

YOUTH OFFENDING: RESILIENCE AND PROTECTIVE FACTORS

by

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A thesis submitted to

The University of Birmingham

for the degree of

DOCTORATE IN FORENSIC PSYCHOLOGY PRACTICE

(ForenPsyD)

Centre for Forensic and Criminological Psychology

University of Birmingham

July 2012

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ABSTRACT

The assessment and rehabilitation of young offenders is an important area within forensic psychology. Despite general recognition that resilience processes and protective factors can make significant contributions to our understanding of overcoming risk, knowledge of the relationship between young people's offending behaviour and desistance is deficient, as outlined in Chapter One. The aim of this thesis was to redress this imbalance, and to enhance knowledge on the relevance of protective factors and resilience to youth offending and desistance. Chapter Two is a systematic review of the literature examining the relevance of protective factors in young people's desistance from crime. A number of protective factors were found to significantly discriminate between re-offenders and desisters, and an interactive relationship between risk and protective factors received most support. In Chapter Three the strengths and limitations of a psychometric tool to assess young people's personal resiliency are discussed. In Chapter Four this measure was used to examine whether resiliency differed between males who had non-sexually offended, sexually offended, and not offended. Differences in personal resiliency were found between and within these groups. Limitations and implications for practice and future research are discussed in Chapter Five, in relation to the systematic review, the empirical research, and for the thesis in general. A preliminary model of youth offending/re-offending is proposed. It is concluded that the inclusion of protective factors and personal resiliency, alongside risk factors, improves the prediction of offending behaviour. Furthermore, these positive factors appear to be instrumental to the rehabilitation of young offenders.

ACKNOWLEDGEMENTS

My thanks to Dr Leigh Harkins for her academic supervision and guidance. Additional thanks to Sue Hanson and Dr Tony Beech for their help and encouragement. I would like to acknowledge and show my appreciation to Helen Bradshaw and Julie Morgan for their ongoing advocacy, compassion and supervision. Additionally I would like to thank all at G-map, especially Bobbie Print, for continued support, commitment and sponsorship of the doctorate award and research project. Without Bobbie, I would not have embarked on, or completed this journey. Thanks to all the organisations and participants who contributed to the research study, out of goodwill and an acknowledgement of the potential value research can have. Thank you to my family and friends, who over the last four years have been forgiving and understanding when I have been unable to attend engagements or make arrangements due to my study commitments. Finally, a big special thank you to my husband, Ian, who has provided so much encouragement, assistance, patience, and devotion throughout the undertaking of this study.

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CHAPTER ONE

INTRODUCTION TO THESIS

The value of this topic

In recent years youth offending has been a central focus of public attention and policy initiatives (Hagell, 2003). At the heart of this is the concept of crime prevention and the priority to protect children and young people and maximise their potentials (Department for Education and Skills: DfES, 2003). There have been two main models which have offered promise in the prevention and treatment of 'youth issues', a model focussed on risk and a framework prioritising resilience (Bogenschneider, 1996).

The 'risk factor prevention paradigm' (Farrington, 2000) gained prominence in the 1990's and has had considerable influence on the current youth justice system (Haines & Case, 2008; Muncie, 2006). The identification and then treatment or prevention of those factors that put a youth at risk of crime (i.e., 'risk factors') has arguably provided benefits in a number of areas, such as the following: linking crime prevention with explanations for delinquency; making risk measurable; and making youth offending easier to comprehend and discuss for researchers, practitioners and the public (Farrington, 2000). However, whilst empirical studies have increased the awareness of many different risk factors, the prediction of how young people will behave in the longer term continues to be difficult (Laub & Sampson, 2003). Furthermore, in numerous studies (e.g., Griffin & Vettor, 2012; Monahan, 1981; Hood, Shute, Feilzer, & Wilcox, 2002), risk assessments have produced both false positives (i.e., inaccurately predicted offenders/re-offending) and false negatives (i.e., failed to identify offenders/re-offenders).

Critics have argued that a focus on young people's risk factors could increase their risk of marginalisation and stigmatisation, and lead to young people being foremost perceived as 'dangerous', thus distracting from their vulnerabilities and needs (see Case, 2006). Additionally, there has been criticism of the focus on pathology and negative

outcomes of the risk approach, with little regard for those ‘at risk’ populations who overcome the probabilities stacked against them and achieve positive outcomes (Benard, 1991; Bogenschneider, 1996).

The resiliency model is more recent and addresses this criticism through moving beyond a risk framework to encourage positive development (Bogenschneider, 1996). With the emergent influence of positive psychology, there has been an increasing shift in emphasis towards the investigation of strengths and positive factors (Seligman, 2000). Resiliency-research has been applied to approaches with children and adolescents (see Benard, 2006; Constantine, Benard, & Diaz, 1999; Newman, 2004; Zimmerman & Arunkumar, 1994) and in the UK, this is likely to have been further amplified in light of the Every Child Matters agenda (DfES, 2003). Whilst there have been extensive studies and reviews on risk and youth offending, the focus on the resiliency of this population has been limited (Mowder, Cummings, & McKinney, 2010; Todis, Bullis, Waintrup, Schultz, & D’Abrosio, 2001). Currently, protective factors are being recognised as having a significant influence (Fougere & Daffern, 2011), and questions that have been neglected by deficit-based models about what stops or prevents individuals from offending, are being asked (Wormith, Althouse, Simpson, Reitzel, Fagan, & Morgan, 2007). Research into resilience could help to explain why some ‘high risk’ young offenders do not go on to have criminal careers (Pobanz, 2000).

Therefore, whilst we are coming into era where the relevance of protective factors and resilience to youth delinquency and offending is becoming accepted, knowledge is lagging. Additionally, emerging approaches for intervening with offenders, for example through positive psychology, need to be evidence-based (Wormith et al., 2007). The exploration of protective factors and resiliency in youth offending populations is therefore

a significant and important area of study.

Positive approaches to youth development

Crime is a socially constructed phenomenon, at least in part, and therefore needs to be understood within a social context (McNeill, 2012). Psychometric approaches to the assessment of risk emphasise deviancy of the individual, rather than focussing on the environmental contributors (Laws & Ward, 2011), and as such it can encourage the person to be subjected to negative labels. It is well documented within the social sciences that negative labels (for example, 'high risk' or 'deviant') have the potential to be counterproductive, become internalised and lead to self-fulfilling prophecies (Coffrey, 2006).

Positive psychology has attempted to redress the imbalance of psychological enquiry, through a focus on those conditions that encourage positive functioning and thriving, rather than those factors that contribute to deficits and pathology (Gable & Haidt, 2005; Seligman & Csikszentmihalyi, 2000). According to Bremer (2006):

Placing the focus on weakness rather than strength, what is wrong rather than what is right, taking power and control rather than teaching assertiveness, are all ways to perpetuate a sense of helplessness, a 'bad me' identity and a lack of social belonging that promotes pro-social behaviour. (p.93)

The psychometric assessment of resiliency and strengths therefore has potential to instead highlight the young person's resources and capacities that could be rechanneled into positive identities and prosocial outcomes (Mowder et al., 2010). However, empirical research examining such measures is sparse (Jimerson et al., 2004).

This is not to say that positive psychology denies the relevance and reality of human dysfunction and difficulties, but more that it has chosen to concentrate on positive development and human strengths (Gable & Haidt, 2005). According to Seligman and Csikszentmihalyi (2000) in their special edition publication, which appears to have sparked an ‘extraordinary growth’ of interest in this area of psychology (Hart & Sasso, 2011), “the exclusive focus on pathology...results in a model of human being lacking the positive features which makes life worth living” (p. 5). Topics and associated research within positive psychology are not new (Gable & Haidt, 2005), however the recent resurgence of this approach and way of thinking about human functioning has corresponded with a ‘boom’ in scholarly interest and research on resilience (Hart & Sasso, 2011) and positive youth development. It has been claimed that the emergence of a resiliency framework, in which positive adaptation, capacity and achievement, despite adverse experiences was acknowledged, helped to reignite an interest in positive psychology (Masten, 2001; Yates & Masten, 2004a).

The resilience model is conceptually separate to the positive youth development approach (Kia-Keating, Dowdy, Morgan, & Noam, 2011). Both focus on strengths, resources and capacities of young people, however, the positive youth development model emphasises universal youth development and focuses on personal strengths as part of normal development (Damon, 2004). On the other hand, the resiliency model has emphasised positive development in the face of adversity, and has focused on risk and protection (Kia-Keating et al., 2011). Since there is evidence that young people who offend tend to have backgrounds including disadvantage, adversity and risk factors (Boswell, 1996; Creeden, 2005; Fonagy et al., 1997), the resilience model is likely to be significant to developing our understanding of youth offending, and as such will be

central to the current thesis.

According to Yates and Masten (2004a), the identification of assets/resources, vulnerabilities, risks and protective factors are all important in helping us to understand resilience. Bremer (2006) refers to protective factors as the “building blocks of resiliency” (p. 89) and therefore these will also be significant feature of the current thesis. Protective factors are those factors, internal or external to the individual, often argued to moderate the effects of adversity and act as a buffer against negative outcomes (Kirby & Fraser, 1997; Masten & Yates, 2004b).

