionnaire, ARBS = Adolescent Risk Behavior Screen, SDQ = Strengths and Difficulties Questionnaire, MPBI = Multiple Problem Behavior Index

To establish whether there were any significant group differences between schools Mann-Whitney tests were conducted. It was established that the average scores for Schools A and B were statistically significantly different for the following measures and subscales:

- Total SCARED, $U = 4422.5$, $z = -2.81$, $p = .005$, $r = -0.18$
- SCARED Panic Disorder, $U = 4723.5$, $z = -3.89$, $p < .001$, $r = -0.25$
- SCARED Generalized Anxiety Disorder, $U = 4775$, $z = -3.75$, $p < .001$, $r = -0.24$
- SCARED Separation Anxiety, $U = 5535$, $z = -2.76$, $p = .006$, $r = -0.17$

- SCARED Social Anxiety, $U = 5635$, $z = -2.02$, $p = .044$, $r = -0.13$
- Total SMFQ, $U = 4740.5$, $z = -4.87$, $p < .001$, $r = -0.30$
- Risk-Avert Screening Tool Community, $U = 8697$, $z = -2.37$, $p = .018$, $r = 0.15$

This showed that students surveyed at School A presented with higher anxiety and mood scores than School B, as indicated by the SCARED subscales and total SMFQ scores, although the two schools did not differ significantly with regards to the SCARED subscale Significant School Avoidance. Students at School A also scored significantly higher than School B for Peer Problems, as indicated by the SDQ. Students at School B scored significantly higher on the Risk-Avert Community subscale than those at School A, this indicates increased risk at School B in relation to curfews and arrests when compared to School A. Given the large number of tests conducted, a Bonferroni correction was applied ($\alpha_{adjusted} = .05/23 = .002$) and differences in Risk-Avert Community subscale score, total SCARED score and the Separation Anxiety and Social Anxiety subscales of the SCARED were no longer statistically significant. All other measure and subscale scores did not differ significantly between the two schools. It is of note that this includes much of the Risk-Avert Screening Tool and the other risk measures (the ARBS and MPBI), which are the focus of the validation. It was decided that it remained appropriate to conduct analyses with the entire sample (data from School A and School B combined) as such differences were considered likely to be typical of schools in Norfolk, which can differ regarding factors such as their location (urban or rural), student body and achievement levels.

However, the significant differences found in the above analyses should be borne in mind when reflecting on subsequent analyses.

Table 4.3 summarises the frequency of responses for each item as well as the number of missing responses, ordered by response type, across the whole sample (both schools combined). The same pattern of response as identified in the previous chapter (see section 3.3.1, page 89) was found, with most participants providing responses thought to indicate lower risk. The frequency of responses was compared between this and the sample of Essex schools reported in the previous chapter for those items (and their associated response options) that remained the same between the 2014/2015 and 2016/2017 versions of the measure. The percentage of responses appeared comparable between the two samples for most items. However, it appeared that those in the Norfolk sample were more likely to have a social networking profile (87.8% vs. 76.7% in the previous chapter). It should be noted that this may only reflect the increasing popularity of social media in the time between the two data collections and/or the increased number of examples of such social networking profiles being provided in the item wording. Fewer students in the Norfolk sample reported that they had a curfew (26.5% reported having a curfew vs. 72.6% in the previous chapter). However, the frequencies reporting a pre and post-8pm curfew in the Norfolk sample for the next item did not seem to be compatible with that answer (197, 70.6% participants reported being expected to be in before 8pm). This may suggest a misunderstanding of the item(s). Those from the Norfolk schools also appeared less happy at school, with 21.1% reporting they did not like school, in comparison to 11.4% reporting the same in the Essex sample. Participants

from the Norfolk schools also reported less that they felt safe at school (80.3% reported feeling safe at school vs. 88.1% in the Essex sample). Chi-square tests reinforced the above observations and revealed that those in the Norfolk sample were significantly more likely to have a social networking profile (χ^2 (1) = 14.19, p < .001) or report not liking school (χ^2 (1) = 22.61, p < .001) and significantly less likely to have a curfew (χ^2 (1) =269.44, p < .001) or feel safe at school (χ^2 (1) = 6.35, p = .012), than those in the Essex sample.

Table 4.3 – Frequency of responses for each item of the Risk-Avert Screening Tool across both schools

Item	Yes	No			Missing
1. Have you done risky things, even if they were a little dangerous?	169 (60.6%)	102 (36.6%)			8 (2.9%)
2. Have you done something dangerous because someone dared you to do it?	69 (24.7%)	203 (72.8%)			7 (2.5%)
3. Have you ever been excluded from school?	21 (7.5%)	255 (91.4%)			3 (1.1%)
4. Have you ever tried a cigarette?	8 (2.9%)	265 (95%)			6 (2.2%)
5. Have you ever tried an electronic cigarette?	25 (9%)	249 (89.2%)			5 (1.8%)
8. Have you got a social networking profile?	245 (87.8%)	33 (11.8%)			1 (.4%)
8a. Do you add people to your online accounts who you have not met in person?	84 (30.1%)	162 (58.1%)			33 (11.8%)
8b. Have you ever regretted sharing something online?	33 (11.8%)	213 (76.3%)			33 (11.8%)
8c. Have you ever felt pressured to share something online?	10 (3.6%)	239 (85.7%)			30 (10.8%)
10. Do you feel safe at school?	224 (80.3%)	45 (16.1%)			10 (3.6%)
11. Have you been bullied at school in the last 2 months?	48 (17.2%)	226 (81%)			5 (1.8%)

Item	Yes	No			Missing
14. Have you ever been arrested?	1 (.4%)	269 (96.4%)			9 (3.2%)
15. If you are out with friends, do you have a curfew?	74 (26.5%)	197 (70.6%)			8 (2.9%)
	Before 8pm	**After 8pm/ Don't have a curfew**			**Missing**
16. What time are you expected home?	197 (70.6%)	72 (16.1%)			10 (3.6%)
	None	**Once or more**			**Missing**
7. In the past year, on how many occasions have you had a few sips of a drink containing alcohol, without adult supervision?	219 (78.5%)	53 (19%)			7 (2.5%)
	Good, I like it/It's okay	**I don't like school**			**Missing**
9. What do you think about school?	219 (78.5%)	59 (21.1%)			1 (.4%)
	Happy/ Okay	**Sad**			**Missing**
12. How do you feel most days?	266 (95.3%)	11 (3.9%)			2 (.7%)
	Never/ Occasionally	**Once a week**	**More than once a week**		**Missing**
6. How often do you drink energy drinks?	248 (88.9%)	17 (6.1%)	13 (4.7%)		1 (.4%)
	Very wrong/ Wrong	**A little bit wrong**	**Not wrong at all**		**Missing**
13a. How wrong do your parents feel it would be for you to smoke cigarettes?	261 (93.5%)	7 (2.5%)	5 (1.8%)		6 (2.2%)
13b. How wrong do your parents feel it would be for you to drink alcohol regularly?	213 (76.3%)	44 (15.8%)	13 (4.7%)		9 (3.2%)
13c. How wrong do your parents feel it would be for you to smoke cannabis?	266 (95.3%)	1 (.4%)	3 (1.1%)		9 (3.2%)
13d. How wrong do your parents feel it would be for you to steal something worth more than £5?	268 (96.1%)	1 (.4%)	2 (.7%)		8 (2.9%)

	Very wrong/ Wrong	A little bit wrong	Not wrong at all		Missing
13e. How wrong do your parents feel it would be for you to draw graffiti on walls or buildings?	255 (91.4%)	11 (3.9%)	5 (1.8%)		8 (2.9%)
	Very wrong/ Wrong	**A little bit wrong**	**Not wrong at all**		**Missing**
13f. How wrong do your parents feel it would be for you to pick a fight or bully someone?	258 (92.5%)	12 (4.3%)	2 (.7%)		7 (2.5%)
	None	**Once**	**Three times**	**Five or more**	**Missing**
17. How many times a week do you go out with friends without parents or other adults?	56 (20.1%)	101 (36.2%)	76 (27.2%)	38 (13.6%)	8 (2.9%)

Total and subscale scores were calculated for each participant and each measure. Table 4.4 summarises the average score and dispersion for each measure and subscale across the entire sample.

Table 4.4 - Average scores and dispersion for each measure and subscale

	N	Median	IQR	Min-Max
Risk-Avert Screening Tool: Total	205	15	5-26	0-105
Risk-Avert Screening Tool: Individual	232	5	.25-16	0-67
Risk-Avert Screening Tool: School	263	.00	0-8	0-26
Risk-Avert Screening Tool: Family	267	.00	0-0	0-30
Risk-Avert Screening Tool: Community	261	4	2-6	0-21
SCARED: Total	233	14	7-25	0-81
SCARED: Panic Disorder	253	2	0-6	0-25
SCARED: Generalized Anxiety Disorder	254	3	.75-7	0-18
SCARED: Separation Anxiety	257	2	.5-4	0-16
SCARED: Social Anxiety	251	4	2-7	0-14
SCARED: Significant School Avoidance	261	1	0-2	0-8

	N	Median	IQR	Min-Max
SMFQ	263	3	1-6	0-26
ARBS	253	10	9-12	9-22
SDQ: Total	253	10	6-14.5	0-35
SDQ: Emotional Problems	255	2	0-4	0-10
SDQ: Conduct Problems	255	2	1-3	0-8
SDQ: Hyperactivity	253	4	2-6	0-10
SDQ: Peer Problems	255	2	1-3	0-10
SDQ: Prosocial	252	7	6-9	0-10
MPBI: Delinquent Behaviour	265	11	10-14	10-37
MPBI: Smoking Involvement	270	0	0-0	0-6
MPBI: Negative Consequences of Drinking	120	0	0-0	0-4
MPBI: Problem Drinking	256	0	0-0	0-6

Note: SCARED = Screen for Childhood Anxiety Related Emotional Disorders, SMFQ = Short Mood and Feelings Questionnaire, ARBS = Adolescent Risk Behavior Screen, SDQ = Strengths and Difficulties Questionnaire, MPBI = Multiple Problem Behavior Index

4.3.2 Principal components analysis

Given the changes made to the Risk-Avert Screening Tool between the 2014/2015 version used in the previous chapter and the 2016/2017 version used for the current study, an exploratory principal components analysis was conducted to assess the underlying structure of the revised version. Difficulties with this analysis remained due to the differing number of response options between items and subscales and analysis had to be conducted in two halves. As before, the scoring of the Individual and School subscales resulted in most items becoming dichotomous and so these subscales were analysed together. An exception to the use of the original scoring was made in the case of item six (“how often do you drink energy drinks?”). Responses for this item were dichotomised by the researcher to bring the scoring in line with that of the other items in the Individual subscale. Thus, the response categories, “never” and “occasionally” were combined

and scored zero, but all the remaining response options (“once a week” and “more than once a week”) were each scored five, creating a second response category of “once a week or more”. As well as this, item eight (“have you got a social networking profile?”) was originally a non-scoring item, but for these analyses not having a social networking profile scored zero points as it was felt this indicated less potential for increased risk, whilst having a social networking profile scored one point as it was felt this did indicate potential for increased risk. These changes allowed for the inclusion of items six and eight in the principal components analyses.

Most of the items in the Community subscale were also dichotomous, except item 17 (“how many times a week do you go out with friends without parents or other adults?”) which was not included in the analyses as the response options did not correspond with those of any other item. Item 15 (“if you are out with friends, do you have a curfew?”) was originally non-scoring but in order for it to be included in these analyses having a curfew scored zero points as it was felt this indicated less potential for increased risk, whilst not having a curfew scored one point as it was felt this indicated potential for increased risk. The scoring of the Family subscale resulted in most items having three response categories, thus this subscale was analysed separately. For all principal components analyses missing data were excluded listwise and an orthogonal rotation (varimax) was applied.

4.3.2.1 Dichotomous items of the Individual, School and Community subscales

Analysis of data across the 18 dichotomous items in the Individual, School and Community subscales revealed seven components with eigenvalues

exceeding one (accounting for 61.98% of the variance, 56% nonredundant residuals). However, the scree plot appeared to indicate a four-component model (see Figure 4.1) and the seven-component model had a less clear component structure due to some items cross-loading. Given that analyses in the previous chapter suggested that a four-component model may underly these subscales, further analyses were run with the number of components fixed at four.

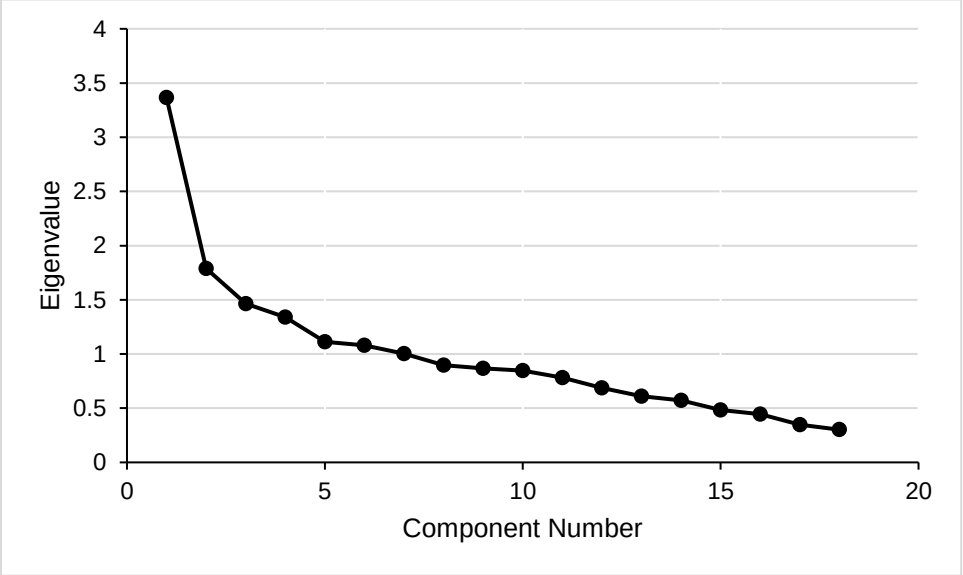

Figure 4.1 – Scree Plot of dichotomous items in the Risk-Avert Screening Tool

Analysis of the component loadings, communalities and nonredundant residuals demonstrated by both models revealed the four-component model (accounting for 44.22% of the variance, 52% nonredundant residuals) to be that which provided the clearest structure alongside the best model fit. Table 4.5 shows the initial eigenvalues, variance accounted for and component loadings (after rotation) when the component number was fixed at four.

Table 4.5 - Initial eigenvalues, percentage of variance accounted for and component loadings (after rotation) as identified by principal components analysis of the dichotomous items of the Risk-Avert Screening Tool

	Component				
	1	**2**	**3**	**4**	
Eigenvalue	3.35	1.78	1.45	1.35	
Percentage of variance	18.61	9.89	8.05	7.49	
Item					**Communality**
2. Have you done something dangerous because someone dared you to do it?	**.72**	.15	.10	-.06	.56
1. Have you done risky things, even if they were a little dangerous?	**.58**	.13	.05	.01	.35
7. In the past year, on how many occasions have you had a few sips of a drink containing alcohol, without adult supervision?	**.57**	.06	-.03	**.36**	.46
8a. Do you add people to your online accounts who you have not met in person?	**.57**	.10	.07	-.04	.35
4. Have you ever tried a cigarette?	**.55**	-.23	-.03	.01	.36
5. Have you ever tried an electronic cigarette?	**.54**	.14	.21	.22	.41
14. Have you ever been arrested?	.07	**.68**	-.03	.07	.48
8c. Have you ever felt pressured to share something online?	.02	**.66**	**.36**	.06	.57
8b. Have you ever regretted sharing something online?	.09	**.55**	.02	.01	.31
3. Have you ever been excluded from school?	.05	**.50**	-.003	.04	.25
6. How often do you drink energy drinks?	.24	**.40**	-.07	.26	.29

	Component				
	1	**2**	**3**	**4**	
15. If you are out with friends do you have a curfew?	.15	.18	**.83**	.01	.75
16. What time are you expected home?	**.34**	.03	**.78**	.07	.73
8. Have you got a social networking profile?	.19	.26	**-.46**	-.19	.35
9. What do you think about school?	.25	.07	.03	**.69**	.55
10. Do you feel safe at school?	-.08	.20	.16	**.67**	.52
12. How do you feel most days?	.05	-.05	.07	**.61**	.38
11. Have you been bullied at school in the last 2 months?	-.15	**.36**	-.08	**.37**	.30

Note: Factor loadings greater than .30 are highlighted in bold

Examination of the factor loadings revealed that the items from the School subscale of the Risk-Avert Screening Tool all loaded on one component. However, item 11 (“have you been bullied at school in the last 2 months?”) also cross-loaded on the second component. Item seven (“in the past year, on how many occasions have you had a few sips of a drink containing alcohol, without adult supervision?”) also loaded on the same component as the School subscale items, as well as the first component.

Items from the Individual subscale loaded across two different components, as was found in the principal components analysis of the previous version of the measure. Two items, those regarding a curfew, from the Community subscale loaded together on the third component. The other dichotomous item of the Community subscale (item 14 “have you ever been arrested?”) did not load on the same component, but instead loaded on a component with items from the Individual subscale. However, although this

loading can be understood given that being arrested is more likely driven by individual action rather than the wider community, it should also be noted that the variance of item 14 was very low, with almost all participants responding no, and this may have impacted the item loading. Item eight ("have you got a social networking profile?"), originally included in the Individual subscale, loaded negatively on the same component as the items regarding a curfew.

Overall, the underlying structure of the dichotomous items of the 2016/2017 version of the Risk-Avert Screening Tool was not as clear as the overt structure implies, with items from the Individual subscale loading mostly upon two components rather than one and numerous items from all subscales cross-loading over several components. Although for remaining analyses reported in this thesis the original subscales of the 2016/2017 version of the Risk-Avert Screening Tool will be used as that is how the Risk-Avert Screening Tool is utilised in practice, the identified lack of clarity in their underlying structure should be borne in mind.

4.3.2.2 Family subscale

Analysis of data across the six items in the Family subscale revealed one component with an eigenvalue exceeding one, accounting for 52.55% of the variance (60% nonredundant residuals). This solution was supported by the scree plot (see Figure 4.2). This finding appears to demonstrate that the overt structure of the Family subscale of the Risk-Avert Screening Tool corresponds with the underlying structure. Table 4.6 shows the initial eigenvalues, percentage of variance accounted for and component loadings.

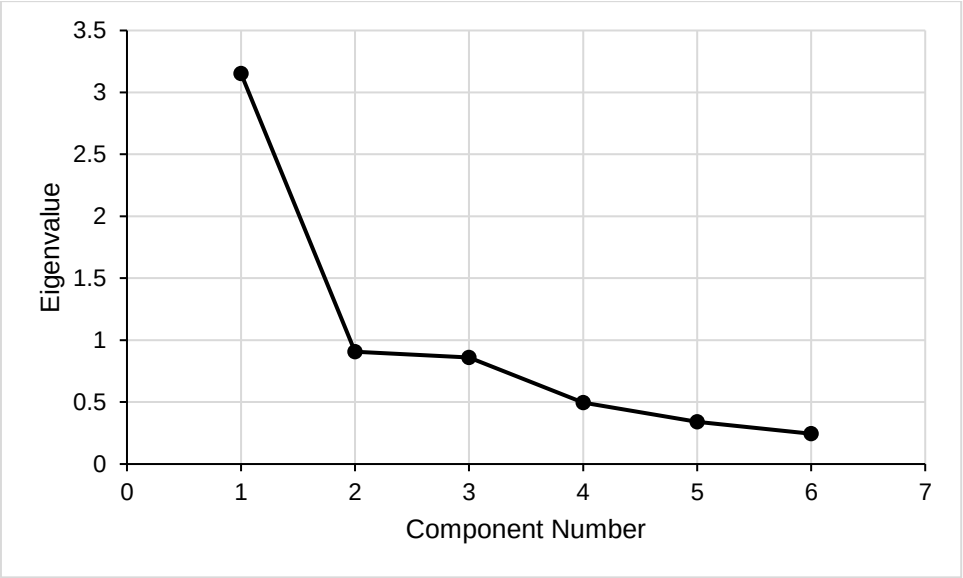

Figure 4.2 – Scree plot of items in the Family subscale of the Risk-Avert Screening Tool

Table 4.6 – Eigenvalue, communalities and component loadings of the Family subscale of the Risk-Avert Screening Tool

	Component 1	
Eigenvalue	3.15	
Percentage of variance	52.55	
Item		**Communality**
13d. How wrong do your parents feel it would be for you to steal something worth more than £5?	**.86**	.74
13c. How wrong do your parents feel it would be for you to smoke cannabis?	**.80**	.64
13f. How wrong do your parents feel it would be for you to pick a fight or bully someone?	**.75**	.57
13e. How wrong do your parents feel it would be for you to draw graffiti on walls or buildings?	**.74**	.54
13a. How wrong do your parents feel it would be for you smoke cigarettes?	**.65**	.42
13b. How wrong do your parents feel it would be for you to drink alcohol regularly?	**.50**	.25

Note: Factor loadings greater than .30 are highlighted in bold

4.3.3 Internal reliability

Cronbach's alpha, reported in Table 4.7, was calculated for each of the measures used within this sample to indicate internal reliability. As response options varied across items for the Risk-Avert Screening Tool, ARBS and MPBI internal reliability calculations were not conducted for the entire measure. Where subscales were present and item response options were consistent within those subscales, internal reliability scores are given.

All Risk-Avert Screening Tool items were scored using the scoring assigned by the developers (The Training Effect and Essex County Council) to the Risk-Avert Screening Tool. The original four subscales of the Risk-Avert Screening Tool were used as although previous principal components analyses revealed more subscales, the original subscales reflected how the Risk-Avert Screening Tool was being utilised in practice. Item 17 ("how many times a week do you go out with friends without parents or other adults?") from the Community subscale of the Risk-Avert Screening Tool was omitted from internal reliability calculations as was item six ("how often do you drink energy drinks?") from the Individual subscale, due to differing response options compared to the rest of the subscale.

One item of the Negative Consequences of Drinking subscale of the MPBI ("you've gotten into trouble with the police because of drinking") had no variance and this left four items in the subscale. Zero variance in this item was problematic for internal reliability analysis as the alpha calculation relies upon calculation of average variance.

Table 4.7 – Internal reliability statistics for each measure and/or subscale

	Internal Reliability
Risk-Avert Screening Tool	-
Individual	.55
School	.49
Family	.74
Community	-.06
Adolescent Risk Behavior Screen	-
Multiple Problem Behavior Index	-
Delinquent Behaviour	.78
Cigarette Smoking	-
Problem Drinking	-
Negative Consequences	.22
SDQ	.73
Emotional Problems	.82
Conduct Problems	.66
Hyperactivity	.74
Peer Problems	.52
Prosocial	.66
SCARED	.96
Panic Disorder	.92
Generalized Anxiety Disorder	.90
Separation Anxiety	.82
Social Anxiety	.86
Significant School Avoidance	.73
SMFQ	.92

Note: SDQ = Strengths and Difficulties Questionnaire, SCARED = Screen for Childhood Anxiety Related Emotional Disorders, SMFQ = Short Mood and Feelings Questionnaire

The SDQ, SCARED and SMFQ as entire measures all demonstrated good internal reliability. The Peer Problems (α = .52), Prosocial (α = .66) and Conduct Problems (α = .66) subscales of the SDQ demonstrated lower internal reliability in comparison to the other measures and subscales. The Delinquent Behaviour subscale of the MPBI had good internal reliability (α = .78), as did the Family subscale of the Risk-Avert Screening Tool (α = .74). However, the Individual and School subscales of the Risk-Avert Screening

Tool demonstrated only moderate internal reliability (α = .55 and α = .49 respectively), suggesting that there is room for improvement. The Community subscale demonstrated very poor internal reliability (α = -.06). The analysis demonstrated that the negative value was due to negative covariance between item 14 (“have you ever been arrested?) and item 16 (“what time are you expected home?”).

Although the original organisation of the subscales was used as they reflected how the Risk-Avert Screening Tool was being used in practice, it should be considered that the internal reliability of the subscales may have been improved if they were tested in line with the results of the principal components analysis (see section 4.3.2, page 126).

4.3.3.1 Item correlations for the Risk-Avert Screening Tool

Table 4.8 provides correlation coefficients (Spearman’s rho) that allow further understanding of the relationship between items of the Risk-Avert Screening Tool when using the original scoring assigned by the developers. Exceptions to this are item eight (“have you got a social networking profile?”) and item 15 (“if you are out with friends, do you have a curfew?”) which were originally non-scoring but for the purpose of this analysis increasing scores were coded to indicate increasing risk.

Table 4.8 – Item correlations for the Risk-Avert Screening Tool

Item	1	2	3	4	5	6	7	8	8a	8b	8c	9	10	11	12	13a	13b	13c	13d	13e	13f	14	15	16
1. Have you done risky things, even if they were a little dangerous?																								
2. Have you done something dangerous because someone dared you to do it?	.43** 268																							
3. Have you ever been excluded from school?	.20** 269	.27** 270																						
4. Have you ever tried a cigarette?	.14* 268	.30** 269	.20** 271																					
5. Have you ever tried an electronic cigarette?	.22* 269	.32** 270	.16** 272	.40** 273																				
6. How often do you drink energy drinks?	.15* 271	.23** 272	.25** 276	.08 273	.18** 274																			
7. In the past year, on how many occasions have you had a few sips of a drink containing alcohol, without adult supervision?	.67** 267	.31** 268	.11 270	.31** 269	.30** 270	.31** 272																		
8. Have you got a social networking profile?	.10 270	.08 271	.01 275	.06 272	.08 273	.13* 277	.09 271																	
8a. Do you add people to your Facebook/Twitter account who you have not met?	.16* 242	.31** 242	.06 246	.17* 242	.21** 243	.16* 246	.31** 241	.06 246																
8b. Have you ever regretted about sharing something online?	.16* 242	.14* 242	.07 246	.07 243	.12 244	.07 246	.22** 241	.07 246	.17** 245															
8c. Have you ever felt pressured to share something online?	.07 243	.21** 243	.17** 249	.08 244	.21** 245	.11 249	.09 243	.04 249	.07 246	.40** 246														
9. What do you think about school?	.12* 270	.16* 271	.15* 275	.13** 273	.21** 273	.19** 277	.23** 271	.06 277	.18** 245	.07 245	.09 248													

Item	1	2	3	4	5	6	7	8	8a	8b	8c	9	10	11	12	13a	13b	13c	13d	13e	13f	14	15	16
10. Do you feel safe at school?	.02 262	.06 264	.06 266	.04 264	.13* 265	.09 268	.11 263	.07 268	-.07 238	.06 238	.28** 240	.38** 268												
11. Have you been bullied at school in the last 2 months?	.06 267	.01 268	.09 271	-.02 269	.06 270	.09 273	-.01 268	-.04 273	-.01 242	.20** 242	.19** 244	.11 266	.23** 266											
12. How do you feel most days?	.04 269	.05 270	.08 274	.08 271	.20** 272	.05 276	.18** 270	.02 276	.05 244	.15* 244	.25** 247	.17** 276	.23** 267	.20** 272										
13a. How wrong do your parents feel it would be for you to smoke cigarettes?	-.02 265	.08 267	.14* 270	.38** 267	.30** 268	.10 272	.17** 266	.02 272	.003 240	.09 240	.06 243	.10 272	.10 263	-.002 268	.06 271									
13b. How wrong do your parents feel it would be for you to drink alcohol regularly (at least once or twice a month)?	.16* 262	.26** 264	.07 267	.15* 264	.24** 265	.12* 269	.31** 263	.16* 269	.25** 238	.16* 238	.23** 241	.11 269	.17** 260	-.04 265	.18** 268	.33** 270								
13c. How wrong do your parents feel it would be for you to smoke cannabis?	-.03 262	-.001 264	-.04 267	.17** 264	.07 265	-.04 269	.10 263	-.05 269	-.003 238	-.05 238	-.02 241	-.06 269	-.05 260	-.05 265	-.02 268	.45** 269	.24** 268							
13d. How wrong do your parents feel it would be for you to steal something worth more than £5?	-.07 263	.02 265	-.03 268	-.02 265	.09 266	.08 270	.13* 264	.04 270	-.004 238	-.05 238	.16* 241	.03 270	.05 261	-.05 266	.17** 269	.35** 270	.21** 269	.58** 269						
13e. How wrong do your parents feel it would be for you to draw graffiti on walls or buildings?	.10 263	.14* 265	.18** 268	.16** 265	.21** 266	.22** 270	.34** 264	.09 270	.22** 238	.04 238	.11 241	.18** 270	.06 261	-.03 266	.12* 269	.12 270	.31** 269	.37** 269	.44** 271					
13f. How wrong do your parents feel it would be for you to pick a fight or bully someone?	.11 264	.13* 266	.06 269	-.04 266	.23** 267	.19 271	.16** 265	.08 271	.08 239	.16* 239	.30** 242	.12* 271	.19** 262	.11 267	.13* 270	.22** 271	.26** 270	.26** 270	.47** 271	.51** 271				
14. Have you ever been arrested?	.05 262	.11 264	.24** 267	-.01 265	.21** 266	.17** 269	.13* 263	.02 269	.09 237	.17** 237	.33** 240	.12 269	.14* 260	.13* 265	-.01 268	-.01 267	-.03 265	-.01 266	-.01 266	.25** 266	.27** 267			
15. If you are out with friends, do you have a curfew?	.13* 263	.19** 265	.11 268	.06 266	.19** 267	.16** 270	.11 265	-.06 270	.17** 239	.02 239	.23** 242	.07 270	.13* 261	.08 266	.02 269	.04 268	.16** 265	-.07 265	.02 266	.11 266	.06 267	.10 267		
16. What time are you expected home?	.23** 263	.27** 265	.10 266	.17** 265	.39** 266	.17** 268	.17** 265	.04 268	.19** 238	.05 238	.18** 240	.13* 268	.13* 260	-.01 265	.07 268	.05 266	.28** 264	-.07 263	.02 264	.14* 264	.09 265	-.04 264	.63** 266	

Item	1	2	3	4	5	6	7	8	8a	8b	8c	9	10	11	12	13a	13b	13c	13d	13e	13f	14	15	16
17. How many times a week do you go out without parents or other adults?	.18** 263	.25** 265	.17** 268	.16** 265	.20** 266	.34** 270	.27** 265	.22** 270	.20** 240	.13* 240	.06 243	.22** 270	.07 262	.04 266	-.04 269	.05 268	.08 265	-.08 265	-.05 266	.15* 266	.14* 267	.10 266	.02 270	.10 266

Note: Sample size for each correlation is presented below the correlation coefficient, * p < .05, ** p < .01

Overall, the correlations between items were mostly small to moderate. Item one (“have you done risky things, even if they were a little dangerous?) and item seven (“in the past year, on how many occasions have you had a few sips of a drink containing alcohol, without adult supervision?”) demonstrated the strongest correlation (r_s = .67, p < .001). The Family subscale of the Risk-Avert Screening Tool was the only subscale that demonstrated the majority statistically significant correlations between items, although they varied from small to moderate in size. Overall, this demonstrates varied strength of relationship between items in the Risk-Avert Screening Tool, even when they are contained within the same subscale.

4.3.3.2 Item correlations for the ARBS

As variation in response options for items within the ARBS prevented the use of internal reliability analyses such as Cronbach’s Alpha, Table 4.9 provides correlation coefficients (Spearman’s rho) demonstrating the relationship between items.

Table 4.9 – Item correlations for the ARBS

Item	1	2	3	4	5	6	7	8
1. How often do you wear a seat belt when riding in a car driven by someone else?								
2. During the past 12 months, did you ever feel so sad or hopeless almost every day for two weeks or more in a row that you stopped doing some usual activities?	.28** 271							

Item	1	2	3	4	5	6	7	8
3. During the past 30 days, did you go without eating for 24 hours or more (also called fasting) to lose weight or to keep from gaining weight?	.34** 272	.38** 267						
4. During the past 12 months, how many times were you in a physical fight?	.30** 272	.08 267	.32** 289					
5. Have close friends or relatives worried or complained about your drinking?	.15* 267	.08 263	.29** 264	.10 264				
6. How wrong do you think it is for someone your age to smoke marijuana?	.19** 273	.04 268	.14* 270	.31** 271	.16* 266			
7. How much do you think people risk harming themselves (physically or in other ways) if they smoke marijuana regularly?	.21** 270	.12* 265	.16* 267	.36** 268	.14* 264	.46** 270		
8. How wrong do you think it is for someone your age to use LSD, cocaine, amphetamines or another illegal drug?	.17** 272	-.03 267	.12* 269	.26** 269	.16* 266	.60** 271	.36** 269	
9. About how many adults have you known personally who in the past year have sold or dealt drugs?	.21** 271	.14* 266	.21** 268	.20** 269	.10 264	23** 271	.13* 268	.22** 272

Note: Sample size for each correlation is presented below the correlation coefficient, * p < .05, ** p < .01

The majority of correlations between items of the ARBS were small to moderate, with the largest correlation coefficient being that between items six ("how wrong do you think it is for someone your age to smoke marijuana?") and eight ("how wrong do you think it is for someone your age to use LSD, cocaine, amphetamines or another illegal drug?"), $r_s = .60$, $p < .001$ and the

second largest being that between items seven ("how much do you think people risk harming themselves (physically or in other ways) if they smoke marijuana regularly?") and six, $r_s = .46$, $p < .001$. Items six, seven and eight all regard either how wrong the participant feels it would be to use drugs (items six and eight) or how harmful it may be to use drugs (item seven). Overall, the correlational analyses demonstrate variable relationships between items of the ARBS. This may indicate that the risk behaviours intended to be captured by these items are not all related.

4.3.3.3 Item correlations for the MPBI

4.3.3.3.1 Delinquent Behaviour

Although the Delinquent Behaviour subscale of the MPBI was appropriate for internal reliability analysis using Cronbach's alpha (presented in Table 4.7), as item correlations are going to be presented for all other subscales of the MPBI those for the Delinquent Behaviour subscale (Spearman's rho) are presented in Table 4.10 for consistency.

Table 4.10 – Item correlations for the Delinquent Behaviour subscale of the MPBI

Item	1	2	3	4	5	6	7	8	9
1. *During the past six months, how often have you:* cheated on tests or homework?									
2. Shoplifted from a store?	.11 271								
3. Damaged or marked up public or private property on purpose?	.32** 272	.36** 272							

Item	1	2	3	4	5	6	7	8	9
4. Lied to a teacher about something you did?	.50** 273	.27** 273	.35** 274						
5. Taken something of value that doesn't belong to you?	.30** 271	.30** 271	.53** 272	.29** 273					
6. Stayed out all night without permission?	.12 273	.34** 273	.27** 274	.28** 275	.21** 273				
7. Lied to your parents about where you have been or who you were with?	.27** 272	.35** 272	.39** 273	.53** 274	.35** 272	.24** 274			
8. Hit another student because you didn't like what he or she did?	.32** 272	.28** 272	.29** 273	.48** 274	.32** 272	.24** 274	.35** 273		
9. Carried a weapon, like a knife or gun, at school?	.09 272	.32** 273	.34** 273	.14* 274	.24** 272	.19** 274	.17** 273	.15* 273	
10. Made fun of or picked on other kids because they are different or not part of your group?	.31** 272	.15* 272	.33** 273	.35** 274	.38** 272	.25** 274	.35** 273	.42** 273	.13* 273

Note: Sample size for each correlation is presented below the correlation coefficient, * p < .05, ** p < .01

Although good internal reliability was indicated by the Cronbach's alpha statistic, the item correlations for the Delinquent Behaviour subscale of the MPBI varied with the majority being small to moderate, although some were large. The highest correlation coefficient was that demonstrating the relationship between items four and seven, and five and three, both $r_s = .53$, $p < .001$. Items four and seven both concern lying, whereas items five and three concern behaviours that could be considered criminal (stealing and vandalism). The second highest correlation coefficient was that demonstrating

the relationship between items one and four, that concern deception within the school environment, r_s = .50, p < .001. Overall, the results demonstrated that the relationships between items of the Delinquent Behaviour subscale of the MPBI were variable and thus whilst some items appeared to correlate well, others did not, and this may indicate that the risk behaviours intended to be captured by the items are not related.

4.3.3.3.2 Smoking Involvement

The Smoking Involvement subscale is comprised of only two items ("have you smoked cigarettes in the past 12 months?" and "during the past month, how many cigarettes have you smoked on an average day?"), correlational analyses using Spearman's rho revealed a statistically significant strong correlation, r_s = .72, p < .001, between the two items.

4.3.3.3.3 Problem Drinking

The Problem Drinking subscale of the MPBI is calculated by finding the mean of the Negative Consequences of Drinking subscale score (items 2 to 6 in the below table comprise this subscale) plus two other item scores. The results of correlational analyses (Spearman's rho) are presented in Table 4.11. There was zero variance in one item of the Negative Consequences of Drinking subscale of the MPBI ("you've gotten into trouble with police because you had been drinking").