Protective factors and risk factors are considered by some to interact over time in unpredictable and complicated ways (Bremer, 2006). Griffin, Beech, Print, Bradshaw and Quayle’s (2008) adaptation of Beech and Ward’s (2004) aetiology of sexual offending starts to comprehend the complexity of this interaction. The model attempts to help explain sexual harmful behaviour by adolescents. Within this model, it is implied that some strengths act as protective factors to buffer the effects of risk factors in terms of (1) reducing ‘trait psychological problems’ (e.g., effective relationship skills could improve and increase friendships and thus reduce emotional loneliness and the search for intimacy through deviant means) and (2) through directly addressing triggering factors (for example, effective coping strategies could prevent an individual from engaging in substance abuse). This theoretical model emphasises the importance of both risk factors and protective factors in the assessment of adolescents who have sexually offended. However, the way that risk and protective factors precisely interact to either encourage or divert away from youth offending, remains unclear (Mowder, 2008).

It would appear that research into resilience and protective factors associated with youth offending could potentially provide clues to improving the odds for positive

development and change, and therefore may help to answer questions about how youth ‘at risk’ can be diverted away from crime. Furthermore, Benard (2006) has claimed that resilience research provides hope and optimism to practitioners and is a “gift to all human services” (p.198). In addition to motivating practitioners, what Wieck, Rapp, Sullivan and Kiskardt (1989) called a ‘strengths perspective’, which considers individuals capacity, competence, and the development of their resources, could also provide offenders with motivation to change (Jimerson, Sharkey, Nyborg, & Furlong, 2004). It is noteworthy that motivation has been viewed as a relevant factor in treatment success (Beech & Fisher, 2002; Craig, Brown, & Beech, 2008). This approach is in contrast to some existent rehabilitation models in the UK that have encouraged powerlessness through ‘coerced correction’, where interventions are ‘done to’ offenders instead of ‘done with’ them (McNeill, 2012). Effective rehabilitative models and theories are likely to be key to successfully addressing youth crime.

Rehabilitation theories

According to the British Crime Survey 2010/2011, the most popular perception regarding the role of the youth justice system was that it should rehabilitate offenders through offering help and support, and trying to change behaviour. In the 1970’s and 80’s the view that ‘nothing works’ (Martinson, 1974), with reference to the previous failures of offender rehabilitation, was embraced by politicians (Hollin, 1992). Subsequently, rehabilitation was influenced by the ‘what works’ approach. Here, resources were allocated on the basis of risk of re-offence (Robinson & Crow, 2009). An emphasis was placed on evidence-based research, cost effectiveness and quantifying youth justice through risk assessments and actuarial approaches (Muncie, 2006). As part of this

movement, the Risk-Need-Responsivity (RNR) model was established (Andrews & Bonta, 2010; Andrews, Bonta, & Hoge, 1990; Bonta & Andrews, 2007). Here the principles governing rehabilitation relied on reducing re-offending through matching resources to levels of risk, targeting relevant risk factors that could be changed through intervention (i.e., ‘criminogenic needs’) and ensuring treatment was responsive to the offender’s capacity to learn. The RNR model of offender rehabilitation has received empirical support for reducing recidivism (Hanson, Bourgon, Helmus, & Hodgson, 2009; Polaschek, 2012) and has been useful for integrating theory, practice and research (Ogloff & Davis, 2004), however, it also reinforced an approach to rehabilitation that was preoccupied with risk (Robinson, 2003).

The last decade has seen the development and refinement of The Good Lives Model as a framework of offender rehabilitation (Laws & Ward, 2011; Purvis, Ward, & Willis, 2011; Ward 2002; Ward & Gannon, 2006; Ward & Maruna, 2007; Ward & Stewart, 2003; Ward, Yates, & Long, 2006; Yates, Prescott, & Ward, 2010). With its roots in positive psychology, this model is focused on maximising the effectiveness of interventions through developing the offender’s strengths (Wormith et al., 2007). Put simply, this model conceptualises criminal behaviours as the ways that offenders go about meeting their basic needs and aspirations. It is conceived that offenders might have difficulties meeting their needs through adaptive means because of either, or both, internal and/or external barriers, and a lack of internal and/or external resources. Within this framework, the goal of offender interventions is to (1) promote healthy functioning through helping offenders meet their universal needs in pro-social ways, and (2) to manage or reduce risks (Ward, Mann, & Gannon, 2007). It is proposed that this model attends to criminogenic needs (Ward et al., 2011), but also that offender control or

management can be accomplished in a goal orientated way (see Laws & Ward, 2011). Rehabilitation through goal approach, as opposed to goal avoidance, is believed to be motivational for offenders (Mann, Webster, Schofield, & Marshall, 2004; Ward & Gannon, 2006).

Whilst the Good Lives Model has applicability to the rehabilitation of all types of offenders, it has predominantly been used in the assessment and treatment of sexual offenders (Ward et al., 2007). This model provides a strengths based approach that is compatible with building personal resiliency and promoting protective factors to prevent and rehabilitate from crime. Furthermore, this approach is in line with desistance-based perspectives (McNeill, 2012) and contains some desistance concepts, which has not until recently been considered or studied within forensic psychology (Laws & Ward, 2011). However, as relatively new theory, the Good Lives Model does not have the empirical support for reducing re-offending which other models, such as the RNR do. Therefore, this theory of rehabilitation is likely to benefit from more empirical studies into what positive factors help to reduce offending and re-offending.

Purpose of the current thesis

As explored within the aforementioned literature, there is a growing recognition that concepts such as offending should not be defined and considered solely in terms of risks. Instead there appears to be a value in additionally taking into account strengths, resilience, factors that protect against offending, and the individual's overall wellbeing. With this in mind, the aim of the present thesis was to enhance the currently deficient knowledge and research base regarding how protective factors and resilience might be related to youth offending and desistance. This was attempted through the following

objectives:

- To investigate what protective factors are related to desistance;
- To identify and evaluate a psychometric measure which assessed personal resiliency;
- To empirically examine the extent to which offending and non offending groups differed regarding their personal resiliency;
- To explore the relationship between risk and protective factors, including whether the inclusion of protective factors and resiliency added value to exclusively measuring risk when predicting youth offending/re-offending.

Young people who have sexually harmed are a particular area of interest for the author. Additionally, the assessment and intervention of sexual offenders, specifically, has made a notable contribution to the current knowledge in this field; for example, a current risk assessment for this group includes protective factors, and the Good Lives Model has been most used in the treatment of sexual offenders. As such, the focus was on more general offending and offending through harmful sexual behaviour.

Summary of the thesis

This chapter (Chapter One) has provided a brief outline of a more positive approach that is currently gaining popularity within the field of psychology, and how this can translate into the study of offending behaviour. Chapter Two applies this ethos to the study of youth offending, investigating what protective factors have emerged from empirical studies as significant to help young offenders desist from criminal behaviour. This was done through a systematic review of the literature in order to optimise the completeness and quality of the findings. Secondly, Chapter Two explores the

relationship protective factors had with risk factors in relevant studies. It was hoped that through exploring what factors were associated with desistance and how these related to risk, it could ultimately provide practitioners and researchers with a greater understanding of more effective, holistic and positive approaches to the rehabilitation of young offenders.

Chapter Three examines the psychometric properties of the Resiliency Scale for Children and Adolescents (RCSA: Prince-Embury, 2007). With positive psychology starting to influence forensic psychology, it is important for the forensic field to have access to scientifically grounded tools to measure resilience and related phenomenon. In the absence of a 'gold standard' to measure resilience, this chapter assesses whether the theoretical base, validity, reliability and practical utility of the RCSA is adequate, and discusses its potential limitations.

Subsequently, the RCSA is used to measure personal resiliency within forensic and non-forensic populations in Chapter Four. Here, an empirical study is presented, comparing resilience between young males who have non-sexually offended, sexually offended, and not offended. Not only is this study unusual for its focus on the potential strengths and capacities of offending populations, additionally it compares young people who have committed different types of offences and provides a control group. This research primarily aims to explore the similarities and differences in personal resiliency both between and within these groups, so as to inform prevention strategies and rehabilitative interventions. Secondary to this, the risk factor 'exposure to adversity' is measured and compared between groups, allowing for some preliminary exploration of whether the assessment of resilience can add to the prediction of offending, beyond studying adversity alone. This has implications for the inclusion of positive factors of

human functioning and resources in offender assessment tools.

In Chapter Five, the overall findings of the thesis are presented. The limitations and strengths of the thesis, recommendations for future research, and the clinical application of the present findings are discussed. Furthermore, a preliminary model of youth offending/re-offending is proposed, based on the findings within the thesis.

CHAPTER TWO

A LITERATURE REVIEW FOLLOWING A SYSTEMATIC APPROACH: AN ASSESSMENT OF THE PROTECTIVE FACTORS THAT HELP YOUNG OFFENDERS TO DESIST FROM CRIME

Abstract

Re-offending results in considerable costs to society. Whilst there has been a significant amount of research into risk factors (RF) associated with re-offending, these appear to only partially explain and account for the continuation of delinquent behaviour. The current review sought to explore the role of protective factors (PFs) and their relationship with RFs. The review was based on a systematic search of literature related to PFs that help young people, aged 10 to 19 years, to desist from crime. The review included 15 studies, published between 1991 and 2012, assessed in quality as moderate-to-strong. The data from research was synthesised qualitatively. The review found that a number of PFs significantly discriminated between re-offenders and desisters. Regarding the relationship between risk and PFs, whilst there appeared to be greater support for an interactive model, no clear conclusions could be made. The strengths and weaknesses of the review are discussed and recommendations are made for future research and practice.

Introduction

Offending and re-offending are common to all societies across different cultures (Contreras, Molina, & Cano, 2011). In the United Kingdom (UK), for the year ending March 2010, the rate of proven youth re-offending was 33.3%, resulting in over 37,786 young people re-offending, with an average of 2.8 offences each (Youth Justice Board, 2012). The estimated average financial cost of each young offender in the UK is £8,000 (Akhtar et al., 2011). Add the human cost and the enormity of the societal problem connected with youth re-offending is evident. In a recent review of risk and protective factors (PFs) associated with youth offending, Communities that Care (2005) concluded “the need for more research into what can be done to prevent young offenders re-offending cannot be overstated” (p. 139).

Risk factors (RFs)

The correlates and causes of youth offending have been extensively researched, however, the pathway to delinquency is not straightforward (Shader, 2003). RFs, defined as factors that increase the likelihood of problems being intensified, produced or maintained (Fraser & Terzian, 2005), have been grouped into five domains: 1) individual; 2) family; 3) school; 4) community; and 5) peer-related (Hawkins et al., 2000; Jenson & Fraser, 2006). Research on RFs has provided a means to predict which young people are most likely to offend and/or re-offend. RFs associated with re-offending include: parent criminality (Farrington, 1986), parenting problems (Hoge, Andrews, & Leschied, 1996), low family income (West, 1982; West & Farrington, 1973), poor supervision, early onset of offending and exposure to multiple RFs (Communities that Care, 2005).

Whilst studying risk has been important to understanding the aetiology of youth offending, it does not explain why many youngsters at high risk of developing criminal

and violent behaviours do not offend (Gilgun, 1996b; Werner & Smith, 1992), and why many who do engage in offending desist (Palermo, 2009). The current perspective is that RFs can be offset by PFs (Palermo, 2009), and that these factors could account for the inaccuracy of risk predictions (Rogers, 2000). It has been argued that a benefit of focussing on positive factors to prevent offending, compared to reducing RFs, is that they should be easier to change and promote (Simões, Matos, & Batista-Foguet, 2008).

Protective factors

The term protective factor has been used inconsistently across the literature (Shader, 2003; Stouthamer-Loeber, Wei, Loeber, & Masten, 2004). PFs have been defined as influences that reduce the probability of problem behaviour when exposed to RFs (Garmezy, 1985; Rutter, 1979). Multiple PFs are considered important in distinguishing between individuals who have experienced similar RFs to delinquents, but who resist involvement in crime (Hartman, Turner, Diagle, Exum, & Cullen, 2009). Loeber, Pardini, Stouthamer-Loeber and Raine (2007) distinguish between promotive factors and PFs, with the former relating to desistance and the reduced probability of offending in delinquent populations, and the latter being synonymous with nonparticipation in deviance after exposure to high levels of risk. For the purpose of this study, the term 'PF' will encompass all these definitions.

PFs can be grouped into the same domains as RFs (Blum, McNeely, & Nonnemaker, 2002), although have also been identified as fitting within three basic categories of social bonding, individual characteristics, and healthy beliefs/standards of behaviour (Hawkins, Catalano, & Miller, 1992; Werner & Smith, 1992). A number of factors have been identified within the research literature as having a protective influence

against criminal/problematic behaviour. For example, Herrenkohl and colleagues (2003) found that attending religious services, parents demonstrating good family management, and bonding to school, had protective effects against youths acting out violently. McCord (1982) identified that the following protected against offending: absence of family conflict, families without separated parents and supportive relationships with mothers. Bonding with parents more generally is also considered a PF against offending (Garmezy, 1985) with the potential to mitigate many adverse factors associated with family conflict. The presence of a biological father has been found to have a protective influence that may mitigate potential negative outcomes associated with being born to a young mother (Morash & Rucker, 1989). The protective influence of this sense of relatedness with others has been extended to include quality relationships with teachers, other significant adults, and peers, if they are positive role models and place productive expectations on the youngster (Hawkins et al., 1992; Simões et al., 2008).

Furthermore, community integration, a sense of community within school, and involvement in extra-curricular activities are believed to protect youngsters from violent or problematic behaviours (Garbarino, 1999; Battistich, & Hom, 1997; Orpinas, Murray, & Kelder, 1999). Elliot (1994) identified peer disapproval of delinquency had a protective effect on youth offending.

A number of individual factors are also relevant. Research has indicated that female gender serves as a PF against criminal involvement, in that fewer young females offend when compared to males (Home Office, 1997). However, it is notable that gender differences have been found for both RFs and PFs associated with youth crime (Hart, O'Toole, Price-Sharps, & Shaffer, 2007). Other PFs residing within the individual include: interpersonal skills (Gilgun, 1996b, 1999b), high IQ (Shader, 2003) and

resilience (Fougere & Daffern, 2011).

A lack of consensus exists regarding whether PFs are independent of RFs or are the opposite or absence of risk (Luthar, Sawyer, & Brown, 2006; Shader, 2003). Additionally, the relationship between PFs and RFs is not clear (Communities that Care, 2005). The interactive model conceptualises PFs as interacting with RFs to moderate the relationship between risk and outcomes (Fergus & Zimmerman, 2005; Fougere & Daffern, 2011, Pollard, Hawkins, & Arthur, 1999) through neutralising or diminishing the effects of risk (Luthar, Cicchetti, & Becker, 2000). For example, supportive parenting might act as a buffer against the RF poverty to reduce the likelihood of offending (Shader, 2003). Within this model, PFs only become relevant when RFs are present and therefore do not operate when risk levels are low (Hoge et al., 1996). However, Stouthamer-Loeber, Loeber, Wei, Farrington, and Wikström (2002) assert that consideration of PFs and RFs as separate to each other ignores the diverse impact these factors might have on different individuals, for example a factor could be risky for one individual and protective for another.

An alternative is the additive model, whereby RFs and PFs, which are commonly viewed as opposite poles of a factor, increase or decrease the likelihood of an outcome. Here, PFs may have an independent effect on outcomes (Fougere & Daffern, 2011) through counteracting RFs (Fergus & Zimmerman, 2005). For example, low IQ is often associated with an increased probability of offending and high IQ with a decreased likelihood of offending. These factors are viewed as cumulative with each additional PF increasing the likelihood of positive outcomes, and each additional RF decreasing this likelihood (Garmezy, 1993). Factors can have direct, compensatory or main effects. Hoge and colleagues (1996) found positive peer relations, amongst other PFs, had a main

effect, with no evidence of interactions between these and RFs. A further model is the challenge model, whereby moderate exposure to risk is viewed as optimal, compared to high and low levels of exposure (Fergus & Zimmerman, 2005). Here moderate levels of risk exposure are believed to encourage resilience through allowing individuals to learn how to overcome RFs. Whereas low exposure to risk is considered inadequate to facilitate this learning and high risk exposure is believed to potentially overwhelm individuals.

PFs provide an important challenge for the next generation of risk assessments (Farrington, 2007). There has already been an advance in the production of assessment tools for young offenders incorporating both RFs, and PFs, for example: The AIM2 initial assessment for young people who display sexually harmful behaviours (Print et al, 2007), the Santa Barbara Assets and Risks Assessment (SB ARA; Jimerson, Sharkey, O'Brien, & Furlong, 2003; O'Brien, Jimerson, Saxton, & Furlong, 2001), the San Diego Risk and Resiliency Check-up (SDRRC; Little, n.d.) and the Structured Assessment of Violent Risk in Youth (SAVRY; Borum, Bartel, & Forth, 2006). These tools attempt to predict risk of re-offending, so that resources can be targeted at young people who have a high risk of re-offending, rather than at those who are considered more likely to desist from crime.

Desistance

Adolescence is a life stage where individuals increasingly engage in anti-social and delinquent behaviours (Moffitt, 1993). Empirical evidence suggests these behaviours do not always continue over the life course and many cease offending by their late twenties (Blumstein & Cohen, 1987). Therefore, desistance could be associated with

factors that have surfaced or altered since the onset of offending (Stouthamer-Loeber et al., 2004). Traditionally, criminology focussed on the origins of offending behaviour rather than the process whereby offenders stop offending (Laub & Sampson, 2001; Moffitt, 1993). Studies from the 1970's and 1980's indicated that marriage, employment and parenthood may act as positive indicators for desistance (Gibbens, 1984; Irwin, 1970; Trasler, 1979), however the impact of these factors has had mixed results (Knight, Osborn, & West, 1977; Rand 1987) and the research evidence is not convincing (Laub & Sampson, 2001). Age and maturity may influence desistance, however this does not explain why some young adults persist with offending, whereas others do not (Moffitt, 1993). A distinction has been made between primary and secondary desistance (Maruna & Farrell, 2004), with the former relating to an offence-free period, and the latter involving the attainment of an ex-offending identity.