Table 4.11 - Item correlations for the Problem Drinking and Negative Consequences of Drinking subscales of the MPBI

Item	1	2	3	4	5	6
1. During the past six months, how often did you drink alcohol?						
2. You've gotten into trouble with your parents because you had been drinking	.43** 106					
3. You've had problems at school or with schoolwork because you had been drinking	.03 106	.19* 120				
4. You've had problems with your friends because you had been drinking	.13 106	.11 120	.40** 120			
5. You've had problems with someone you were dating because you had been drinking	.11 106	-.03 120	-.01 120	-.02 120		
6. You've gotten into trouble with the police because you had been drinking	- 106	- 120	- 120	- 120	- 120	
7. In the past six months, about how many times have you gotten drunk or "very, very high" on alcohol?	.54** 106	.75** 118	.29** 118	.21* 118	.22* 118	- 118

Note: Sample size for each correlation is presented below the correlation coefficient, * $p < .05$, ** $p < .01$

The pattern of correlations for items of the Negative Consequences of Drinking and Problem Drinking subscales appears to reveal that the frequency of being drunk is more related to experiencing problems due to

drinking than is the frequency of consuming alcohol. Item seven ("in the past six months, about how many times have you gotten drunk or "very, very high" on alcohol?") is statistically significantly, positively related to all other items of the subscales, whereas item one ("during the past six months, how often did you drink alcohol?") was statistically significantly related only to item seven (r_S = .54, p < .001) and item two (r_S = .43, p < .001, "you've gotten into trouble with your parents because you had been drinking"). This suggests frequent alcohol consumption of any level was associated with increased issues between the participants and their parents but was not necessarily indicative of experiencing problems in other areas of life. Overall, these results demonstrate variable relationships between the items, particularly those that comprise the Negative Consequences of Drinking subscale, suggesting that the risk behaviours that the subscale intends to measure may not be related.

4.3.4 Convergent validity

To assess the convergent validity of the Risk-Avert Screening Tool, the total scores for all measures and their subscales were subjected to correlational analyses using Spearman's rho correlation coefficient. Table 4.12 shows the correlation coefficients obtained between the Risk-Avert Screening Tool and the SCARED, SMFQ, SDQ, ARBS, MPBI and their subscales. Please note that the correlations between MPBI Smoking Involvement and the Risk-Avert Screening Tool total score and Community subscale score could not be calculated because only three participants scored higher than zero for MPBI Smoking Involvement and those three participants had not provided enough data to calculate the Risk-Avert Screening Tool scores.

Table 4.12 - Correlation coefficients demonstrating the relationship between the Risk-Avert Screening Tool and the SCARED, SMFQ, SDQ, ARBS and MPBI

Item	Risk-Avert Screening Tool: Total	Risk-Avert Screening Tool: Individual	Risk-Avert Screening Tool: School	Risk-Avert Screening Tool: Family	Risk-Avert Screening Tool: Community
SCARED: Total	.17* 172	.12 194	.25* 220	-.04 225	-.01 220
SCARED: Panic Disorder	.22** 187	.20** 210	.30** 238	.03 245	.03 239
SCARED: Generalized Anxiety Disorder	.13 189	.10 213	.25** 239	-.02 245	-.04 240
SCARED: Separation Anxiety	-.04 191	-.01 214	.08 243	-.13* 248	-.12 243
SCARED: Social Anxiety	.04 186	-.002 210	.14* 237	-.11 242	-.04 238
SCARED: Significant School Avoidance	.24** 194	.14* 218	.32** 246	.08 252	.13* 247
SMFQ	.33** 199	.28** 220	.36** 248	.23** 254	.14* 249
ARBS	.48** 197	.48** 216	.35** 243	.33** 243	.39** 242
SDQ: Total	.51** 187	.44** 210	.46** 239	.24** 243	.25** 238
SDQ: Emotional Problems	.17* 189	.09 212	.28** 241	.03 245	.05 240
SDQ: Conduct Problems	.58** 189	.54** 212	.35** 241	.33** 245	.31** 240
SDQ: Hyperactivity	.48** 187	.45** 210	.39** 239	.24** 243	.22** 238
SDQ: Peer Problems	.09 189	.10 212	.19** 241	.11 245	.07 240
SDQ: Prosocial	-.24** 187	-.17* 210	-.18** 238	-.20** 242	-.13* 238
MPBI: Delinquent Behaviour	.62** 199	.61** 222	.37** 249	.41** 257	.33** 251
MPBI: Smoking Involvement	- 	.20** 227	.09 255	.16** 261	-
MPBI: Negative Consequences of Drinking	.39** 96	.36** 107	.33** 114	.36** 115	.19 111

Item	Risk-Avert Screening Tool: Total	Risk-Avert Screening Tool: Individual	Risk-Avert Screening Tool: School	Risk-Avert Screening Tool: Family	Risk-Avert Screening Tool: Community
MPBI: Problem Drinking	.41** 195	.41** 218	.19** 241	.44** 248	.33** 243

Note: Sample size for each correlation is presented below the correlation coefficients, * p < .05, ** p < .01
SCARED = Screen for Childhood Anxiety Related Emotional Disorders, SMFQ = Short Mood and Feelings Questionnaire, ARBS = Adolescent Risk Behavior Screen, SDQ = Strengths and Difficulties Questionnaire, MPBI = Multiple Problem Behavior Index

The Risk-Avert Screening Tool total score was shown to be moderately positively correlated with the ARBS score, r_s = .48, p < .001. The Individual and Community subscale scores of the Risk-Avert Screening Tool correlated highest out of the Risk-Avert Screening Tool subscales with the ARBS score, again demonstrating a moderate positive correlation, r_s = .48 & r_s = .39 respectively, p < .001. Whilst the scores for the other subscales of the Risk-Avert Screening Tool do correlate positively and statistically significantly with the ARBS score, the correlations are smaller. These results are likely to reflect the differences in questions asked of participants in the Risk-Avert Screening Tool Family and School subscales and the ARBS. The ARBS focuses much more on drug use and the perception of drug use (Jankowski et al., 2007), whereas the Risk-Avert Screening Tool (The Training Effect & Essex County Council, n.d.) only asks questions about an individual's personal substance use in the Individual subscale, which was one of the subscales shown to correlate highest with the total ARBS score.

Total Risk-Avert Screening Tool score and MPBI Delinquent Behaviour (r_s = .62, p < .001), Negative Consequences of Drinking (r_s = .39, p < .001) and Problem Drinking subscale (r_s = .41, p < .001) scores all correlated positively and at least moderately. The Individual subscale of the Risk-Avert Screening Tool was the subscale that correlated highest with the Delinquent Behaviour subscale of the MPBI (r_s = .61, p < .001). The Family subscale of

the Risk-Avert Screening Tool had the next highest correlation with an MPBI subscale, the Problem Drinking subscale (r_s = .44, p < .001). As was the case with the correlations between the Risk-Avert Screening Tool subscale scores and the ARBS, the correlations between the remaining Risk-Avert Screening Tool subscales and the MPBI subscales were still statistically significant (except that between the Negative Consequences of Drinking subscale of the MPBI and the Community subscale of the Risk-Avert Screening Tool), but smaller. Again, this is believed to reflect the differing questions asked in the two tools, as the MPBI Delinquent Behaviour subscale (Jessor et al., n.d., 2003) assesses topics covered predominantly in the Individual subscale of the Risk-Avert Screening Tool.

Regarding subscales of the wellbeing measures, the Risk-Avert Screening Tool School subscale score was found to have a moderate, positive correlation with the Significant School Avoidance subscale of the SCARED, r_s = .32, p < .01. The SDQ Prosocial score was found to correlate negatively with the Risk-Avert Screening Tool total score, as well as the scores for all the Risk-Avert Screening Tool subscales. Whilst all the correlations would be considered small to moderate they were in the expected direction. Overall, positive and statistically significant correlations between the Risk-Avert Screening Tool and the ARBS and MPBI provide evidence consistent with the Risk-Avert Screening Tool demonstrating convergent validity in this sample.

4.3.5 Receiver Operating Characteristic (ROC) analysis

To assess the accuracy of the Risk-Avert Screening Tool, it was subjected to ROC analysis. This analysis establishes a cut-off score, whereby in this case

individuals scoring above a specified value can be said to be engaging in notable levels of risk behaviour. This is determined by comparing those identified using the Risk-Avert Screening Tool to those identified using the ARBS, which is a previously validated tool with an established cut-off score (>17; Jankowski et al., 2007). The cut-off score for the Risk-Avert Screening Tool is selected by considering the specificity and sensitivity of the measure at any given score (Spitalnic, 2004a, 2004b). Sensitivity refers to whether a measure accurately identifies individuals with a characteristic, in this case whether an individual with the potential to engage in high levels of risk behaviour is correctly identified as demonstrating those risk factors. Whereas specificity refers to whether a measure identifies individuals without a characteristic as not having that characteristic, in this case whether an individual who does not demonstrate being at risk for engaging in high levels of risk behaviour is correctly categorised as such. An area under the curve (AUC) value is also calculated based upon the ROC plot, where a value closer to 1 is considered to indicate increased accuracy of the measure, whilst a score of 0.5 would indicate that using the Risk-Avert Screening Tool would be no better than guessing (Zhou, Obuchowski, & McClish, 2011).

The AUC for the Risk-Avert Screening Tool was found to be .97 (95% CI = .94 – 1.0, $p < .001$). This indicates that the Risk-Avert Screening Tool can accurately discriminate between those individuals demonstrating high and low potential for risk behaviour. See Figure 4.3 for a plot of the Risk-Avert Screening Tool scores and associated sensitivity and 1- specificity values. The value of 1 – specificity indicates the false positive rate i.e. those

individuals who are identified as at risk for engaging in high levels of risk behaviour (score above the cut-off) when they should not be.

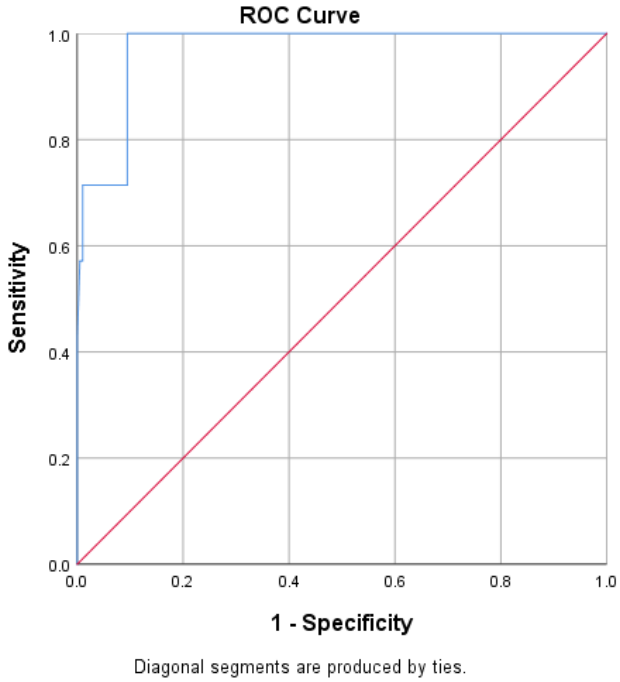

Figure 4.3 - ROC plot of scores for the Risk-Avert Screening Tool

Table 4.13 shows the sensitivity and 1 – specificity for several Risk-Avert Screening Tool cut-off scores. For brevity, only scores between 15.5 and 40.5 have been presented. The Risk-Avert Screening Tool currently utilises a cut-off score of >29, i.e. those who score above 29 are considered to demonstrate the potential for high levels of risk behaviour. This analysis demonstrates that this would result in 100% of individuals being correctly identified as at risk for engaging in high levels of risk behaviour. A cut-off score of >29 would also mean that 16% of individuals may be offered the programme when they do not at that time display the potential to engage in a high level of risk behaviour. It should be noted that in this sample 82 individuals could not be included in the analysis due to missing data and only seven individuals were above the cut-off for the ARBS. Given that so few

individuals were identified by the ARBS in this sample, this does call into question its relevance for the current sample and thus the result of the ROC analysis for the Risk-Avert Screening Tool.

Table 4.13 - The sensitivity and 1 - specificity of Risk-Avert Screening Tool cut-off scores

Positive if greater than or equal to	Sensitivity	1 – Specificity
15.5	1.00	.447
16.5	1.00	.426
17.5	1.00	.395
18.5	1.00	.347
19.5	1.00	.326
20.5	1.00	.321
21.5	1.00	.279
22.5	1.00	.274
23.5	1.00	.242
24.5	1.00	.237
25.5	1.00	.232
26.5	1.00	.200
27.5	1.00	.184
28.5	1.00	.179
29.5	**1.00**	**.163**
30.5	1.00	.153
31.5	1.00	.147
32.5	1.00	.137
33.5	1.00	.126
34.5	1.00	.116
36.0	1.00	.111
38.0	1.00	.105
39.5	1.00	.100
40.5	1.00	.095

4.4 Discussion

This study aimed to evaluate the validity of the Risk-Avert Screening Tool and its associated scoring. Scores obtained for the Risk-Avert Screening Tool were compared to those obtained for other validated risk and wellbeing measures, namely the ARBS, MPBI, SDQ, SCARED and SMFQ. Where increased scores indicate increased risk, as is the case for the Risk-Avert Screening Tool, ARBS and MPBI, it was expected that scores on the Risk-Avert Screening Tool would demonstrate a positive correlation with those obtained for the other risk measures. This prediction was for the most part supported. The Risk-Avert Screening Tool total score was shown to be moderately positively correlated with the ARBS score. Whilst scores on all subscales of the Risk-Avert Screening Tool correlated positively with the ARBS scores, the Individual subscale score of the Risk-Avert Screening Tool demonstrated the strongest correlation. A similar pattern was demonstrated when assessing the correlation between the Total Risk-Avert Screening Tool Score and the MPBI Delinquent Behaviour, Negative Consequences of Drinking and Problem Drinking scores. Whilst all the aforementioned scores correlated positively and moderately, the Individual subscale of the Risk-Avert Screening Tool was the subscale that correlated highest with all the MPBI subscales.

The result that the Individual subscale of the Risk-Avert Screening Tool correlated strongest with the ARBS score and scores for the MPBI subscales is likely to reflect differences in questions contained within the appropriate measures and subscales. For example, the ARBS focuses much more on drug use and the perception of drug use (Jankowski et al., 2007), which are

topics only covered within the Individual subscale of the Risk-Avert Screening Tool (The Training Effect & Essex County Council, n.d.). Similarly, regarding the correlation between the Risk-Avert Screening Tool subscales and the MPBI subscales (Jessor et al., n.d., 2003), the MPBI subscales assess topics covered predominantly in the Individual subscale of the Risk-Avert Screening Tool. Thus, evidence for convergent validity of the Risk-Avert Screening Tool appears strongest for the Individual subscale, but this may be largely due to the content of the measures to which it was compared. Other measures may be needed in future for comparison to assess the convergent validity of the School, Community and Family subscales of the Risk-Avert Screening Tool.

Regarding convergent validity with the wellbeing measures, the Risk-Avert Screening Tool School subscale score was found to have a positive correlation with the Significant School Avoidance subscale of the SCARED. This suggests that the School subscale of the Risk-Avert Screening Tool taps into aspects of school avoidance also measured by the SCARED, with an increased score for the School subscale of the Risk-Avert Screening Tool perhaps indicating increased school avoidance. SDQ Prosocial score was found to correlate negatively with the total score on the Risk-Avert Screening Tool, as well as scores for each of the Risk-Avert Screening Tool's associated subscales. This reflects an expected pattern as both Problem Behavior Theory (Jessor & Jessor, 1977) and the Social Development Model (Catalano & Hawkins, 1996) theorise that involvement in prosocial behaviour will be protective against engaging in risk behaviour (please see sections 1.3.3 and 1.3.4, page 34 and 38, for more detailed discussion of both theories). However, the correlations concerning prosocial behaviour found in this study

were small and although in the expected direction, only the total score and scores for two of the Risk-Avert Screening Tool's four subscales demonstrated statistically significant correlations with prosocial behaviour. Despite some small correlations however, the above results demonstrate that the Risk-Avert Screening Tool possesses convergent validity in regard to other risk measures, namely the ARBS and MPBI, as well as wellbeing measures, namely the SCARED and SDQ.

Given changes made to the Risk-Avert Screening Tool between the 2014/2015 version used in the previous chapter and the 2016/2017 version used in the current chapter, analysis of the underlying structure and internal reliability of the revised version was conducted. Principal components analysis revealed the underlying structure of the 2016/2017 version of the Risk-Avert Screening Tool was not as clear as the overt structure implies, with items from the Individual subscale loading upon two components rather than one. It is of note that this was also the case for the 2014/2015 version of the Risk-Avert Screening Tool. However, although the two components underlying the Individual subscale of the 2014/2015 version were labelled "Normative Adolescent Risk Behaviour" and "Uncommon Adolescent Risk Behaviour" this same conceptualisation does not seem to apply as clearly to the two components underlying the Individual subscale of the 2016/2017 version. For example, how often energy drinks were consumed loaded on the same component as being arrested.

The internal reliability for the majority of the subscales was the same (e.g. the School subscale, $\alpha = .49$) or improved (e.g. the Individual subscale, $\alpha = .55$ for the 2016/2017 version, $\alpha = .51$ for the 2014/2015 version) in this

sample, for the 2016/2017 version of the Risk-Avert Screening Tool, in comparison to the 2014/2015 version used in the previous sample and reported in the previous chapter. However, this was not the case for the Community subscale, for which the internal reliability had deteriorated from the 2014/2015 (α = .71) to the 2016/2017 version (α = -.06). This was likely due to changes made to the Community subscale between the two versions, particularly the inclusion in the later version of the subscale of item 14, which regards whether the individual has ever been arrested. Not only did this item demonstrate little variance (only one participant indicated they had been arrested) which is problematic for internal reliability analysis, but the principal components analysis demonstrated that this item loaded upon the same component as items of the Individual subscale and not those of the Community subscale. These results are suggestive that item 14 should be moved from the Community subscale to the Individual subscale.

As well as seeking to establish the validity of the Risk-Avert Screening Tool, this study also aimed to establish the accuracy of the Risk-Avert Screening Tool regarding identifying students at risk of engaging in multiple risk behaviours. For this purpose, a ROC analysis was conducted. This revealed that the Risk-Avert Screening Tool can accurately discriminate between those individuals demonstrating high and low potential for risk behaviour. However, this result should be considered alongside the knowledge that there was little variation in scores for the ARBS in this sample. Only seven individuals that scored above the cut-off for the ARBS also had a total score for the Risk-Avert Screening Tool and so could be included in the ROC analysis, and six of them attended the same school.

The Risk-Avert Screening Tool currently utilises a cut-off score of >29, i.e. those who score above 29 are considered to demonstrate the potential for risk behaviour. The ROC analysis demonstrated that this would result in 100% of individuals being correctly identified as at risk. The analysis also revealed that 16% of individuals may be offered the programme when they do not at that time display the potential to engage in a high level of risk behaviour. Although there is no reason to believe that any such individuals may not go on to increase their potential to engage in a high level of risk behaviour and may feel benefit at that time from having partaken in the programme, there are risks of false positives that should be considered. These include the risk of iatrogenic effects such as the potential for "deviancy training" to occur in which risk behaviour may be increased due to exposure to and encouragement of risk behaviour from others in the group (Dishion et al., 1999) (see section 1.4, page 43 for more detailed discussion of the potential iatrogenic effects of targeted interventions). However, at this time a false positive rate of 16% is not considered reason to adjust the cut-off score of the Risk-Avert Screening Tool. In conversation with school professionals over the course of this research it was noted, albeit anecdotally, that some seemed to believe that it may be beneficial to roll-out the Risk-Avert programme in a more universal fashion. This further implies that there is not a perceived harm in those who do not demonstrate risk or high potential for risk at the time of screening still taking part in the programme.

A possible limitation of this research is the nature of the school sample obtained as following the application of a Bonferroni correction, statistically significant differences were identified between School A and School B for the

SCARED Panic Disorder and Generalised Anxiety Disorder subscales and the total SMFQ score. However, all other measure and subscale scores did not differ significantly between the two schools, and so the decision was taken to conduct analyses with the entire sample as combining the samples for analysis provided a more representative sample than using only one school. Any further differences between the schools regarding factors such as location, student body and achievement levels appeared reflective of typical variation among Norfolk schools.

It is also of note that this study used an “opt-out” procedure for gaining parental consent. At the time this was an acceptable procedure and all the necessary ethical approvals were obtained. However, shortly following the conduct of this research the local authorities and ethical approval committees embraced an “opt-in” policy for school-based research. This new policy ensures active consent from the guardians of students and removes the possibility that guardians are deemed to have not opted-out when instead they may not have received the communication. However, an “opt-out” policy at the time of this research likely led to larger participant numbers than would have been recruited with an “opt-in” policy. This potential difference would not necessarily be due to a true difference in the number of guardians wanting students to be involved in research, but instead due to issues with notifying researchers and/or schools that they have opted-in.

As this thesis has thus far focused on assessing the psychometric properties of the Risk-Avert Screening Tool; its underlying structure, accuracy, internal reliability and validity, the next chapter will describe a pre-

and post-test study concerning the effectiveness of the Risk-Avert programme itself.

5. A longitudinal study of the impact of the Risk-Avert programme in two Essex schools

5.1 Introduction

Given that the previous chapters of this thesis have explored the psychometric soundness of the Risk-Avert Screening Tool, this chapter will move on to examining the effectiveness of the programme itself. The information about the Risk-Avert programme contained within the remainder of this section is available in and was gathered from the programme manual, accessible to involved schools via an online portal (The Training Effect & Essex County Council, 2017). The Risk-Avert programme is designed to move away from a consequences approach (also known as an information-deficit approach, see section 1.4, page 43 for a more detailed explanation) and as such is built on the premise that young people already know the consequences of the risks that they take, but what they lack is an understanding of what motivates their behaviour and/or how to recognise and manage a situation in which they are potentially at risk (M. Bowles, personal communication, 16 August 2019). Thus, rather than focusing on the outward behaviour itself and its own specific consequences, the Risk-Avert programme encourages young people to analyse the why for their behaviour and what motivates them. The programme introduces two decision making models to help young people with this: The Four Whats and The Traffic Light.

The Four Whats is presented as a set of five cogs, designed as such to try and demonstrate how the elements that influence our decisions about risk behaviour are interrelated. The first cog is entitled “what I know” and this represents what a young person understands about a behaviour and its consequences. A second cog, “what I feel” aims to capture what young

people feel about a risk, both more simplistic feelings such as whether they are scared or excited when they think about engaging in a behaviour, and more complex feelings such as their sense of obligation to others in their lives. A third cog, “what I want” represents the young person’s priorities, for example does their desire to maintain good health outweigh their desire to fit in with a new group of friends? A fourth cog entitled “what I do” aims to represent the results of the previous three cogs and how they each ultimately influence a young person’s eventual behaviour. The Four Whats (and associated cogs) are also related to a fifth cog that is entitled “why I do it” and represents that the results of the first three cogs produce a description of a young person’s reasons for engaging in a behaviour (the fourth cog).

The second decision making model that young people are introduced to during the Risk-Avert programme is The Traffic Light. This utilises a traffic light image where red represents “Stop!”, yellow represents “Think!” and green represents “Go?”. “Stop!” is where young people recognise a behaviour as potentially being risky, they are asked to consider what the risk is and why it is risky. The “Think!” light is where young people are encouraged to weigh up the pros and cons of the risk and examine what they feel about the risk and how they prioritise the outcomes. This is the section of the Traffic Light that links most with the Four Whats model previously described. The final light of the traffic light represents “Go?” where young people are encouraged to consider whether they are going to engage in the behaviour and whether there are any measures that they need to take to either prevent the behaviour or make it safer.

The decision-making models are embedded throughout the six sessions of the Risk-Avert programme: Introduction, Your Brain, Your Priorities, Your Friends and Family, Your Choices and Your Journey. The introduction session explains the concept of risk and the differences in risk taking between the two genders. It also introduces young people to The Traffic Light. The second session, Your Brain, explores how a young person's brain is still developing and the impact of this upon their decision-making. It also introduces the Four Whats. The third session, Your Priorities, explores how a young person may know a risk is present, understanding how their priorities in any given situation influence their decision-making and introduces the concept of assertiveness. In Your Friends and Family, session four, young people are encouraged to explore the influence of social norms and the beliefs of their family, friends, and other people in their lives. Your Choices, session five, explores how decisions are made, encouraging young people to identify what aspects of the Four Whats most influence a decision and how to make plans to manage risk. The final session, Your Journey, focuses on reinforcing what young people have learnt over the previous sessions and how this can be applied in their lives. Every session is supported by videos, worksheets and exercises that encourage interactive learning.

The Risk-Avert programme also includes a social norms lesson that can be run as a part of the programme, during Personal, Social, Health and Economic (PSHE) lessons or as an assembly (The Training Effect, 2016). The lesson introduces young people to the concept of social norms and includes video presenting statistics related to three topics: smoking, drinking and social media. Discussion is encouraged regarding the true and perceived

prevalence of each risk behaviour and the reasons for discrepancies between the two (The Training Effect, 2016). The school is encouraged to use the prevalence statistics for behaviour such as drinking alcohol, trying a cigarette, drinking energy drinks and adding strangers to social networking profiles for the specific year group to which they are delivering the session, as provided by the Risk-Avert Screening Tool (The Training Effect & Essex County Council, n.d.).

As one of the aims of the Risk-Avert programme is to reduce risk behaviour in young people by improving their insight into their own behaviour, their decision making, how to identify risk, and how others influence their behaviour, it would be expected that those participating in the Risk-Avert programme would demonstrate decreased risk behaviour upon completion of the programme and/or improvements in wellbeing. This chapter describes a pre- and post-test study that aimed to inform future, larger evaluation(s) of the Risk-Avert programme, by comparing scores on risk behaviour and wellbeing measures between two time-points, among those who did and did not take part in the Risk-Avert programme. The hypotheses were as follows:

1. In comparison to time one scores, those who *did not* take part in the Risk-Avert programme will demonstrate no change in risk behaviour and/or wellbeing at time two.
2. In comparison to time one scores, those who *did* take part in the Risk-Avert programme will demonstrate improvement in risk behaviour and/or wellbeing at time two.

5.2 Method

5.2.1 Participants

At time one 276 participants from School A and 218 participants from School B completed the online questionnaire. At time two, School A completed all their questionnaires on hard copies, a total of 212 participants. School B continued with online submission and 93 participants completed the questionnaire at time two. Some participants failed to complete the online version of the questionnaire. Whilst some of these completion failures were due to problems experienced with the online questionnaire, other completion failures may have been a conscious decision to withdraw from the study and as such their data was not included. There was also one participant whose guardians removed their consent for participation in the Risk-Avert programme and as this was not distinct from their consent to participate in the research, the participant's data were subsequently not included in the research.

For School A, 200 participants provided data with ID numbers that could be matched across time one and time two. For School B, 89 participants provided data with ID numbers that could be matched across time one and time two. These participants comprised the final sample.

Table 5.1 – Sample size and characteristics by school in the final sample at time one

	N	Mean (SD) Age	Gender			First Language - English	Ethnic Group - White
School A	200	12.25 (.44)	Female	Male	Other	192 (96.5%)	154 (77.4%)
			97 (48.7)	100 (50.3%)	2 (1.0%)		
School B	89	12.25 (.44)	Female	Male	Other	86 (96.6%)	84 (94.4%)
			47 (52.8%)	42 (47.2%)	0		

Table 5.1 summarises demographic characteristics of participants within School A and School B at time one for the final sample that completed both time-points. At time one, two participants from School A identified as a different gender, but the answers given as to what this identity was appeared to reveal that their answer was not genuine (mango and attack helicopter). At time one, School A's sample was predominantly white, with other ethnic groups indicated being black/African/Caribbean/black British (8%), Asian/Asian British (4%), Chinese (.5%), mixed/multiple ethnic groups (9%) and other (.5%). At time one, School B's sample was also predominantly white, with other ethnic groups indicated being black/African/Caribbean/black British (1.1%), Arab (2.2%) and mixed/multiple ethnic groups (2.2%). Given the difference in those identifying as white between the two schools (77.4% at School A and 94.4% at School B) a chi-square test was conducted to test for an association between ethnicity and school. There was a statistically significant association between ethnicity and the school attended, $\chi^2(1) = 12.38$, $p < .001$. Based on the odds ratio, a participant was 4.91 times more likely to attend School A than School B if they identified as an ethnicity other than white. It should be noted that the large sample size may have increased

the likelihood of finding a statistically significant effect. As such, and given the small odds ratio, this statistically significant difference between the schools was not deemed a factor that would prevent the samples from being combined for later analyses, although it should still be considered during the interpretation of those analyses.

At time one, other languages identified at School A as first language were Chinese, Cypriot, Greek, Japanese, Lithuanian, Portuguese and Punjabi, at School B they were Arabic, French and Polish (all with one participant each).

At time two, one participant from School A failed to record their gender. Of those that did, one individual indicated they identified with a different gender description, but their answer in response to what this was indicated that they considered themselves female. At time two, the breakdown of ethnicities for School A remained reassuringly like that at time one, minus the addition of one individual that identified as Arab (.5%). The same could be said of School B, although at time two no participants identified as black/African/Caribbean/black British and one participant identified as Asian/Asian British (1.1%). The number of participants who indicated that English was their first language remained the same for School B between time one and time two, but one participant from School A no longer indicated that English was their first language at time two. The first languages indicated for School A at time two were Cypriot, Greek, Koriba, Lithuanian, Mandarin, Portuguese, Punjabi, Russian and Twi. The first languages indicated for School B at time two remained the same as for time one.

As described in prior chapters, a sub-sample of those in year eight are selected to take part in the Risk-Avert programme (if they score in the "medium" range for the Risk-Avert Screening Tool (The Training Effect & Essex County Council, n.d.), between 30 and 59). Tables 5.2 and 5.3 summarise the demographics of Risk-Avert participants and non-participants respectively within School A and School B at time one. In School A and B the majority of participants in the Risk-Avert programme were white. In school A, four participants (14.3%) in Risk-Avert identified as mixed/multiple ethnic groups. In School B, one Risk-Avert participant (8.3%) identified as Arab. All the Risk-Avert participants at both schools identified that they spoke English as their first language. The gender of Risk-Avert participants was such that School A had a majority of male participants (53.6%) whilst school B had a majority of female participants (58.3%).

Table 5.2 - Sample size and characteristics for Risk-Avert participants by school at time one

	N	**Mean (SD) Age**	**Gender**			**First Language - English**	**Ethnic Group - White**
School A	28 (14.07%)	12.29 (.46)	Female	Male	Other	28 (100%)	24 (85.7%)
			13 (46.4%)	15 (53.6%)	0		
School B	12 (13.5%)	12.17 (.39)	Female	Male	Other	12 (100%)	11 (91.7%)
			7 (58.3%)	5 (41.7%)	0		

Table 5.3 - Sample size and characteristics for non-Risk-Avert participants by school at time one

	N	Mean (SD) Age	Gender			First Language - English	Ethnic Group - White
School A	171 (85.93%)	12.25 (.43)	Female	Male	Other	164 (95.9%)	130 (76%)
			84 (49.1%)	85 (49.7%)	2 (1.2%)		
School B	77 (86.5%)	12.26 (.44)	Female	Male	Other	74 (96.1%	73 (94.8%)
			40 (51.9%)	37 (48.1%)	0		

5.2.2 Measures

The measures used in this study included the Risk-Avert Screening Tool (see Appendix F; The Training Effect & Essex County Council, n.d.), the Adolescent Risk Behavior Screen (ARBS) (see Appendix G; Jankowski et al., 2007), the Multiple Problem Behavior Index (MPBI) (see Appendix H; Jessor et al., n.d.), and the Strengths and Difficulties Questionnaire (SDQ) self-report version for 4-17 years (see Appendix I; Goodman et al., 1998). These measures were described in detail in Chapter Four (section 4.2.2, page 109). In this study the measures were combined into one questionnaire alongside questions regarding demographics, including age, who they live with, their ethnicity and their first language (see Appendix E for demographic questions). At time two an additional question was added that asked students whether they had taken part in the Risk-Avert programme. The information regarding completion of the programme was also corroborated by the school by providing the ID numbers of those students that participated.

5.2.3 Design

This study was of a longitudinal design. Time one data collection took place in October and November of 2017. Time two data collection was completed in July 2018.

5.2.4 Procedure

Year eight students were asked to complete a questionnaire formed from the measures listed above at the beginning of the 2017/2018 academic year. Permission was first sought from the Risk-Avert leads of each school. Following this, the school sent letters provided by the researcher to all parents or guardians of potential participants, asking for them to “opt-out” if they were not happy for their child to engage in the research (see Appendix P). Assent was sought from all adolescents involved at the time of questionnaire completion (see Appendix Q). The schools were asked to have the students complete the questionnaires within as short a time-frame as possible and to discourage students from conferring during questionnaire completion. This procedure was then repeated when the school had completed administering the Risk-Avert programme, in July 2018. Please see Figure 5.1 which provides a flow-chart of the study procedure, focused upon the timing of questionnaire completion. To minimise the impact of data collection, the second period of questionnaire completion was begun only once the school had successfully completed the Risk-Avert programme with all identified students. This extended the follow-up period as the completion of the programme with all identified students was impacted by the number of students and thus the number of cohorts run, school timetabling, staff availability etc.

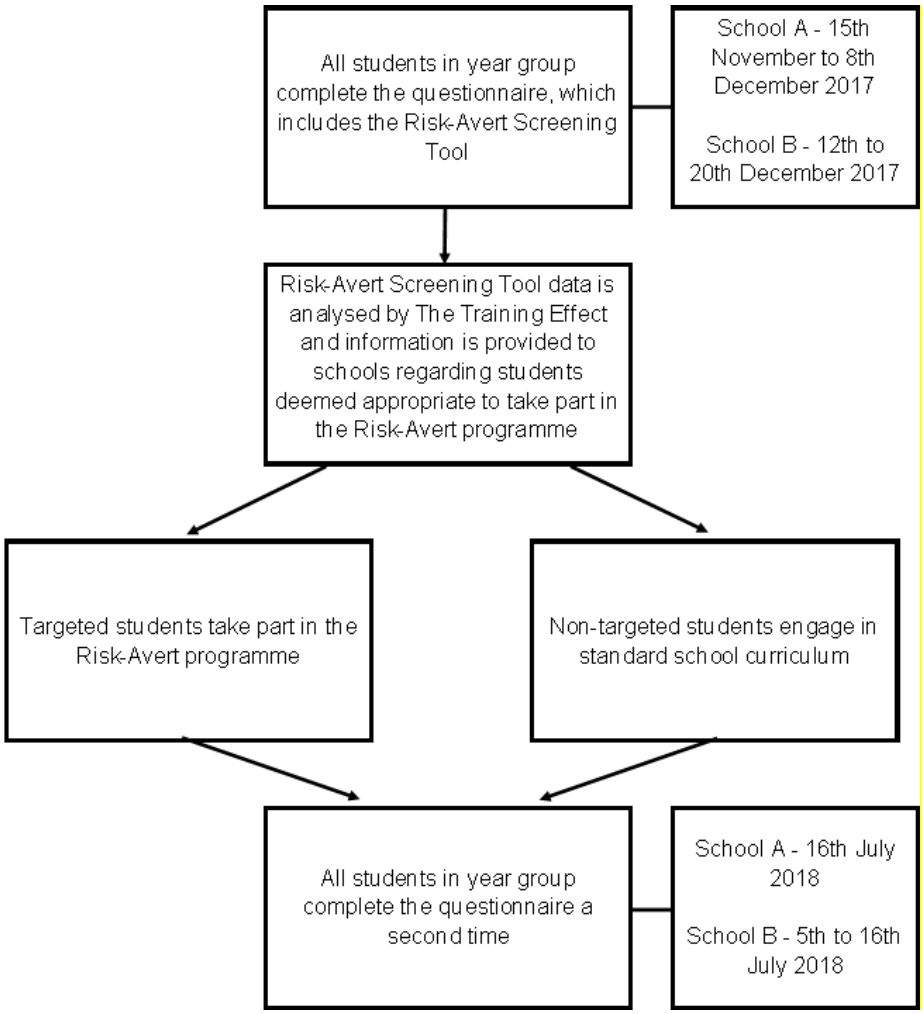

Figure 5.1 - Flow chart demonstrating participant flow through study

5.2.5 Ethics

Ethical approval was requested from and granted by the University of Essex (see Appendix L) and Essex County Council (see Appendix R). As the procedure/issues regarding ethics in this study were dealt with in the same manner as described in Chapter Four, please refer to section 4.2.5, page 116, for detailed explanation.

5.2.6 Plan for analysis

Independent-samples tests were conducted across all measures to assess whether samples for each of the two schools could be appropriately

combined. Following this, internal reliability analysis of the Risk-Avert Screening Tool was conducted. Correlational analyses of the Risk-Avert Screening Tool and all risk behaviour and wellbeing measures were performed to test convergent validity in this sample. Between-groups analysis of the risk behaviour and wellbeing scores of those who did and did not take part in the Risk-Avert programme was conducted to assess difference between the two groups at time one and then at time two. Within-groups analysis assessed the difference between time one and time two scores for Risk-Avert participants and non-participants.

5.3 Results

As in the previous chapter, the Risk-Avert Screening Tool was scored using the scoring assigned by the developers (The Training Effect and Essex County Council) for the 2016/2017 academic year (see Appendix F).