In summary, whilst there have been an increasing number of studies on PFs and delinquency over the last twenty years, this work is still in its infancy compared to the body of research on RFs (Rennie & Dolan, 2010). Reviews on research regarding PFs and delinquency have tended to focus on factors associated with offending/non-offending, rather than re-offending/desistance, and even then, these reviews have often not followed a systematic approach (e.g., Communities that Care (2005); Shader, 2003). Few studies have examined which adolescent PFs predict desistance from offending (Laub & Sampson, 2001; Lodewijks, Ruiter, & Doreleijers, 2010; Masten et al., 2004). Such research could be significant to the provision of effective interventions to address this important societal problem (Lodewijks et al., 2010).

The current review

Preliminary searches of the following databases were undertaken on 29th December 2011 to assess the originality of the current review: Cochrane Database of Systematic Reviews, Cochrane Database of Abstracts and Review Effects, Centre for Reviews and Dissemination, PsycArticles, Medline, PsycInfo and The Campbell Library of Systematic Reviews. This preliminary search yielded no relevant systematic reviews/meta-analysis on PFs and offending, re-offending or desistance. One non-systematic review on resilience of young offenders (Fougere & Daffern, 2011) was identified through a Google search.

The current review aimed to systematically examine research findings regarding the association between PFs and the transition of young people from offending to desistance. Objectives of the current review were to explore:

- Whether PFs were related to desistance for young offenders.
- Which PFs helped young offenders to desist from crime
- The relationship in research to date, between RFs and PFs for re-offending/desistance. For example, are PFs just a positive way of framing RFs? Are they something inherently different that mediate or ameliorate risk? Do PFs make any contribution beyond the study of RFs alone?

Method

Systematic search

A scoping exercise was conducted to identify the extent of the existing literature on PFs and youth offending or desistance. This informed the potential scope of the current review through helping to define the parameters and refine the aim of the review.

For example, the initial scoping study supported the feasibility of a search on PFs and youth re-offending/desistance, in that the literature appeared neither too narrow nor too broad, and as a result the focus of the review was changed from its former and more extensive focus on PFs and youth offending.

In order to identify potential studies to be included within the current review, a search was undertaken on January 22' 2012 of the following electronic databases: Web of Science (1990-2012), Cochrane Library (1990-2012), OVID PsycArticles (1990 to 2012), OVID PsycInfo (1987 to January Week 3 2012), Ovid MEDLINE (1946 to January Week 3 2012), National Criminal Justice Reference Service Abstracts (1990 to 2012), Applied Social Sciences Index and Abstracts (1990 to 2012), Social Services Abstracts (1990 to 2012), Sociological Abstracts (1990 to 2012), Science Direct (1990 to 2012) and on January 23, 2012 for the databases: Ovid EMBASE (1988 to January Week 3 2012), and Francis (OCLC) (1990 to 2012). The inclusion of these databases was informed through examining relevant sources used in reviews on similar topics, and through the scoping exercise. Search parameters included papers written in English, and dated between 1990 and 2012. Time and financial constraints were not conducive to accessing literature requiring translation. Early studies on PFs were undertaken in the mid 1980's (Calvert, 2002), therefore the year 1990 was specified to allow the development of research into this more specific area, and 2012 was selected to include current and up-to-date studies. Studies were excluded from the output if they included reviews, commentaries, narratives or opinion papers. Journal sources could include articles that were peer reviewed, non-peer reviewed or where this status was unknown, with the intention of reducing the sampling bias associated with just including published studies.

The validity of the search strategy was likely to have been reduced because the

entire content of key journals were not hand searched (Armstrong, Jackson, Doyle, Waters, & Howes, 2005). In an attempt to make the literature search more encompassing the following actions were taken: 1) reference lists of shortlisted articles were hand searched to identify other potentially relevant literature, 2) a search was performed using Google, 3) communication was initiated via email with experts/professionals identified through former searches as having potentially further contributed towards the literature in this area. Appendix 1 provides names of professionals contacted for this review.

Relevant terms were identified, synonyms used and terms were mapped to subject headings to generate a list of keywords, which in turn were selected as search terms. The rationale for this more timely process, rather than simply mapping terms to subject headings, was that it allowed for consistency across multiple databases and allowed terms to be specifically matched to the aim of the review. It is likely that a more generic approach, such as the mapping of terms to subject heading, may have resulted in important studies being overlooked or an overly broad retrieval of articles. In order to ascertain studies on PFs and the transition of young people from offending to desistance, keywords associated with a population of youngsters and offenders were used, in addition to keywords associated with PFs, and keywords associated with the behaviour of re-offending/desistance. Figure 2.1 contains the search terms applied to electronic databases.

When search terms were applied to databases, it yielded 660 results. Appendix 2 provides comprehensive details of specific search terms and outputs from databases. After removing duplicates, 414 articles were identified. An additional 18 articles were identified through either direct contact with professionals, hand searching reference lists or a Google search.

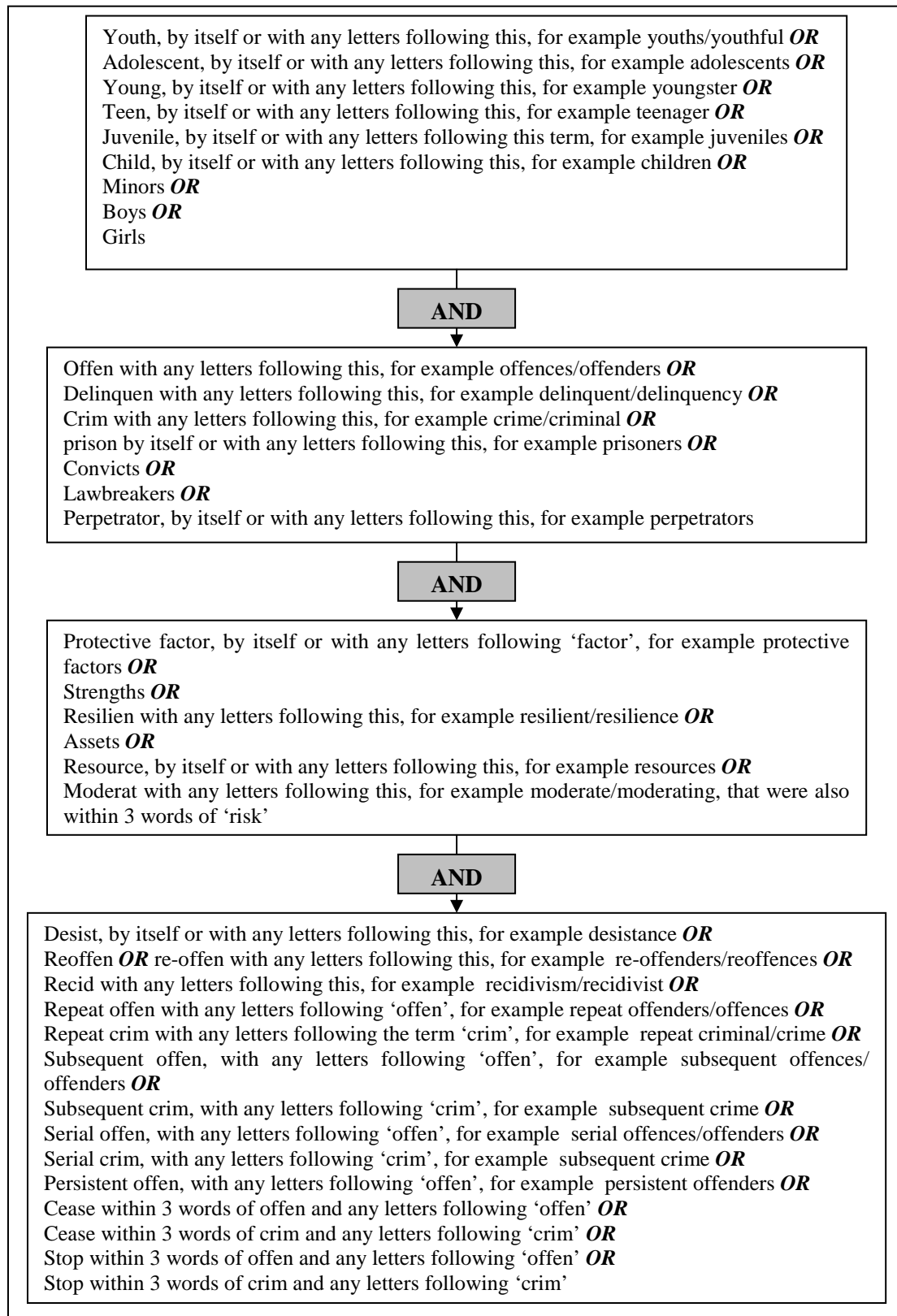


Figure 2.1. Search Terms.

Inclusion/exclusion criteria

To identify relevant articles, abstracts or (where required) the full article were hand searched and inclusion/exclusion criteria, as (Table 2.1) was applied. Appendix 3 contains the form, with predefined inclusion and exclusion criteria, used to shortlist articles for the review.

Table 2.1

Inclusion/Exclusion Criteria

PICO	Inclusion Criteria	Exclusion Criteria
Population	Young People aged 10-19 at the time offending and assessment of some protective factors. Offenders (all types of ‘offences’ defined as receiving criminal charges/convictions for the commission of an offence, or self-reported offending) Males and Females Different Nationalities Different Ethnicities	Aged over 19 or under 10 at time of offending Non-Offenders
Intervention/ Exposure	PFs	Exclusively RFs
Comparator	Desist from general or particular type of crime; re-offend (defined as either self-reported re-offending, or as receiving police charges/convictions for subsequent offence that is either similar and/or different to prior offence(s))	
Outcome	Desist from crime, defined as no recorded and/or self-reported criminal activity for a period of 12 months	
Study Design	Cohort; Case Control	Studies designed to assess interventions; cross sectional or case series studies; reviews, narratives; commentaries; editorials; other types of opinion papers
Other Factors	Year of publication: 1990 to 2012 Language of publication: English	

The rational for the inclusion/exclusion criteria within the Population, Intervention or Exposure, Comparator, and Outcome (PICO) framework were as follows:

- The focus of the current review was on young offenders, therefore at the time that at least some PFs and offending were assessed, the youngsters needed to be aged between 10 and 19. As many studies were longitudinal, follow-up of participants could be in adulthood. In recognition of the limitations of exclusively using official statistics as an indicator of offending, offending was defined as either officially recorded criminal activity or self-reported criminal activity. The terminology ‘offending’ was used in this review if the behaviour constituted an ‘offence’ in principle, regardless of whether criminal proceedings had taken place.
- Exposure to PFs was evidently a key focus of the review. To enable a more exploratory focus of the review, PFs were not defined by the current author, neither was the relationship between PFs and RFs specified. As a result of the latter, exposure to RFs was not part of the inclusion criteria. It was hoped that this approach would allow for insight into how researchers in this field made these distinctions.
- To assess the PFs that help young offenders desist from crime, desisters needed to be compared to re-offenders. In recognition of the limitations of exclusively using official statistics, re-offending was defined as either officially recorded subsequent criminal activity or self-reported subsequent criminal activity. The terminology ‘re-offending’ was used in this review if, in principle, the behaviour constituted a subsequent ‘offence’, regardless of whether criminal proceedings had taken place.

- Desistance could be defined as the permanent transition to non-offending (Bushway, Thornberry, & Krohn, 2003), however it would be difficult for studies to use this definition, as it would require examination of an individual's entire life-course. To maximise the quantity of eligible studies, a more liberal definition of non-offending for a minimum of 12 months was used.
- Studies designed to examine this area of research have tended to be longitudinal. Whilst randomised controlled trials (RCT) are considered the gold standard of research designs, the review did not aim to evaluate the efficacy of clinical interventions, which is the type of study usually associated with RCT's. Case control and cohort studies were selected in the inclusion criteria, as these designs are usually used for this area of research. Case control studies are usually retrospective and involve the comparison of participants with a condition or outcome, and similar participants without that condition or outcome. Cohort studies may also be prospective and often involve follow-up of a group who share a similar characteristic over a period of time, to analyse how different exposures to a specific factor affect outcomes.

Initial sifting through retrieved articles allowed 372 articles to be excluded based on abstracts, reducing the potentially relevant pool to 42 articles plus those from contacts, reference lists and a Google search. Reasons articles were dismissed included: use of adult populations, no clear focus on 'offending' populations, no comparisons of re-offenders with desisters, no detail provided about factors differentiating between groups,

sole focus on risk, focus on treatment/service evaluation, and they were reviews, theoretical papers or discussion papers. For the remaining 42 papers from the database search and 18 additional studies identified through other searches (e.g., scanning reference lists), full copies of articles, where possible, were obtained via the University of Birmingham elibrary, on-site library, interlibrary loans or direct contact with authors. Papers included grey literature, for example dissertations, in addition to published literature. It was not possible to access four unpublished studies, even after contacting authors to request access to these papers (see Appendix 4). Inclusion criteria were subsequently applied to the remaining 56 studies. Where information relating to the criteria was unclear, the author(s) of the study were contacted via email for clarification.

Following this more comprehensive assessment, using the PICO framework, 17 articles remained as potentially appropriate for inclusion in the review. Appendix 5 provides details of papers assessed as potentially relevant during initial sifting, but excluded after inclusion criteria was applied to the full article. For some studies shortlisted at this stage, only parts of the study met the criteria, therefore the parts of the study that was not relevant to the review were ignored, for example research additionally undertaken on RFs or samples of non-offenders. Appendix 6 provides details of studies meeting inclusion criteria.

Quality assessment

When undertaking systematic reviews it is positive to assess the quality of the original studies so as to enhance the credibility of the results (Sanderson, Tatt, & Higgins, 2007). However, a universal framework for the quality assessment of observational studies is lacking (Mallen, Peat, & Croft, 2006). In evaluating checklists and scales used to assess non-randomised studies (Deeks et al., 2003), 11 published tools were identified

as the ‘best tools’ for assessing the quality of primary studies. One of these tools was the Quality Assessment Tool for Quantitative Studies (Effective Public Health Practice Project, 1998), which reported good reliability and validity (Thomas, Ciliska, Dobbins, & Miccucci, 2004). Some sections of this tool were irrelevant to the specific design of the selected studies, leading to adaptations of the tool to meet the purpose of the review.

The adapted tool (Appendix 7) incorporated a number of the quality criteria identified by Mallen and colleagues (2006) as frequently used (in a minimum of 10 systematic reviews between 2003 and 2004) to assess the quality of observational studies. Using a ‘strong’, ‘moderate’, or ‘weak’ classification system, it assesses the overall quality of eight sections: (1)sampling bias, (2)study design, (3)confounding variables, (4)blinding, (5)data collection methods and reporting, (6)withdrawals, drop-outs and missing data, (7)analysis, (8)outcomes. A global rating of ‘strong’, ‘moderate’ or ‘weak’ was assigned to studies on the basis of how many sections received a ‘weak’ rating. If no sections were rated as ‘weak’ the overall quality was assessed as ‘strong’, if two or more sections were rated as ‘weak’, the overall quality was assessed as ‘weak’.

The quality of all 17 studies matching PICO criteria were assessed (Appendix 8). Two of the selected studies were undertaken by the current author and thus, to increase objectivity, a secondary assessor, qualified to a post-graduate level with a background in research and who was not associated with the studies, assessed their quality. The author assessed 15 of the selected studies. To ensure the consistency of ratings, 18% (n=3) studies were independently assessed by both the author and the secondary assessor. Cohen’s kappa was used to evaluate the inter-rater reliability of the quality assessment tool, yielding a kappa of 1 for the global rating and 0.9 for the sub-scales¹. Using Fleiss’

¹ Ratings of individual items yielded a kappa of 0.8

(1981) classification, kappas greater than 0.75 are ‘excellent’.

The confounding variables and data collection sections of the quality assessment were more likely to be rated as ‘weak’. Seven studies had a global quality assessment of ‘strong’, eight were ‘moderate’ and one was ‘weak’. The quality of one study could not be ascertained because a damaged copy of the book detailing the study (where one page was missing) prevented all sections from being adequately assessed. Fifteen studies were included and examined within the review. Figure 2.2 presents a flow chart detailing the data selection process.

A predefined pro-forma was used to extract data using a standardised approach (Appendix 9). The current author designed the proforma to (1)extract relevant information about the reviews aims and objectives, (2)record limitations of each study, (3)provide an overview of the quality of studies. Information was recorded on the following:

- The population studied, including sample size, age, ethnicity, gender and offence type;
- Exposure, including how PFs were defined and assessed;
- Comparators, including definitions for and numbers of re-offenders/desisters;
- Outcome(s), including use of statistical tests, whether and how PFs were related to desistance and RFs;
- Limitations of the study;
- Summary of quality.

Where information was indecipherable or absent within the write up ‘unclear’ or ‘not known’ was marked next to the relevant item. Following initial attempts, no additional

contact was made with authors to clarify information for the purposes of data extraction due to time constraints.