5.3.1 Comparison of schools

Given the potential for differences between the two school samples due to factors such as the nature of the student population, school funding and geographic location it was thought necessary to identify whether their data could be deemed comparable enough to analyse as one sample. Exploration of the data relating to all outcome measures revealed the violation of assumptions for the use of parametric tests i.e. normality and homogeneity for some measures/subscales. It is of note that the Smoking Involvement subscale of the MPBI was constant at time one for both schools (all scores were zero) and so the tests could not be completed for that subscale. The Kolmogorov-Smirnov statistics for all measures and subscales were

statistically significant in both samples at $p < .05$, except for SDQ Total Difficulties scores at time one (KS = .078, N = 89, $p = .200$) and time two (KS = .090, N = 89, $p = .070$) for School B. Levene's test revealed that for the Emotional Problems subscale of the SDQ, the variances were unequal for School A and School B at time one, ($F(1, 285) = 8.58$, $p = .004$) and at time two ($F(1, 272) = 6.43$, $p = .01$). Levene's test also revealed that for the Negative Consequences of Drinking subscale of the MPBI, the variances were unequal for School A and School B at time two, $F(1, 101) = 10.04$, $p = .002$. It should be noted that statistically significant test statistics are common in large samples. Overall, to maintain consistency across analyses, the median was used as the average score for all subscales, alongside non-parametric tests. The average scores and dispersion for each measure and subscale were calculated for each school at each time point (see Table 5.4 and Table 5.5).

Table 5.4 - Average scores and dispersion for each measure and subscale by school at time one

	School A				**School B**			
	N	**Median**	**IQR**	**Min-Max**	**N**	**Median**	**IQR**	**Min-Max**
ARBS	157	10	9-11	9-21	60	10	9-11	9-14
Risk-Avert Screening Tool: Total	166	12	4-26	0-70	77	12	3.5-22.5	0-70
Risk-Avert Screening Tool: Individual	164	4	0-16.75	0-48	77	2	0-15	0-57
Risk-Avert Screening Tool: School	199	0	0-5	0-26	89	0	0-5	0-21
Risk-Avert Screening Tool: Family	200	0	0-0	0-30	89	0	0-0	0-8

	School A				School B			
	N	**Median**	**IQR**	**Min-Max**	**N**	**Median**	**IQR**	**Min-Max**
Risk-Avert Screening Tool: Community	199	2	2-6	0-25	89	4	2-4	0-19
SDQ: Total Difficulties Score	198	10	6-13	0-26	89	11	6-14.5	0-30
SDQ: Emotional Problems	198	3	1-5	0-10	89	3	1-6	0-10
SDQ: Conduct Problems	198	1	1-2	0-8	89	4	2-5.5	0-10
SDQ: Hyperactivity	198	3	2-5	0-10	89	4	2-5.5	0-10
SDQ: Peer Problems	198	1	0-2	0-7	89	1	0-3	0-8
SDQ: Prosocial	198	8	6-9	0-10	89	8	7-9	0-10
MPBI: Delinquent Behaviour	199	11	10-12	10-50	89	11	10-13	10-22
MPBI: Smoking Involvement	197	0	0-0	0-0	89	0-0	0-0	0-0
MPBI: Negative Consequences of Drinking	17	0	0-0	0-1	11	0	0-0	0-1
MPBI: Problem Drinking	17	0	0-.33	0-2	11	0	0-.33	0-2

Note: ARBS = Adolescent Risk Behavior Screen, SDQ = Strengths and Difficulties Questionnaire, MPBI = Multiple Problem Behavior Index

Table 5.5 - Average scores and dispersion for each measure and subscale by school at time two

	School A				School B			
	N	**Median**	**IQR**	**Min-Max**	**N**	**Median**	**IQR**	**Min-Max**
ARBS	184	11	9-12	9-19	66	10	9-12	9-25
Risk-Avert Screening Tool: Total	147	13	5-27	0-158	83	21	5-37	0-89
Risk-Avert Screening Tool: Individual	164	8	0-18	0-77	83	15	1-24	0-57
Risk-Avert Screening Tool: School	192	0	0-5	0-26	89	0	0-8	0-26

	School A				School B			
	N	**Median**	**IQR**	**Min-Max**	**N**	**Median**	**IQR**	**Min-Max**
Risk-Avert Screening Tool: Family	195	0	0-0	0-30	89	0	0-3	0-30
Risk-Avert Screening Tool: Community	189	4	2-6	0-25	89	4	2-6	0-23
SDQ: Total Difficulties Score	185	9	5.5-13	0-26	89	10	6-15	0-35
SDQ: Emotional Problems	185	3	1-4	0-9	89	4	1-6	0-10
SDQ: Conduct Problems	185	1	0-2	0-7	89	1	0-2	0-9
SDQ: Hyperactivity	185	3	2-5	0-10	89	4	2-5.5	0-10
SDQ: Peer Problems	185	1	0-2.5	0-9	89	1	0-3	0-8
SDQ: Prosocial	185	8	6-9	3-10	89	8	6-9	0-10
MPBI: Delinquent Behaviour	189	12	10-13	10-22	89	11	10-14	10-28
MPBI: Smoking Involvement	191	0	0-0	0-1.5	89	0	0-0	0-0
MPBI: Negative Consequences of Drinking	81	0	0-0	0-2	22	0	0-.3	0-5
MPBI: Problem Drinking	38	0	0-.33	0-5	22	.17	0-.7	0-3

Note: ARBS = Adolescent Risk Behavior Screen, SDQ = Strengths and Difficulties Questionnaire, MPBI = Multiple Problem Behavior Index

To establish whether there were any statistically significant differences between the two schools on scores for each measure at both time-points Mann-Whitney tests were conducted. It was established that the average scores for Schools A and B were statistically significantly different for only the Emotional Problems subscale of the SDQ at time two, $U = 9663$, $z = 2.267$, $p = .023$, $r = 0.14$. This showed that students surveyed at time two from School A presented with lower emotional problems scores than those from School B. Due to the large number of tests conducted a Bonferroni correction was

applied ($\alpha_{adjusted}$ = .05/16 = .003), following which the difference was no longer statistically significant. All other measure and subscale scores did not differ significantly between the two schools at either time point. As such, it was decided that it remained appropriate to conduct analyses with the entire sample (data from School A and School B combined). Given that scores across the entire sample still violated parametric assumptions, Table 5.6 summarises the median scores and interquartile range for each measure and subscale across the entire sample (with the schools combined) at time one. Table 5.7 provides the same information but for time two.

Table 5.6 - Average scores and dispersion for each measure and subscale across the entire sample at time one

	N	Median	IQR	Min-Max
ARBS	217	10	9-11	9-21
Risk-Avert Screening Tool: Total	240	12	4-25	0-70
Risk-Avert Screening Tool: Individual	241	2	0-16	0-57
Risk-Avert Screening Tool: School	288	0	0-5	0-26
Risk-Avert Screening Tool: Family	289	0	0-0	0-30
Risk-Avert Screening Tool: Community	288	3	2-5.5	0-25
SDQ: Total Difficulties Score	287	10	6-14	0-30
SDQ: Emotional Problems	287	3	1-5	0-10
SDQ: Conduct Problems	287	1	0-3	0-8
SDQ: Hyperactivity	287	4	2-5	0-10
SDQ: Peer Problems	287	1	0-2	0-8
SDQ: Prosocial	287	8	6-9	0-10
MPBI: Delinquent Behaviour	288	11	10-12	10-50
MPBI: Smoking Involvement	286	0	0-0	0-0
MPBI: Negative Consequences of Drinking	28	0	0-0	0-1
MPBI: Problem Drinking	28	0	0-.33	0-2

Note: ARBS = Adolescent Risk Behavior Screen, SDQ = Strengths and Difficulties Questionnaire, MPBI = Multiple Problem Behavior Index

Table 5.7 - Average scores and dispersion for each measure and subscale across the entire sample at time two

	N	Median	IQR	Min-Max
ARBS	250	11	9-12	9-25
Risk-Avert Screening Tool: Total	230	15	5-31	0-158
Risk-Avert Screening Tool: Individual	247	9	1-20	0-77
Risk-Avert Screening Tool: School	281	0	0-5	0-26
Risk-Avert Screening Tool: Family	284	0	0	0-30
Risk-Avert Screening Tool: Community	278	4	2-6	0-25
SDQ: Total Difficulties Score	274	9	6-14	0-35
SDQ: Emotional Problems	274	3	1-5	0-10
SDQ: Conduct Problems	274	1	0-2	0-9
SDQ: Hyperactivity	274	4	2-5	0-10
SDQ: Peer Problems	274	1	0-3	0-9
SDQ: Prosocial	274	8	6-9	0-10
MPBI: Delinquent Behaviour	278	11	10-13.25	10-28
MPBI: Smoking Involvement	280	0	0-0	0-1.5
MPBI: Negative Consequences of Drinking	103	0	0-0	0-5
MPBI: Problem Drinking	60	0	0-.58	0-5

Note: ARBS = Adolescent Risk Behavior Screen, SDQ = Strengths and Difficulties Questionnaire, MPBI = Multiple Problem Behavior Index

Participant numbers differed between time one and time two for each measure, for example the ARBS had a sample size of 217 at time one but this increased to 250 at time two. This is due to variation in missing data affecting the calculation of measure and subscale scores. Of most note is the increase in sample size for the MPBI Negative Consequences of Drinking and Problem Drinking subscales at time two in comparison to time one. The items that comprise these subscales are usually only answered if participants first answer positively to initial screening questions. The increase in sample size could reflect a genuine increase in the number of students reporting relevant risk behaviours and thus moving past the screening questions. However, as

hard copies of the questionnaire were used by one school at time two some students provided responses to items even if they had been asked to skip items based on their prior responses, which was prevented in the online version of the questionnaire. This latter explanation of the sample size increase appears most likely when it is considered that the median score remained zero for these subscales, although both also showed an increase in maximum score at time two.

Regarding the Risk-Avert Screening Tool, the maximum total score increased from 70 at time one to 158 at time two. This appears to be driven by an increase in the maximum score for the Individual subscale (from 57 at time one to 77 at time two), as the maximum scores for each of the other subscales that comprise the Risk-Avert Screening Tool did not change between time one and time two. There was less visible variation in the SDQ total and subscale sample size and scores between time one and time two, although there was an increase in maximum score for the Total Difficulties score and the Conduct Problems and Peer Problems subscales.

5.3.2 Internal reliability

Prior to the main analyses that address the hypotheses of this chapter, analysis of the internal reliability of the measures was conducted. Although this has been explored in previous chapters, this was with different samples and it was deemed important to ensure that any results presented in this chapter could be discussed with consideration of the reliability and validity of the measures in this sample.

Total and subscale scores were calculated for each participant and each measure. Cronbach's alpha, reported in Table 5.8, was calculated for

each of the measures used within this sample (school A and school B combined) at time one and time two, to indicate internal reliability. As response options varied across items for the Risk-Avert Screening Tool, ARBS and MPBI internal reliability calculations were not conducted for the whole measure. Where subscales were present and item response options were consistent within those subscales, internal reliability scores are given.

All Risk-Avert Screening Tool items were scored using the scoring assigned by the developers (The Training Effect and Essex County Council) except for item 17 (“how many times a week do you go out with friends without parents or other adults?”) from the Community subscale and item six (“how often do you drink energy drinks?”) from the Individual subscale, which were omitted from internal reliability calculations due to differing response options compared to the rest of the subscale.

At time two, the item of the Delinquent Behaviour subscale of the MPBI that asked whether the participant had carried a weapon at school in the past 6 months had zero variance and so was omitted from the subsequent internal reliability calculation. At time one, three items of the Negative Consequences of Drinking subscale (“you’ve had problems with schoolwork because of drinking”, “you’ve had problems with someone you were dating because of drinking”, “you’ve gotten into trouble with the police because of drinking”) had no variance and this left only two items in the subscale. Zero variance in these items was problematic for internal reliability analysis as the alpha calculation relies upon calculation of average variance.

Table 5.8 – Internal reliability statistics for each measure and/or subscale at each time point

	Time 1	Time 2
Risk-Avert Screening Tool	-	-
Individual	.44	.53
School	.46	.49
Family	.66	.79
Community	.05	.27
Adolescent Risk Behavior Screen	-	-
Multiple Problem Behavior Index	-	-
Delinquent Behaviour	.83	.72
Cigarette Smoking	-	-
Problem Drinking	-	-
Negative Consequences	-.11	.73
Strengths and Difficulties Questionnaire	.76	.73
Emotional Problems	.73	.73
Conduct Problems	.56	.59
Hyperactivity	.74	.75
Peer Problems	.57	.57
Prosocial	.66	.71

The internal reliability of the Delinquent Behaviour subscale of the MPBI was very good, although better at time one than at time two. The Negative Consequences of Drinking subscale of the MPBI also demonstrated very good internal reliability, although only at time two. At time one a negative Cronbach's alpha statistic (α = -.11) was found. This was due to the two items remaining in the subscale at time one (following the exclusion of three items due to their having zero variance) demonstrating a negative correlation in this sample. Most of the subscales of the SDQ also showed good internal reliability at both time-points, except the Conduct Problems subscale and the Peer Problems subscale which demonstrated internal reliability below α = .60 at both time-points. Regarding the Risk-Avert Screening Tool, the Family subscale demonstrated good internal reliability, but the Individual and School

subscales demonstrated less-than ideal internal reliability. The Community subscale demonstrated the worst internal reliability of all the subscales. This suggests that the two items (“have you ever been arrested?”) and (“what time are you expected home?”) do not measure the same underlying construct. It is of note that this supports the findings of analyses conducted in the previous chapter with a different sample (see section 4.3.3, page 133).

5.3.2.1 Item correlations for the Risk-Avert Screening Tool

Table 5.9 provides correlation coefficients (Spearman’s rho, due to non-normality of data) demonstrating the relationship between items of the Risk-Avert Screening Tool. All the correlations between items of the Risk-Avert Screening Tool were calculated using the scoring system assigned by the developers (The Training Effect and Essex County Council) for each item, except item eight (“have you got a social networking profile?”) and item 15 (“if you are out with friends, do you have a curfew?”) which were originally non-scoring but for the purpose of this analysis increasing scores were coded to indicate increasing risk.

Table 5.9 – Item correlations for the Risk-Avert Screening Tool

Item	1	2	3	4	5	6	7	8	8a	8b	8c	9	10	11	12	13a	13b	13c	13d	13e	13f	14	15	16
1. Have you done risky things, even if they were a little dangerous?																								
2. Have you done something dangerous because someone dared you to do it?	.43** 290																							
3. Have you ever been excluded from school?	.13* 290	.20** 290																						
4. Have you ever tried a cigarette?	.11 290	.23** 290	.32** 290																					
5. Have you ever tried an electronic cigarette?	.09 289	.11 289	.14* 289	.51** 289																				
6. How often do you drink energy drinks?	.18** 290	.29** 290	.05 290	.13* 290	.14* 289																			
7. In the past year, on how many occasions have you had a few sips of a drink containing alcohol, without adult supervision?	.11 290	.15* 290	.08 290	.14* 290	.19** 289	.25** 290																		
8. Have you got a social networking profile?	.06 290	.07 290	-.03 290	-.03 290	.06 289	.06 290	.10 290																	
8a. Do you add people to your Facebook/Twitter account who you have not met?	.18** 243	.25** 243	.12 243	.25** 243	.26** 242	.07 243	.06 243	-																
8b. Have you ever regretted about sharing something online?	.11 243	.15* 243	.12 243	.05 243	.03 242	.16* 243	.21** 243	-	.08 243															
8c. Have you ever felt pressured to share something online?	.12 243	.03 243	.20** 243	.16* 243	.12 242	.02 243	.22** 243	-	.11 243	.37** 243														
9. What do you think about school?	.01 290	.11 290	.25** 290	.14* 290	.11 289	.09 290	.02 290	.04 290	.10 243	-.07 243	.04 243													
10. Do you feel safe at school?	.07 289	.17** 289	.25** 289	.15* 289	.02 288	.14* 289	.20** 289	.01 289	.09 242	.22** 242	.18** 242	.23** 289												

Item	1	2	3	4	5	6	7	8	8a	8b	8c	9	10	11	12	13a	13b	13c	13d	13e	13f	14	15	16
11. Have you been bullied at school in the last 2 months?	-.04 290	.12* 290	.09 290	.03 290	-.05 289	.02 290	.09 290	-.05 290	-.09 243	.04 243	.14* 243	.06 290	.19** 289											
12. How do you feel most days?	-.01 290	.06 290	.06 290	.12* 290	.19** 289	.03 290	.08 290	-.14* 290	.05 243	-.01 243	-.04 243	.25** 290	.16** 289	.25** 290										
13a. How wrong do your parents feel it would be for you to smoke cigarettes?	.09 290	.15** 290	.09 290	.32** 290	.23** 289	.17** 290	.17** 290	-.03 290	.05 243	.05 243	.20** 243	.06 290	.002 289	-.02 290	.07 290									
13b. How wrong do your parents feel it would be for you to drink alcohol regularly (at least once or twice a month)?	.03 290	.03 290	.06 290	.16** 290	.16** 289	.22** 290	.22** 290	.01 290	.01 243	.10 243	-.02 243	.09 290	.19** 289	.01 290	.10 290	.21** 290								
13c. How wrong do your parents feel it would be for you to smoke cannabis?	.06 290	.11 290	.33** 290	.50** 290	.25** 289	.17** 290	.10 290	-.13* 290	-	-	-	.16** 290	.17** 289	.14* 290	.28** 290	.34** 290	.18** 290							
13d. How wrong do your parents feel it would be for you to steal something worth more than £5?	.06 290	.11 290	.33** 290	.50** 290	.25** 289	.17** 290	.10 290	-.13* 290	-	-	-	.16** 290	.17** 289	.14* 290	.28** 290	.34** 290	.18** 290	1.0** 290						
13e. How wrong do your parents feel it would be for you to draw graffiti on walls or buildings?	.09 290	.10 290	.09 290	.15** 290	.32** 289	.18** 290	.08 290	.02 290	.16* 243	-.02 243	-.04 243	.12* 290	.14* 289	.04 290	.16** 290	.20** 290	.19** 290	.34** 290	.34** 290					
13f. How wrong do your parents feel it would be for you to pick a fight or bully someone?	.10 290	.23** 290	.19** 290	.30** 290	.21** 289	.28** 290	.15** 290	.03 290	.08 243	.08 243	-.04 243	.17** 290	.19** 289	-.02 290	.15** 290	.19** 290	.23** 290	.32** 290	.32** 290	.30** 290				
14. Have you ever been arrested?	.03 290	.11 290	.18** 290	.28** 290	.13* 289	.07 290	.02 290	-.05 290	.08 243	-.04 243	-.02 243	.18** 290	.07 289	.25** 290	.32** 290	.18** 290	.08 290	.58** 290	.58** 290	.18** 290	.17** 290			
15. If you are out with friends, do you have a curfew?	.09 290	-.02 290	.03 290	.03 290	.06 289	.17** 290	.10 290	.01 290	.09 243	.06 243	-.10 243	.23** 290	.10 289	.01 290	.09 290	.08 290	.20** 290	.15** 290	.15** 290	.23** 290	.12* 290	.06 290		
16. What time are you expected home?	.16** 289	.11 289	.05 289	.08 289	.14* 288	.24** 289	.16** 289	.08 289	.15* 243	.03 243	-.12 243	.28** 289	.13* 288	-.02 289	.10 289	.10 289	.15* 289	.11 289	.11 289	.24** 289	.17** 289	.03 289	.69** 289	
17. How many times a week do you go out without parents or other adults?	.14* 290	.16** 290	.07 290	.10 290	.17** 289	.16** 290	.20** 290	.34** 290	.33** 243	.01 243	.05 243	.14* 290	.02 289	.04 290	.01 290	.03 290	.02 290	.10 290	.10 290	.20** 290	.16** 290	.08 290	.04 290	.13* 289

Note: Sample size for each correlation is presented below the correlation coefficient, * p < .05, ** p < .01

Although several item-correlations were statistically significant, this is not unexpected given the large sample size in this study. The highest correlation was between items 15 and 16 (r_S = .69, p < .01) which both concern curfew, whether the adolescent has one and if so, what time it is. The next highest correlation was between items 14 ("have you ever been arrested?") and items 13c ("how wrong do your parents feel it would be for you to smoke cannabis?") and 13d ("how wrong do your parents feel it would be for you to steal something worth more than £5?), both of which had a correlation coefficient of r_S = .58, p < .01 demonstrating that those who indicated they had been arrested were also more likely to suggest their parents would be less concerned about them smoking cannabis or stealing. Although there are some higher inter-item correlations such as those described above, most correlations between items within the Risk-Avert Screening Tool were small, even for items contained with the same subscale. This is problematic as it suggests there is little relationship between items and thus it is unclear what the calculation of a total score is measuring.

5.3.2.2 Item correlations for the ARBS

As variation in response options for items within the ARBS prevented the use of internal reliability analyses such as Cronbach's Alpha, Table 5.10 provides correlation coefficients (Spearman's rho) demonstrating the relationship between items.

Table 5.10 – Item correlations for the ARBS

Item	1	2	3	4	5	6	7	8
1. How often do you wear a seat belt when riding in a car driven by someone else?	-	-	-	-	-	-	-	-
2. During the past 12 months, did you ever feel so sad or hopeless almost every day for two weeks or more in a row that you stopped doing some usual activities?	.04 289	-	-	-	-	-	-	-
3. During the past 30 days, did you go without eating for 24 hours or more (also called fasting) to lose weight or to keep from gaining weight?	.11 288	.16** 287	-	-	-	-	-	-
4. During the past 12 months, how many times were you in a physical fight?	.28** 289	.11 288	-.05 288	-	-	-	-	-
5. Have close friends or relatives worried or complained about your drinking?	.04 288	-.09 287	.04 287	-.03 288	-	-	-	-
6. How wrong do you think it is for someone your age to smoke marijuana?	.16** 276	.05 275	.07 275	.32** 276	.003 275	-	-	-
7. How much do you think people risk harming themselves (physically or in other ways) if they smoke marijuana regularly?	.10 221	.04 220	-.02 221	.30** 221	.01 220	.38** 220	-	-
8. How wrong do you think it is for someone your age to use LSD, cocaine, amphetamines or another illegal drug?	.27** 278	.01 277	.09 277	.16** 278	-.04 277	.37** 268	.13 220	-

Item	1	2	3	4	5	6	7	8
9. About how many adults have you known personally who in the past year have sold or dealt drugs?	.15* 288	.12* 287	-.002 287	.17** 288	.04 287	.05 275	.26** 221	.09 277

Note: Sample size for each correlation is presented in below the correlation coefficient, * p < .05, ** p < .01

It is of note that although correlation coefficients are in the expected direction, the majority are small, with the largest correlation coefficient being that between items six and seven, r_s = .38, p < .001 and the second largest being that between items six and eight, r_s = .37, p < .001. Items six, seven and eight all regard either how wrong the participant feels it would be to use drugs (items six and eight) or how harmful it may be to use drugs (item seven). It is of note that this pattern of results is very similar to that identified in the previous chapter which used a different sample (see section 4.3.3.2, page 139).

5.3.2.3 Item correlations for the MPBI

5.3.2.3.1 Delinquent Behaviour

Table 5.11 shows the correlations (Spearman's rho) between items of the Delinquent Behaviour subscale of the MPBI.

Table 5.11 – Item correlations for the Delinquent Behaviour subscale of the MPBI

Item	1	2	3	4	5	6	7	8	9
1. During the past six months, how often have you: cheated on tests or homework?	-	-	-	-	-	-	-	-	-
2. Shoplifted from a store?	.20** 290	-	-	-	-	-	-	-	-
3. Damaged or marked up public or private property on purpose?	.24** 290	.26** 290	-	-	-	-	-	-	-
4. Lied to a teacher about something you did?	.44** 290	.20** 290	.30** 290	-	-	-	-	-	-
5. Taken something of value that doesn't belong to you?	.30** 290	.16** 290	.32** 290	.36** 290	-	-	-	-	-
6. Stayed out all night without permission?	.22** 290	.37** 290	.15* 290	.23** 290	.14* 290	-	-	-	-
7. Lied to your parents about where you have been or who you were with?	.30** 289	.18** 289	.28** 289	.44** 289	.30** 289	.29** 289	-	-	-
8. Hit another student because you didn't like what he or she did?	.23** 290	.29** 290	.27** 290	.23** 290	.35** 290	.25** 290	.23** 289	-	-
9. Carried a weapon, like a knife or gun, at school?	.07 290	.43** 290	.20** 290	.10 290	.27** 290	.13* 290	.06 289	.19** 290	-
10. Made fun of or picked on other kids because they are different or not part of your group?	.10 290	.30** 290	.18** 290	.19** 290	.16** 290	.25** 290	.22** 289	.22** 290	.15* 290

Note: Sample size for each correlation is presented below the correlation coefficient, * p < .05, ** p < .01

Despite good internal reliability, most of the item correlations for the Delinquent Behaviour subscale of the MPBI were small to moderate at best. The highest correlation coefficient was between items four and seven, and four and one all of which concern deceit (lying or cheating), $r_s = .44$, $p < .001$. The second highest correlation coefficient was that demonstrating the relationship between items two and nine, which ask about shoplifting and weapon-carrying respectively, $r_s = .43$, $p < .001$.

5.3.2.3.2 Cigarette Smoking

Due to very small sample size, binary items and lack of variation in the scores for the questions that make-up the Cigarette Smoking subscale of the MPBI, item correlations were not informative. Only three participants indicated that they had ever smoked a cigarette and each of those also indicated that they had smoked cigarettes in the past 12 months.

5.3.2.3.3 Problem Drinking

As explained in the previous chapter, the Problem Drinking subscale of the MPBI is calculated by finding the mean of the Negative Consequences of Drinking subscale score (items 2 to 6 in the below table comprise this subscale) plus two other item scores. Table 5.12 shows the correlations between items of the Problem Drinking subscale of the MPBI for which there were responses and so they could be computed. Responses to these items were fewer as they were dependent upon participants' responses to three previous screening items. Most participants were screened out by one of those questions and did not answer the later Problem Drinking items. One inter-item correlation that could be calculated will be discussed here as it was

found to be moderate, although not statistically significant. Those participants who reported having been drunk more often in the past six months, were also more likely to indicate they had been in trouble with their parents (r_s = .35, p > .05).

Table 5.12 - Item correlations for the Problem Drinking subscale of the MPBI

	Item 1	Item 2	Item 3	Item 4	Item 5	Item 6
1. Over the past six months, how many times did you drink four or more drinks of beer, wine, or liquor when you were drinking?	-	-	-	-	-	-
2. You've gotten into trouble with your parents because you had been drinking	-.14 28	-	-	-	-	-
3. You've had problems at school or with schoolwork because you had been drinking			-	-	-	-
4. You've had problems with your friends because you had been drinking	-.10 28	-.05 28		-	-	-
5. You've had problems with someone you were dating because you had been drinking					-	-
6. You've gotten into trouble with the police because you had been drinking						-
7. In the past six months, about how many times have you gotten drunk or "very, very high" on alcohol?	-.18 28	.35 28		-.07 28		

Note: Sample size for each correlation is presented below the correlation coefficient, * p < .05

5.3.3 Comparison of Risk-Avert participants and non-participants

Given that it was established in the previous section that the two school samples could be combined, analyses now consider the comparison of those

who did and did not take part in the Risk-Avert programme. Tests of assumptions were conducted to check for any abnormality in the data that may affect how to proceed with analysis. It is of note that the Smoking Involvement subscale of the MPBI was constant at time two for those who took part in the Risk-Avert programme and so the tests could not be completed for those variables. The Kolmogorov-Smirnov statistics for most of the measures and subscales were statistically significant in both samples at $p < .05$. However, this was not the case for Risk-Avert participants for:

- SDQ Hyperactivity score (KS = .13, N = 40, $p = .09$) and SDQ Total Difficulties score (KS = .10, N = 40, $p = .20$) at time one.
- Risk-Avert Screening Tool Individual score (KS = .139, N = 39, $p = .057$) at time one.
- Total Risk-Avert Screening Tool score (KS = .12, N = 34, $p=.20$), and Risk-Avert Screening Tool Individual score (KS = .09, N = 39, $p = .20$) at time two.
- SDQ Total Difficulties score (KS = .13, N = 40, $p = .10$), SDQ Emotional Problems score (KS = .12, N = 40, $p = .20$) and SDQ Prosocial score (KS = .14, N = 40, $p = .06$) at time two.

Levene's test revealed that for the Risk-Avert Screening Tool school subscale ($F (1, 286) = 16.37$, $p < .001$), Family subscale ($F (1, 287) = 8.01$, $p = .005$) and Community subscale ($F (1, 286) = 9.05$, $p = .003$), the variances were unequal for Risk-Avert participants and non-participants at time one. The same was true for the Delinquent Behaviour subscale of the MPBI, $F (1, 286) = 9.84$, $p = .002$. For the Risk-Avert Screening Tool School subscale ($F (1, 279) = 5.74$, $p = .017$), the ARBS ($F (1, 248) = 4.05$, $p = .045$), and the

Negative Consequences of Drinking subscale of the MPBI (F (1, 101) = 5.40, *p* = .022), the variances were unequal for Risk-Avert participants and non-participants at time two. Again, it should be noted that statistically significant test statistics are common in large samples but given that exploration of the data revealed the violation of assumptions for the use of parametric tests i.e. normality and homogeneity, for consistency across analyses, the median continued to be used as the average score alongside non-parametric tests.

To examine the change between time-points demonstrated by those who did, as well as those who did not, partake in the Risk-Avert programme, average scores and dispersion for each measure were calculated separately for those who participated in Risk-Avert and those who did not at time one (see Table 5.13) and again for time two (see Table 5.14).

Table 5.13 - Average scores and dispersion for each measure and subscale by Risk-Avert participation at time one

	Participated in Risk-Avert				**Non-Participants**			
	N	**Median**	**IQR**	**Min-Max**	**N**	**Median**	**IQR**	**Min-Max**
ARBS	26	11	10-11	9-19	191	10	9-11	9-21
Risk-Avert Screening Tool: Total	38	36	33-46.3	30-70	202	9	3-17	0-70
Risk-Avert Screening Tool: Individual	39	25	17-30	0-57	202	1	0-9.25	0-48
Risk-Avert Screening Tool: School	39	5	0-10	0-26	249	0	0-0	0-26
Risk-Avert Screening Tool: Family	40	0	0-3	0-11	249	0	0-0	0-30
Risk-Avert Screening Tool: Community	40	0	0-3	0-11	248	2	2-4	0-25
SDQ: Total Difficulties Score	40	14.5	12-18.8	3-29	247	9	5-13	0-30
SDQ: Emotional Problems	40	5	1.3-6	0-9	247	3	1-4	0-10

	Participated in Risk-Avert				Non-Participants			
	N	**Median**	**IQR**	**Min-Max**	**N**	**Median**	**IQR**	**Min-Max**
SDQ: Conduct Problems	40	2.5	2-4	0-8	247	1	0-2	0-8
SDQ: Hyperactivity	40	5	4-7	0-10	247	3	2-5	0-10
SDQ: Peer Problems	40	2	1-3.8	0-7	247	1	0-2	0-8
SDQ: Prosocial	40	8	6-9	0-10	247	8	6-9	0-10
MPBI: Delinquent Behaviour	40	13	11-17	10-27	248	11	10-12	10-50
MPBI: Smoking Involvement	39	0	0-0	0-0	247	0	0-0	0-0
MPBI: Negative Consequences of Drinking	11	0	0-0	0-1	17	0	0-0	0-1
MPBI: Problem Drinking	11	0	0-.33	0-2	17	0	0-.33	0-2

Note: ARBS = Adolescent Risk Behavior Screen, SDQ = Strengths and Difficulties Questionnaire, MPBI = Multiple Problem Behavior Index

Table 5.14 - Average scores and dispersion for each measure and subscale by Risk-Avert participation at time two

	Participated in Risk-Avert				Non-Participants			
	N	**Median**	**IQR**	**Min-Max**	**N**	**Median**	**IQR**	**Min-Max**
ARBS	35	12	10-15	9-19	215	10	9-12	9-25
Risk-Avert Screening Tool: Total	34	31	19.8-41.5	7-87	196	12	4-27	0-158
Risk-Avert Screening Tool: Individual	39	20	10-28	0-57	208	8	0-16.75	0-77
Risk-Avert Screening Tool: School	38	5	0-10.8	0-18	243	0	0-5	0-26
Risk-Avert Screening Tool: Family	37	0	0-3	0-5	247	0	0-0	0-30
Risk-Avert Screening Tool: Community	39	6	4-10	0-23	239	2	2-6	0-25
SDQ: Total Difficulties Score	40	11	8.3-16.5	2-24	234	9	5-13	0-35
SDQ: Emotional Problems	40	3	1-5	0-9	234	3	1-5	0-10
SDQ: Conduct Problems	40	2	1-3	0-6	234	1	0-2	0-9
SDQ: Hyperactivity	40	4.5	4-6	1-10	234	3	2-5	0-10

	Participated in Risk-Avert				Non-Participants			
	N	**Median**	**IQR**	**Min-Max**	**N**	**Median**	**IQR**	**Min-Max**
SDQ: Peer Problems	40	1	0-3.8	0-6	234	1	0-2	0-9
SDQ: Prosocial	40	7	6-9	0-10	234	8	7-9	1-10
MPBI: Delinquent Behaviour	40	13	12-17.8	10-22	238	11	10-13	10-28
MPBI: Smoking Involvement	39	0	0-0	0-0	241	0	0-0	0-1.5
MPBI: Negative Consequences of Drinking	20	0	0-.75	0-3	83	0	0-0	0-5
MPBI: Problem Drinking	16	.33	0-1.3	0-3	44	0	0-.33	0-5

Note: ARBS = Adolescent Risk Behavior Screen, SDQ = Strengths and Difficulties Questionnaire, MPBI = Multiple Problem Behavior Index

The significance of differences between the time one scores of Risk-Avert participants and non-participants was tested using Mann-Whitney U (see Table 5.15). The same tests were conducted for time two (see Table 5.16).

Table 5.15 - Risk-Avert participants compared to non-participants - Mann-Whitney U Tests comparing time one scores

						Participated in Risk-Avert		Non-Participants	
	Total N	**U**	**Sig.**	**Z**	**Effect Size (*r*)**	**N**	**Mean Rank**	**N**	**Mean Rank**
ARBS	217	3322.5	.003	2.94	.20	26	141.29	191	104.6
Risk-Avert Screening Tool: Total	240	7504.5	.000	9.35	.60	38	216.99	202	102.35
Risk-Avert Screening Tool: Individual	241	7206	.000	8.32	.53	39	204.77	202	104.83
Risk-Avert Screening Tool: School	288	6805	.000	5.01	.30	39	194.49	249	136.67
Risk-Avert Screening Tool: Family	289	6284.5	.000	4.18	.25	40	177.61	249	139.76

						Participated in Risk-Avert		Non-Participants	
	Total N	**U**	**Sig.**	**Z**	**Effect Size (*r*)**	**N**	**Mean Rank**	**N**	**Mean Rank**
Risk-Avert Screening Tool: Community	288	7722.5	.000	5.83	.34	40	213.56	248	133.36
SDQ: Total Difficulties Score	287	7491.5	.000	5.25	.31	40	207.75	247	133.67
SDQ: Emotional Problems	287	6237.5	.007	2.69	.16	40	176.44	247	138.75
SDQ: Conduct Problems	287	7190	.000	4.74	.28	40	200.25	247	134.89
SDQ: Hyperactivity	287	7142.5	.000	4.56	.27	40	199.06	247	135.08
SDQ: Peer Problems	287	6271	.005	2.81	.17	40	177.28	247	138.61
SDQ: Prosocial	287	4577	.449	-.76	-.04	40	134.93	247	145.47
MPBI: Delinquent Behaviour	288	7291.5	.000	4.99	.29	40	202.79	248	135.10
MPBI: Smoking Involvement	286	4816.5	1.00	.000	0	39	143.5	247	143.5
MPBI: Negative Consequences of Drinking	28	105	.313	1.01	.19	11	15.55	17	13.82
MPBI: Problem Drinking	28	106	.498	.68	.13	11	15.64	17	13.76

Asymptotic significance (2-sided test) reported, Note: ARBS = Adolescent Risk Behavior Screen, SDQ = Strengths and Difficulties Questionnaire, MPBI = Multiple Problem Behavior Index

At time one, participants of the Risk-Avert programme were demonstrated to have higher mean rank scores than non-participants across all measures. The only exception to this is in the case of the Prosocial subscale of the SDQ, where non-participants have a higher mean rank score than participants in the Risk-Avert programme. This is an expected pattern as the Prosocial subscale of the SDQ measures the opposite type of behaviour to all other subscales and a higher score indicates more prosocial behaviour/attitudes.

However, Mann-Whitney U tests revealed no statistically significant difference in scores for the Prosocial subscale of the SDQ between participants of the Risk-Avert programme and non-participants at time one. The Mann-Whitney U tests revealed that the difference in ARBS score between Risk-Avert participants and non-participants at time one was statistically significant. For the Risk-Avert Screening Tool Family subscale and the Peer Problems subscale of the SDQ, differences between participants and non-participants were also statistically significant at time one. It should be noted that a significant difference between Risk-Avert participants and non-participants is expected at time one for the Risk-Avert Screening Tool, as this is the basis on which they are invited to take part in the programme.