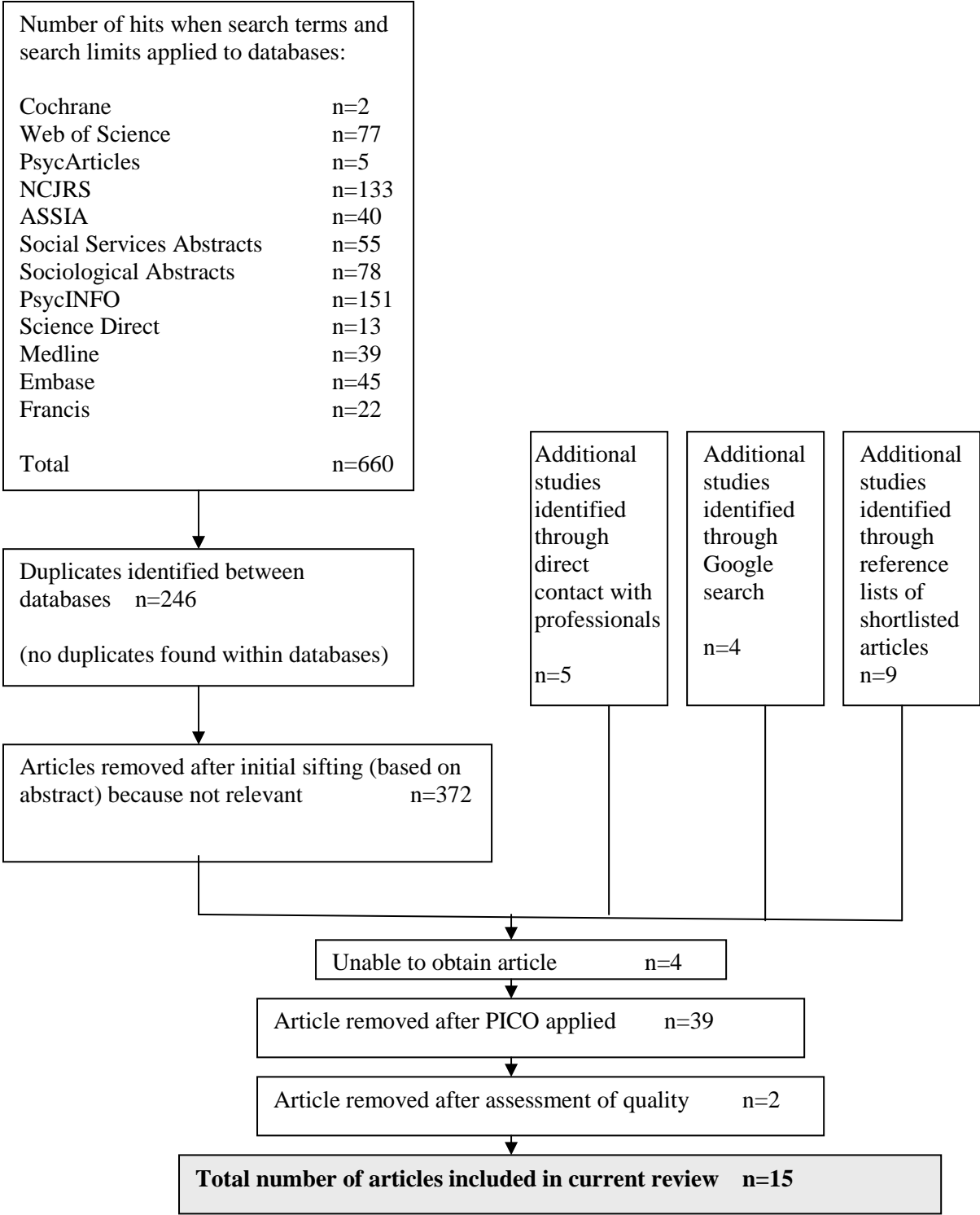


Figure 2.2. Data selection process.

Results

Data synthesis

Data was synthesised from studies meeting the inclusion criteria and assessed as strong or moderate quality. Table 2.2 summarises the population, factors examined and findings from eligible studies. The studies' aims (see Appendix 10) were not always fully consistent with the aims and objectives of the review. For example, the aims of 40% directly related to the review questions, whereas 47% focussed on measuring or supporting the predictive validity of specific risk assessment tools. Consequently, characteristics of the study or sample not compatible with the inclusion criteria were not extracted for inclusion in the review.

There was heterogeneity between studies regarding the population, comparators and PFs. Whilst the comparators used within studies could be loosely classified as 'desisters/re-offenders', some studies involved 'convictions' whereas others involved 'arrests', some involved violent or sexual re-offences, whereas others involved general re-offending. For the purpose of the current review the comparators 're-offenders' and 'desisters' was used to encompass recidivists/non-recidivists, persisters/desisters, rearrests/non-rearrests, self-reported and officially recorded subsequent offending/non-offending; regardless of the 'offence' type and even though qualitative differences exist between these categories. Consequently, studies were often not directly comparable and data could often not be pooled or quantitatively synthesised. The data was therefore examined qualitatively. Whilst some data could be counted to highlight themes, other data required a more narrative approach to allow the scope of the research to be explored and heterogeneity to be explicit. The latter can be poorer at highlighting commonality between studies (Lucas, Baird, Arai, Law, & Roberts, 2007).

Table 2.2

Summary of data from relevant studies

Authors and year of study (Assessed Quality)	Population		Summary of PFs (PF's)/Domains Assessed	Were PF's different to RFs (RF's) or opposite to/on continuum with RF's?	Comparators Desister Verses Re-offender	Follow-up Period	Outcome	
	Size of relevant sample Gender (Age)	Offence type					Relationship between PF's and desistance/re-offending	Relationship between RF's & PF's in predicting desistance/re-offending
Clingempeel & Henggeler, 2003 (Strong)	80 78% Male 22% Female (12-17 years)	Violent	In adolescence: 1)individual competencies; 2)mother-adolescent relationships; 3)global family relations; 4)peer relationships. Emerging adulthood: 1)perceived emotional support; 2)quality of friendships; 3)job satisfaction; 4)positive physical health.	Unclear	No violent offence between 4-6 years after treatment, Verses Subsequent violent offence between 4-6 years after treatment	4-6 years	Desisters exhibited more emotional bonding with peers in adolescence ($F(1,73)=6.81$; $p<0.05$); demonstrated greater adjustment in emerging adulthood ($F(4,74)=4.67$; $p<0.01$), i.e., more emotional support ($F(1,76)=6.46$; $p<0.05$); greater job satisfaction ($F(1,76)=6.69$; $p<0.05$); higher quality peer relationships ($F(1,76)=7.86$; $p<0.01$). A number of factors not significantly associated with desistance.	RF's also significant predictors, particular those measured in adolescence.
Lodewijks et al., 2010 (Strong)	111 Male (12-18 years)	Violent	PF's from the SAVRY: 1)prosocial involvement; 2)strong social support; 3)strong attachment and bonds; 4)positive attitude towards intervention and authority; 5)strong commitment to school or work; 6)resilient personality	Different factors	No convictions for subsequent violent offending Verses Convictions for subsequent violent offending	36 months	Protective Scale (PS) was a significant predictor of violent re-offending ($AUC=0.28$, $p<0.01$). Individual items significantly predicting violent re-offending= 1)strong social support; 2)strong attachment bonds. PS was a significant predictor when entered in step 1 of regression model ($R^2=0.7$, $\beta=-.788$, $p>0.01$)	PF's differentiated recidivists within high and low risk groups. After entering PS into regression model, dynamic risk scale failed to reach significance.

Authors and year of study (Assessed Quality)	Population		Summary of PFs (PF's)/Domains Assessed	Were PF's different to RFs (RF's) or opposite to/on continuum with RF's?	Comparators Desister Verses Re-offender	Follow-up Period	Outcome	
	Size of relevant sample Gender (Age)	Offence type					Relationship between PF's and desistance/re-offending	Relationship between RF's & PF's in predicting desistance/re-offending
Loeber et al., 2007 (Strong)	252 Male (assess predictors at 13-16 years)	Various	'Promotive factors': 1)cognitive; 2)physiological; 3)parenting, 4)community; 5)low peer delinquency; 6)child factors	Opposite ends of continuum	No moderate/serious delinquency aged 17-19 Verses Moderate/serious delinquency aged 17-19 years	Approx 3 years	No promotive factors significantly predictive of desistance.	Only RF's significantly discriminated between desisters and persisters.
Loeber et al., 1991 (Strong)	133 Male (approx 12 years)	Various	Not classified as PF's, although range of factors studied to identify which had protective influence/correlated with desistance: 1)personal factors 2)school factors 3)attitude to delinquency; 4)child/ caretaker functioning; 5)socio-economic status	Opposite ends of continuum	No subsequent delinquency Verses De-escalators i.e., delinquent at lower level of seriousness	Approx 18 months	Factors associated with desistance (RIOC>0.25): 1)low physical aggression; 2)low oppositional defiant disorder; 3)low attention deficit/hyperactivity symptom score; 4)accountability; 5)low manipulative behaviour; 6)good educational achievement; 7)low school suspension; 8)negative attitude to problem behaviour; 9)low peer delinquency; 10)few bad friends; 11)positive caretaker-child relationship; 12)low counter control; 13)trustworthiness; 14)low truancy; 15)good school motivation; 16)caretaker enjoyment of child; 17)get along with caretaker; 18)strict discipline; 19)low depression; 20)positive school attitude; 21)good supervision; 22)perceived likelihood of getting caught	No clear distinction made between RF's and PF's