Table 5.16 - Risk-Avert participants compared to non-participants - Mann-Whitney U Tests comparing time two scores

						Participated in Risk-Avert		Non-Participants	
	Total N	**U**	**Sig.**	**Z**	**Effect Size (*r*)**	**N**	**Mean Rank**	**N**	**Mean Rank**
ARBS	250	4776	.009	2.62	.17	35	154.46	215	120.79
Risk-Avert Screening Tool: Total	230	5011	.000	4.69	.30	34	164.88	196	106.93
Risk-Avert Screening Tool: Individual	247	5968.5	.000	4.71	.30	39	173.04	208	114.81
Risk-Avert Screening Tool: School	281	6137	.000	3.79	.22	38	181	243	134.74
Risk-Avert Screening Tool: Family	284	4910	.310	1.02	.06	37	151.70	247	141.12
Risk-Avert Screening Tool: Community	278	6747	.000	4.60	.27	39	193	239	130.77

						Participated in Risk-Avert		Non-Participants	
	Total N	**U**	**Sig.**	**Z**	**Effect Size (*r*)**	**N**	**Mean Rank**	**N**	**Mean Rank**
SDQ: Total Difficulties Score	274	6079	.002	3.03	.18	40	172.47	234	131.52
SDQ: Emotional Problems	274	4947.5	.560	.58	.04	40	144.19	234	136.36
SDQ: Conduct Problems	274	5960.5	.004	2.86	.17	40	169.51	234	132.03
SDQ: Hyperactivity	274	6334.5	.000	3.60	.22	40	178.86	234	130.43
SDQ: Peer Problems	274	4999.5	.479	.71	.04	40	145.49	234	136.13
SDQ: Prosocial	274	3910.5	.091	-1.69	-.10	40	118.26	234	140.79
MPBI: Delinquent Behaviour	278	7020.5	.000	4.92	.30	40	196.01	238	130.00
MPBI: Smoking Involvement	280	4680	.687	-.40	-.02	39	140.00	241	140.58
MPBI: Negative Consequences of Drinking	103	983.5	.017	2.39	.24	20	59.67	83	50.15
MPBI: Problem Drinking	60	436.5	.120	1.56	.20	16	35.78	44	28.58

Asymptotic significance (2-sided test) reported, Note: ARBS = Adolescent Risk Behavior Screen, SDQ = Strengths and Difficulties Questionnaire, MPBI = Multiple Problem Behavior Index

At time two, participants of the Risk-Avert programme continued to demonstrate higher mean rank scores than non-participants across all measures. The Prosocial subscale of the SDQ remained the exception to this, as non-participants continued to have a higher mean rank score than participants in the Risk-Avert programme, although this difference remained statistically non-significant. The Mann-Whitney U tests revealed that the difference in ARBS score between Risk-Avert participants and non-participants remained statistically significant at time two. For the Risk-Avert Screening Tool Family subscale and the Peer Problems subscale of the SDQ,

differences between participants and non-participants were no longer statistically significant at time two. The opposite pattern was revealed for the Negative Consequences of Drinking subscale of the MPBI, for which the difference between participants and non-participants was not statistically significant at time one but was at time two.

Given the difference in the sample sizes of Risk-Avert participants and non-participants, it is useful to consider the effect sizes alongside the statistical significance tests. In this case, regardless of statistical significance, the effect sizes across all measures were small. The exceptions to this statement were the Risk-Avert Screening Tool total score (r = .60) and the Risk-Avert Screening Tool Individual score (r = .53) at time one, which demonstrated a large effect size. Regarding these two subscales, those effect sizes had reduced at time two (both r = .30). Notably, changes in all effect sizes were in the expected direction between time one and time two. The only measure for which this was not the case was the MPBI. All the MPBI subscales demonstrated either negligible change in effect size (Delinquent Behaviour subscale), or an increase in effect size at time two. However, this could be due to the nature of those subscales, for which sample sizes are much smaller due to screening questions and variance in scores was typically minimal.

To specifically test hypotheses one and two: 1) those who *did not* take part in the Risk-Avert programme will demonstrate no change between time one and time two, 2) those who *did* take part in the Risk-Avert programme will demonstrate improvement between time one and time two, Wilcoxon Signed-Rank Tests were conducted separately for those who did not participate in

Risk-Avert (see Table 5.17) and those who did (see Table 5.18). This tested for differences between the scores for each variable at time one and time two.

Table 5.17 - Sample size, test statistics, significance values, z-values and effect sizes for each of the Wilcoxon Signed-Rank Tests for those who did not participate in Risk-Avert

	N	T	Sig.	Z	Effect Size (*r*)	Median Time 1	IQR Time 1	Median Time 2	IQR Time 2
ARBS	172	4507	.000	4.667	.25	10	9-11	10	9-12
Risk-Avert Screening Tool: Total	178	10016.5	.000	5.904	.31	9.00	3-17	12.00	4-29
Risk-Avert Screening Tool: Individual	188	6682	.000	5.643	.29	1.00	0-9.75	8.00	0-17
Risk-Avert Screening Tool: School	243	2236.5	.000	3.532	.16	.00	0-0	.00	0-5
Risk-Avert Screening Tool: Family	247	1442	.004	2.86	.13	.00	0-0	.00	0-0
Risk-Avert Screening Tool: Community	238	6729	.000	3.851	.17	2.00	2-4	2.00	2-6
SDQ: Total Difficulties Score	232	10974.5	.623	.492	.02	9.00	5-12.75	9.00	5-13
SDQ: Emotional Problems	232	8502.5	.512	.656	.03	3.00	1-4.75	3.00	1-5
SDQ: Conduct Problems	232	4495	.275	-1.091	-.05	1.00	0-2	1.00	0-2
SDQ: Hyperactivity	232	8294	.828	.217	.01	3.00	2-5	3.00	2-5
SDQ: Peer Problems	232	6165.5	.332	.969	.04	1.00	0-2	1.00	0-2
SDQ: Prosocial	232	7757	.048	1.979	.10	8.00	6-9	8.00	7-9
MPBI: Delinquent Behaviour	237	8884.5	.000	4.957	.23	11.00	10-12	11.00	10-13
MPBI: Smoking Involvement	240	1	.317	1	.05	.00	0-0	.00	0-0
MPBI: Negative Consequences of Drinking	13	.000	.317	-1	-.20	.00	0-0	.00	0-0
MPBI: Problem Drinking	12	23.5	.429	.791	.16	.00	0-.33	.17	0-.67

Asymptotic significance (2-sided test) reported, *all ties, no differences, Note: ARBS = Adolescent Risk Behavior Screen, SDQ = Strengths and Difficulties Questionnaire, MPBI = Multiple Problem Behavior Index

The Wilcoxon Signed-Rank tests revealed that non-participants showed statistically significantly higher ARBS total scores at time two than at time

one. For the Delinquent Behaviour subscale of the MPBI, non-participants showed statistically significantly higher scores at time two than at time one. Regarding scores for the Risk-Avert Screening Tool and its subscales, it is important to consider the difference in the spread of scores (denoted by the interquartile range) at each time-point and not focus only on the averages, as some medians are zero. Non-participants showed statistically significantly higher Risk-Avert total, Individual subscale, School subscale, Family and Community subscale scores at time two than at time one. This represents an increase in risk behaviour between the two time-points.

For the SDQ and its subscales, non-participants in the Risk-Avert programme showed no significant difference in scores for the Total Difficulties score, as well as the Emotional Problems, and Conduct Problems subscales. Non-participants did however show statistically significantly higher scores for the prosocial scale of the SDQ at time two than at time one (demonstrating an improvement).

Table 5.18 - Sample size, test statistics, significance values, z-values and effect sizes for each of the Wilcoxon Signed-Rank Tests for those who participated in Risk-Avert

	N	T	Sig.	Z	Effect Size (*r*)	Median Time 1	IQR Time 1	Median Time 2	IQR Time 2
ARBS	24	113.5	.446	.762	.11	10.5	10-11	11	10-12
Risk-Avert Screening Tool: Total	33	164.5	.063	-1.861	-.23	37.00	33-47	31.00	20-42
Risk-Avert Screening Tool: Individual	38	202.5	.104	-1.625	-.19	25.00	16.5-30	20.00	13-28
Risk-Avert Screening Tool: School	38	148	.759	.307	.04	5.00	0-10	5.00	0-10.75
Risk-Avert Screening Tool: Family	37	20	.020	-2.331	-.27	.00	0-4	.00	0-3

	N	T	Sig.	Z	Effect Size (*r*)	Median Time 1	IQR Time 1	Median Time 2	IQR Time 2
Risk-Avert Screening Tool: Community	39	149	.977	-.029	-.003	6.00	4-10	6.00	4-10
SDQ: Total Difficulties Score	40	147	.003	-2.931	-.33	14.50	12-18.75	11.00	8.25-16.5
SDQ: Emotional Problems	40	127	.016	-2.398	-.27	5.00	1.25-6	3.00	1-5
SDQ: Conduct Problems	40	85.5	.035	-2.108	-.24	2.50	2-4	2.00	1-3
SDQ: Hyperactivity	40	201.5	.095	-1.668	-.19	5.00	4-7	4.50	4-6
SDQ: Peer Problems	40	169	.290	-1.059	-.12	2.00	1-3.75	1.00	0-3.75
SDQ: Prosocial	40	251	.953	.060	.01	8.00	6-9	7.00	6-9
MPBI: Delinquent Behaviour	40	311	.377	.883	.10	13.00	11-17	13.00	12-17.75
MPBI: Smoking Involvement	39	.000	1	NaN*	-	.00	0-0	.00	0-0
MPBI: Negative Consequences of Drinking	8	6	.109	1.604	.40	.00	0-0	.00	0-2.5
MPBI: Problem Drinking	7	12	.216	1.236	.33	.00	0-.33	.67	0-1.67

Asymptotic significance (2-sided test) reported, *all ties, no differences, Note: ARBS = Adolescent Risk Behavior Screen, SDQ = Strengths and Difficulties Questionnaire, MPBI = Multiple Problem Behavior Index

The Wilcoxon Signed-Rank tests revealed that, unlike non-participants, participants of Risk-Avert showed no statistically significant difference in total ARBS scores between the two time-points. For the Delinquent Behaviour subscale of the MPBI, again unlike non-participants, participants of the Risk-Avert programme showed no statistically significant difference in scores between the two time-points. For total Risk-Avert score Risk-Avert participants showed no statistically significant difference in scores between the two time-points. This pattern was repeated for the Individual subscale, the School subscale and the Community subscale. However, for the Family subscale of the Risk-Avert Screening Tool, participants of the Risk-Avert

programme showed statistically significantly lower scores at time two than at time one.

For the SDQ and its subscales, participants in the Risk-Avert programme showed significantly lower Total Difficulties scores for the SDQ, as well as the Emotional Problems and Conduct Problems subscales (demonstrating an improvement), at time two than at time one. Participants of the Risk-Avert programme showed no statistically significant difference in scores for the Prosocial subscale of the SDQ between the two time-points.

Again, given the difference in the sample sizes of Risk-Avert participants and non-participants, it is useful to consider the effect sizes alongside the statistical significance tests. Regarding the Risk-Avert participants, all effect sizes were in the expected direction even if they were small. The exceptions to this were again the subscales for the MPBI, for which issues with screening questions, sample size and a lack of variance should be considered. But also, the School subscale of the Risk-Avert Screening Tool and the Prosocial subscale of the SDQ, although the effect sizes were very small (r = .04 and r = .01 respectively) and the total ARBS score (r = .11). Those subscales for which there were statistically significant differences between time one and two were also those for which the effect sizes were closest to medium in size (e.g. approximately r = .30).

Regarding those that did not participate in Risk-Avert, of which there were a larger number than those who did participate in the programme, statistically significant differences between time one and two typically were still associated with small effect sizes. Only that for the total score of the Risk-

Avert Screening Tool (*r* = .31) and the Individual subscale of the Risk-Avert Screening Tool (*r* = .29) were of approximately medium size.

5.4 Discussion

This study explored two hypotheses:

1. In comparison to time one scores, those who *did not* take part in the Risk-Avert programme will demonstrate no change at time two.
2. In comparison to time one scores, those who *did* take part in the Risk-Avert programme will demonstrate improvement at time two.

Given that this study aimed to inform future, larger evaluation(s) of the Risk-Avert programme and was small in size, the discussion of findings conducted here must be caveated with the understanding that any differences in the trends found in the Risk-Avert participant and non-participant groups may be due to factors other than the intervention itself.

Contrary to the first hypothesis, non-participants appeared to deteriorate between time one and time two across several variables, namely ARBS total, the Delinquent Behaviour subscale of the MPBI and the Risk-Avert Screening Tool total and all its subscales. But notably this was not the case for the SDQ, for which hypothesis one was supported as there were no differences for non-participants except an improvement between time one and two on the Prosocial subscale.

The second hypothesis was also not supported by the data and analysis of this study. Participants in the Risk-Avert programme did not demonstrate expected improvement on the ARBS, Risk-Avert Screening Tool or MPBI. However, it was encouraging that there was no evidence that participants in the Risk-Avert programme deteriorated over time; although effect sizes were

small, they were in the opposite direction to non-participants. One explanation for this pattern of results i.e. worsening of levels of risk behaviour among non-participants and no change in participants of the programme, is that the Risk-Avert programme is preventative in nature. It is also of note that we would not necessarily expect to see statistically significant effects for the Risk-Avert participants as the sample size was much smaller in comparison to non-participants. Post-hoc power analysis revealed that a Wilcoxon Signed-Rank test (two-tailed, $\alpha = .05$) performed with 40 participants (the entire sample of Risk-Avert participants included in this study) would have 43.9% power to detect a small effect ($d = .3$) whereas the same test performed with the entire sample of 248 non-participants of the programme would have 99.6% power to detect the same effect.

Although the second hypothesis, an expected improvement between time one and two for Risk-Avert participants, was not supported by the Risk-Avert Screening Tool, ARBS or MPBI, there were improvements measured by the SDQ. In support of the hypothesis, participants in the Risk-Avert programme showed statistically significantly lower Total Difficulties scores for the SDQ, as well as the Emotional Problems, and Conduct Problems subscales, at time two in comparison to at time one. This appears to show an improvement in their behaviour over the duration of the Risk-Avert programme. The exception to this pattern was the Prosocial subscale of the SDQ, for which participants in the Risk-Avert programme demonstrated no change over time.

Finding that the SDQ revealed differences for Risk-Avert participants when the ARBS, Risk-Avert Screening Tool and MPBI did not raises some questions regarding the reason for this. Although this difference could be

because the SDQ measures an aspect of behaviour or attitudes that is different to that measured by the risk measures and so the difference between the results from the measures were genuine, it may also speak to something else in the quality of the measures. Namely, within the Risk-Avert Screening Tool many high-scoring items remain the same across completions of the measure regardless of other improvements in behaviour. For example, the wording of the question regarding having been arrested, “have you *ever*”, means that the answer will always be yes regardless of whether the arrest was several years ago and no involvement with the police has taken place since then. Using this type of wording in the items calls into question whether the Risk-Avert Screening Tool could measure improvement in behaviour or attitudes, as well as deterioration. Thus, the findings of this study may reflect poor sensitivity to change, as opposed to a genuine lack of improvement in participants. Giving some support to this idea, the Family subscale of the Risk-Avert Screening Tool did appear able to measure improvement and this subscale has a very different set of response options in comparison to the rest of the measure (i.e. graded response options without time-limiting). However, it must be noted that the Risk-Avert Screening Tool was not developed with the intention of measuring change in risk behaviour over time but instead as a means of screening students into the intervention (Bowles, 2015, 2016), thus these results reflect use outside of its original purpose.

Another query regarding the quality of the measures within this sample was raised by evidence that item-correlations for the risk measures were typically small. This calls into question the reliability of subscale and total scores across the risk measures in this sample. The low item-correlations

could be due to differences in question wording and response options, but it must also be considered that these risk measures may *wrongly* be assuming that the elements of risk they are measuring are the same and so a "total" level of risk can be calculated. Each measure assesses several different types of risk behaviour using individual items and combines scores across those items to create a total, thus assuming these behaviours correlate together in such a way that calculating a total risk score across these is useful. Although researchers have found relations between different adolescent risk behaviours (e.g. Farrell et al., 1992; Guilamo-Ramos et al., 2005; Wiefferink et al., 2006) and some have even proposed the idea that these relations represent an underlying problem behavior syndrome (e.g. Donovan & Jessor, 1985; Donovan et al., 1988), there is also research suggestive that the strength of correlation between risk behaviours is larger in past studies than in more recent ones (Guilamo-Ramos et al., 2005) and some types of risk behaviour relate more strongly than others (Wiefferink et al., 2006). For example, in the current sample only 1.4% of participants reported having ever tried a cigarette (as measured by the Risk-Avert Screening Tool), thus this particular risk behaviour is not going to correlate well with other more prevalent risk behaviours.

Given that the hypotheses were largely unsupported; expected differences were absent or not in the expected directions, the following chapter will explore differences in the baseline risk level and demographics of Risk-Avert participants and non-participants and how this may have effected change and selection for participation in the programme. The aim is that this will provide insight into why the analyses reported in this chapter did not demonstrate the

expected improvement in behaviour in Risk-Avert participants but did reveal an increase in risk behaviour in those who did not participate in the Risk-Avert programme.

6. A longitudinal study of the impact of the Risk-Avert programme in two Essex schools – Exploring change and group membership

6.1 Introduction

The previous chapter explored longitudinal data collected pre-and-post completion of the Risk-Avert programme among participants and non-participants. It was expected that participants of the Risk-Avert programme would demonstrate improvement in scores across measures between time one and time two, whilst non-participants would demonstrate no change. Contrary to expectations, there was little evidence for statistically significant improvement between time one and time two for participants of the Risk-Avert programme. As well as this, there was evidence for deterioration in the scores of those who did not take part in the programme. This chapter will further explore the data presented in the previous chapter, focusing on identifying differences between the Risk-Avert participants and non-participants and establishing how any differences may have impacted on students 1) being invited to take part in the programme and 2) experiencing change in risk behaviour and wellbeing over the course of the study.

Whilst failure to support the original hypotheses may be due to the nature of the measures used (please refer to Chapter Five, section 5.4, page 200 for discussion of this possibility), it is also probable that factors other than participation in the programme itself are affecting the likelihood and/or nature of change. As discussed in greater detail in the introduction to this thesis, there is research indicating that psychological (e.g. personality, decision-making), social/environmental (e.g. school, peers, family) and biological (e.g. DNA, hormones, the brain) factors are associated with adolescent risk

behaviour. For example, risk-taking activity (such as smoking, alcohol drinking and theft) has been found to be more prevalent in boys than girls (Centre for Longitudinal Studies, 2018), those from single-parent families have been found to be more likely to engage in risk behaviour (e.g. Blum et al., 2000) and individuals belonging to ethnic minorities have been found to be less likely to engage in risk behaviours than individuals belonging to ethnic majorities (Fuligni, 1998).

Another possibility is that selection for participation in the Risk-Avert programme is affected by influences other than score on the Risk-Avert Screening Tool and this may have influenced the data from either group. To examine these possibilities, this chapter will seek to answer the following research questions:

1. How is categorisation of risk according to the Risk-Avert Screening Tool reflected in participation in the Risk-Avert programme?
2. Do family structure, ethnic group and/or gender at time one predict participation in the Risk-Avert programme?
3. Do family structure, ethnic group and/or gender at time one predict change in variable scores between time one and time two?

6.2 Method

6.2.1 Participants

The data used for the analysis in this chapter was the same as that included in Chapter Five. As such, detailed exploration of the nature of the sample will not be repeated here, but Table 6.1 and Table 6.2 provide a summary of the sample of participants and non-participants of the Risk-Avert programme, separated by school.

Table 6.1 - Sample size and characteristics for Risk-Avert participants by school at time one

	N	Mean (SD) Age	Gender			First Language - English	Ethnic Group - White	Family - Conventional
			Female	Male	Other			
School A	28	12.29 (.46)	13 (46.4%)	15 (53.6%)	0	28 (100%)	24 (85.7%)	17 (60.7%)
School B	12	12.17 (.39)	7 (58.3%)	5 (41.7%)	0	12 (100%)	11 (91.7%)	10 (83.3%)

Table 6.2 - Sample size and characteristics for non-Risk-Avert participants by school at time one

	N	Mean (SD) Age	Gender			First Language - English	Ethnic Group - White	Family - Conventional
			Female	Male	Other			
School A	172	12.24 (.43)	84 (48.8%)	86 (50%)	2 (1.2%)	165 (95.9%)	130 (76%)	134 (77.9%)
School B	77	12.26 (.44)	40 (51.9%)	37 (48.1%)	0	74 (96.1%	73 (94.8%)	57 (74%)

6.2.2 Measures

To avoid repetition as this chapter does not use new data, please see Chapter Five (section 5.2.2, page 167) and Chapter Four (section 4.2.2, page 109) for detailed descriptions of measures, which included the Risk-Avert Screening Tool (The Training Effect & Essex County Council, n.d.), the Adolescent Risk Behavior Screen (ARBS) (Jankowski et al., 2007), The Multiple Problem Behavior Index (MPBI) (Jessor et al., n.d.), and the Strengths and Difficulties Questionnaire (SDQ) (Goodman et al., 1998). Variables used in analyses included: Risk-Avert participation, family conventionality, ethnicity and gender. Risk-Avert participation was a dichotomous variable and coded such that participation = 1 and non-

participation = 0. Family conventionality and ethnicity were dichotomised after data collection for ease of interpretation. Responses to the question regarding family structure were categorised such that any response that indicated a mother and father residing in the same household were deemed conventional (and coded 1) and any other response was categorised as not being conventional (and coded 0). Ethnicity was dichotomised such that one category consisted of those who identified their ethnicity as white (coded 1) and the other category included any other response (coded 0). Gender was coded such that female = 0 and male = 1. Those who identified their gender as “other” were excluded from the analyses as there were too few responses to form a discrete category. English as first language was not included in analysis as only five participants in the sample indicated that English was not their first language.

6.2.3 Design

This study entails secondary data analysis of data collected as detailed in the Method section (5.2, page 163) of Chapter Five.

6.2.4 Procedure

As above, please see Chapter Five, section 5.2.4, page 168, for a description of the study procedure.

6.2.5 Plan for analysis

To explore whether factors such as demographics influenced whether an individual was in the group of Risk-Avert participants a logistic regression analysis was conducted with the entire sample. The outcome variable was whether the student had participated in the Risk-Avert programme.

Demographic variables used as predictors included: family conventionality, ethnicity and gender. Subscales of the SDQ were included in the model as predictors, as was the Delinquent Behaviour subscale of the MPBI. This was done to establish whether demographic variables or behaviour scores were more predictive of group membership. The SDQ Total Difficulties score was not included in the analysis as it is a product of the subscales. All variables included in this analysis will be those measured at time one.

To provide further insight into whether the change in risk behaviour between time one and time two varied according to baseline risk level, Wilcoxon-Signed Rank tests were conducted. These tests examined change between time one and time two for all adolescents in the low and medium-risk groups separately.

To explore what may predict change in the Risk-Avert Screening Tool score between the two time-points, a multiple regression analysis was conducted. A difference score was calculated for the Risk-Avert Screening Tool total score for each participant (time two score minus time one score). Whereby a negative difference score indicated improvement between time one and time two, and a positive difference score indicated deterioration. This change score was used as the outcome variable in this analysis. Included predictors were family conventionality, ethnicity, gender (all dichotomous variables), ARBS total score, the Delinquent Behaviour subscale of the MPBI and the Emotional Problems, Conduct Problems, Hyperactivity, Peer Problems and Prosocial subscales of the SDQ. The subscales of the Risk-Avert Screening Tool were not included in this analysis as the Risk-Avert Screening Tool total score from which the difference scores were obtained is

a product of those scales. All included predictors were those measured at time one.

6.3 Results

Risk-Avert Screening Tool total scores are categorised presently as low-risk (scores between 0-29), medium-risk (scores between 30-59) and high-risk (scores above 60). Not everybody who completes the Risk-Avert Screening Tool is invited to take part in the Risk-Avert programme. To meet the criteria for participation, students are expected to demonstrate a Risk-Avert Screening Tool total score that places them in a “medium-risk” category (Bowles, 2016). The first step of this analysis is to explore whether this sample of Risk-Avert participants and non-participants accurately reflects the risk categorisation of the students.

Table 6.3 – Frequency of Risk-Avert participants and non-participants categorised as low, medium or high-risk on the Risk-Avert Screening Tool at time one and time two

		N (%) Time One	N (%) Time Two
Non-participants	Low	196 (97%)	153 (78.1%)
	Medium	4 (2%)	34 (17.3%)
	High	2 (1%)	9 (4.6%)
Risk-Avert participants	Low	-	16 (47.1%)
	Medium	37 (97.4%)	15 (44.1%)
	High	1 (2.6%)	3 (8.8%)

In response to the first research question regarding how categorisation of risk according to the Risk-Avert Screening Tool is reflected in participation in the Risk-Avert programme, Table 6.3 summarises the frequency of participants

within each group that were categorised as low, medium or high-risk according to the Risk-Avert Screening Tool at time one and time two. Reassuringly, nobody classified as low-risk was included in the group of Risk-Avert participants. However, there were four individuals who did not partake in the Risk-Avert programme that would have been considered eligible as they scored within the medium-risk category. Two high-risk students were excluded from the programme, but another was included. The included high-risk student attended School B.

The four participants classified as medium-risk but not included in the programme all identified that English was their first language. Three of those individuals identified as white at time one and one as black/African/Caribbean/black British. All four of those students identified as female. Further examination of the data revealed that medium-risk students that did not take part in the programme all attended the same school (School A).

Table 6.4 summarises the frequencies of different demographics within the groups of Risk-Avert participants and non-participants and risk categorisation at time one.

Table 6.4 – A summary of the frequency of Risk-Avert participants or non-participants classified as low, medium or high-risk that came from conventional families, were of white ethnicity, were female, attended School A and identified English as their first language at time one

		Conventional Family = Yes	**Ethnicity = White**	**Gender = Female**	**School = A**	**English First Language = Yes**
Non-participants	Low	150 (76.5%)	163 (83.6%)	102 (52%)	131 (66.8%)	191 (97.4%)
	Medium	3 (75%)	3 (75%)	4 (100%)	4 (100%)	4 (100%)
	High	1 (50%)	2 (100%)	0 (0%)	2 (100%)	2 (100%)
Risk-Avert participants	Low	-	-	-	-	-
	Medium	25 (67.6%)	34 (91.9%)	20 (54.1%)	26 (70.3%)	37 (100%)
	High	1 (100%)	1 (100%)	0 (0%)	0 (0%)	1 (100%)

To explore whether factors such as demographics influenced whether an individual was in the group of Risk-Avert participants a logistic regression analysis was conducted with the entire sample. The model was statistically significant, χ^2 (10) = 28.91, p = .001. Only one variable was found to be a statistically significant predictor of Risk-Avert participation – the Delinquency subscale score of the MPBI. As score on the Delinquency subscale increased, so did the likelihood of participating in Risk-Avert, b = .23, Wald χ^2 (1) = 6.62, p = .01. No demographic variable was found to significantly predict Risk-Avert participation. Table 6.5 provides the coefficients for all significant and non-significant predictors.

Table 6.5 – Coefficients of the model predicting whether a participant took part in the Risk-Avert programme

				95% CI for Odds Ratio		
	b	**S.E.**	***p***	**Lower**	**Odds Ratio**	**Upper**
Family Conventionality	-.08	.55	.89	.31	.93	2.71
Ethnicity	-.85	.72	.24	.10	.43	1.75
Gender	.96	.56	.08	.88	2.62	7.83
ARBS Total	.04	.13	.75	.81	1.04	1.35
SDQ: Emotional Problems	.02	.12	.84	.82	1.02	1.28
SDQ: Conduct Problems	.10	.20	.61	.75	1.11	1.63
SDQ: Hyperactivity	.18	.12	.15	.94	1.19	1.52
SDQ: Peer Problems	.01	.17	.96	.72	1.01	1.41
SDQ: Prosocial	-.01	.14	.96	.75	.99	1.32
MPBI: Delinquent Behaviour	.23	.09	.01	1.06	1.26	1.49
Constant	-6.59	1.80	.000		.001	

Note: ARBS = Adolescent Risk Behavior Screen, SDQ = Strengths and Difficulties Questionnaire, MPBI = Multiple Problem Behavior Index

Thus, regarding the second research question (do family structure, ethnic group and/or gender at time one predict participation in the Risk-Avert programme?), the above findings suggested that family structure, ethnic group and/or gender did not predict Risk-Avert participation.

Analyses detailed in Chapter Five appeared to demonstrate that those who did not participate in the Risk-Avert programme deteriorated between time one and time two. To provide further insight into this finding, change in risk behaviour was explored according to baseline risk level. Only three students were classified as high-risk and so no inferential analysis regarding this group could be performed. For completeness, the average score for participants and non-participants classified as high-risk are presented in Table 6.6, as there was only one Risk-Avert participant classified as high-risk the presented scores are actual scores rather than an average. Although no

conclusions can be drawn from this data, it is of note that the participant of the Risk-Avert programme classified as high-risk appeared to lower their level of risk behaviour between time one and time two, whilst those who did not participate appeared to increase their level of risk behaviour between the time-points.

Table 6.6 - Average scores by Risk-Avert participation for each measure and subscale for adolescents classified as high-risk at time one

	Participants			Non-Participants		
	N	**Score Time 1**	**Score Time 2**	**N**	**Median Time 1**	**Median Time 2**
ARBS	0	-	-	2	17	*
Risk-Avert Screening Tool: Total	1	70	41	2	65.5	81.00
Risk-Avert Screening Tool: Individual	1	57	26	2	46	54.5
Risk-Avert Screening Tool: School	1	13	13	2	9	15.5
Risk-Avert Screening Tool: Family	1	0	0	2	5.5	4
Risk-Avert Screening Tool: Community	1	0	2	2	5	7
SDQ: Total Difficulties Score	1	10	11	2	9.5	18.5
SDQ: Emotional Problems	1	0	1	2	2	3
SDQ: Conduct Problems	1	2	4	2	2	4.5
SDQ: Hyperactivity	1	4	6	2	3.5	8
SDQ: Peer Problems	1	4	0	2	2	3
SDQ: Prosocial	1	0	0	2	7.5	8
MPBI: Delinquent Behaviour	1	17	14	2	14.5	14

*One participant had missing data for the ARBS at time two, Note: ARBS = Adolescent Risk Behavior Screen, SDQ = Strengths and Difficulties Questionnaire, MPBI = Multiple Problem Behavior Index

Although inferential analysis was not appropriate for the high-risk group, Wilcoxon-Signed Rank tests were conducted for the low and medium-risk groups. These tests examined change between time one and time two for all adolescents in the low and medium-risk groups (regardless of Risk-Avert

participation, although all those in the low-risk group were not reported to have taken part in the programme). Tables 6.7 and 6.8 summarise these analyses.

Table 6.7 – Differences between time one and time two scores for adolescents categorised as low-risk at time one

	N	t	Sig.	Z	Effect Size (*r*)	Median Time 1	IQR Time 1	Median Time 2	IQR Time 2
ARBS	135	2368.50	.014	2.45	.15	12.00	12-13	13.00	12-13
Risk-Avert Screening Tool: Total	173	9477.50	.000	5.94	.32	9.00	3-17	12.00	4-27
Risk-Avert Screening Tool: Individual	183	6238.00	.000	5.68	.30	1.00	0-9	8.00	0-16
Risk-Avert Screening Tool: School	191	1455.50	.000	3.73	.19	.00	0-0	.00	0-5
Risk-Avert Screening Tool: Family	194	999.50	.001	3.41	.17	.00	0-0	.00	0-0
Risk-Avert Screening Tool: Community	190	4371.00	.001	3.39	.17	2.00	2-4	4.00	2-6
SDQ: Total Difficulties Score	184	7114.00	.474	.72	.04	8.00	5-12	9.00	5.25-13
SDQ: Emotional Problems	184	5078.00	.541	.61	.03	3.00	1-5	3.00	1-5
SDQ: Conduct Problems	184	2741.00	.421	-.80	-.04	1.00	0-2	1.00	0-2
SDQ: Hyperactivity	184	5124.50	.578	.56	.03	3.00	2-5	3.00	2-5
SDQ: Peer Problems	184	3871.50	.238	1.18	.06	1.00	0-2	1.00	0-2
SDQ: Prosocial	184	4179.00	.141	1.47	.08	8.00	6-9	8.00	7-9
MPBI: Delinquent Behaviour	190	6576.50	.000	4.84	.25	11.00	10-12	11.00	10-13

Note: ARBS = Adolescent Risk Behavior Screen, SDQ = Strengths and Difficulties Questionnaire, MPBI = Multiple Problem Behavior Index

The Wilcoxon-Signed Rank tests revealed that those in the low-risk group (none of whom were found to have participated in Risk-Avert) demonstrated statistically significant increase in scores between time one and time two for Risk-Avert Screening Tool total score, MPBI Delinquent Behaviour score, as well as the Individual, School, Family and Community subscales of the Risk-Avert Screening Tool. Although the effect size was smaller for the Community subscale (*r* = .17) than the total scale (*r* = .32) and Individual subscale (*r* = .30).

Table 6.8 - Differences between time one and time two scores for adolescents categorised as medium-risk at time one

	N	t	Sig.	Z	Effect Size (*r*)	Median Time 1	IQR Time 1	Median Time 2	IQR Time 2
ARBS	25	90.50	.820	.23	.03	13.00	13-14	13.00	12-14.5
Risk-Avert Screening Tool: Total	35	187.00	.059	-1.89	-.23	37.00	33-48	31.00	20-43
Risk-Avert Screening Tool: Individual	39	201.50	.063	-1.86	-.21	25.00	19-30	20	12-28
Risk-Avert Screening Tool: School	40	169.00	.583	.55	.06	5.00	0-8	5.00	0-10
Risk-Avert Screening Tool: Family	38	34.00	.072	-1.80	-.21	.00	0-3	.00	0-3
Risk-Avert Screening Tool: Community	40	176.00	.749	-.32	-.04	6.00	4-10	6.00	4-8
SDQ: Total Difficulties Score	41	170.50	.010	-2.56	-.28	14.00	12-18.5	12.00	9-16
SDQ: Emotional Problems	41	179.00	.109	-1.60	-.18	5.00	1.5-6	4	1.5-5
SDQ: Conduct Problems	41	69.00	.006	-2.77	-.31	2.00	1.5-4	2.00	1-3
SDQ: Hyperactivity	41	180.00	.041	-2.04	-.23	5.00	4-7	4.00	4-6
SDQ: Peer Problems	41	219.00	.566	-.57	-.06	2.00	1-4	2.00	1-4

	N	t	Sig.	Z	Effect Size (*r*)	Median Time 1	IQR Time 1	Median Time 2	IQR Time 2
SDQ: Prosocial	41	344.00	.250	1.15	.13	7.00	6-9	7.00	6-9
MPBI: Delinquent Behaviour	41	343.00	.262	1.12	.12	12.00	11-16.5	13.00	12-17

Note: ARBS = Adolescent Risk Behavior Screen, SDQ = Strengths and Difficulties Questionnaire, MPBI = Multiple Problem Behavior Index

The same tests conducted for those in the medium-risk group (the majority of whom – all but four – participated in the Risk-Avert programme) also revealed some statistically significant differences between time one and time two. This was true for the SDQ Total Difficulties score and the Conduct problems and Hyperactivity subscales. The medians for each scale/subscale at time one and time two revealed lower scores at time two than at time one, except in the case of the Conduct Problems subscale, which revealed no discernible difference between the two medians at two decimal-points. Given that this analysis and the analysis of the low-risk participants revealed a similar pattern of results to that detailed in Chapter Five, this adds further support to those findings.

To explore what may predict a change in score for the Risk-Avert Screening Tool between the two time-points, a multiple regression analysis was conducted. Table 6.9 details the coefficients for both significant and non-significant predictors. The results of this analysis indicated that the model explained 12.1% of the variance and that the model was a statistically significant predictor of Risk-Avert Screening Tool total change score, F (10, 143) = 1.97, p = .041. Gender (β = .25, p = .005) was found to significantly predict Risk-Avert Screening Tool total change score. Given the coding of the gender variable, this analysis indicated that males were likely to have larger

positive difference scores, indicating that they were more likely than females to increase score on the Risk-Avert Screening Tool total (a deterioration in behaviour) between time one and time two. Thus, regarding the final research question (do family structure, ethnic group and/or gender at time one predict change in variable scores between time one and time two?), findings supported the conclusion that gender was the only measured demographic variable that predicted change in Risk-Avert Screening Tool total score, as males were found to be more likely to increase their score between time one and time two than females. No linear relationship was identified between family structure or ethnic group and change in Risk-Avert Screening Tool total score.

Table 6.9 – Linear model of predictors of a score reflecting difference between Risk-Avert Screening Tool total scores at time one and time two

	b	**S.E.**	**β**	***p***
Family Conventionality	-3.89	2.85	-.11	.18
Ethnicity	-2.19	3.20	-.06	.49
Gender	7.87	2.9	.25	.005
ARBS Total	1.14	.83	.13	.17
SDQ: Emotional Problems	-.17	.60	-.02	.78
SDQ: Conduct Problems	.30	1.21	-.03	.81
SDQ: Hyperactivity	1.22	.70	.17	.09
SDQ: Peer Problems	-.39	1.04	-.03	.71
SDQ: Prosocial	1.26	.81	.14	.12
MPBI: Delinquent Behaviour	-.71	.53	-.14	.18
Constant	-10.83	12.06		.37

Note: ARBS = Adolescent Risk Behavior Screen, SDQ = Strengths and Difficulties Questionnaire, MPBI = Multiple Problem Behavior Index

6.4 Discussion

This chapter sought to further explore the results found in Chapter Five by identifying factors that may have influenced the patterns of change among Risk-Avert participants and non-participants, as well as the likelihood of a student being selected to take part in the programme. Specifically, the aim was to answer the following research questions:

1. How does categorisation of risk according to the Risk-Avert Screening Tool affect participation in the Risk-Avert programme?
2. Do family structure, ethnic group and/or gender at time one predict participation in the Risk-Avert programme?
3. Do family structure, ethnic group and/or gender at time one predict change in variable scores between time one and time two?