Authors and year of study (Assessed Quality)	Population		Summary of PFs (PF's)/Domains Assessed	Were PF's different to RFs (RF's) or opposite to/on continuum with RF's?	Comparators Desister Verses Re-offender	Follow-up Period	Outcome	
	Size of relevant sample Gender (Age)	Offence type					Relationship between PF's and desistance/re-offending	Relationship between RF's & PF's in predicting desistance/re-offending
Rennie & Dolan, 2010 (Strong)	111 Male (13-18 years)	63% Violent 37% Non-violent	PF's from SAVRY: (see: Lodewijks above)	Different factors	No subsequent cautions/convictions Verses Subsequent caution/ conviction for offence(s)	12 months	Significant inverse relationship between number of PFs and number of non-violent and general re-offences ($r_s = -0.28$, $p < 0.01$). Total Protective Scale significantly predicted desisters (i.e., from any type of crime, $t = 4.16$, $p < 0.01$; $AUC = 0.71$, $CI = .61-.81$, $p < 0.01$). Individual PF significantly predicting desistance from any type of crime was resilient personality ($Exp\beta = 2.86$, $p = 0.05$, $CI = 1.00$ to 8.26). Individual PFs did not significantly predict desistance from violent re-offending although total score for Protective Scale did ($Exp\beta = 0.72$, $p = 0.05$, $CI = 0.51$ to 1.00).	Interaction between RF's and PF's not studied, authors concluded PF's may buffer effects of RF's.
Stouthammer-Loeber et al., 2004 (Strong)	107 Male (13-19 yrs)	Various	'Promotive factors': A) positive outcomes in adulthood in 1) education; 2) employment; 3) romantic relationships; B) predictors in adolescence including: 1) religiosity; 2) academic achievement; 3) organisations; 4) chores; 5) positive	Opposite ends of continuum	No serious delinquent acts aged 20-25 Verses committed one+ serious delinquent act aged 20-25	Up to 12 years (desistance over 6 year period between 20-25 years)	Aged 20-25 years desisters significantly more likely to be 1) employed $\geq 95\%$ time ($p < 0.05$), 2) employed/in school ($p < 0.01$). Significant promotive factors at ages 13-16 associated with desistance: 1) being accountable ($OR = 4.7$); 2) believing likely to be caught ($OR = 2.5$); 3) low physical punishment from caretaker ($OR = 2.7$); 4) good relationship with peers ($OR = 5.3$);	Combination of three PF's and five RF's included in final regression model predicting desistance (79% participants correctly classified 48% of variance explained)

Authors and year of study (Assessed Quality)	Population		Summary of PFs (PF's)/Domains Assessed	Were PF's different to RFs (RF's) or opposite to/on continuum with RF's?	Comparators Desister Verses Re-offender	Follow-up Period	Outcome	
	Size of relevant sample Gender (Age)	Offence type					Relationship between PF's and desistance/re-offending	Relationship between RF's & PF's in predicting desistance/re-offending
			relationships; 6)employment related skills; 7)positive interaction with interviewer; 8)aspirations; 9)pro-social self perception; 10)Positive family factors; 11)peer associations; 12) individual attitude.				5)low peer substance use (OR=2.7). Significant promotive factors at ages 13-16 associated with desistance: 1)low non-physical aggression (OR=2.6); 2)believing likely to be caught (OR=3.2); 3) many skills for getting jobs (OR=1.8); 4)low peer substance use (OR=5.0); 5)positive interactions with interviewers (OR=2.6). Correlates with desistance aged 20-25: 1)low non-physical aggression (OR=4.2); 2)low peer substance use (OR=5.3); 3) positive interactions with interviewers (OR=0.4). A number of factors not significantly associated with desistance.	
Vincent et al., 2011 (Strong)	480 Male (mean age 14.47 yrs; SD= 1.03)	Various (although 71% had prior violent/ threat offence)	PF's from SAVRY: (see: Lodewijks above)	Different factors	Not arrested subsequently Verses Arrested subsequently	Average of 5 years	Protective scale not significantly related to re-arrests for 'any' re-arrest or violent re-arrest. Protective scale negatively related to non-violent re-arrest.	Static RF's most strongly predictive of nonviolent re-arrest and dynamic RF's of violent re-arrest.

Authors and year of study (Assessed Quality)	Population		Summary of PFs (PF's)/Domains Assessed	Were PF's different to RFs (RF's) or opposite to/on continuum with RF's?	Comparators Desister Verses Re-offender	Follow-up Period	Outcome	
	Size of relevant sample Gender (Age)	Offence type					Relationship between PF's and desistance/re-offending	Relationship between RF's & PF's in predicting desistance/re-offending
Carr & Vandiver, 2001 (Moderate)	76 57% Male 43% Female (11-17 years)	Various	23 PF: 1)personal characteristics; 2)familial conditions; 3)positive role models; 4)peer selection; 5)school interests; 6)activities and hobbies	Opposite	No subsequent offences Verses Re-offended	Not Known	Summed PFs score significantly distinguished desisters and re-offenders (F(1,74)= 6.77, p<0.01, r=.29) Desisters had significantly higher mean scores for: 1)personal characteristics (F(1,74)= 6.52, p<0.01, r=.28); 2)familial conditions (F(1,74)= 6.59, p<0.01, r=.29); 3)peer selection (F(1,62)= 4.27, p<0.05, r=.25)	Summed RF's scores failed to distinguish between desisters and re-offenders, however risk scores for personal characteristics and familial conditions differentiated these groups.
Griffin et al., 2008 (Moderate)	70 Male (12-18 years)	Sex offenders	24 'strengths': 1)sexually and non-sexually harmful behaviours; 2)developmental; 3)family; 4)environmental	Different factors	No subsequent sexual offence Verses Subsequent sexual offence	2 to 15 years, (mean 6 years)	'Strengths' factors that were high for those who did not re-offend with sexual offence: 1)positive leisure interests ($\chi^2=9.51$, p<0.01); 2)above average intelligence ($\chi^2=8.47$, p<0.01); 3)positive talents/interests ($\chi^2=6.30$, p<0.05); 4)positive attitude from significant adults ($\chi^2=5.24$, p<0.05); 5)positive emotional coping from significant adults ($\chi^2=4.64$, p<0.05); 6)at least one emotional confidant ($\chi^2=6.24$, p<0.05); 7)positive evaluations from work/education staff ($\chi^2=9.79$, p<0.01); 8)positive relationships with professionals ($\chi^2=6.36$, p<0.05)	RF's and PF' independently contributed to predicting re-offenders/desisters . High scores on strengths scale appeared to be protective even if offender had high score for risks.

Authors and year of study (Assessed Quality)	Population		Summary of PFs (PF's)/Domains Assessed	Were PF's different to RFs (RF's) or opposite to/on continuum with RF's?	Comparators Desister Verses Re-offender	Follow-up Period	Outcome	
	Size of relevant sample Gender (Age)	Offence type					Relationship between PF's and desistance/re-offending	Relationship between RF's & PF's in predicting desistance/re-offending
Griffin & Vettor, 2012 (Moderate)	46 Male (12-18 years)	Sex offenders with a learning disability	24 'strengths' factors in domains of the AIM2 (see Griffin above) Adapted AIM assessment 'Strengths' factors measured on above four domains.	Different factors	No known sexual/non- sexual offence Verses Known sexual/non-sexual offence	2 to 15 years, (mean 6 years)	Total strengths scores did not significantly contribute towards the prediction of sexual re-offending. Total strengths scores on AIM2 and the adapted AIM assessments significantly predicted general desistance (i.e., from sexual and non-sexual crime; AUC=0.703, CI: 0.55-0.85; p<0.05; AUC=0.717, CI: 0.57-0.87; p<0.05 respectively).	Inclusion of strengths factors made little difference to the prediction of sexual re-offending (AUC=0.79, p<0.01 for strengths and risks score; AUC=0.78, p<0.01 for risks score alone).
Jimerson et al., 2004 (Moderate)	462 (original sample 566, unclear why reduced by 104) 65% Male 35% Female (10-to-18 yrs)	Various (first time high risk offenders)	'Assets': (1)parent-child relationship; (2)individual; (3)community; (4)peer; (5)school; (6)individual substance use; (7)sexual activity; (8)individual criminality; (9)family criminality; (10)family substance abuse; (11)family mental health	Opposite	No subsequent criminal offences Verses Subsequent criminal offences	12 months	Factors negatively associated with re-offending for females (df=21): 1)Emotional support ($\beta=-.156$); 2)Discipline ($\beta=-.251$); 3)Self Effectiveness ($\beta=-.320$); 4)Running Away ($\beta=-.088$); 5)Youth's drug use ($\beta=-.090$); 6)Friendships ($\beta=-.059$); 7)Sexual activity ($\beta=-.301$). Factors negatively associated with re-offending for males (df=28): 1)Communication ($\beta=-.175$); 2)Discipline ($\beta=-.121$); 3)Boundaries and roles ($\beta=-.019$); 4)Mental health ($\beta=-.019$); 5)Youth alcohol use ($\beta=-$	A combination of assets and risks predicted re-offending

Authors and year of study (Assessed Quality)	Population		Summary of PFs (PF's)/Domains Assessed	Were PF's different to RFs (RF's) or opposite to/on continuum with RF's?	Comparators Desister Verses Re-offender	Follow-up Period	Outcome	
	Size of relevant sample Gender (Age)	Offence type					Relationship between PF's and desistance/re-offending	Relationship between RF's & PF's in predicting desistance/re-offending
							.034); 6)Use of free time ($\beta=-.042$); 7)Peer influence ($\beta=-.088$); 8)Friendships($\beta=-.090$); 9)Educational goals ($\beta=-.011$); 10)Progress towards graduation ($\beta=-.251$)	
McEachran, 1995 (Moderate)	108 Male (14-16 years)	Various	PF's from SAVRY: (see: Lodewijks above)	Different factors	No charge for offence settled in court, after aged 18. Verses Charge for offence settled in court after aged 18.	36 months	There were significantly different mean scores on the Protective Scale (PS) for violent re-offenders, non-violent re-offenders, and non-reoffenders ($F(2,105)=8.43$, $p<0.01$). Significant difference only found between non-violent re-offenders and non-reoffenders; and violent re-offenders and non-reoffenders. Non-reoffenders had highest PS score.	Mean scores were significantly different for risk sub-scales for violent re-offenders, non-violent re-offenders, and non-reoffenders. RF's alone significantly predicted violent re-offending.
Onifade et al., 2011 (Moderate)	585 75% Male 25% Female (10-18 years)	Various	Not defined as PFs per se, social and economic indicators e.g., household hardship; household stability; labour capital; educated	Opposite	No new assessment for criminal petition Verses Assessment for new criminal petition	24 months	'Resilient block' was identified as educated (high rate of high school completion), unstable (high prevalence of rental properties/single-parent households), and working (higher labour participation/low rate of public assistance). For the 'resilient block', compared to the reference block, the log mean recidivism decreased by .55 ($p<0.05$); the resilient block had lower rates of recidivism.	The resilient block had negative effect on the relationship of assessed risk scores on recidivism. Thus had potentially moderating relationship between risk score and recidivism.