Regarding question one, analyses revealed that, as expected, nobody classified as low-risk by the Risk-Avert Screening Tool was included in the group of Risk-Avert participants. However, there were four individuals who did not partake in the Risk-Avert programme that would have been considered eligible. Of course, we have no way of knowing if these students were invited but declined to take part or were excluded for some other reason. It is advised by the programme developers that those scoring as high-risk are not included within the Risk-Avert programme but instead referred to other more appropriate services (Bowles, 2015). As such, it is not unusual that two high-scoring students were excluded from the programme, but it is more unusual that someone classified as high-scoring was included. Again, the reasons for this inclusion are not known. It is impossible to tell what resources are

available to or within schools and/or why Risk-Avert was deemed to be an appropriate intervention for that individual.

None of the measured demographic variables were found to significantly predict Risk-Avert participation. This would suggest that in this sample, risk behaviour and risk vulnerability (as measured by the Risk-Avert Screening Tool) were not predicted simply by gender, ethnicity or family structure and this is reassuring in that it does at least imply that students are not being included in the programme due to bias. However, this finding may also be affected by a lack of variation in some of the demographic variables, particularly ethnicity as most participants identified as White and very few identified as another ethnicity.

Given that the first set of analyses conducted with this data and explained in Chapter Five suggested that those who did not participate in the Risk-Avert programme demonstrated an increased level of risk behaviour between time one and time two, further analyses were conducted to explore the potential reasons for this finding and change in risk behaviour was examined according to baseline risk level. Unfortunately, sample sizes were too small and uneven for analyses to be conducted according to risk category and Risk-Avert participation in combination. Thus, it was not possible to compare medium-risk individuals included in the programme to medium-risk individuals who did not participate, which would have been ideal. However, to go some way in exploring this, change was examined between time one and time two in the low, medium and high-risk groups.

Although no conclusions can be drawn from data regarding the high-risk group due to the very small sample, it is of note that the participant of the

Risk-Avert programme classified as high-risk appeared to lower their level of risk behaviour between time one and time two, whilst those who did not participate appeared to increase their level of risk behaviour between the time-points. The Wilcoxon-Signed Rank tests revealed that those in the low-risk group (none of whom participated in Risk-Avert) demonstrated significantly lower scores at time one than at time two for Risk-Avert total score, as well as the Individual, School, Family and Community subscales of the Risk-Avert Screening Tool. These results are interpreted as a deterioration between the time-points. However, it should be noted that the differences between the medians of time one and time two for the School and Family subscales were negligible. The statistical significance of this difference is likely to only reflect the large size of the sample, in which cases even very small differences are likely to be detected as statistically significant. In support of this, the effect sizes for these subscales, as well as the Community subscale, were small (r = .19 for the School subscale and r = .17 for the Community and Family subscales). The same can be said for the Delinquent Behaviour subscale of the MPBI, although this subscale had a slightly larger effect size (r = .25).

The same tests conducted for those in the medium-risk group (all but four of whom participated in the Risk-Avert programme) revealed significantly higher scores at time one than at time two for the SDQ Total Difficulties score and its Conduct Problems and Hyperactivity subscales[1]. However, the

[1] When this analysis was repeated with the four non-participants of the Risk-Avert programme removed, the pattern of results remained similar although the difference for the Family subscale of the Risk-Avert Screening Tool (r = -.27, p = .027) and the Emotional Problems subscale of the SDQ (r = .27, p = .019) became statistically significant and the difference for the Hyperactivity subscale of the SDQ (r = .22, p = .056) became non-significant.

Conduct Problems subscale revealed no discernible difference between the two medians at two decimal-points and thus this is a statistically significant difference but likely due to the large sample size rather than the existence of a genuine difference. However, overall these results were interpreted as demonstrating improvement between the two time-points for those categorised as medium-risk by the Risk-Avert Screening Tool. Given that most of these participants took part in the Risk-Avert programme, in combination with the finding that low-risk individuals (who did not take part in the programme) deteriorated on some measures between time one and time two, this would imply that those who do not take part in the Risk-Avert programme may demonstrate an increase in risk behaviour over time, whereas those taking part in the Risk-Avert programme may reduce certain aspects of risk. This adds additional weight to the findings of Chapter Five.

To further explore what may be influencing the change in Risk-Avert Screening Tool score evidenced between the time-points, a multiple regression analysis was conducted examining which demographic variables, risk or wellbeing scores predicted a Risk-Avert Screening Tool change score. Given the coding of the gender variable, this analysis indicated that males were more likely than females to increase Risk-Avert Screening Tool total score between time one and time two. This is consistent with literature suggesting that risk behaviour is more prevalent in male than female adolescents (Centre for Longitudinal Studies, 2018).

Although this and the previous chapters present some evidence for the Risk-Avert programme having a positive impact on risk behaviour among those who take part, as well as evidence for a deterioration in risk for those

who do not take part, there are limitations associated with exclusively using self-report measures to assess attitudes and behaviour. For example, adolescents have been found to make inaccurate self-reports such as incorrectly describing their drug use (Fan et al., 2006; Williams & Nowatzki, 2005). Therefore, the next chapter will use qualitative data to provide further insight into school staff's experience of the practicalities and impact of the programme.

7. Exploring the facilitators' views of Risk-Avert

7.1 Introduction

Russell, McWhirter and McWhirter (2016) reported on qualitative work conducted with seven schools in the Essex and Medway areas that had begun the Risk-Avert programme in 2015. This work included focus groups and semi-structured interviews with students and staff. The report discussed evidence of improved student confidence, risk awareness and school-connectedness experienced following participation in the Risk-Avert programme. In discussing the mechanisms for this, positive impacts of programme participation for staff and the school more widely were considered, these included the programme being enjoyed by teaching staff, the programme being easily included alongside other interventions and programme participation having improved communication between staff and students' family members.

Staff views were used predominantly in discussion of what Russell et al. (2016) termed barriers and enablers when it came to implementing and facilitating the Risk-Avert programme. Enabling factors that they identified included running small groups, considering the location of each session, voluntary participation by students, using active learning strategies, support from senior leadership and the approachability of staff. The only barrier that they identified across schools was a risk of negative stigma being attached to student participation in the Risk-Avert programme.

The questions used by Russell et al. (2016) in interviewing school staff members did not include questions explicitly relating to the Risk-Avert Screening Tool (The Training Effect & Essex County Council, n.d.), specific

elements of the Risk-Avert programme or changes that staff members would like to see made to either the Risk-Avert Screening Tool or the programme itself. As well as this, although the Risk-Avert programme is designed to run in the format of six sessions, typically assumed to be completed via one session per week (Bowles, 2015; The Training Effect & Essex County Council, 2015), during the completion of the current research early discussion with schools appeared to suggest that there may be variation in the running of the programme at school level. Given this potential variation and the need to assess aspects of the programme and the Risk-Avert Screening Tool not asked about by Russell et al. (2016), it was considered important to collect further qualitative data from school staff using semi-structured interviews. It was felt qualitative methods would best capture the potential complexity of the views of school staff as to the impact and practicalities of the Risk-Avert programme.

7.2 Method

7.2.1 Participants

Participants were a convenience sample of nine members of school staff from eight schools across Suffolk and Essex, United Kingdom who responded to an email requesting participation in the research that was sent to multiple schools that were implementing the Risk-Avert programme. All the participants had led sessions of the Risk-Avert programme in the 2016/2017 academic year. Each participant completed a demographics sheet detailing their age, gender, job role and years of experience (see Appendix S). This demographic information is included in Table 7.1. Seven participants were employed in student support roles, whilst one was a teacher and one other

was a part of the school leadership team. However, only four participants identified as being strictly non-teaching, whilst others still taught or had taught previously as qualified teachers but were now employed in student support roles.

7.2.2 Data collection and analysis

Nine staff members at a total of eight schools participated in interviews. Seven of the schools had taken at least one group of students through the entire Risk-Avert programme, some were still in the process of ensuring the entire cohort of identified students (which is typically made up of several groups) had taken part in the full programme. One school had not been able to complete the full programme with any group due to other constraints. Staff and school experience with the programme varied, some staff were new to the programme whilst the school was not, some schools and/or staff entirely new to the programme and other schools and/or staff had been involved with the Risk-Avert programme for more than one academic year. In the case of all schools except those that were a part of the Children's Support Service, (please see Table 7.2 and the associated footnote), all the schools at which the staff members were employed had comprehensive admissions policies. Only one school indicated any specific religious affiliation and none of the schools specifically served only one gender.

Each participant was interviewed individually between May and July 2017 by prior arrangement at the school for which they worked. There was one interview that included two participants due to time constraints and room availability. The data was collected via a semi-structured interview designed by the researcher to prompt participants to consider the impact and

practicalities of the programme with regards to themselves, students and the wider school (see Appendix T). Given the semi-structured nature of the interviews, the questions asked of each participant varied according to their role and responses to previous items. Each interview lasted between 20 minutes and 1 hour and 13 minutes and was recorded using an Olympus WS-852 MP3 digital recording device and later transcribed by the researcher. The researcher also made minimal written notes at the time of interview regarding any additional observations not captured by the recording device. NVivo 11 was used to assist in conducting thematic analysis of the data.

Thematic analysis was chosen because it is more flexible than other qualitative analysis methods and is not aligned with any one underlying theoretical standpoint. The approach to thematic analysis identified by Braun and Clarke (2006) was used. This ensured rigour as Braun and Clarke's (2006) approach describes six phases (familiarisation with the data, generation of initial codes, the search for themes, the review of themes, the definition and naming of themes, and production of the written report) that must be undertaken when analysis is conducted.

7.2.3 Ethics

Ethical approval for this research was requested from and granted by the University of Essex (see Appendix U), Essex County Council (see Appendix V) and Suffolk County Council (see Appendix W). Informed consent was sought from all school staff taking part in interviews who were asked to sign a form indicating that they consented to participation and had received and understood the information regarding the research (see Appendix X). Information about the research was provided orally by the researcher as well

as in an information sheet (see Appendix Y). Audio files and electronic copies of transcripts were stored securely on password-protected computers. Hard copies of transcripts as well as the demographic questionnaires and consent forms signed by participants were stored in locked cabinets on university premises. The identity of individuals will be protected in this write-up using pseudonyms.

Table 7.1 - Participant demographics

School Label	Participant	Gender	Age (years)	Ethnic Group	English First Language	Teaching Years	Time at current school (years)	Current role	Time in current role (years)
1	Alan	Male	51-60	White	Yes	32	11	Leadership	6
2	Beth	Female	26-30	White	Yes	3 (primary)	1	Student support	1
3	Chloe	Female	41-50	White	Yes	28	5.5	Student support	1
3	Danielle	Female	31-40	White	Yes	Non-teaching	2	Student support	1
4	Emily	Female	41-50	Mixed/Multiple ethnic groups	Yes	Non-teaching	7	Student support	7
5	Fred	Male	51-60	White	Yes	9	5.5	Student support	5.5
6	Georgia	Female	41-50	White	Yes	20	4	PSHE teacher	4
7	Imogen	Female	41-50	White	Yes	Non-teaching	12.5	Student support	1
8	Helen	Female	51-60	White	Yes	Non-teaching	3	Student support	15

Table 7.2 - School demographics

School	County	Age range	School Type	Gender of entry	Religious character	Admissions policy	Ofsted	Total pupils on roll (all ages)	Pupils with SEN or EHC	Pupils whose first language is not English
1	Essex	-	Children's Support Service[2]	-	None	-	-	-	-	-
2	Suffolk	11 to 18	Voluntary Aided School	Mixed	Roman Catholic	Comprehensive	Good (2016)	847	1.4%	15.2%
3	Essex	11 to 18	Academy - Converter Mainstream	Mixed	None	Comprehensive	Good (2016)	851	1.2%	2.5%
4	Essex	11 to 19	Academy - Converter Mainstream	Mixed	None	Comprehensive	Good (2016)	1863	1.9%	3.1%
5	Suffolk	11 to 18	Community School	Mixed	Does not apply	Comprehensive	Requires Improvement (2015)	933	2.1%	3.2%
6	Essex	-	Children's Support Service	-	None	-	-	-	-	-
7	Essex	11 to 16	Academy - Converter Mainstream	Mixed	None	Comprehensive	Requires Improvement (2017)	905	2.1%	2.1%
8	Suffolk	11 to 18	Academy - Converter Mainstream	Mixed	None	Comprehensive	Good (2017)	1397	0.4%	2.5%

Data taken from https://www.gov.uk/school-performance-tables. This is data for the 2016/2017 academic year. Note that "–" represents data that was not available, SEN = Special Educational Needs, EHC = Education, Health and Care plan

[2] As described by Alan during interview, Children's Support Service provide education for students in Essex removed from mainstream schooling. Schools one and six are two separate centres within this service (also known as Pupil Referral Units). The data presented in the above table is not provided for the Children's Support Service centres on https://www.gov.uk/school-performance-tables.

7.3 Results

Following transcription of and familiarisation with the data each transcript was reviewed, and initial coding applied by hand. This was broad but typically focused upon identifying information felt by the researcher to be relevant to the research aims i.e. information concerning the Risk-Avert Screening Tool and the impact or running of the Risk-Avert programme. After the initial codes were generated, the data was transferred to NVivo 11 to facilitate the early identification of themes.

The first search for themes among the initial codes yielded numerous themes and subthemes. In order to condense the information and provide a clearer theme structure, during the review of themes several of the initial themes and/or subthemes were renamed or condensed/combined. Through this process it became clear that the identified themes related to one of three distinct areas of discussion and were therefore best clustered into three overarching themes: ‘establishing Risk-Avert within a school’, ‘use of the Risk-Avert Screening Tool’, and ‘facilitators’ perceptions of the Risk-Avert programme’. Each of these themes and their associated subthemes will be discussed in turn and are presented in Table 7.3.

Table 7.3 – Themes and subthemes

Theme	Subthemes	Further subthemes
Establishing Risk-Avert within a school	Becoming a Risk-Avert facilitator	
	Implementing and adapting Risk-Avert	
Use of the Risk-Avert Screening Tool	The importance and limitations of confidentiality	
	Staff perceptions of the Risk-Avert Screening Tool	
	Facilitators' views of student selection	
Facilitators' perceptions of the Risk-Avert programme	Facilitators' perceptions of the changing nature of risk behaviour	
	Facilitators' observations of student behaviour	Improved relationships
		Improved risk reduction and management capabilities
		Struggles with engagement and understanding
	Lessons learned by facilitators	Suggestions for improving the programme
		Do not be afraid to deviate
		Maintain group confidentiality
		Offer rewards
		Persist
	The impact of Risk-Avert on the wider school community	
	Negative effects of Risk-Avert participation	

7.3.1 Establishing Risk-Avert within a school

This theme 'establishing Risk-Avert within a school' is largely contextual and the information within it provides useful insight regarding the background of the schools and individuals that run the Risk-Avert programme, as well as how they became involved with Risk-Avert and established the programme within the school environment. It consists of two subthemes: 'becoming a Risk-Avert facilitator' and 'implementing and adapting Risk-Avert'.

7.3.1.1 Becoming a Risk-Avert facilitator

Seven of the nine participants described becoming involved with Risk-Avert initially due to the responsibility being passed onto them, usually via a manager, as opposed to volunteering themselves to take part:

> 'I was the the person chosen by the school to go and do the training' (Beth, 4-5)

Six participants were unsure of how the school had initially become aware of Risk-Avert, although the majority felt that a supervisor had likely been contacted about the programme by email, "I think somebody probably just emailed in to the school" (Imogen, 22). One participant who held a more senior role within the school described having sought-out the Risk-Avert programme to improve their provision for students:

> 'we were looking for examples of outstanding schools in the PSHE area [ok] erm one of the local schools…they were doing this thing called the Risk-Avert programme [ok] so that's how we then found out a little bit more about it…' (Alan, 35-41)

No other participant so explicitly described a desire to improve their Personal, Social, Health and Economic (PSHE) education provision as a driving motivation for becoming involved with the Risk-Avert programme. In fact, eight of the nine participants felt unsure as to the approach that the school had previously taken to adolescent risk behaviour before their involvement with the Risk-Avert programme. Seven of them described either a reactive approach to risk behaviour in that it would be dealt with once it had occurred

or that the topic had been covered in a more general way within the PSHE curriculum:

> ‘I think they just tried to tackle it through PSHE… they would tend to sort of get to know the student and kind of pick up on things they were do doing that were risky [yeah] and then addressing it through the lessons’ (Georgia, 408-411)

Most participants implied that they had been involved with the Risk-Avert programme for as long as it had been active within the school. This was typically between one and three academic years in duration. However, Chloe illustrated the issue of staff turnover within schools as they had only joined the programme in the year of the interview, although it had been running at the school since it was piloted:

> ‘we were in on the ground floor [ok] so the moment Risk-Avert came in [mmhmm] we got in on erm pilot level so we’ve been one of the longest running… even though you and I have only been doing it for this year’ (1003-1010)

7.3.1.2 Implementing and adapting Risk-Avert

Four participants implied that their expectations of the programme, as created by the training that they attended, did not match the reality of delivering the programme to students in school:

> ‘they sort of said on the training that it would be would you could literally pick it up and go with it… and I I feel that I’m quite confident with picking up a lesson plan [mmhmm] and going with it but I found that really hard’ (Beth, 81-85)

Only one participant reported that their experience was better than what they had expected:

> ‘much easier than I thought it felt like it was gonna be’ (Imogen, 967)

There seemed to be mixed feelings as to whether Risk-Avert was truly a ‘pick it up and run with it’ programme. Six participants described feeling that Risk-Avert did require additional planning time. The level of this planning was mixed, Helen described spending an evening going over lesson plans and ensuring materials were ready, whereas Chloe and Danielle described planning that focused upon simply reading over the materials and picking out what would and would not be included in a session. The level of planning and preparation put in by participants seemed to be dependent upon how much they were determined to stick precisely to what was prescribed for Risk-Avert – the more they wanted to deliver Risk-Avert precisely as prescribed, the longer it took:

> ‘if you followed it as it says there’s no way you’d get it done it would take longer than an hour [yeah] longer than 45 minutes or whatever it is’ (Danielle, 962-964)

Five of nine participants described situations in which the delivery of the Risk-Avert programme was not prioritised, either by themselves, other staff members or the school more widely. This meant that delivery of the sessions was delayed, prolonged or even abandoned:

> ‘I just didn’t get on and do do the the next bit that was my fault [mmhmm] I just something always kept coming up’ (Imogen, 167-168)

Seven of nine participants described time pressures and timetabling constraints that greatly impacted their running of the Risk-Avert programme. In some cases, this related most to the completion of the Risk-Avert Screening Tool, as organising for one hundred or more students to access computers in as short a time as possible was difficult in schools with limited resources. Two participants described being limited regarding which subject lessons students could be removed from to take part in the Risk-Avert programme. Six participants described further difficulties being added by one-off events such as assessments, or students not wanting to leave a preferred lesson. If not related to the organisation of programme delivery, then time constraints were also present regarding providing students with enough input in a session that must last no longer than one period:

> ‘I haven’t got time to go around and make sure [yeah] in that hour trying to get it all delivered’ (Imogen, 402-404)

There was discussion of several situations in which the turnover of school staff also impacted the delivery of the Risk-Avert programme. In at least one school the staff member moves with the year group, so a new member of staff will be delivering the programme in the following year. In other schools, reorganisation had meant that new staff members were involved with the programme:

> ‘no we’re we’re both new to it… ran by a member of staff who left in October [ok] so therefore erm [COLLEAGUE] more pastoral support [yeah] and this came then under the remit of pastoral intervention’ (Chloe, 40-45)

Opinion was split as to whether having one or more than one facilitator was better. One participant described feeling irritated that their fellow facilitators had not been involved enough and shown more initiative:

> ‘there was us three doing it… and I kept saying to the girls like get your logins login look round the the website and work out what it what you think it is… the idea was we would all take groups [ok] but no-one else has’ (Imogen, 340-348)

Chloe and Danielle had a different view and felt that having two facilitators was very beneficial. They expressed that they could share the workload, and each brought different experiences and approaches to the delivery of the programme:

> ‘Chloe: I think it’s really benefitted from having two of us… and the different approaches… and the different ages…
>
> Danielle: yeah because I will have a totally different take on things to how you have a different take on things [mmhmm] so actually its worked its worked much better [yeah] that maybe on that just one person delivering it with the group
>
> Chloe: and we’ve also bounced off each other’ (1649-1669)

There were mixed feelings as to whether being a teacher or having a teaching background was beneficial or a hindrance when it came to running the Risk-Avert programme. Imogen implied that not having a teaching background meant that planning and implementing sessions was harder, “I’m not a teacher… there’s that different sort of approach… I don’t plan it teachers are good at planning aren’t they so I’m good at just doing things off the cuff (laughter)” (210-214). This would seem to be supported by Georgia’s

assertion that it was easier for her to implement the programme given that she was a teacher as opposed to a member of the support team, “other people had been on the training previously but never implemented it and they weren’t teaching staff they were engagement mentors so in my role as PSHE teacher I felt kind of more able to deliver it to the students” (10-14). However, Beth, Chloe and Danielle made references to them having not been a teacher or behaving like a teacher improving the participation of the students in the programme:

> ‘Chloe: yeah and you not being establishment helps
>
> Danielle: yeah yeah cos they don’t see me as a teacher at all… so they tell me everything’ (1672-1680)

Seven of the nine participants described having felt that it was also important to consider the characteristics of those included in each group. For some this meant grouping participating students according to their identified risk level, for others it meant considering the gender split of the group. Several of the participants described wanting to ensure that there was not a lone boy or girl in any group to prevent a sense of isolation. Three of the nine participants referenced feeling that risk behaviour differed between male and female adolescents. Typically, this meant that male students were more likely to engage in physically risky behaviours, for example jumping from buildings, whilst female students engaged in online or other, less obvious risks:

> ‘some of the discussions we’ve had where the girls have just looked at the boys in absolute disgust at what they have done erm and the contempt some of the girls have shown towards it actually highlighted a

lot of the the differences in terms of the the the risks that the boys perceive [mmhmm] to the girls' (Chloe, 206-210)

Fred also felt that the students' participation with the Risk-Avert programme and other group members differed between the genders:

'miss was observing or most the time even supporting the girls as such [yeah] but they took a backward step on it like I say they wouldn't come out with honest answers regarding sort of sex or anything like that [mmhmm] they wouldn't come out with that sort of stuff' (37-41)

Overall, it was felt by several participants that the gender of group members needed to be considered in deciding who would take part in which group. There was a definite feeling that it was important to have mixed-gender groups where possible. However, in the case of grouping students according to risk level Imogen felt that this was not what would be done should the programme run again:

'I tried to club them together so that those with the most points the higher risk I I definitely saw first… looking back it doesn't really matter' (176-180)

It was also discussed that it was beneficial to consider the academic ability and behaviour in school of those in the groups. One participant expressed feeling that having mixed groups in terms of ability and behaviour allowed for a more balanced group with better student engagement:

'that was really good because the ones that were sort of a bit more well-behaved [mmm] pulled the ones who weren't a long with them… so that

was probably one of my best sort of workshops if ya like' (Emily, 354-357)

All the participants described the requirement to adapt the programme to their needs. Sometimes adaptations were brought about by time constraints:

'I had two groups but because of time management there was two groups of 12 I ended up putting them together in the end…' (Imogen, 352-353)

'we did 2 sessions each week [ok] so we did it over 3 weeks instead of over six weeks' (Beth, 10-11)

The two schools operated by the Children's Support Service described how they have expanded the programme to all their students as risk behaviour is a significant issue for every student that attends:

'instead of erm doing a baseline with all year eights [mmhmm] and then from that doing a year eight group err we do a baseline with all our pupils… involve all the pupils who are there at that particular time…' (Alan, 66-70)

They also adapt their use of the social norms data provided by the Risk-Avert Screening Tool as their social norms data is skewed due to behaviour issues among their students. In their case, one school spoke of using national data in educating their students, but using the school-level data to inform staff members:

'take smoking for example [yeah] erm the vast majority of pupils in year nine will not smoke [mmhmm] at a Pupil Referral Unit the vast majority

of pupils will smoke [yeah] so when we're using social norms we don't use school data we'd we use national data' (Alan, 185-189)

Interestingly the other school operating under the same professional body did not follow the same methods of adapting their data, but instead chose to omit that section of the programme for students, demonstrating the discrepancies between the running of the programme in different schools even when they would be assumed to have the same guiding policies:

'INT: So with the social norms do you still tend to use the the the centres norms or do you

RESP: I haven't I've avoided it in the past so perhaps I need to think about I've just tended not to do it… I'm not sure… if we can access national norms or summin' (Georgia, 385-392)

Many participants spoke of using the Risk-Avert programme manual as a general starting point, but very much choosing what they spoke about or included depending upon the students involved in each session:

'I sometimes changed round what we were doing… I just sometimes I would do the the written work first because otherwise they would just they'd had their fun bit and they didn't want to get engaged in anything else…' (Helen, 258-263)

Sometimes these changes were described as more off-the-cuff, in that something had been planned but would then be changed in the moment due to the engagement or behaviour of the students:

'yeah and again and it would be very much on them as well [mmm] cos it'd be like this is what we're doing this this session and depending on

> how they would go with the discussion [mmm] would depend on whether stuff got stuff got covered [yeah] or didn't in a sense or used' (Danielle, 988-992)

Typically, the ability to make adaptations was discussed as being a real positive of the Risk-Avert programme. However, the number and nature of adaptations made by each individual school call into question the practicality of the Risk-Avert programme and create problems with its evaluation. It is difficult to compare the effectiveness of the programme across schools if its implementation is not consistent because each has made adaptations.

7.3.2 Use of the Risk-Avert Screening Tool

The Risk-Avert Screening Tool is a questionnaire used to identify which students at a given school may benefit from participating in the Risk-Avert programme (please see sections 3.2.2, page 85 and 4.2.2, page 109 for in-depth discussion of the Risk-Avert Screening Tool). This section discusses how the Risk-Avert Screening Tool was used by schools and its perceived worth. Three subthemes were identified: 'the importance and limitations of confidentiality', 'staff perceptions of the Risk-Avert Screening Tool' and 'facilitators' views of student selection'.

7.3.2.1 The importance and limitations of confidentiality

This theme relates to the level of knowledge that the interviewee possessed regarding students' responses to the Risk-Avert Screening Tool and how this impacted on their delivery of the programme and/or students' engagement with the programme. Although students' responses were supposed to be confidential, it appears that the level of confidentiality varied from school to

school depending on the duties of the staff members and the ability of the students. Two respondents spoke of needing to read through the survey with the students to ensure their participation, “a lot of our pupils struggle with the reading and writing of it… in many cases we sit and read and… support that” (Alan, 298-300). This does call into question the accuracy of the Screening Tool for those individuals that require a staff member to help them in completing it, as some students may feel uncomfortable providing truthful answers in front of school staff members. Although, this would depend upon the relationship between staff member and student and the openness of the student. Two respondents from different schools felt that their lack of knowledge regarding survey questions and responses was beneficial in ensuring that students taking part in the programme were treated fairly and not intentionally or unintentionally singled out during programme delivery:

> ‘I find sometimes if you know too much information you make that preconceived [yeah] judgement on that on that person [mmhmm] and I like I for it to work fairly for them we need to go in there a little bit more blind’ (Danielle, 1855-1858)

As well as potentially impacting upon the facilitator’s delivery of the programme, the confidentiality of the tool was expressed to be important to students, “they had obviously a unique code that we issued so you wouldn’t know the child’s identity [mmhmm] and I think the children liked that” (Imogen, 68-70). However, there seemed to be some confusion as to the difference between the survey being confidential and being anonymous, “they’re all told its anonymous and then then they get the big big on their big high horses how’s its anonymous if you’ve picked us to do that and you know our scores”

(Danielle, 1264-1266). This could be due to the explanation provided prior to completion of the Risk-Avert Screening Tool, or possibly because of inaccuracies maintained by staff involved with the programme.

7.3.2.2 Staff perceptions of the Risk-Avert Screening Tool

The two schools operated by the Children's Support Service identified how useful the survey results were in training their staff who otherwise are not involved with the Risk-Avert programme and helping them to understand the distribution of risk behaviour among their students:

> 'what I do is I use the feedback from the surveys in the three centres [mmhmm] to deliver inset to the teachers at the different centres [ok] so I can then use that survey data [mmhmm] to give an overview of the pupils that we currently have at each of the centres [yeah] and what Risk-Avert is and how it operates within in our subject area' (Alan, 155-160)

When asked about their opinions of the questions included in the Risk-Avert Screening Tool two respondents felt that they would make no changes. However, many respondents made suggestions of possible additions. This varied according to the needs and focuses of each school, but included the addition of questions regarding healthy relationships, LGBTQ issues, gang-related activity and extremism:

> 'I recently went on an LGBTQ conference [ok] and I wonder if maybe there could be a question around that… maybe gangs as well [gangs] yeah the gangs thing yeah cos that that's another current hot topic isn't it' (Georgia, 183-211)

Helen wished to remove the question regarding smoking as they did not consider it relevant to their school.

7.3.2.3 Facilitators' views of student selection

Eight of the nine participants provided examples of occasions on which the results of the Risk-Avert Screening Tool appeared to be inaccurate and thus made the tool less useful at identifying the right students to take part in the Risk-Avert programme:

> '…how useful do you think the survey was at picking the right students to take part?
>
> RESP: …not at all' (Imogen, 112-115)

The main explanation given for this was that the students were dishonest when answering the items on the Risk-Avert Screening Tool:

> 'they thought… a lot of pupils wouldn't have been honest… a lot of them said well this I spoke to this person they said that they weren't honest and things like that' (Beth, 578-581)

However, there is of course the possibility that the staff members' judgement is incorrect, and the students were being honest after all and/or the students lied when confronted by staff regarding their answers.

Three of the nine participants described situations in which the Risk-Avert Screening Tool may have been inaccurate due to practical issues with its completion. This particularly related to the practicalities of organising for several hundred students to complete the Screening Tool. Several schools

lacked the IT resources to ensure the smooth completion of the Risk-Avert Screening Tool:

> ‘I found one of the most difficult things about the programme was getting the kids screened [ok] we’ve got over 200 can’t remember now 280 or something in that year group… both times that we’ve run it that has been the biggest barrier’ (Helen, 578-586)

More minor issues experienced included students inputting the incorrect identification code, “I definitely had a couple of people put in the wrong code … some people that were there twice… and some people weren’t there at all” (Imogen, 138-141), students making mistakes in understanding the questions, “sometimes the survey you know the kids don’t understand the questions correctly” (Emily, 136-137), or requiring staff assistance in completing the Screening Tool due to the wording being complicated, “the feedback questionnaire is a bit wordy… I can normally get em to do it if I sit and talk and tick it for them… the only way I can do it is if I read the question and they do it” (Georgia, 351-355).

Regarding improving the accuracy of the results of the Risk-Avert Screening Tool, there was acknowledgement from some participants that issues regarding IT resources, student truthfulness or student mistakes were not of the type that could be corrected by changing the Risk-Avert Screening Tool: ‘it’s a hard one because I’d say that you can’t you couldn’t have done the survey any different’ (Imogen, 154-155)

Five participants explained that identification by the Risk-Avert Screening Tool was not the only way that a student may be invited to take part in the

programme, nor does identification by the tool guarantee that a student will be invited to take part. It became clear that the school and staff members use their own judgement in selecting students:

> ‘as a school we also used our judgement of this student might not benefit from the group session [mmhmm] but this student would so we’ll bring them in and things like that so we kinda used the scores as a baseline and then worked from there as well’ (Beth, 129-133)

Given difficulties that the schools faced with ensuring the completion of the Risk-Avert Screening Tool, this does somewhat call into question whether the Risk-Avert Screening Tool is necessary for identifying students to take part in the programme, particularly if staff feel that their own judgement is more accurate. However, five of the nine participants spoke of the Risk-Avert programme allowing for the identification of and opportunity for contact with students that may otherwise have been overlooked as their behaviour may have gone under the radar in comparison to more extreme behaviours demonstrated by others:

> ‘our high scoring lad at the time was not majorly trouble… but it highlighted the moment he answered the questions [ok] that the potential for serious trouble… was there’ (Chloe, 545-555)

As well as the Risk-Avert Screening Tool being used directly for student selection, there was also suggestion that results were used to determine the provision of resources and lessons for the year group, that is, identifying what behaviours or issues may or may not require attention within or outside of the Risk-Avert programme:

> ‘it will highlight if like 80% of our students are using cannabis and we know we have to focus on that if 60% of year nines are being sexually active and using having unprotected sex then that highlights a major focus we need to kind of look at’ (Georgia, 149-153)

7.3.3 Facilitators’ perceptions of the Risk-Avert programme

The Risk-Avert programme consists of six sessions focused upon increasing participants’ knowledge regarding their risk behaviour and potential methods for managing it. Typically, it is expected that the six sessions are run one per week for a period of six weeks and that the groups consist of around 8 to 12 students at a time. This may mean that schools run more than one group to capture all students identified by the Risk-Avert Screening Tool (Bowles, 2015; The Training Effect & Essex County Council, 2015). The following five subthemes: ‘facilitators’ perceptions of the changing nature of risk behaviour’, ‘lessons learned by facilitators’, ‘the impact of Risk-Avert on the wider school community’, ‘facilitators’ observations of student behaviour’ and ‘negative effects of Risk-Avert participation’, relate broadly to the Risk-Avert programme, typically focusing on its impact and the views of staff. The subtheme ‘lessons learned by facilitators’ has a further five subthemes: ‘suggestions for improving the programme’, ‘do not be afraid to deviate’, ‘maintain group confidentiality’, ‘offer rewards’ and ‘persist’. The subtheme ‘facilitators’ observations of changes in student behaviour’ also has a further three subthemes: ‘improved relationships’, ‘improved risk reduction and management capabilities’ and ‘struggles with engagement and understanding’.

7.3.3.1 Facilitators' perceptions of the changing nature of risk behaviour

This theme considers how participants perceived risk behaviour of young people and how this related to their experience of delivering the Risk-Avert programme.

In discussing their experience of the Risk-Avert programme, several of the participants revealed attitudes, management strategies and specific risk behaviours that had been different in the past. Emily described how the type of risk behaviours engaged in by adolescents had changed:

> 'Not many kids smoke now cos it's so socially unacceptable [mmhmm] erm they don't really drink unless they're getting it from parents ya know erm drugs I don't think… I mean they may try all this stuff but I don't think it's as prominent as online [mm] I think the online stuff it it rules everything' (528-532)

Several participants used language that implied that the risk behaviours deemed concerning or methods used to prevent adolescent risk behaviour have changed or do change over time. This included Georgia referring to LGBTQ matters as "hot at the moment", implying that the importance of topics ebbs and flows dependent upon wider political and cultural issues. Emily and Helen described situations in which they felt the management and prevention of risk had changed from when they were at school. Emily described how campaigns like road safety and stranger danger were incredibly prevalent when they were young, and they were "bombarded" by them via the television. But such campaigns no longer exist or at least their presence is no longer felt in the same way.

Imogen, Chloe and Danielle seemed to share the view that the only thing that effectively prevents adolescent risk behaviour is the consequence to risk behaviour. That is, adolescents will not learn to not do a risk behaviour until they do it and something goes wrong:

> ‘and of course some of them are at that at that level where they haven’t actually done anything major [mmhmm] in their life they can they need to do that major to then be able to decipher erm and maybe help them to think beforehand’ (Danielle, 816-819)

There was also recognition from one participant that sometimes external consequences and parental supervision were not enough to manage adolescents’ risk behaviour:

> ‘they were kids whose parents are supportive and whose who have quite strong boundaries at home but they were putting themselves at risk by the internet [mmm] or having a drink’ (Helen, 448-450)

Imogen further acknowledged that they did not feel participation in the Risk-Avert programme would truly prevent risk behaviour despite the adolescents being provided with all the information to make good decisions:

> ‘I’m sort of hoping that the information I’ve given em is going in [mmhmm] they might not act on it but I’m pretty sure they’ll come and tell me that I told em so (laughs)’ (812-814)

These comments regarding how a participant feels risk behaviour may be influenced and reduced or should be dealt with are sometimes contrary to the underlying ethos of the Risk-Avert programme, which aims to be much more

than an information-providing programme and instead provide adolescents with useable life skills to apply to a variety of risky situations and decisions. This calls into question whether the underlying ethos of the Risk-Avert programme is thoroughly explained to and accepted by the staff members trained to facilitate it. It also raises the question of whether someone who holds beliefs and views contrary to the ethos of the programme can truly deliver it in such a way as to positively impact upon adolescents. Perhaps more consideration needs to be given to the views that facilitators come to the programme with, how this may impact upon the way that the programme is implemented and the potential for addressing this.

7.3.3.2 Facilitators' observations of student behaviour

Two participants were unable to think of any changes in the behaviour or attitudes of students that had participated in the programme, whereas six participants could provide specific examples of improvements in behaviour or attitudes among students. Facilitators' observations of student behaviour will be discussed in the following three subthemes: 'improved relationships', 'improved risk reduction and management capabilities', and 'struggles with engagement and understanding'.

7.3.3.2.1 Improved relationships

Six participants thought that participation in Risk-Avert led to improved relationships, both between facilitators and students and amongst students in the group.

Helen spoke of the initial trepidations that some students expressed regarding who else would be a part of the Risk-Avert group with them. They described

having undertaken measures to prevent students refusing to participate due to others in the group, namely they chose to not reveal the participants until the sessions had begun:

> ‘I’ve said I’m not telling you who else is in the group and every group gelled [mmhmm] every single one and if you’d have said to one particular child you’re going to be in with this I’m not doing it then’ (202-207)

Helen spoke of one individual who may potentially have chosen not to take part had they known they were going to be the only female in the group, but appeared to end up enjoying the sessions:

> ‘and one group only had one girl in it… and if I’d have said to her well it’s all boys except you she wouldn’t have wanted to do it [yeah] but actually she had really good fun’ (207-217)

Helen and Beth both expressed feeling that participation in the Risk-Avert sessions had promoted bonding between students that perhaps previously would not have had much, if any, contact:

> ‘I think they learn to tolerate people that aren’t the same as them… it gels kids and it makes kids be more tolerant of each other I think’ (Helen, 406-410)

As well as improvements in the relationships between students, interviewees also felt that their relationships with students had been improved because of the students’ participation in the Risk-Avert programme. Six of nine participants expressed this sentiment multiple times. Imogen spoke of how

facilitating the Risk-Avert programme had exposed her to students that perhaps they would not have had contact with otherwise:

> ‘it’s been good for me to get to know them… you’re always seeing the the sort of like 15 20 kids that are kind of causing you or the school problems… it’s been nice to sort of see the children that are somewhere in the middle as well’ (495-499)

Several participants spoke of this improvement in relationship appearing to have been due to an increased respect or understanding between facilitator and student. For some this came from students no longer seeing them as extremely authoritative, “I think they they are seeing me as the year’s gone on as a more real person to them [mmhmm] ya know and not somebody that’s a little bit colder or more in place as a teacher is” (Imogen, 780-783). Others felt that this was simply caused by the ability to spend intensive time with a small group of students, “I think not only is the programme helpful but having a member of staff who is spending intensive time with a small group helpful” (Beth, 555-557).

7.3.3.2.2 Improved risk reduction and management capabilities

Three participants referenced instances in which they felt students had demonstrated better risk management due to the tools and strategies provided by the Risk-Avert programme, either directly in the form of coping mechanisms that had been discussed in the sessions, or indirectly in that they felt better able to discuss issues with staff members:

> ‘its catching those ones whose behaviour is a little bit frisky or risky erm and guiding them or giving them the tools to erm change the route they might be going on’ (Helen, 75-78)

Several participants spoke of feeling that students were better able to analyse their decisions regarding risk behaviour and risk factors because of their participation in the Risk-Avert programme:

> ‘after we’ve done the programme we’re able just you know look at things and say you know would you do that would you not do that [yeah] why would you do that why would you not do that’ (Alan, 580-583)

> ‘they can identify the consequences [mmhmm] and the impact of their behaviour on everything else’ (Danielle, 1153-1155)

Two of the nine participants spoke of instances in which they felt students that participated in the Risk-Avert programme were better able to identify risk behaviour or the potential for risk behaviour in others:

> ‘and they also will come and tell you that somebody else is giving them concern [ok] which they certainly would not have done before’ (Chloe, 1710-1712)

> ‘in fact one group of girls said… we think more girls need to do this’ (Helen, 474-475)

Six participants spoke of students that participated in the programme having shown an increased level of self-awareness as a result:

> ‘I also think we’ve got those that yes they blow but I think they’ve got a better handle on their anger management they know they blow now… which they didn’t necessarily know before and they know they haven’t got the strategies in place so they come and find the strategies’ (Chloe, 1105-1113)

> ‘INT: Ok erm what are the key things that you thought the students took from the programme
>
> RESP: Self-reflectiveness was the biggest one’ (Beth, 531-534)

Five of the nine participants mentioned how students who took part were better able to identify the support that they needed in managing their risk behaviour, as well as where they could access that support:

> ‘just an awareness and an openness to needing support and needing help and its positive [mmm] experiences of support and not just negative [yeah] telling off if they’ve done something wrong’ (Beth, 547-549)

Five of the nine participants implied that pressure from peers was a significant factor in increasing adolescents’ risk behaviour. Half of these participants described feeling that Risk-Avert reduced the effect of peer pressure and gave students a greater ability to consider the impact of peer pressure upon themselves:

> ‘what do the students take from it ermmm yeah I think realizing quite how much people around them influence them that’s quite helpful’ (Georgia, 446-448)

It was also noted that peer pressure may impact upon the behaviour of students *within* the Risk-Avert programme sessions:

> ‘when I see a student one to one they’re totally different than they are in a group [ok] completely different’ (Beth, 618-620)

7.3.3.2.3 Struggles with engagement and understanding

Five of the nine participants described difficulty in encouraging students to engage in the writing tasks outlined by the Risk-Avert programme:

> ‘cos nine times outta ten they wouldn’t write nothing’ (Fred, 146-147)

Many participants spoke of their efforts to improve student engagement by omitting writing tasks or focusing more on conversation:

> ‘there was an awful lot of writing expected [ok] so erm I tried to sort of turn it into a more of a conversation and just write a a word’ (Imogen, 547-548)

There was a general feeling that the reluctance to engage with writing tasks was less to do with the specifics of the task and more to do with the general nature of the pupils that are involved with the Risk-Avert programme:

> ‘they don’t really wanna be writing a lot down it it and ya know that if they were in class they would be the the class that doesn’t write a lot down’ (Imogen, 400-402)

As well as difficulties encouraging students to write, several participants described difficulties with student engagement more generally and it was clear from some participants that the level of involvement in any given session could change depending upon circumstances related to the group, session, or the individuals themselves:

> ‘I mean the first group when I showed em about the brain they thought it was brilliant… we had a really insightful conversation just about that [mmhmm] the second group they’re like what is this [ok] why are we looking at that… it was like pulling teeth a little bit’ (Imogen, 465-474)

Thus, difficulties engaging students and maintaining that engagement didn't seem to be directly related to the Risk-Avert programme materials, although one participant did describe at least one element of the programme that caused students to "switch-off":

> 'I think they they saw it as a little bit boring if I'm honest… I don't know they just didn't really engage [yeah] with the traffic light system' (Helen, 317-324)

Three participants provided information that demonstrated that students had difficulty in putting the theory discussed in the Risk-Avert programme into practice in their daily life due to the theory being too complicated and lengthy for the year eights. The Four Whats, a concept introduced in Risk-Avert that aims to enable students to think through their motives for behaviour before engaging was more frequently mentioned as problematic:

> 'Interviewer: ok erm were there any particular elements of the programme that erm were difficult to deliver or that the students didn't understand as well
>
> Chloe: I think potentially only the… Four Whats yeah
>
> Danielle: yeah I think they understood them but how to how to put them practically in how they can use them on a day to day scale [mmhmm] they couldn't get their heads round… because there's too many erm I think' (762-780)

The Four Whats were described by six of the nine participants as being too complicated and taking much more time to explain and understand than the programme allows for:

> ‘it’s the explaining to them the erm the cogs system [ok yeah] erm and they they found that quite hard to understand… and every group struggled with that… they kept saying what d’ya mean I don’t understand it and when they were doing their worksheets they weren’t really getting it’ (Helen, 273-281)

There was suggestion from one participant that this difficulty in understanding the Four Whats may be due to the visual used to explain them. They felt that perhaps students of this era have little understanding of the concept of working cogs and how cogs relate to each other:

> ‘Well I had a I think it was what leads on from what maybe a flow chart [ok] would be better [yeah] I think the the erm the mechanics of a turning cog I’m not sure they’ve they’ve ever seen turning cogs’ (Helen, 293-295)

Other elements of the programme that were mentioned as those that students did not like were The Traffic Lights, which students felt were boring and/or too immature for them and the videos related to peer pressure, which were felt to include footage that was too old and out-of-date and therefore not relatable.

7.3.3.3 Lessons learned by facilitators

All the participants described changes that they made and lessons that they learnt because of running the programme. The following five subthemes (‘suggestions for improving the programme’, ‘do not be afraid to deviate’, ‘maintain group confidentiality’, ‘offer rewards’, and ‘persist’) group what participants learned and their suggestions as to what worked and what did not.

7.3.3.3.1 Suggestions for improving the programme

Every participant was asked whether they would make changes to the Risk-Avert programme. Five of the nine participants described wishing to provide a wider group or age range the opportunity to take part, be that the whole year eight group or multiple different year groups. This would allow schools to capture a broader range of students and/or address risk behaviour at multiple ages:

> 'actually if I went back and did year eight again I would might start with the first lot of children that are picked but then I might even of done it with all of em' (Imogen, 721-723)

Those schools with a high turnover of students also expressed wishing to engage in screening and implementing the programme multiple times in the academic year:

> 'we get a high turnover and something that I'm actually thinking about is that we do Risk-Avert in the kind of October/November… and maybe to revisit the programme in May/June' (Alan, 75-78)

Many participants discussed topics that they felt should be added to or removed from the Risk-Avert programme. They were also able to acknowledge that these more specific needs are likely to vary between the schools depending upon their student body. The topics that were discussed as being beneficial to bring into the programme included gang membership, extremism, peer pressure, healthy relationships, peer-on-peer abuse and self-harm. One participant did feel that smoking did not need to be covered in either the Risk-Avert Screening Tool or the programme. It is of note at this

point that the essence of the Risk-Avert programme is to not focus on specific risk behaviours, but instead provide skills and techniques that could be broadly applied to risk behaviour. Perhaps this aspect of the programme was missed by the participants.

Two participants felt that the Risk-Avert programme would benefit from some type of follow-up or add-on to act as a reminder for students of the topics covered:

> ‘maybe some sort of follow-up… some sort of gathering for the children that have done it or something… maybe even some workshop type things for them’ (Georgia, 569-577)

Two participants also felt that students required a greater sense of achievement after completing the programme, perhaps by the inclusion of a certificate or “graduation”:

> ‘I would like to see a a really a nice certificate for em [ok] at the end… [yeah] to take home and show’ (Emily, 454-461)

There was some allusion to the certificate being integral in getting parents involved in the sense that students could take it home and perhaps that would provoke conversation and greater parental involvement. A desire for greater parental involvement in the Risk-Avert programme was also expressed by Chloe and Danielle. They suggested this may be accomplished via an assembly for parents and guardians at which the programme and the results of the Risk-Avert Screening Tool could be discussed. Several participants felt that the parents of students involved with the Risk-Avert programme lacked knowledge of what it involves and what its purpose is and thus were unable to

support their children in the process. There was also a feeling that parents simply lacked knowledge of the risks that their children were exposed to or involved in and this could be improved by sharing the results of the Risk-Avert Screening Tool with parents:

> ‘it’s such a shame that Risk-Avert doesn’t actually involve the parents in any way … the findings are that 8% of your year group don’t smoke do smoke whatever… but that information unless we share it as a school with the parents doesn’t get shared they just get told that their child is doing this’ (Chloe, 358-378)

One participant also suggested that wider staff training at the schools may be useful in improving the profile, recognition and prioritisation of the Risk-Avert programme.

As has been discussed in previous subthemes, suggestions were made for improving the programme by changing specific elements such as the Four Whats and The Traffic Lights to improve student understanding of and engagement with them. They were felt to be too complex, too immature or simply boring. Helen called for the programme to have more specific examples of techniques or methods for students to use to remove themselves from or prevent a risky situation. The example they provided was techniques for how to leave a car being driven at speed:

> ‘some sort of crib sheet or little reminder things like how to not do things when your friends are doing them’ (Helen, 839-840)

7.3.3.3.2 Do not be afraid to deviate

Typically, those participants that felt the Risk-Avert programme was most useful or enjoyable seemed to have deviated from expectations in some way; whether that be deviating from what is usually expected of a teacher or a lesson or deviating from the procedures prescribed for the Risk-Avert programme.

Five of the nine participants described the importance of the sessions feeling informal and not like a typical lesson. It was felt that this encouraged students to attend consistently, participate well and share with the group and the facilitators:

> ‘I think that’s what I’ve learned is just to keep it relaxed and fun’ (Emily, 804-805)

Participants also expressed that student engagement with the Risk-Avert programme was greatly improved when they shared their own experiences and insights with the students. It was felt that this created a bond of trust between facilitator and student that was beneficial, as well as portraying the facilitator as human and not just a teacher. Additionally, providing anecdotes was often more relatable for students than sticking to the exact prescription of the Risk-Avert programme:

> ‘I was telling em real life stories of their friends and them themselves me as a mum and how I’ve viewed risk and… children that I’ve known in the school doing really risky things of year eight and they really engaged with that’ (Imogen, 441-445)

Three participants expressed the importance of making sure the material discussed was relatable to the students and not too abstract. This typically meant straying from the Risk-Avert proforma slightly and instead inserting the facilitators' own examples or anecdotes or focusing on the use of videos and scenarios. A failure to do this was often described as having a negative effect on student engagement:

> 'that is something that they would remember rather than going through like someone's scenario [yeah] because to them it's not real they don't really make the connection [yeah] or my children didn't seem to make the connection [mmhmm] they weren't interested in something that wasn't real' (Imogen, 652-656)

Four of the nine participants expressed how important conversation was in engaging the students with the Risk-Avert materials. Several participants described having had trouble with getting students to engage with the Risk-Avert materials until they began to just discuss the topics. Some felt this was simply because students were averse to writing tasks.

7.3.3.3.3 Maintain group confidentiality

Four participants described having expressed to students that the topics discussed in the group were confidential, except in the case of a safeguarding risk. It was felt that this encouraged students to open-up without fear of judgement and thus engage better with the facilitator and the Risk-Avert materials:

> 'I do say to them it's a confidential group as well… I say whatever they say is confidential apart from if it's really you know a safeguarding issue

umm so I think they feel kind of secure in talking about it' (Georgia, 454-458)

7.3.3.3.4 Offer rewards

Although less common in comparison to the other techniques described for improving student engagement, two participants described using rewards to encourage positive behaviour. In one case this was explicitly using food as a reward, but both participants also described simply using the videos that the students had found funny as a reward for completing the session well and/or early:

'the videos we still play throughout if we get through the session… they're a good bargaining tool' (Danielle, 1951-1952)

7.3.3.3.5 Persist

A learning that came up among several participants was the idea that the experience of delivering the Risk-Avert programme improved over time. Those who had delivered the programme more than once expressed having felt more confident the second time:

'first year was a bit tricky cos there was lots of activities to do… the second year was ok third year… it was absolutely fantastic [ok] it it went really well because I knew exactly what message I was getting across' (Emily, 305-309)

For some this was because they felt they had made mistakes the first time that could be corrected on the second running, for others it was simply a greater sense of familiarity with the materials and programme. This is

significant, as negative views of the programme provided by those who have only run it once may be improved should the facilitator or school run it again.

7.3.3.4 The impact of Risk-Avert on the wider school community

Many participants spoke of the impact that the programme had had on the wider school community, that is, students and staff that were not directly involved with the Risk-Avert programme.

The impression given by the participants was that the awareness of staff members not involved with the programme of Risk-Avert varied across the schools. For most schools, the awareness of staff members went no further than practical issues, for example, they were a part of the leadership team that approved its roll-out, or they knew it was happening because students would be removed from their classes to participate:

> 'INT: Erm what about other staff within the school do they know anything about Risk-Avert or?
>
> RESP: Er the leadership team do [yeah] and obviously the teachers that I ask but nobody's really come up to me and asked me what it's about' (Imogen, 864-869)

Two participants referenced that the programme is "contained", that is, it happens in isolation from the rest of the school:

> 'I don't think they talk about it I don't think they talk about anything because they're just du du du du (motions like "compartmentalized")
>
> INT: Everything's contained and it's just one hour lesson [yeah] and then they move on [they move on] to the next thing
>
> RESP: Yeah and they're doing summin else' (Emily, 619-626)

There was feeling among three participants that this lack of awareness was not necessarily specific to the Risk-Avert programme, but applied to pastoral interventions more generally:

> ‘Interviewer: so it happens quite separately from… everything else
>
> Danielle: I think interventions on a whole happens quite separately (laughter) [ok] from everything else… not just not just necessarily Risk-Avert just erm across the board’ (1206-1220)

Chloe and Danielle discussed that the lack of awareness may be fuelled by ignorance on the part of other staff members, or a feeling that pastoral work is not as important as academic work given that it cannot be quantified or targeted in the same way:

> ‘Chloe: it is purely and utterly that it it is one of the dark magics worked by Chloe and Danielle and it works I don’t need to know about it [ok] um and quite frankly I hate to say it but I’m more important in what I’m doing…
>
> Danielle: and that mindset that it is about they measure things academically [mmm] not on what needs to come in socially or life skills wise that’s not… erm it’s not on progress eight (laughs) as such… it’s not in our interest’ (1465-1504)

However, there were two schools operating under the same professional body that spent time using Risk-Avert data to train their staff members and so staff awareness in those environments may have been slightly higher:

> ‘we do staff training… where we use the data for the three institutions err once a year it gives it a high profile [mmhmm] so err staff would if you

said Risk-Avert they'd recognize the term… they would then say that's what we do in PSHE and Alan spoke about it' (Alan, 489-494)

There was consensus among several participants that the opportunity to send more staff on training regarding the Risk-Avert programme would be beneficial:

'do they do any staff training d'ya know like come and speak to teachers about it that might be quite nice as well' (Georgia, 671-673)

Several participants referred to how the entire year group partake in the Risk-Avert Screening Tool and/or a social norms assembly and are aware of other students being selected and leaving classes, but that their awareness typically stopped there:

'they all do the questionnaire don't they at the beginning [yeah] and they're all very aware of it' (Danielle, 1262-1264)

7.3.3.5 Negative effects of Risk-Avert participation

Whilst none of the participants referred to any overt negative impacts of Risk-Avert, there were two participants who discussed instances when participation in the Risk-Avert programme may have had negative effects. Emily explained the need to choose carefully which students participate in the programme, as even if selected by the Risk-Avert Screening Tool, they may be unsuitable for group participation for other reasons. The specific example that they provided was children with special educational needs who may have been exposed to information and behaviours that they found scary, "especially with kids with special needs [mmhmm] um may not really

understand… in fact it was probably more of a fear factor from listening to what the other kids were up to" (Emily, 151-156).

Five of nine participants implied that there is a negative stigma associated with participating in the Risk-Avert programme. They described for example adjusting their description of the programme to parents or students in order that they would feel better about being selected for or participating in the Risk-Avert programme.

Although they did not explicitly state that they felt that parents thought that being involved with the Risk-Avert programme was negative, a few of the participants did describe feeling the need to adjust their explanation of the Risk-Avert programme when talking to parents to prevent them from feeling that their child had been singled out or was abnormal. They also implied that parents felt that being invited to participate in the Risk-Avert programme was accusing their child of being "bad" or grouping them with other students they did not think they should be associated with:

> 'I liked the templates for the letters erm I did make a few adaptations I just wanted to word something a little bit differently … we worded it more that we just feel that at this age it's worth going through this course… just so that parents didn't automatically feel that your child's been chosen… we wanted to make it sound a little bit more any child could get chosen' (Imogen, 705-721)

7.4 Discussion

The analysis of interviews with teachers and school staff members who had been involved with the Risk-Avert programme revealed three themes: ‘establishing Risk-Avert within a school’, ‘use of the Risk-Avert Screening Tool’, and ‘facilitators’ perceptions of the Risk-Avert programme’.

What became evident in ‘establishing Risk-Avert within a school’, was that typically school staff members did not volunteer to become involved with the Risk-Avert programme, they were instead asked to or put forward by a more senior member of school staff. There often was not a clear explanation as to why the school had become involved with the Risk-Avert programme and many of the schools chose to adapt the programme in some way to suit either their own needs or the needs of their students. Sometimes this merely meant merging what was described as two sessions in the Risk-Avert manual into one session to meet time constraints. In other schools, the programme was expanded to include more students, or elements of the programme were adjusted to improve student engagement. A process evaluation of a different school-based multiple risk behaviour programme in London, England also found that timetabling issues present in schools sometimes resulted in a larger number of students in a group than had previously been agreed (Densley et al., 2017). This suggests that timetabling in schools may be a significant issue to consider when implementing school-based programmes in England.

In all, what became clear over the course of the interviews and subsequent analysis was that the Risk-Avert programme was often run in a way that was contrary to the expectations outlined in the Risk-Avert materials.

This was dependent upon the time constraints that schools were facing, the amount of support from senior members of staff, the nature of the students attending and the number of facilitators available, among other considerations. However, in the present research it seemed that those staff members that were prepared to deviate from the expectations laid out for the Risk-Avert programme were also those that felt most positive about it. For example, it appeared that they expressed less difficulty with student engagement and less experience of struggling to complete the programme elements within the time limit imposed by a typical lesson length. The above-mentioned process evaluation (Densley et al., 2017) of the Growing Against Gangs and Violence programme in London similarly found that the facilitators observed found it difficult to manage time within sessions as there was a delicate balance to be struck between engaging the students and presenting programme materials, which some were better at than others. Although the Densley et al. (2017) study did include one primary school in their sample of three schools, their research suggests that finding the aforementioned balance and the difficulties in doing such are not unique to the Risk-Avert programme.

While deviating from the Risk-Avert proforma may seem to improve staffs' views of the programme, the discrepancies between the theory of implementing the Risk-Avert programme and how the programme is run in the reality of a school environment could be positive or negative. Although the developers of the Risk-Avert programme would certainly prefer that the intervention were delivered exactly as prescribed, they are realistic in understanding that adaptations will be necessary when dealing with such a

diverse range of schools and students (M. Bowles, personal communication, 17 December 2019). In fact, during the course of our personal communication it became clear that both the programme developers and I feel that the adaptability of the programme is a strength as it makes it more useable in a wider variety of situations, so long as the main principles of the intervention are still being adhered to. This represents a personal shift in thinking that has occurred during my experience of this research, as I previously held a more fixed view of fidelity. Since exploring the use of the Risk-Avert programme it has become clear that programme fidelity must be balanced alongside programme usability, as being overly prescriptive could be prohibitive. However, it cannot be denied that deviations in how the programme is run cause difficulty in evaluating the impact of the programme. It is difficult to establish whether any impact observed across schools is due to the programme itself or the way that a school has implemented the programme.

Regarding using the Risk-Avert Screening Tool, it was expressed that students appeared to value the confidentiality of their answers but did not always know the difference between answers being confidential and anonymous and who could see what information about them. Concerns regarding student honesty and the impact of this on the accuracy of the Risk-Avert Screening Tool were raised by almost all interviewees. However, it was typically still felt that the data provided by the Risk-Avert Screening Tool was useful, particularly regarding establishing the norms for different behaviours within the school and/or year group. Some participants also described situations in which a student had been identified by the tool that they would

not have identified themselves and they did go on to benefit from participation in the programme, although such a situation seemed rare.

Despite interviewees describing the Risk-Avert Screening Tool as useful, many also described situations in which their own or others' opinions had overruled the information provided by the Risk-Avert Screening Tool and a student had been included or excluded from the programme as a result. This reflects how school staff have access to further contextual information about students that the Risk-Avert Screening Tool naturally cannot capture. However, the expressed difficulty in completing the Risk-Avert Screening Tool due to the practicalities of computer access, as well as programme facilitators feeling that they would have identified the appropriate students themselves, calls into question whether the tool is a necessary pre-requisite to running the intervention.

Overall, the view of the Risk-Avert programme, captured within 'facilitators' perceptions of the Risk-Avert programme', was positive. Teachers appeared to value the opportunity that the programme provided for getting to know students and discuss or identify issues related to risk behaviour. It was clear that all the staff members spoken to felt strongly that running the Risk-Avert programme had improved their relationships with students. In some cases, this was thought to provide students with an improved ability to seek support in times of need and allowed school staff to engage with students that may previously have been unnoticed.

According to the facilitators, as well as having an improved ability to seek support, some students demonstrated improved decision-making skills, self-awareness and ability to identify risk in others. However, some students were

described as struggling with elements of the programme, perhaps because they could not engage well with written tasks or did not understand the theory. An additional issue raised was that some materials were not mature enough for students and this caused them to disengage. However, any experiences of students discussed here are only those noticed by the interviewees as school staff members and are not reflective of the students' own views and so no direct conclusions regarding the impact of the programme on students nor the students' views of the programme can be drawn from this research.

Difficulties were expressed regarding evaluating the impact of the programme for feedback to school management, the high rate of facilitator turnover, time pressures and making the programme a priority amidst the other expectations placed upon school staff. Some interviewees spoke of not having expected the programme to require as much additional planning time. Interestingly, this seemed to be most likely among those who had attempted to follow the Risk-Avert proforma to-the-letter. Unfortunately, there was little awareness amongst interviewees of the Risk-Avert programme having an impact on the wider school community.

Russell et al. (2016) split their findings into barriers and enablers for participation in the Risk-Avert programme. Whilst this study found several barriers to implementing and running the Risk-Avert programme, for example difficulty with having the resources to complete the Risk-Avert Screening Tool, difficulty finding the time to plan for or prioritise the running of the programme and problems with student engagement and/or understanding, Russell et al. (2016) identified only one barrier in their results, "a risk of stigma". They identified that a participant from only one school of the seven in

their sample raised concerns around students feeling that their being chosen to take part in the Risk-Avert programme may reflect negatively upon them. It was felt in their research that the risk of stigma was not a significant barrier to participation and was easily managed by the schools using techniques such as renaming the sessions something innocuous like “PSHE session” and reassuring students that they were lucky to take part or were ambassadors for the programme.

Russell et al. (2016) did not report students experiencing negative treatment from peers because of participating in the programme. However, this research study found that there were concerns raised regarding negative stigma by the facilitators. When interviewees raised this concern, it was usually related to the opinions of parents and their feelings regarding their child being identified as ‘risky’ and needing to take part in the programme. Several schools discussed having taken measures to persuade parents that being chosen for the programme was not a negative reflection upon their child. Thus, this research would suggest that perhaps negative stigma is more of a difficulty within the Risk-Avert programme than suggested by Russell et al. (2016). Perhaps greater consideration should be given by programme developers as to advising schools of how best to manage and reduce the risk of negative stigma.

One method for eliminating negative stigma related to Risk-Avert participation would be to make the programme universal rather than selective. This would mean every student in the year group would be invited to take part, regardless of their current risk level. Use of this strategy would also be supported by the findings presented in Chapters Five and Six which appeared

to demonstrate that those not initially identified at screening may benefit from the programme, as there was an increase in risk behaviour (as measured by subscales of the Risk-Avert Screening Tool, ARBS and MPBI) among non-participants of the programme between initial screening and the second round of data collection. Thus, as well as eliminating negative stigma, inviting all students to partake in the Risk-Avert programme would ensure that they had equal opportunity to learn to better manage risk and were not dismissed simply because they did not demonstrate a high enough level of risk at the specific time of screening.

Although Russell et al. (2016) identified only one barrier in their research, on closer consideration it seems that their discussion of enablers includes some things that in this study were expressed more negatively by interviewees or using Russell et al.'s (2016) terminology, as barriers. For example, in their theme for the enabler "delivery style and content" they discuss that pupils preferred sessions that focused less upon writing. The same was found in this study with interviewees describing how they needed to adjust their delivery of the Risk-Avert programme to accommodate this. Perhaps differences in the negative or positive nature of identified themes between this research and that of Russell et al. (2016) are reflective of the wider context of the interviews conducted, as it is easy to see how something could be positive for one interviewee but negative for another, the nature of the questions asked, or the framing of the interviews by the researchers at the point of analysis.

7.4.1 Limitations and future research

A limitation of this study is that participants were largely self-selecting. They chose to respond to an email inviting them to take part in the study. This may mean that these participants were also those who felt the most inclined to express their views about the Risk-Avert programme, perhaps because they were in some way extreme i.e., they really liked or did not like something about it. It also may be the case that these staff members were those who had made the most adaptations to the programme and wanted the opportunity to showcase these. As such, this research may be missing some of the middle-of-the-road views regarding the Risk-Avert programme and/or could reflect the more extreme cases of programme implementation.

One interview also involved two participants (identified as Chloe and Danielle), it should be considered that the presence of their colleague may have affected the answers provided by either participant due to factors such as following their colleagues line of thought rather than their own or altering their response due to wanting to preserve working relationships. These limitations should be borne in mind while considering the outcomes of this research.

7.4.2 Conclusion

In conclusion, views of the Risk-Avert programme from the programme facilitators were encouraging. Many interviewees felt that the programme had positive impacts upon involved students and they typically enjoyed facilitating it. This was despite some practical issues with implementing and facilitating the programme and completion of the Risk-Avert Screening Tool in the school environment. Some issues raised for consideration by programme developers

included: adjusting some programme materials to make them more appropriate and engaging for students; reducing negative stigma; minimising writing or other less active tasks; increasing the number of students targeted by the programme; exploring the potential for greater involvement from parents/guardians and including some form of follow-up. It was evident from this research that there is great variation in the way that the Risk-Avert programme is implemented within different schools. Consideration needs to be given to the effect of this upon the integrity of the programme, its impact and its evaluation.

8. Summary, Discussion and Conclusions

8.1 Introduction

The previous five chapters have presented the results of quantitative and qualitative data analysis exploring the practicalities and effectiveness of the Risk-Avert programme and the reliability, validity and accuracy of its associated screening tool. This chapter will summarise these findings in the context of the specific research questions of this thesis as well as the wider literature. Next, the limitations of this research will be addressed and avenues for future research identified, followed by reflections as to the role of the researcher in, and contributions of, this research. Finally, the chapter will end with a conclusion summarising the aims and findings of this thesis.

8.2 Discussion of the findings

This thesis assessed the validity and accuracy of the Risk-Avert Screening Tool (The Training Effect & Essex County Council, n.d.) and the effectiveness of the Risk-Avert programme via five research questions, the findings of the studies will now be discussed, addressing each question in turn.

Research Question One

What is the underlying factor structure of the Risk-Avert Screening Tool? Does it align with the intended four risk factor groupings: individual, family, school, and community?

Findings of principal components analysis reported in Chapter Three demonstrated that the items of the Risk-Avert Screening Tool loaded upon more components than the expected four. This finding was repeated in Chapter Four, although this examined an updated version of the Risk-Avert

Screening Tool in a different sample of adolescents. Although the School, Family and Community subscales loaded in a manner expected given their current organisation, the items of the Individual subscale loaded upon two separate components. This was evident in both analyses which suggests that, although not reflecting the intended structure, there is an underlying structure to the Risk-Avert Screening Tool that can be consistently demonstrated in that items of the Individual subscale load on two components.

In Chapter Three it was suggested that the two components underlying the Individual subscale may represent different perceived severities of risk behaviour. As the two items regarding smoking cigarettes and getting arrested or excluded from school loaded on a different component to other items of the Individual subscale, it was suggested that that component could be renamed “Uncommon Adolescent Risk Behaviour” and the other component underlying the Individual subscale (which consisted of items such as “have you ever regretted sharing something online?” and “have you done risky things, even if they were a little dangerous?”) could be entitled “Normative Adolescent Risk Behaviour”. This seemed generally consistent with the framework of Problem Behavior Theory (Jessor & Jessor, 1977) and the definition of problem behaviours (those which are restricted and/or penalised) and health-compromising behaviours (those behaviours that are still potentially dangerous and/or unhealthy but not restricted and/or penalised) provided by researchers within the context and expansion of the theory (Donovan et al., 1988, 1991; Jessor, 1987, 2014; Turbin et al., 2000).

However, this conceptualisation of the two components underlying the Individual subscale did not hold for the principal components analysis of the

new version of the Risk-Avert Screening Tool reported in Chapter Four. Although the items of the Individual subscale still loaded on two separate components, the nature of the items loading on each component was different to that reported in Chapter Three and did not appear to meet the definitions of problem behaviours and health-compromising behaviours used previously. The items regarding smoking and being arrested loaded on separate components, rather than one component as found in Chapter Three. “Have you ever been arrested?” instead loaded on the same component as the items regarding regretting online sharing, feeling pressured into online sharing, drinking energy drinks and being excluded from school. The other items of the Individual subscale, which included “have you ever tried a cigarette?”, as well as items that focused upon topics such as being dared to do something dangerous, doing risky things, drinking alcohol, adding strangers to online accounts and trying electronic cigarettes, loaded on a separate component.

As well as this, the underlying structure reported in Chapter Four was generally less clear than that found in Chapter Three, as several items cross-loaded on multiple components. Item 11 (“have you been bullied at school in the last 2 months?”) cross-loaded on the second component with items from the Individual subscale, perhaps because it may refer to peer pressure which is also encompassed in some of the other items that loaded upon that component (e.g. “have you ever felt pressured to share something online?”) or because methods of bullying and consequences of bullying are reflected in the other items that loaded upon the same component (e.g. “have you ever regretted sharing something online?” and “have you ever been excluded from

school?"). Item 16 ("what time are you expected home?") cross-loaded on the first component with items from the Individual subscale, perhaps because the time an individual is expected home is related to adult supervision and/or the opportunity to engage in other behaviours captured by items that also loaded upon that component (e.g. "in the past year, on how many occasions have you had a few sips of a drink containing alcohol without adult supervision?"). Item 8c ("have you ever felt pressured to share something online?") cross-loaded onto the component upon which items from the Community subscale loaded. However, item eight ("have you got a social networking profile?") also loaded upon this component and there is clear relation between having a social networking profile and opportunity to feel pressure to share something online. The cross-loading which seems hardest to explain is that of item seven ("in the past year, on how many occasions have you had a few sips of a drink containing alcohol, without adult supervision?") which cross-loaded on the same component as the school items. It should also be noted that none of the items cross-loaded highly on their secondary components (the highest cross-loading was .36).

Taken in combination, results reported in Chapter Three and Four appear to indicate that the Risk-Avert Screening Tool's underlying structure consists of five components. Whilst the School, Family and Community subscales for the most part appeared to load on separate components as expected (apart from some items that cross-loaded), items within the Individual subscale loaded on two components rather than one. However, different items loaded upon these two components in each analysis, meaning that the particulars of which items loaded upon which component were not

reliably demonstrated. Thus, although the underlying structure of the Risk-Avert Screening Tool largely aligns with the risk factor domains employed by other researchers (Beyers et al., 2004; Brooke-Weiss et al., 2008; Jackson et al., 2010; Thomas et al., 2008), further consideration needs to be given to the conceptualisation of items of the Individual subscale.

Research Question Two

Does the Risk-Avert Screening Tool possess internal reliability and convergent validity?

Determining the internal reliability of the Risk-Avert Screening Tool was difficult due to variations between items in the scoring and response options. Those subscales that contained enough similar items to be subjected to internal reliability analysis typically revealed poor internal reliability, except for the Family subscale. Examination of inter-item correlations for all items of the Risk-Avert Screening Tool revealed typically small to moderate correlations, with only a few exceptions in either set of analyses that would be considered moderate to high. This was the case in analyses reported in Chapters Three, Four and Five, each of which examined different samples. Chapter Three also examined a different version of the Risk-Avert Screening Tool (2014/2015) to chapters Four and Five (which used the 2016/2017 version).

It is notable that, although tested in different samples, changes made to the Risk-Avert Screening Tool between the 2014/2015 and 2016/2017 versions did not appear to improve the internal reliability of the subscales, nor inter-item correlations. The Family subscale of the Risk-Avert Screening Tool was identified as that with the highest internal reliability (indicated by Cronbach's alpha) in both analyses and would be considered acceptable.

This is likely because it is the only subscale for which the scoring and response options are identical for each item.

Regarding convergent validity, Chapter Four reported findings that the Risk-Avert Screening Tool correlated positively and moderately with other risk measures, (the Adolescent Risk Behavior Screen (ARBS; Jankowski et al., 2007) and the Multiple Problem Behavior Index (MPBI; Jessor et al., n.d., 2003)) and of all the Risk-Avert Screening Tool subscales, the Individual subscale correlated highest with the ARBS and the MPBI subscales. The School subscale of the Risk-Avert Screening Tool was also found to correlate positively with the Significant School Avoidance subscale of the Screen for Child Anxiety Related Emotional Disorders (SCARED; Birmaher et al., 1999, 1997). The Risk-Avert Screening Tool scores were also found to correlate negatively with the Strengths and Difficulties Questionnaire (SDQ; Goodman et al., 1998) Prosocial score. Thus, the evidence presented in Chapters Four and Five appears to suggest that the Risk-Avert Screening Tool does not possess good internal reliability, except in the case of the Family subscale. Although there is evidence of convergent validity with other risk and wellbeing measures, this has been demonstrated in only one sample and with a relatively limited number of measures.

Research Question Three

Is the Risk-Avert Screening Tool accurately identifying at-risk students? Is the current cut-off score appropriate?

Chapter Four revealed that the Risk-Avert Screening Tool can accurately identify at-risk students by discriminating between those individuals

demonstrating high and low potential for risk behaviour. The current cut-off score of >29 would mean that 100% of those who complete the Risk-Avert Screening Tool would be correctly identified as at-risk. Evidence presented in Chapters Five and Six demonstrated that, in a sample of two Essex schools, even those not identified as at-risk at the time of the completion of the Risk-Avert Screening Tool demonstrated increased risk behaviour over the period of study, as did those who were identified as at-risk but did not partake in the programme. This is supportive of the argument that the false positive rate of 16% reported in Chapter Four is not problematic as even those not identified as at-risk at the time of screening may later increase their level of risk behaviour and/or benefit from the programme.

However, the analysis presented in Chapter Four should be considered in the context of potential issues with the use of the ARBS (Jankowski et al., 2007) as a “gold standard” (please see section 8.4, page 292 for a full discussion of this matter). Thus, research question three could be considered only partially answered. Although statistical analyses at this time appear to indicate that the Risk-Avert Screening Tool is accurate and the current cut-off score is appropriate, this is dependent upon the acceptance of the ARBS as a “gold standard”. The semi-structured interviews with school staff members reported in Chapter Seven also revealed an ambivalence about the Risk-Avert Screening Tool, with participants generally reporting alternative methods for identifying participants (e.g. the experience of school staff) and questioning its accuracy but also describing its usefulness.

Research Question Four

Do those students that take part in the programme demonstrate reduced risk in comparison to those who do not?

Chapter Five reported results of a longitudinal study that demonstrated that participants of the Risk-Avert programme did not demonstrate statistically significant reductions in risk behaviour as measured by any of the risk behaviour measures utilised. However, there was also no evidence that their level of risk behaviour increased. The wellbeing measure utilised in the study, the SDQ (Goodman et al., 1998), did identify improvements for Total Difficulties, Emotional Problems and Conduct Problems. In comparison, those who did not take part in the programme appeared to demonstrate contrasting results as they showed an increased level of risk behaviour between time one and time two as measured by the same risk measures, but no differences measured by the SDQ except an improvement in prosocial behaviour. The validity of these results may be hindered by the quality of the measures used (please see section 8.4, page 292 for a full discussion of this matter).

Chapter Six reported analyses by risk level to clarify the findings of Chapter Five. Although the high-risk group was too small for the use of inferential statistics and thus no conclusions could be drawn, the participants of the Risk-Avert programme did appear to lower their level of risk behaviour between time one and time two whilst high-risk non-participants appeared to increase their level of risk behaviour. The pattern of findings for the low-risk group (all non-participants of the programme) was such that they demonstrated significantly higher levels of risk behaviour at time two than at time one, whilst those in the medium-risk group (all but four of whom were

participants of the programme) demonstrated unchanged levels of risk behaviour at time two in comparison to time one.

Chapter Seven provided evidence from semi-structured interviews with staff members that suggested that participating in the Risk-Avert programme was beneficial. Although these are views of staff regarding student experiences and not those of the students themselves, staff members felt that participants of the programme demonstrated improved relationships with staff members, improved ability to seek support, improved decision-making skills, improved self-awareness and an improved ability to identify risk in others. Thus, participants of the Risk-Avert programme may experience improvements in behaviour and risk-related competencies not captured by the self-report questionnaire utilised in this thesis.

The combination of evidence presented in Chapters Five, Six and Seven would appear to indicate that those who participate in the Risk-Avert programme might derive positive benefit from it, although this may not always translate into a reduced level of risk behaviour as shown by the measures used in this thesis. The findings of Chapters Five and Six however cannot be taken as conclusive evidence of an intervention effect due to factors such as the small sample size, thus low power to detect effects, and the inability to establish whether any differing trends in the Risk-Avert participant and non-participant groups were truly due to the intervention.

Research Question Five

How is the programme currently utilised in schools? How do those that facilitate the programme feel about its effectiveness?

The fifth set of research questions was answered exclusively in Chapter Seven, by way of thematic analysis of semi-structured interviews with school staff members that led the Risk-Avert programme. The analysis revealed three overarching themes: 'establishing Risk-Avert within a school', 'use of the Risk-Avert Screening Tool', and 'facilitators' perceptions of the Risk-Avert programme'. 'Establishing Risk-Avert within a school' and 'facilitators' perceptions of the Risk-Avert programme' will be discussed here, as they are the themes that specifically speak to this set of research questions.

What came across most clearly in the interviews and subsequent analysis was that each school utilised the Risk-Avert programme somewhat differently to suit the needs of the school and their students and thus the programme was run contrary to the expectations of the developers. Changes to the programme proforma seemed to be most likely prompted by either time constraints faced by the schools and staff members or attempts to improve the engagement of involved students and included such things as combining sessions or omitting or altering tasks. The most notable difference in the running of the programme was perhaps evident in the comparison of the Children's Support Service schools and mainstream schools. All students attending the Children's Support Service schools at the time the Risk-Avert programme was run were given the opportunity to take part in the Risk-Avert programme (and complete the Risk-Avert Screening Tool), given that risk behaviour is a significant issue for all students in that environment, essentially

making the programme universal rather than selecting a group of students to take part as was the case in the mainstream schools. Unlike mainstream schools, the Children's Support Service schools also did not use their own school norms for the social norms elements of the programme as it was felt that would present students with a skewed view of the prevalence of risk behaviour. Whilst a need to alter the programme may speak to an unsuitability for its current purpose, its adaptability could also be a strength when you consider the number of schools it is aiming to be useful for. In fact, this research appeared to demonstrate that those staff members interviewed who deviated most from the original plan for the Risk-Avert programme also seemed to be those that felt the most positive about the programme. However, it must be considered that any discrepancies in how the Risk-Avert programme is utilised and run between schools presents difficulties for the evaluation of the programme's effectiveness.

The theme 'facilitators' perceptions of the Risk-Avert programme' captured information regarding the facilitators' feelings about the programme's effectiveness. Most consistently, facilitators seemed to value the opportunity that the programme provided to allow them to engage with previously unknown students, as well as improve their relationships with students and get to know them in a context other than an academic lesson. Although there were few examples provided of direct changes in risk behaviour for those students who had participated in the Risk-Avert programme, it was felt by facilitators that students demonstrated improved decision-making skills, improved self-awareness and an improved ability to identify risk in others. There were examples provided of elements of the

programme that some students were felt by the facilitators to be less engaged with or have less understanding of, thus perhaps hampering the effectiveness of the programme. Despite such examples the general feeling of facilitators in this sample appeared to be that the Risk-Avert programme had positive effects and improved students' skills related to risk behaviour.

As well as providing reason to question the ability of self-report measures to assess the benefits of the Risk-Avert programme, the qualitative findings presented in Chapter Seven also revealed substantial variation in the way that schools implemented the Risk-Avert programme, which calls into question the use of quantitative methods in evaluations of interventions such as this, given that such methods rely upon the intervention being delivered uniformly across participants. Had this research not utilised mixed-methods, it is possible that conclusions may have been drawn on incomplete information, thus potentially rendering the conclusion(s) incorrect. For example, the quantitative findings presented in Chapters Five and Six demonstrated no statistically significant reduction in risk behaviour for Risk-Avert participants. Had this finding been taken in isolation the conclusion could have been drawn that the Risk-Avert programme has no effect on the risk behaviour of participants. However, the qualitative aspects of this research presented in Chapter Seven provide information that 1) provides potential explanation for the findings e.g. lack of uniformity in the delivery of the programme and 2) provides evidence of the effects of the Risk-Avert programme on its participants, in relation to risk behaviour as well as other areas such as improved relationships. Thus, the use of mixed-methods allowed for better-informed conclusions.

8.2.1 Relation to theoretical models of risk behaviour

Although the research detailed in this thesis did not seek to directly test any specific theoretical model, nonetheless several of the findings could be considered relevant to models of adolescent risk behaviour. Most notably, the two theoretical frameworks explicitly described in the introduction to this thesis, Problem Behavior Theory (Jessor & Jessor, 1977) and the Social Development Model (Catalano & Hawkins, 1996) (please see sections 1.3.3 and 1.3.4, pages 34 and 38, for more detailed discussion of both theories), are general models in that they are not specific to one risk behaviour. However, as discussed in greater detail in section 5.4, page 200, this research found that item-correlations for each of the risk measures used were mostly small, thus suggesting that in this case the relation between the different risk behaviours assessed in these measures may also have been small. Although this could be due to factors specific to the particular measures used in this research, or other factors such as low variation in these samples, not only does this finding provide evidence contrary to the idea of a problem behaviour syndrome (Donovan & Jessor, 1985; Donovan et al., 1988) as suggested in Problem Behavior Theory (Jessor & Jessor, 1977), but it also raises the question as to whether widely applying general models to different adolescent risk behaviours is appropriate, or whether instead different risk behaviours require different approaches.

In Chapter Three, two components were identified as underlying the Individual subscale of the Risk-Avert Screening Tool (The Training Effect & Essex County Council, n.d.). It was suggested that, based upon the item loadings, the components could be conceptualised as “Uncommon

Adolescent Risk Behaviour" and "Normative Adolescent Risk Behaviour" which seemed consistent with the framework of Problem Behavior Theory (Jessor & Jessor, 1977) and the associated definition of problem behaviours and health-compromising behaviours (Donovan et al., 1988, 1991; Jessor, 1987, 2014; Turbin et al., 2000). However, the same conceptualisation was not applicable to the components underlying the Individual subscale when principal components analysis was conducted on the new version of the Risk-Avert Screening Tool in Chapter Four. Thus, this research provided mixed evidence regarding the grouping of problem behaviours and health-compromising behaviours suggested in Problem Behavior Theory (Donovan et al. 1988, 1991; Jessor, 1987, 2014; Jessor & Jessor, 1977; Turbin et al., 2000), as whilst the results of Chapter Three were consistent with these distinctions, the results of Chapter Four were not. Of course, this could reflect problems with the Risk-Avert Screening Tool itself, as discussed in greater detail in section 8.4, page 292.

Chapter Four also reported that a measure of prosocial behaviour was found to correlate negatively with a measure of risk behaviour. This supports both Problem Behavior Theory (Jessor & Jessor, 1977) and the Social Development Model (Catalano & Hawkins, 1996). Both frameworks theorise that adolescents with greater involvement in prosocial activities or with prosocial groups will be less likely to engage in risk behaviour. Similarly, both frameworks also theorise that positive attachments to others and to institutions or social environments can reduce the likelihood of risk behaviour. The importance of positive attachments was evident in findings reported in Chapter Seven, where it was apparent that the staff members who were

interviewed felt that running the Risk-Avert programme had improved their relationships with students and that this subsequently may have impacted students' risk behaviour as they were felt to show improvement in engaging with school staff when they required support.

8.3 Dissemination

The results of this research were disseminated to the Risk-Avert programme developers as each phase of analysis was completed and the draft of this thesis in its entirety was also provided for comment prior to its submission. An executive summary will be produced for dissemination to other parties interested in this research. Feedback was provided by the programme developers and the thesis and results were received positively and informed potential changes to the Risk-Avert programme and the associated Risk-Avert Screening Tool. It is also aimed that the research presented in this thesis will be published in appropriate academic journals.

8.4 Limitations and recommendations for future research

This research was bound by two main limitations related to the real-time use of the Risk-Avert programme in schools and the reliability and validity of the risk measures. Each will be discussed in turn in this section, alongside recommendations for future research.

Conducting research within the school environment presented several difficulties. Many school staff seem to be being asked to do more with less and as such few felt they had the time or resources to commit to engaging in this research. Thus, although original plans for this research had included sampling from a broad range of schools and students with different levels of

risk, including a control group, with varying geographical locations, Ofsted scores etc. this was found to be unrealistic and instead schools participating in the Risk-Avert programme were approached to take part and the reported data is from those who agreed. This does mean that some levels of risk were not represented adequately enough to conduct inferential statistical tests, as was the case in Chapter Six. The original plans for this research also included a much longer follow-up period and an experimental task, which would have provided further insight into the short and long-term effects of the Risk-Avert programme. However, difficulties with recruiting schools to participate in the research prevented this from being completed. This was not only due to time constraints relating to the need to complete the research within a specified period, but also factors such as the experimental task being difficult to implement in a timely manner given that it required students be removed from lessons individually to participate.

As well as this, the differences in the way that Risk-Avert is implemented in each school as well as the reliance on the schools and school staff to issue and ensure the completion of the questionnaires meant that it was difficult to control for confounding variables such as:

- Peer influence in completion of the questionnaire
- The influence of the presence of any school staff members during the completion of the questionnaire
- The overall environment that the questionnaire was completed in
- Any additional verbal instructions or advice participants were given aside from the instructions provided on the questionnaire
- The time taken for the entire sample to complete the questionnaire

- The length of time between the completion of the questionnaire(s) and the undertaking and/or completion of the Risk-Avert programme
- The length of time between the beginning and completion of the Risk-Avert programme

Although steps were taken to ensure that the school staff were aware of these issues e.g. the need to have the students complete the questionnaires within a relatively controlled environment with few distractions and within as short a time frame as possible, there is no way to know how effectively this was enforced.

It must also be borne in mind that the sampling for these studies ultimately relied on what were essentially self-selecting schools and staff members and it is possible that this could have influenced the research findings. For example, it is conceivable that those who agreed to participate in this research are those who have had the most success with the Risk-Avert programme or those who have the most extreme opinions that they wish to express.

Future research should utilise a control group to explore whether it is the content of the Risk-Avert programme that impacts upon students and staff members or whether any effects identified in this thesis are due to other factors such as providing students and staff the opportunity to interact in a small group outside of official teaching structures and thus build or improve relationships. It would also be beneficial to expand upon this research and that of Russell et al. (2016) and interview students, particularly individually as opposed to in a focus group. Providing an opportunity to express their views without the potential for judgement by their peers may allow students to

express insights regarding the Risk-Avert programme that may not otherwise be accessible.

Given the difficulty with quantitative evaluation of the programme caused by the nature of conducting research in schools and the fact that the programme is not implemented uniformly, insights from qualitative research with staff and students at the schools will continue to be essential in evaluating the impact of the Risk-Avert programme. It would also be beneficial to conduct a longitudinal study with a longer follow-up period, perhaps of several months to a year or more following the completion of the Risk-Avert programme. This would provide insight regarding any longer-term effects than the immediately post-programme results presented here.

The second main limitation of this research related to the reliability and validity of the risk measures. Risk-Avert Screening Tool scores were used in several studies and although necessary as this research was in part testing its psychometric properties, it must be borne in mind that it was demonstrated that the Risk-Avert Screening Tool possessed low internal reliability for some subscales, as well as reduced sensitivity to change. However, it should also be acknowledged that using the Risk-Avert Screening Tool to assess change is contrary to its original purpose as a screening tool. Future research should focus upon adjusting the structure and scoring of the Risk-Avert Screening Tool to improve its internal reliability, as well as assessing the scoring of the Risk-Avert Screening Tool to ensure that the weight given to some items currently is valid. Specific recommendations as a result of this research for consideration by developers would include:

- Ensuring greater uniformity in response options across items, especially if they are considered part of the same subscale.
- Giving items currently phrased as “have you ever” an appropriate time frame if sensitivity to change is a desired quality.
- Given that this thesis has reported discrepancy between the overt and underlying structure of the Risk-Avert Screening Tool, such as two components underlying the Individual subscale, consideration needs to be given as to whether the subscales are appropriately structured. For example, item 14 (“have you ever been arrested?”) could be moved to the Individual subscale as in the analyses reported in Chapter Four it loaded on a component with items from that subscale and not the Community subscale where it is currently located.
- If the current weighting of item scores is proven to be accurate and/or useful, consideration should be given to whether the items and/or subscales which are lowest-scoring and/or least predictive of Risk-Avert participation (such as the Family subscale) could be removed whilst still maintaining its usefulness as a screening tool, as this would improve brevity.

Further issues regarding the Risk-Avert Screening Tool and the other included risk measures were raised by evidence reported in Chapters Four and Five that item-correlations were typically small. This calls into question the reliability of subscale and total scores across the risk measures in this sample. As discussed in Chapter Five, the low item-correlations could be due to differences in question wording and response options, but it is also possible that these risk measures wrongly assume relations between risk

behaviours that allow the calculation of a “total” level of risk. Although researchers have found relationships between different adolescent risk behaviours (e.g. Farrell et al., 1992; Guilamo-Ramos et al., 2005; Wiefferink et al., 2006), there is also research suggestive that the strength of correlation between risk behaviours is dependent upon when the study was conducted (Guilamo-Ramos et al., 2005) as well as the types of risk behaviour considered (Wiefferink et al., 2006).

Future research should seek to demonstrate further convergent validity of the Risk-Avert Screening Tool by comparing scores for this tool and other validated measures. It would be useful if measures could be identified that assess similar areas to the Family, School and Community subscales of the Risk-Avert Screening Tool, for example parenting style or school connectedness, as the measures used in the current thesis seemed to assess concepts most like items included in the Individual subscale. As suggested above regarding the effectiveness of the Risk-Avert programme, conducting a study in a much wider sample would also be useful in further validating the Risk-Avert Screening Tool, including not just more schools generally from a wider range of geographical locations (namely counties) but also ensuring that participants demonstrate wider variety within demographics such as ethnicity, language, socioeconomic status or religion. As the Risk-Avert programme is currently administered in several counties, it is important to ensure its validity in a broader sample of schools.

Given that so few individuals were identified as high-risk by the ARBS in Chapter Four, this does call into question its relevance and therefore also the result of the Receiver Operating Characteristic (ROC) analysis for the

Risk-Avert Screening Tool. Future research could utilise a sample of adolescents with a higher level of risk behaviour, which would be expected to lead to more individuals being identified as high-risk by the ARBS and thus a larger sample for the ROC analysis. However, a ROC analysis is only useful if it is possible to identify a true gold standard against which to compare the measure under scrutiny and it could be argued that the ARBS, although the only viable option with a tested suggested cut-off score identified at the time the research was conducted, is not truly a gold standard in this case. The ARBS was developed in the United States with United States adolescents over ten years ago (Jankowski et al., 2007). As such, the tool may encompass outdated examples of risk behaviours among adolescents and may not generalise well to samples from the United Kingdom. For example, the prevalence of some risk behaviours, such as smoking cigarettes, has changed over time (Cabinet Office Horizon Scanning Programme Team, 2014; Health and Social Care Information Centre, 2015) and the legality of some risk behaviours differs between the United States and the United Kingdom. For example, seat belt use is a legal requirement across the United Kingdom in any seat of a car (GOV.UK, 2019) but the rules regarding seat belt use are more varied across the United States (Governors Highway Safety Association, 2019).

Future research should focus upon identifying a more appropriate “gold standard” against which to compare the Risk-Avert Screening Tool to determine its accuracy. As discussed previously, there is some reason to speculate that the ARBS may not be the “gold standard” for this sample. This would suggest that either a different measure should be identified or

developed that is better suited to use in this sample, or the validity of the ARBS needs to be tested in a sample of adolescents from the United Kingdom, so that the results of this study can be either upheld or contested.

8.5 Reflections and Contributions

As explained in the introduction to this thesis, this research project originally began as a studentship funded by Essex County Council following a research proposal developed by themselves in coordination with The Training Effect (the co-developers of the Risk-Avert programme) and academics at the University of Essex. Whilst the aim was to conduct an independent piece of research and so The Training Effect and Essex County Council have been involved as little as possible with the methods, conduct and analysis of the research, working closely with them has no doubt altered my experience of the research process. Not only have I had to be mindful in negotiating the relationships that The Training Effect have with the schools and staff members involved with the Risk-Avert programme, but it has also at times been difficult to balance my desire to conduct unbiased and objective research with my desire to obtain positive outcomes and results for people who have invested time and money into the Risk-Avert programme and also into my own education and development. Whilst I have reported results and analyses objectively, there has no doubt been some desire to focus on the positives in wider discussions or interpretations. However, I am also aware that as a perfectionist I naturally tend to focus on negatives and limitations, and this equally has impacted my views of the research. For example, when the research has met inevitable difficulties, I have had to be conscious not to allow my frustrations to cloud my reasoning.

Many of the difficulties encountered in this research provide valuable insights that can be applied to a potential future larger evaluation of the Risk-Avert programme. Given that the longitudinal study reported in this thesis was small, thus power to detect effects was low, particularly in the case of the Risk-Avert participant group who were selected due to high levels of risk behaviour and thus also had less opportunity to exhibit a worsening of risk behaviour, further evidence will be needed to justify the presence of an intervention effect. As discussed in the previous section (section 8.4, page 292) a significant difficulty encountered in this research was conducting a study within schools. Establishing relationships with schools will be essential to a future evaluation and additional time must be allowed for the process of recruiting schools and individuals and liaising with them. Firstly, in ensuring that enough participants can be recruited for a future evaluation. But also, because maintaining relationships with schools means that they can provide useful input regarding study materials and processes which can be used to better ensure the success of the study. For example, the current study originally sought to use a behavioural task and longer questionnaire, both of which proved infeasible when presented to involved schools.

The experience provided by conducting the current study suggests that any future evaluations should seek to use measures that take as little time as possible to complete, particularly if completion is to take place within school hours and be executed by school staff as opposed to research staff. However, the current research also established that self-report measures may not capture adequately detailed information regarding the impacts of the Risk-Avert programme and so a suggestion would be that future evaluation(s)

continue to utilise qualitative methods in seeking to capture a complete picture of programme impacts. Furthermore, recruiting a higher number of participants will only be beneficial if the uniformity of the intervention can be ensured across participating schools, particularly if a future evaluation seeks to use quantitative methods. Given that the current study established that there is significant variation in the way that the programme is delivered across schools, a process evaluation would provide information that could be used to assess how the implementation of the Risk-Avert intervention impacts upon any results identified in a future evaluation.

In section 4.4 (page 152) it is noted that local authorities and ethical approval committees had begun adopting an “opt-in” policy for school-based research, which ensures active consent from the guardians of students and removes any question as to whether they are fully-informed about the research. Although this level of fully-informed consent is important, given that recruitment for this piece of research was a significant difficulty even with an “opt-out” policy, it is likely that evaluations of school-based programmes such as this will only be more difficult when “opt-in” consent is required. Not only that, but there is a need to consider whether, particularly in the case of adolescent risk behaviour research, the requirement of “opt-in” consent will prevent access to the very population that may benefit most from it. A meta-analysis conducted by Liu, Cox, Washburn, Croff and Crethar (2017) suggested that requiring active consent from the guardians of participants may bias the sample by lowering response rates, changing the demographics of participants and altering the rate of self-reported risk behaviour. Although a requirement for active consent will not necessarily make research such as

this unviable in future, it may be more difficult, and consideration will have to be paid to the impact of consent procedures on the subsequent sample of participants.

As well as providing valuable insights specifically relating to how a larger evaluation of the Risk-Avert programme may be best conducted in the future, this research has also contributed information more widely applicable to adolescent risk behaviour intervention. The fact that those who did not partake in the Risk-Avert programme demonstrated increased risk behaviour over time, sometimes to the level that they would have been considered suitable for the Risk-Avert programme at the second point of measurement, provides support for the use of universal rather than targeted interventions, which although possibly requiring additional resources not only ensure that all adolescents receive a potentially helpful intervention but also may alleviate the likelihood of negative stigma associated with the intervention. However, given that facilitators of the programme consulted within this research consistently spoke of the benefit that Risk-Avert had upon their relationships with students, care should be taken at this time to ensure that this positive aspect of the programme was not lost if it were delivered to higher numbers of students, given that we currently have no evidence as to the mechanisms by which the Risk-Avert programme may work. Universal interventions also remove the need for screening tools, which were shown in this research to be a significant source of frustration for the involved schools, although it was felt that the Risk-Avert Screening Tool provided some useful information. Regarding the use of such screening tools, the correlation of items within the risk behaviour measures used in this research were generally variable and

raised questions as to whether the risk behaviours intended to be captured by the items were all related. This finding suggested that using total scores generated by tools assessing multiple risk behaviours may not be appropriate.

8.6 Conclusions

Overall, this thesis presents the first independent evaluation of the effectiveness of the Risk-Avert programme that includes testing the psychometric properties of the Risk-Avert Screening Tool. The studies reported in this thesis show that the underlying structure of the Risk-Avert Screening Tool likely consists of five components rather than the expected four reflected by its overt structure. Although the Risk-Avert Screening Tool did demonstrate some convergent validity regarding other risk measures, namely the ARBS and MPBI, as well as wellbeing measures, namely the SCARED and SDQ, its subscales revealed low internal reliability except in the case of the Family subscale. In comparison to the ARBS, it was demonstrated that the Risk-Avert Screening Tool was accurately identifying at-risk students at its current cut-off score. In conclusion, the Risk-Avert Screening Tool would benefit from further development that may include restructuring, as well as changing score or response options to improve its usability and reliability.

Regarding the use and effectiveness of the Risk-Avert programme, during qualitative interviews school staff members that led the programme, despite reporting often adapting the programme to better suit their needs, generally reported positive views regarding the programme and its effects. Additionally, from the longitudinal study it can be concluded that this sample of participants of the Risk-Avert programme did not demonstrate statistically

significant reductions in risk behaviour. In comparison, those who did not take part in the programme demonstrated an increased level of risk behaviour. This conclusion must be considered in light of evidence that some of the self-report measures utilised had reduced sensitivity to change and the fact that risk behaviour is not the only outcome which the programme considers, although it was the outcome most focused upon in this research.

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Appendices

Appendix A – The Risk-Avert Screening Tool as used in the 2014/2015 academic year (The Training Effect & Essex County Council, n.d.)[3]

This survey is confidential

Name:	Class:	Number:

About you

1. Have you done risky things, even if they were a little dangerous? **Yes** ☐ **No** ☐
2. Have you done something dangerous because someone dared you to do it? **Yes** ☐ **No** ☐
3. Have you ever been arrested or excluded from school? **Yes** ☐ **No** ☐
4. Have you ever tried a cigarette? **Yes** ☐ **No** ☐
5. How often do you drink energy drinks? **Never** ☐ **Once a week** ☐ **More than once a week** ☐
6. In the past year, on how many occasions have you had a few sips of a drink containing alcohol, without adult supervision:

None ☐ **1-5 times** ☐ **6-11 times** ☐ **11+** ☐

7. Have you got a social networking profile (Facebook ,Twitter etc)? **Yes** ☐ **No** ☐ **[If no, skip to Q8]**

If yes:

- Do you add people to your Facebook/Twitter account who you have not met? **Yes** ☐ **No** ☐
- Have you ever regretted about sharing something online? **Yes** ☐ **No** ☐

About school

8. What do you think about school? **Good, I like it** ☐ **It's okay** ☐ **I don't like school** ☐
9. Do you feel safe at school? **Yes** ☐ **No** ☐
10. Have you been bullied recently at school (teased or called names, been deliberately left out of things, threatened or physically hurt)? **Yes** ☐ **No** ☐
11. How do you feel most days? **Happy** ☐ **Okay** ☐ **Sad** ☐

About your family

12. Think of where you live most of the time, who lives with you? [or who spends time with}

Mum☐ Dad☐ Sister/s☐ Brother/s☐ Auntie☐ Uncle ☐Stepdad☐ Stepmum ☐ Grandparents☐ Foster parents☐ Other ☐ Please explain:

13.

How wrong do your parents feel it would be for you to:	Not wrong at all	A little bit wrong	Wrong	Very wrong
Smoke cigarettes?				
Drink alcohol regularly (at least once or twice a month)?				
Smoke cannabis?				
Steal something worth more than £5?				
Draw graffiti on walls or buildings?				
Pick a fight or bully someone?				

14. If you are out with friends, what time are you usually expected home?

Do you have a curfew? Yes No, if yes…

Before 8pm ☐ **After 8pm** ☐

About your community

15.

What following statements describe where you live?	YES!!	yes	no	NO!!
Lots of empty and abandoned buildings?				
Lots of graffiti?				
Fights and gangs?				
Crime and/or drug dealing?				

16. How many times a week do you go out with friends without parents or other adults?

None ☐ **1** ☐ **3** ☐ **5 or more** ☐

[3] The Training Effect should be contacted before the use of any version for any purpose.

Appendix B - Items, response options and scoring of the Risk-Avert Screening Tool 2014/15 (The Training Effect & Essex County Council, n.d.)[4]

Item	Response options and associated scores			
Individual				
1. Have you done risky things, even if they were a little dangerous?	Yes	No		
	1	0		
2. Have you done something dangerous because someone dared you to do it?	Yes	No		
	1	0		
3. Have you ever been arrested or excluded from school?	Yes	No		
	15	0		
4. Have you ever tried a cigarette?	Yes	No		
	15	0		
5. How often do you drink energy drinks?	Never	Once a week	More than once a week	
	0	3	5	
6. In the past year, on how many occasions have you had a few sips of a drink containing alcohol, without supervision?	None	1-5 times	6-11 times	11+
	0	15	15	15
7. Have you got a social networking profile (Facebook, Twitter etc.)?	Yes	No		
	Non-Scoring			
8. Do you add people to your Facebook/Twitter account who you have not met?	Yes	No		
	8	0		

[4] The Training Effect should be contacted before the use of any version for any purpose.

9. Have you ever regretted about sharing something online?	Yes		No	
	8		0	
School				
10. What do you think about school?	Good I like it	It's okay	I don't like school	
	0	0	8	
11. Do you feel safe at school?	Yes		No	
	0		5	
12. Have you been bullied recently at school (teased or called names, been deliberately left out of things, threatened or physically hurt)?	Yes		No	
	5		0	
13. How do you feel most days?	Happy	Okay	Sad	
	0	0	8	
Family				
14. Think of where you live most of the time, who lives with you?	Mum, Dad, Sister/s, Brother's, Auntie, Uncle, Stepdad, Stepmum, Grandparents, Foster parents, Other			
	Non-scoring			
15. How wrong do your parents feel it would be for you to smoke cigarettes?	Not wrong at all	A little bit wrong	Wrong	Very wrong
	5	3	0	0
16. How wrong do your parents feel it would be for you to drink alcohol regularly (at least once or twice a month)?	Not wrong at all	A little bit wrong	Wrong	Very wrong
	5	3	0	0
17. How wrong do your parents feel it would be for you to smoke cannabis?	Not wrong at all	A little bit wrong	Wrong	Very wrong
	5	3	0	0

18. How wrong do your parents feel it would be for you to steal something worth more than £5?	Not wrong at all	A little bit wrong	Wrong	Very wrong
	5	3	0	0
19. How wrong do your parents feel it would be for you to draw graffiti on walls or buildings?	Not wrong at all	A little bit wrong	Wrong	Very wrong
	5	3	0	0
20. How wrong do your parents feel it would be for you to pick a fight or bully someone?	Not wrong at all	A little bit wrong	Wrong	Very wrong
	5	3	0	0
21. If you are out with friends, do you have a curfew?	Yes		No	
	Non-scoring			
22. What time are you expected home?	Before 8pm		After 8pm	
	0		4	
Community				
23. Do you live near lots of empty and abandoned buildings?	YES!!	Yes	No	NO!!
	3	2	0	0
24. Is there lots of graffiti in your area?	YES!!	Yes	No	NO!!
	3	2	0	0
25. Is there lots of fights and gangs in your area?	YES!!	Yes	No	NO!!
	3	2	0	0
26. Do you think there is crime and/or drug dealing in your area?	YES!!	Yes	No	NO!!
	3	2	0	0
27. How many times a week do you go out with friends without parents or other adults?	None	1	3	5 or more
	0	2	4	6

Appendix C - Survey Guidance - Instructions for the administration of the Risk-Avert Screening Tool 2014/15 (The Training Effect & Essex County Council, 2014)

IMPORTANT: This statement must be read to young people before completion of the survey:

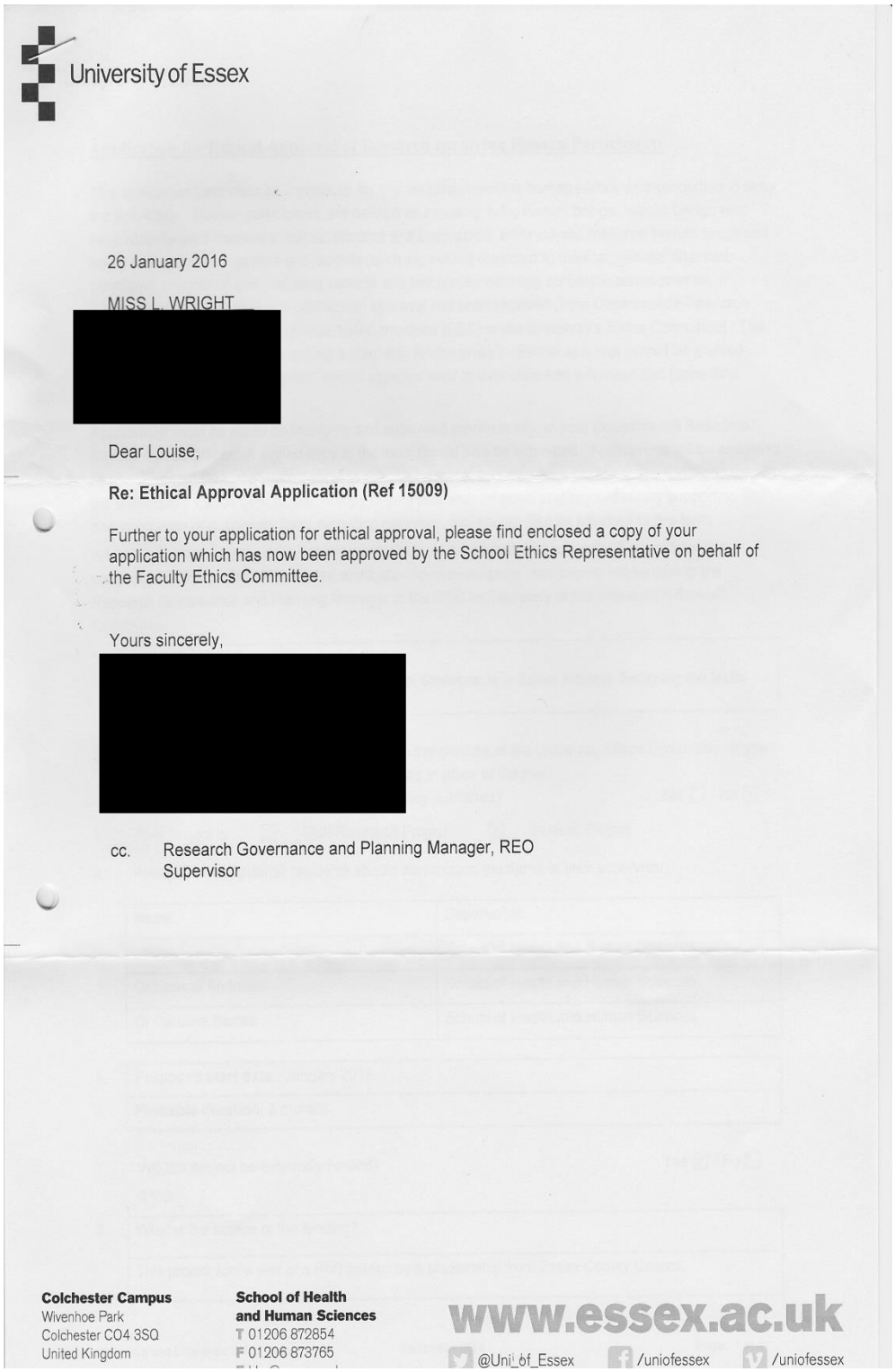
'This is a survey to ask you about your lifestyle and the choices you make. There are a few questions about 'risk', this means decisions you make which can cause you problems or make your life difficult (like smoking or missing lessons). There are no right or wrong answers but we would like you to be as honest as possible.
Some of you may be offered the chance to attend a series of sessions after completing it. These sessions are about making positive decisions in your life and learning more about difficulties that anyone can face. At a later date you will all get the chance to learn the answers for your year group.

The survey is confidential but not anonymous'

Guidelines

- The survey is completely confidential but not anonymous
- Each student needs to complete a separate numbered survey
- The content is confidential, we (The Training Effect) will not know who has completed each form. The school will.
- It can be good practice to separate peer groups whilst they complete the survey
- Young people in a year group should all complete the survey in as short a time as possible e.g. over one morning or afternoon
- Young people who may require support to read / comprehend the survey should be provided with this

Appendix D – Ethical approval letter (secondary data) – University of Essex



University of Essex

26 January 2016

MISS L. WRIGHT
[redacted]

Dear Louise,

Re: Ethical Approval Application (Ref 15009)

Further to your application for ethical approval, please find enclosed a copy of your application which has now been approved by the School Ethics Representative on behalf of the Faculty Ethics Committee.

Yours sincerely,

[redacted]

cc. Research Governance and Planning Manager, REO
Supervisor

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Appendix E - Demographic questions

1. Which of the following describes your gender?

Male

Female

A different description: _____

2. How old are you?

_____ years

4. What is your ethnic group?

White

Black / African / Caribbean / Black British

Asian / Asian British

Chinese

Arab

Mixed / Multiple ethnic groups

Other ethnic group

5. Is English your first language?

Yes

No

If you answered No, what is your first language?

_____

6. Who are you currently living with? (Please circle all that apply and think about the household where you spend the most time)

Mum	Brother(s) or Sister(s)	Foster parents
Dad	Stepbrother(s) or Stepsister(s)	
Stepmum	Grandparent(s)	
Stepdad	Aunt(s) or Uncle(s)	

Other: _____

Appendix F - Items, response options and scoring of the Risk-Avert Screening Tool 2016/2017 version (The Training Effect & Essex County Council, n.d.)[5]

Item	Response options and associated scores			
Individual				
1. Have you done risky things, even if they were a little dangerous?	Yes		No	
	1		0	
2. Have you done something dangerous because someone dared you to do it?	Yes		No	
	1		0	
3. Have you ever been excluded from school?	Yes		No	
	15		0	
4. Have you ever tried a cigarette?	Yes		No	
	15		0	
5. Have you ever tried an electronic cigarette?	Yes		No	
	1		0	
6. How often do you drink energy drinks?	Never	Occasionally	Once a week	More than once a week
	0	0	3	5
7. In the past year, on how many occasions have you had a few sips of a drink containing alcohol, without supervision?	None	1-5 times	6-11 times	11+
	0	15	15	15
8. Have you got a social networking profile?	Yes		No	
	Non-Scoring			

[5] The Training Effect should be contacted before the use of any version for any purpose.

8a. Do you add people to your online accounts who you have not met in person?	Yes		No	
	8		0	
8b. Have you ever regretted sharing something online?	Yes		No	
	8		0	
8c. Have you ever felt pressured to share something online?	Yes		No	
	8		0	
School				
9. What do you think about school?	Good I like it		It's okay	I don't like school
	0		0	8
10. Do you feel safe at school?	Yes		No	
	0		5	
11. Have you been bullied at school in the last 2 months?	Yes		No	
	5		0	
12. How do you feel most days?	Happy		Okay	Sad
	0		0	8
Family				
13a. How wrong do your parents feel it would be for you to smoke cigarettes?	Not wrong at all	A little bit wrong	Wrong	Very wrong
	5	3	0	0
13b. How wrong do your parents feel it would be for you to drink alcohol regularly (at least once or twice a month)?	Not wrong at all	A little bit wrong	Wrong	Very wrong
	5	3	0	0
13c. How wrong do your parents feel it would be for you to smoke cannabis?	Not wrong at all	A little bit wrong	Wrong	Very wrong
	5	3	0	0
13d. How wrong do your parents feel it would be for you to steal something worth more than £5?	Not wrong at all	A little bit wrong	Wrong	Very wrong
	5	3	0	0

13e. How wrong do your parents feel it would be for you to draw graffiti on walls or buildings?	Not wrong at all	A little bit wrong	Wrong	Very wrong
	5	3	0	0
13f. How wrong do your parents feel it would be for you to pick a fight or bully someone?	Not wrong at all	A little bit wrong	Wrong	Very wrong
	5	3	0	0
Community				
14. Have you ever been arrested?	Yes		No	
	15		0	
15. If you are out with friends, do you have a curfew?	Yes		No	
	Non-scoring			
16. What time are you expected home?	Before 8pm	After 8pm	Don't have a curfew	
	0	4	4	
17. How many times a week do you go out with friends without parents or other adults?	None	1	3	5 or more
	0	2	4	6

Appendix G - The Adolescent Risk Behavior Screen (Jankowski et al., 2007)

Developed by M. Kay Jankowski and colleagues – See Jankowski, M. K., Rosenberg, H. J., Sengupta, A., Rosenberg, S. D., & Wolford, G. L. (2007). Development of a Screening Tool to Identify Adolescents Engaged in Multiple Problem Behaviors: The Adolescent Risk Behavior Screen (ARBS). *Journal of Adolescent Health, 40*, 180.e19-180.e26.

Appendix H - Multiple Problem Behavior Index (Jessor et al., n.d., 2003)

Developed by Richard Jessor and colleagues – See Jessor, R., Costa, F. M., & Turbin, M. S. (n.d.). U.S./China Cross-National Study (2000-2002) Measures of Psychosocial Protective Factors, Psychosocial Risk Factors, and Behaviors. Retrieved from https://ibs.colorado.edu/jessor/questionnaires/measures_guide_ahdq3.pdf

Appendix I - Strengths and Difficulties Questionnaire (Goodman et al., 1998)[6]

For each item, please mark the box for Not True, Somewhat True or Certainly True. It would help us if you answered all items as best you can even if you are not absolutely certain or the item seems daft! Please give your answers on the basis of how things have been for you over the last six months.

1. I try to be nice to people. I care about the feelings
2. I am restless, I cannot stay still for long
3. I get a lot of headaches, stomach-aches or sickness
4. I usually share with others (foods, games, pens etc.)
5. I get very angry and often lose my temper
6. I am usually on my own. I generally play alone or keep to myself
7. I usually do as I am told
8. I worry a lot
9. I am helpful if someone is hurt, upset or feeling ill
10. I am constantly fidgeting or squirming
11. I have one good friend or more
12. I fight a lot. I can make other people do what I want
13. I am often unhappy, down-hearted or tearful
14. Other people my age generally like me
15. I am easily distracted, I find it difficult to concentrate
16. I am nervous in new situations. I easily lose confidence
17. I am kind to younger children
18. I am often accused of lying or cheating
19. Other children or young people pick on me or bully me
20. I often volunteer to help others (parents, teachers, children)
21. I think before I do things
22. I take things that are not mine from home, school or elsewhere
23. I get on better with adults than with people my own age
24. I have many fears, I am easily scared
25. I finish the work I'm doing. My attention is good

[6] This is a copyrighted measure © Robert Goodman, 2005 and individuals may be required to purchase a license before use (see https://sdqinfo.org/py/sdqinfo/b0.py).

Appendix J - Short Mood and Feelings Questionnaire (Angold et al., 1995)[7]

This form is about how you might have been feeling or acting **recently.**

For each question, please check (✓) how you have been feeling or acting ***in the past two weeks.***

If a sentence was not true about you, check NOT TRUE.
If a sentence was only sometimes true, check SOMETIMES.
If a sentence was true about you most of the time, check TRUE.

1. I felt miserable or unhappy.
2. I didn't enjoy anything at all.
3. I felt so tired I just sat around and did nothing.
4. I was very restless.
5. I felt I was no good anymore.
6. I cried a lot.
7. I found it hard to think properly or concentrate.
8. I hated myself.
9. I was a bad person.
10. I felt lonely.
11. I thought nobody really loved me.
12. I thought I could never be as good as other kids.
13. I did everything wrong.

[7] © Adrian Angold & Elizabeth J. Costello, 1987. Free to use for research purposes. Downloaded from https://devepi.duhs.duke.edu/measures/the-mood-and-feelings-questionnaire-mfq/

Appendix K - Screen for Child Anxiety Related Disorders (SCARED) – Child Version (Birmaher et al., 1999, 1997)[8]

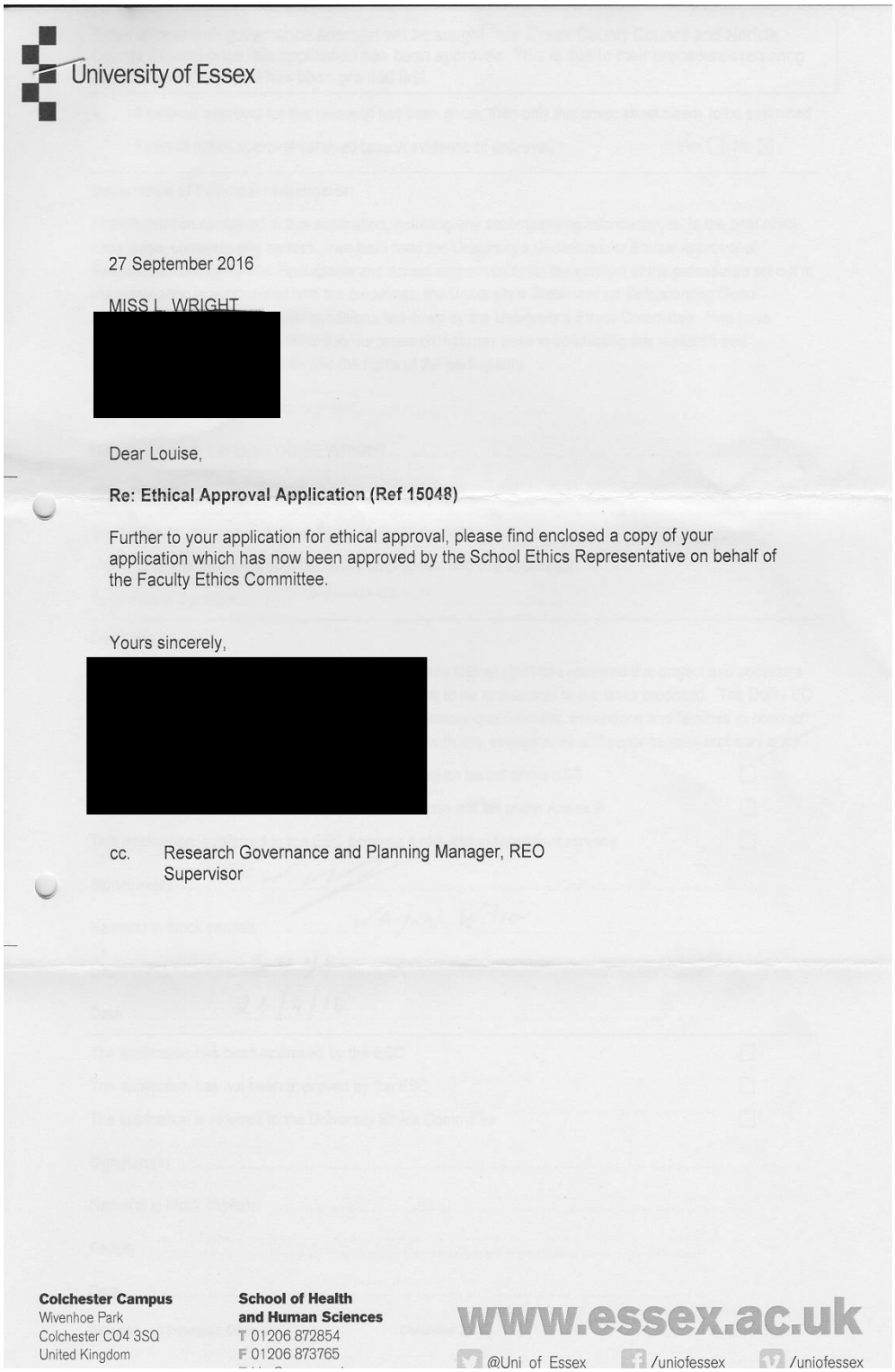
Below is a list of sentences that describe how people feel. Reach each phrase and decide if it is “Not True or Hardly Ever True” or “Somewhat True or Sometimes True” or “Very True or Often True” for you. Then, for each sentence, fill in one circle that corresponds to the response that seems to describe you *for the last 3 months*.

1. When I feel frightened, it is hard to breathe.
2. I get headaches when I am at school.
3. I don’t like to be with people I don’t know well.
4. I get scared if I sleep away from home.
5. I worry about other people liking me.
6. When I get frightened, I feel like passing out.
7. I am nervous.
8. I follow my mother or father wherever they go.
9. People tell me that I look nervous.
10. I feel nervous with people I don’t know well.
11. I get stomachaches at school.
12. When I get frightened, I feel like I am going crazy.
13. I worry about sleeping alone.
14. I worry about being as good as other kids.
15. When I get frightened, I feel like things are not real.
16. I have nightmares about something bad happening to my parents.
17. I worry about going to school.
18. When I get frightened, my heart beats fast.
19. I get shaky.
20. I have nightmares about something bad happening to me.
21. I worry about things working out for me.
22. When I get frightened, I sweat a lot.
23. I am a worrier.
24. I get really frightened for no reason at all.
25. I am afraid to be alone in the house.
26. It is hard for me to talk with people I don’t know well.
27. When I get frightened, I feel like I am choking.
28. People tell me that I worry too much.
29. I don’t like to be away from my family.
30. I am afraid or having anxiety (or panic) attacks.
31. I worry that something bad might happen to my parents.
32. I feel shy with people I don’t know well.
33. I worry about what is going to happen in the future.
34. When I get frightened, I feel like throwing up.
35. I worry about how well I do things.
36. I am scared to go to school.
37. I worry about things that have already happened.

[8] Developed by Boris Birmaher, Suneeta Khetarpal, Marlane Cully, David Brent and Sandra McKenzie. Free to use for research purposes. Downloaded from https://www.pediatricbipolar.pitt.edu/resources/instruments

38. When I get frightened, I feel dizzy.
39. I feel nervous when I am with other children or adults and I have to do something while they watch me (for example: read aloud, speak, play a game, play a sport).
40. I feel nervous when I am going to parties, dances, or any place where there will be people that I don’t know well.
41. I am shy.

Appendix L – Ethical approval letter (Norfolk study) - University of Essex



University of Essex

27 September 2016

MISS L. WRIGHT
[redacted]

Dear Louise,

Re: Ethical Approval Application (Ref 15048)

Further to your application for ethical approval, please find enclosed a copy of your application which has now been approved by the School Ethics Representative on behalf of the Faculty Ethics Committee.

Yours sincerely,

[redacted]

cc. Research Governance and Planning Manager, REO
Supervisor

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Appendix M – Ethical approval letter (Norfolk study) – Norfolk County Council

Wright, Louise A

From: [redacted]
Sent: 07 November 2016 15:13
To: Wright, Louise A
Subject: RGF145

Dear Louise

I am pleased to be able to tell you that your request to undertake research about the risk avert tool has been approved. Please can you let me know the outcome?

Regards

[redacted]

--

To see our email disclaimer click here http://www.norfolk.gov.uk/emaildisclaimer

Appendix N - Parent information sheet (Norfolk study)

A Research Project Investigating Risk Behaviour in Adolescents in Order to Evaluate a Programme Named "Risk-Avert"

Introduction
You are receiving this letter because *Name of School* has kindly decided to participate in this project, which is concerned with the risky behaviours that adolescents may engage in. This research project is being completed by a supervised doctoral student at the University of Essex and is funded by Essex County Council.

Why is this project important?
In 2013 Essex County Council and The Training Effect began a programme named "Risk-Avert". This programme aims to reduce risk behaviour in adolescents and is delivered in a number of schools to young people in school year eight. This research project aims to evaluate 1) whether the questionnaires used to choose the young people who complete the programme help schools identify the right young people and 2) whether Risk-Avert reduces risk behaviour in young people.

What will be involved with taking part?
All students in year eight at *Name of School* will be invited to take part in this study. If you do not wish for your child to take part, please notify the school using the contact method stated at the end of this letter.

At some point during this academic year all those taking part in the study will complete a questionnaire that asks questions about their behaviour. This will take about 20 minutes and be done within normal school hours. The questionnaire will be completed either on a paper copy, or online, depending on what has been chosen by the school. There is a copy of the questionnaire included with this letter for your information.

Will your child's participation in the project remain confidential?
If you and your child agree to take part, their name will not be recorded on the questionnaire. Instead they will be given an ID number. The researcher will only see ID numbers and never names or other identifying information. The school will however have a list of names and ID numbers so that they can identify individuals should they need to. Responses to the questions will be used only for the purpose of this research project, however should your child indicate behaviour that is considered to demonstrate a potential risk to themselves or others this information will be forwarded to the school.

All questionnaire data will be stored either on password protected computers or in locked cabinets located on university premises, depending upon whether it is a paper or electronic copy.

What are the advantages of taking part?
Once this research is finished it could tell us more about the risk behaviours that young people take part in and whether programmes like Risk-Avert can

help to prevent them. This could be useful information for schools (and other services) as they plan for the future and decide how and what to teach young people about risk behaviour.

Are there any disadvantages of taking part?
Whilst the questions have been chosen with care so as to avoid so far as possible asking about sensitive topics, it is possible that your child will not like some of the questions they are asked. They do not have to answer any questions that they are not comfortable with. The school has confirmed that they have appropriate support in place should it be required at any point during your child's involvement with this research project.

Does your child have to take part?
Absolutely not, their participation is entirely voluntary. They are not obliged to take part and have only been considered because they attend one of the schools that has kindly agreed to take part in the research. If you do not wish for your child to take part, you do not have to give a reason and you will not be contacted about the project again. Just make sure to let the school know that you do not wish your child to take part, as if you do not then it will be assumed that you are happy for them to complete the questionnaire. On the day of completing the questionnaire your child will be asked to confirm that they are also happy to take part. They can withdraw from the research project at any time, without providing a reason.

Will I find out the results of the project?
The results of this research project will primarily be written up in the form of a PhD thesis. It is also likely that this research project may be published in the form of articles submitted to scientific journals. A summary of the results of this study will be available upon request. No individual involved in the research project will be identifiable in any of the write-ups.

What if I have any questions?
If you have any questions, please contact the researcher using the details below:

Louise Wright
PhD Student, School of Health and Human Sciences, University of Essex
lwrighb@essex.ac.uk

Leanne Andrews
Academic Supervisor, School of Health and Human Sciences, University of Essex
landre@essex.ac.uk

Caroline Barratt
Academic Supervisor, School of Health and Human Sciences, University of Essex
barrattc@essex.ac.uk

What will happen next?
If you **do not** want your child to take part in the research project, then **please notify the school** by completing and then detaching the form provided below and returning it to the school**.** If you **are** happy for your child to take part in the research project, then you do not have to do anything, your child will simply be asked to confirm they would like to take part on the day(s) that the school has chosen to complete the questionnaire.

I **DO NOT** give permission for (write the child's name on the line below)

_____

to take part in the research project investigating risk behaviour in adolescents.

Signed _____

Appendix O - Participant information and consent (Norfolk study)

Your school has kindly decided to participate in a research project that is looking at the risky behaviours that young people might do.

All students in year eight have been invited to complete this questionnaire. But you do not have to complete it if you do not want to. You also do not have to answer any questions that you do not want to. If you get part way through the questionnaire you can still stop.

This questionnaire will take about 20 minutes to complete.

Your name will not be recorded on the questionnaires. Instead you have been given an ID number by your school that you should put on the questionnaire. The researcher will only see ID numbers and never names.

The school will have a list of names and ID numbers. This means that if your answers show that there may be a risk to your own or someone else's safety then the researchers can let the school know and they will be able to help. This may mean that your teacher, or someone else from the school, will want to talk to you and your parents about your questionnaire.

All of your answers will be stored securely on password protected computers or in locked cabinets located on university premises.

If you feel upset by any of the questions in the questionnaire, please discuss this with an adult such as your teacher.

If you have any questions, you can contact the researcher using the following details:
Louise Wright
PhD Student, School of Health and Human Sciences, University of Essex
lwrighb@essex.ac.uk

By completing this questionnaire you are saying that you are happy to take part in the research project and understand what you have read above.

Appendix P - Parent information sheet (Essex study)

A Research Project Investigating Risk Behaviour in Adolescents in Order to Evaluate a Programme Named "Risk-Avert"

Introduction
You are receiving this letter because *Name of School* has kindly decided to participate in this project, which is concerned with the risky behaviours that adolescents may engage in. This research project is being completed by a supervised doctoral student at the University of Essex and is funded by Essex County Council.

Why is this project important?
In 2013 Essex County Council and The Training Effect began a programme named "Risk-Avert". This programme aims to reduce risk behaviour in adolescents and is delivered in a number of schools to young people in school year eight. This research project aims to evaluate 1) whether the questionnaires used to choose the young people who complete the programme help schools identify the right young people and 2) whether Risk-Avert reduces risk behaviour in young people.

What will be involved with taking part?
All students in year eight at *Name of School* will be invited to take part in this study. If you do not wish for your child to take part, please notify the school using the contact method stated at the end of this letter.

Description of time e.g. "Before the Easter holidays" all those taking part in the study will complete a questionnaire that asks questions about their behaviour. This will take about 20 minutes and be done within normal school hours. The questionnaire will be completed either on a paper copy, or online, depending on what has been chosen by the school. The same questionnaire will then be completed once more toward the end of the school year. There is a copy of the questionnaire included with this letter for your information.

Will your child's participation in the project remain confidential?
If you and your child agree to take part, their name will not be recorded on the questionnaires. Instead they will be given an ID number so that their two questionnaires can be matched. The researcher will only see ID numbers and never names or other identifying information. The school will however have a list of names and ID numbers so that they can identify individuals should they need to. Responses to the questions will be used only for the purpose of this research project, however should your child indicate behaviour that is considered to demonstrate a potential risk to themselves or others this information will be forwarded to the school.

All questionnaire data will be stored either on password protected computers or in locked cabinets located on university premises, depending upon whether it is a paper or electronic copy.

What are the advantages of taking part?
Once this research is finished it could tell us more about the risk behaviours that young people take part in and whether programmes like Risk-Avert can help to prevent them. This could be useful information for schools (and other services) as they plan for the future and decide how and what to teach young people about risk behaviour.

Are there any disadvantages of taking part?
Whilst the questions have been chosen with care so as to avoid so far as possible asking about sensitive topics, it is possible that your child will not like some of the questions they are asked. They do not have to answer any questions that they are not comfortable with. The school has confirmed that they have appropriate support in place should it be required at any point during your child's involvement with this research project.

Does your child have to take part?
Absolutely not, their participation is entirely voluntary. They are not obliged to take part and have only been considered because they attend one of the schools that has kindly agreed to take part in the research. If you do not wish for your child to take part, you do not have to give a reason and you will not be contacted about the project again. Just make sure to let the school know that you do not wish your child to take part, as if you do not then it will be assumed that you are happy for them to complete the questionnaires. On the day of completing the questionnaire your child will be asked to confirm that they are also happy to take part. They can withdraw from the research project at any time, without providing a reason.

Will I find out the results of the project?
The results of this research project will primarily be written up in the form of a PhD thesis. It is also likely that this research project may be published in the form of articles submitted to scientific journals. A summary of the results of this study will be available upon request. No individual involved in the research project will be identifiable in any of the write-ups.

What if I have any questions?
If you have any questions, please contact the researcher using the details below:

Louise Wright
PhD Student, School of Health and Human Sciences, University of Essex, lwrighb@essex.ac.uk

Leanne Andrews
Academic Supervisor, School of Health and Human Sciences, University of Essex, landre@essex.ac.uk

Caroline Barratt
Academic Supervisor, School of Health and Human Sciences, University of Essex, barrattc@essex.ac.uk

What will happen next?
If you **do not** want your child to take part in the research project, then **please notify the school** by completing and then detaching the form provided below and returning it to the school**.** If you **are** happy for your child to take part in the research project, then you do not have to do anything, your child will simply be asked to confirm they would like to take part on the day(s) that the school has chosen to complete the questionnaire.

I **DO NOT** give permission for (write the child's name on the line below)

_____

to take part in the research project investigating risk behaviour in adolescents.

Signed _____

Appendix Q - Participant information and consent (Essex study)

Your school has kindly decided to participate in a research project that is looking at the risky behaviours that young people might do.

All students in year eight have been invited to complete this questionnaire. But you do not have to complete it if you do not want to. You also do not have to answer any questions that you do not want to. If you get part way through the questionnaire you can still stop.

This questionnaire will take about 20 minutes to complete.

If you do choose to complete this questionnaire, then you will be asked to complete another questionnaire toward the end of the school year.

Your name will not be recorded on the questionnaires. Instead you have been given an ID number by your school that you should put on the questionnaire. This is so that your two questionnaires can be matched together later. The researcher will only see ID numbers and never names.

The school will have a list of names and ID numbers. This means that if your answers show that there may be a risk to your own or someone else's safety then the researchers can let the school know and they will be able to help. This may mean that your teacher, or someone else from the school, will want to talk to you and your parents about your questionnaire.

All of your answers will be stored securely on password protected computers or in locked cabinets located on university premises.

If you feel upset by any of the questions in the questionnaire, please discuss this with an adult such as your teacher.

If you have any questions, you can contact the researcher using the following details:
Louise Wright
PhD Student, School of Health and Human Sciences, University of Essex
lwrighb@essex.ac.uk

By completing this questionnaire you are saying that you are happy to take part in the research project and understand what you have read above.

Appendix R – Ethical approval letter (Essex study) – Essex County Council

Essex County Council

Corporate Intelligence Team
Organisational Intelligence
& Commissioning Delivery
Essex County Council
EUG, County Hall, Chelmsford,
Essex, CM1 1QH

Date: 24 October 2016

Dear Louise Wright,

Research Proposal:

Understanding the impact of "Risk-Avert" on adolescents in Essex schools: Exploring the validity of the Risk-Avert Screening Tool

Thank you for forwarding your research proposal to the Research Governance Group.

We are pleased to accept the approval granted by University of Essex School and Faculty Ethics Committees in respect of your research project – reference 15048, dated 27th September 2016. We thus confirm that your research proposal also complies with Essex County Council's research governance guidelines.

May I remind you that your sponsor is responsible for reviewing the quality of the research as it progresses. Should there be any major alterations or adverse occurances during the research, your sponsor is required to notify the Research Governance Group and explain what has been done about it.

When the research is completed please submit a copy of your findings and details of any peer review to the Research Governance Group. Please submit this in an electronic form.

In the mean time good luck with your research and if you do need to discuss any aspects please contact [redacted] direct on [redacted] or on [redacted]

Yours sincerely,

[redacted]

Appendix S - Demographic questions for qualitative study

1. Which of the following describes your gender?

Male

Female

A different description: _____

2. How old are you?

18-25 years

26-30 years

31-40 years

41-50 years

51-60 years

61-70 years

3. What is your ethnic group?

White

Black / African / Caribbean / Black British

Asian / Asian British

Chinese

Arab

Mixed / Multiple ethnic groups

Other ethnic group

4. Is English your first language?

Yes

No

If you answered No, what is your first language?

_____

5. How long have you been teaching?

_____

6. How long have you been at your current school?

_____

7. What is the title of your current role?

_____

8. How long have you been working in your current role?

Appendix T - Semi-structured interview questions

Their role in Risk-Avert
What role have you played in Risk-Avert?
How long have you been involved with Risk-Avert?
How did you get involved with the programme?

Training
What training were you provided with before taking part in Risk-Avert?
After the training did you feel confident in delivering Risk-Avert?

Screening Tool
Could you please describe for me your understanding of how students were selected for the programme?
(If they don't refer to the screening tool): Were you aware of the Risk-Avert survey?
How useful was the survey at helping select suitable students?
Given your understanding of the risks that adolescents take, do you think that there is anything that should be added to or taken out of the survey?

Running Risk-Avert
Describe your experience of delivering Risk-Avert?
Can you describe a particular time where you enjoyed delivering the programme?
Can you describe a particular time where you found it difficult to deliver the programme?
Were there any particular elements of the programme that you struggled to deliver or found difficult to understand? (Prompt: Did you understand the underlying models e.g. Four Whats, Traffic Light)
What did you think about the materials provided?

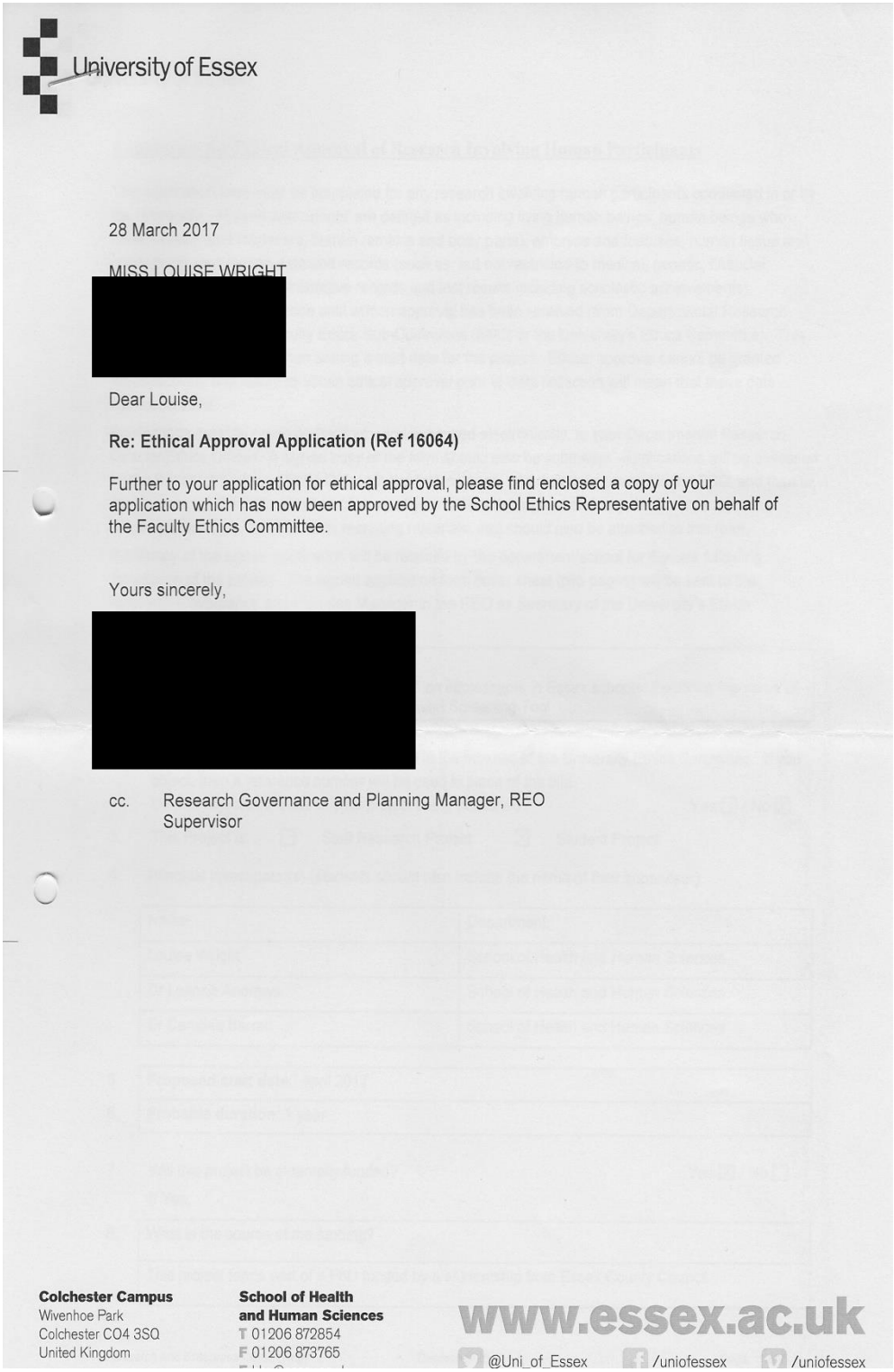
Previous Approaches
Before Risk-Avert what approach did the school take to risk behaviour amongst pupils?
How is Risk-Avert similar or different from what you did before?

Impact of Risk-Avert
What are the key things that you think the students take from the programme?
Have you noticed any change in the behaviour or attitudes of students? If so, how?
What awareness do you think that people not directly involved with the programme have of Risk-Avert? (Prompt: Staff? Students?)
Have you noticed Risk-Avert filtering into other parts of school-life, outside of the initial 6-session programme itself? If so, in what way?
Has Risk-Avert impacted on how you think about or understand risk-taking amongst young people?

Final thoughts
Do you think there is anything missing from the programme?

Would you recommend Risk-Avert to others?
Is there anything else that you would like to add before we finish?

Appendix U – Ethical approval letter for qualitative study – University of Essex



University of Essex

28 March 2017

MISS LOUISE WRIGHT

[redacted]

Dear Louise,

Re: Ethical Approval Application (Ref 16064)

Further to your application for ethical approval, please find enclosed a copy of your application which has now been approved by the School Ethics Representative on behalf of the Faculty Ethics Committee.

Yours sincerely,

[redacted]

cc. Research Governance and Planning Manager, REO
Supervisor

Colchester Campus
Wivenhoe Park
Colchester CO4 3SQ
United Kingdom

School of Health and Human Sciences
T 01206 872854
F 01206 873765

www.essex.ac.uk
@Uni_of_Essex /uniofessex /uniofessex

Appendix V – Ethical approval letter for qualitative study – Essex County Council

Essex County Council

Corporate Intelligence Team
Organisational Intelligence
& Commissioning Delivery
Essex County Council
EUG, County Hall, Chelmsford,
Essex, CM1 1QH

Date: 03 April 2017

Dear Louise Wright,

Research Proposal:
Understanding the impact of "Risk-Avert" on adolescents in Essex schools: Exploring the validity of the Risk-Avert Screening Tool - amendment

Thank you for forwarding your amended research proposal to the Research Governance Group.

We are pleased to accept the amended approval granted by University of Essex School of Health and Human Sciences Ethics Committee in respect of your research project – reference 16064, dated 28 March 2017. We thus confirm that your research proposal also complies with Essex County Council's research governance guidelines.

May I remind you that your sponsor is responsible for reviewing the quality of the research as it progresses. Should there be any major alterations or adverse occurances during the research, your sponsor is required to notify the Research Governance Group and explain what has been done about it.

When the research is completed please submit a copy of your findings and details of any peer review to the Research Governance Group. Please submit this in an electronic form.

In the mean time good luck with your research and if you do need to discuss any aspects please contact us on research.governance@essex.gov.uk.

Yours sincerely,

[redacted]

Appendix W – Ethical approval letter for qualitative study – Suffolk County Council

Your Ref: [redacted]
Our Ref: SRGA: 246
Date: 06.04.2017

[redacted]

Louise Wright
University of Essex
Colchester
By email

Suffolk County Council

Dear Louise

Understanding the impact of "Risk-Avert" on adolescents in Essex schools: Exploring the views of school staff and the validity of the Risk-Avert Screening Tool (Ref: 246)

Thank you for providing copy of the application form, supporting documentation and approval letter by the University of Essex Ethics Committee which I have now reviewed.

I am pleased to confirm that Suffolk Research Governance panel endorsed this ethics approval, as all relevant issues related to ethics and methodology have been appropriately addressed by the University of Essex panel. Therefore, from the research governance point of view, the study is approved to go ahead in Suffolk on the same terms as this approval.

We will now add this research to the Suffolk database as an approved study being implemented in Suffolk. The database is available to the public but any enquiries come through the panel chair who will pass them on to you.

As part of the Suffolk approval please can you:

a) let the panel know of any major changes to the methodology or implementation
b) provide the panel chair with a copy or summary of the final report when completed so we can update our records. At that point it will be discussed with you whether or not you wish the report to be put onto our database.

The Suffolk Research Governance panel wish you well with this work. I hope everything is clear but please contact me if you have any further queries about Suffolk research governance.

With best wishes

[redacted]

[redacted]

Appendix X – Participant consent (qualitative study)

Evaluation of the Risk-Avert Programme

- I have read and understood the Participant Information Sheet provided regarding the research project.
- I agree to take part in an interview for the purposes of this research project.
- I understand that should I change my mind about taking part, I may withdraw from the research project without providing a reason.
- I understand that although written reports of the research may include quotes from my interview, my own and others' names will be changed to prevent identification.
- I understand that the interview will be recorded.
- I understand that all data collected will be stored either on password protected computers or in locked cabinets located on university premises.
- I have been provided with the opportunity to ask questions about the project and my involvement. I understand that should I have further questions; I may contact the researcher or supervisor(s).

Signed …… (research participant)

Print name ……

Date ……

Contact details

Louise Wright
PhD Student, School of Health and Human Sciences, University of Essex
lwrighb@essex.ac.uk

Leanne Andrews
Academic Supervisor, School of Health and Human Sciences, University of Essex
landre@essex.ac.uk

Caroline Barratt
Academic Supervisor, School of Health and Human Sciences, University of Essex
barrattc@essex.ac.uk

Appendix Y – Participant information sheet (qualitative study)

Evaluation of the Risk-Avert Programme

Why is this project important?
In 2013 Essex County Council and The Training Effect began a programme named “Risk-Avert”. This programme aims to reduce risk behaviour in adolescents and is delivered in a number of schools to young people in school year eight. This research project aims to evaluate the impact of the Risk-Avert programme, particularly its impact upon young people. This research project is being completed by a supervised doctoral student at the University of Essex and is funded by Essex County Council.

What will be involved with taking part?
You will be asked to take part in an interview conducted by the researcher. The questions will focus upon your own experience of the Risk-Avert programme. The length of the interview will depend upon your own responses, but we would estimate that it will take at least half an hour. The interview will be recorded using an electronic recording device.

Will my participation in the project remain confidential?
If you agree to take part, your responses to the questions will be used only for the purpose of this research project. All data will be stored either on password protected computers or in locked cabinets located on university premises. Although written reports of the research may include quotes from any of the interviews, no individual will ever be identified. The name of the school will also remain confidential and will not be included in any reports.

What are the advantages of taking part?
Once this research is finished it could tell us more about the risk behaviours that young people take part in and whether programmes like Risk-Avert can help to prevent them. This could be useful information for schools (and other services) as they plan for the future and decide how and what to teach young people about risk behaviour.

Do I have to take part?
Absolutely not, your participation is entirely voluntary. You are not obliged to take part and if at any point you no longer wish to take part, you can withdraw from the research without giving a reason.

Will I find out the results of the project?
The results of this research project will primarily be written up in the form of a PhD thesis. It is also likely that this research project may be published in the form of articles submitted to scientific journals. A summary of the results of this study will be available upon request. No individual involved in the research project will be identifiable in any of the write-ups.

What if I have any questions?
If you have any questions, please contact the researcher using the details below:

Louise Wright
PhD Student, School of Health and Human Sciences, University of Essex
lwrighb@essex.ac.uk

Leanne Andrews
Academic Supervisor, School of Health and Human Sciences, University of Essex
landre@essex.ac.uk

Caroline Barratt
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barrattc@essex.ac.uk