Authors and year of study (Assessed Quality)	Population		Summary of PFs (PF's)/Domains Assessed	Were PF's different to RFs (RF's) or opposite to/on continuum with RF's?	Comparators Desister Verses Re-offender	Follow-up Period	Outcome	
	Size of relevant sample Gender (Age)	Offence type					Relationship between PF's and desistance/re-offending	Relationship between RF's & PF's in predicting desistance/re-offending
Pearl et al., 2009 (Moderate)	2076 72% Male 28% Female (11-15 years)	Various	Protective total score from: 1)individual factors; 2)delinquency factors; 3)Education; 4)family; 5)peer; 6)substance use	Different factors	No subsequent complaint/petition for offence Verses subsequent adult complaint or juvenile petition	12 months	The protective scale significantly predicted re-offending ($r=-.33$, $p<0.01$).	The best predictors of re-offending was delinquency domain measured by RF's and PF's ($r=-.38$, $p<0.01$), and Risk scale ($r=.38$, $p<0.01$).
Pobanz, 2000 (Moderate)	88 Male (10-18 years)	Various (first time offenders)	BERS Factors: 1)Interpersonal Strength; 2)Family Involvement; 3)Intrapersonal Strength; 4)School Functioning; 5)Affective Strength	Different factors	No subsequent arrest Verses One+ subsequent arrest	12 months (after intake)	'Family Involvement (FI) was only sub-scale to significantly predict re-offending/desistance (correlation between FI and re-arrest: $r=-.282$, $p<0.01$).	FI subscale added predictive value when mediating risk scores. When FI was compared with a risk-only model for predicting re-offending/desistance there was a small (2.3%) overall improvement.

Population

Some population characteristics could be quantitatively synthesised. The size of relevant samples ranged from 46 (Griffin & Vettor, 2012) to 2076 (Pearl et al., 2009), with samples of less than 150 in ten studies. The size of the total relevant sample across all studies was 4785 (Mean=319, SD=516). The ages of participants were between 10 and 19, consistent with inclusion criteria. The sample was predominantly male, with ten studies consisting of exclusively male populations (Griffin et al., 2008; Griffin & Vettor, 2012; Lodewijks et al., 2010; Loeber et al., 2007; Loeber et al., 1991; McEachran, 1995; Pobanz, 2000; Rennie & Dolan, 2010; Stouthammer-Loeber et al., 2004; Vincent et al., 2011) and five studies including a minority of females (Carr & Vandiver, 2001; Clingempeel & Henggeler, 2003; Jimerson et al., 2004; Onifade et al., 2011; Pearl et al., 2009). Of the total sample, 80% (n=3845) were male and 20% (n=940) female. The reason for the large number of studies focussing exclusively on male offenders was unclear, however males account for a disproportionately high number of youth offences (Youth Justice Board, 2006). US statistics indicated that girls account for 30% of all youth arrests (Zahn et al., 2008), however females accounted for 20% of the total population in this review. The review focussed on longer term desistance/re-offending and there is support that a significant number of females, when compared to males, offend in duration for less than one-year (Home Office, 2003), which may help explain the focus on males.

The location of the study and ethnicity of participants varied. Ten studies were undertaken in the US (Carr & Vandiver, 2001; Clingempeel & Henggeler, 2003; Jimerson et al., 2004; Loeber et al., 2007; Loeber et al., 1991; Onifade et al., 2011; Pearl et al., 2009; Pobanz, 2000; Stouthammer-Loeber et al., 2004; Vincent et al., 2011), three in the

UK (Griffin et al., 2008; Griffin & Vettor, 2012; Rennie & Dolan, 2010), one in Canada (McEachran, 1995), and one in the Netherlands (Lodewijks et al., 2010), indicating that American researchers have been most influential and active in undertaking research in this area. Ethnicity was often described for the total sample and therefore when a sub-sample (for example non-offenders) was ignored for the purposes of the review the exact ethnic composition of the relevant sample was difficult to gauge. Furthermore the use of ethnic categories was not consistent across studies. The approximate ethnic composition of the total sample was: one-third white; one-quarter black; one-third Latino, Hispanic (non-white) or Mexican American; one-tenth 'other', for example Asian, Indian, Aboriginal, and Mediterranean. It is of note that for the study containing a sample of 2076, which contained over 1490 participants more than other studies, nearly half the sample was Hispanic, thus significantly affecting the proportion this ethnic group comprised of the total sample.

Samples were recruited from a variety of sources including specific treatment programmes (Griffin et al., 2008; Griffin & Vettor, 2012; Pobanz, 2000), probation (Carr & Vandiver, 2001; Clingempeel & Henggeler, 2003; Jimerson et al., 2004; Onifade et al., 2011; Pearl et al., 2009), detention facilities (Lodewijks et al., 2010; Rennie & Dolan, 2010; Vincent et al., 2011), a psychiatric/psychology assessment centre (McEachran, 1995) or were community samples recruited from schools (Loeber et al., 2007; Loeber et al., 1991; Stouthammer-Loeber et al., 2004). It is noteworthy that 100% of the samples including females were recruited from a population of probationers. For six of the 15 studies sampling involved some degree of randomisation (Griffin et al., 2008; Jimerson et al., 2004; Loeber et al., 2007; Loeber et al., 1991; McEachran, 1995; Stouthammer-Loeber et al., 2004), the remaining studies appeared to utilise samples based on the

quality and quantity of relevant information available for participants, the study's inclusion criteria, and the accessibility of participants at the time of undertaking the study.

Ten studies included general offenders, who had committed various offences (Carr & Vandiver, 2001; Jimerson et al., 2004; Loeber et al., 2007; Loeber et al., 1991; McEachran, 1995; Onifade et al., 2011; Pearl et al., 2009; Pobanz, 2000; Stouthammer-Loeber et al., 2004; Vincent et al., 2011), two studies comprised exclusively of violent offenders (Clingempeel & Henggeler, 2003; Lodewijks et al., 2010), two studies comprised exclusively of sexual offenders (Griffin et al., 2008; Griffin & Vettor, 2012) and for one study the sample predominately involved violent offenders although included a minority of non-violent offenders as a comparator (Rennie & Dolan, 2010). It is noteworthy that the majority (73%, n=11) of studies predominantly relied on the official detection and recording of 'offences'/'re-offences' rather than self-report (Carr & Vandiver, 2001; Griffin et al., 2008; Griffin & Vettor, 2012; Jimerson et al., 2004; Lodewijks et al., 2010; McEachran, 1995; Onifade et al., 2011; Pearl et al., 2009; Pobanz, 2000; Rennie & Dolan, 2010; Vincent et al., 2011).

Protective factors measured

Studies used different terminology to refer to what is labelled as 'PFs' within the review. In the current review a definition of PFs similar to Garmezy (1985) and Rutter's (1979) was used. PFs were defined as influences reducing or potentially reducing the probability of problem behaviour (i.e., re-offending) for groups exposed to RFs (i.e., previous offenders). The studies used the following terminology in addition to, or instead of, 'protective factors': 'strengths', 'assets', 'promotive factors', 'resilient' and sometimes 'risk factors' that had a negative association with re-offending.

Exposure to PFs was measured and defined across studies using a variety of methods. Four studies (Clingempeel & Henggeler, 2003; Loeber et al., 2007; Loeber et al., 1991; Stouthammer-Loeber et al., 2004) used in-depth self-report and reports from significant others through interviews and a range of measures and/or tests. Onifade and colleague's study (2011) used census data to identify the effect neighbourhood socio-economic ecological variables had on re-offending and risk. Pobanz (2000) used a single strengths-based psychometric measure, the Behavioural and Emotional Rating Scale (BERS: Epstein & Sharma, 1998). Carr and Vandiver (2001) devised their own measure informed by the literature. The remaining eight studies used risk assessments that incorporated PFs. Pearl and colleagues (2009) used the SDRRC (Little, n.d.), Jimerson and colleagues (2004) used the SBARA (Jimerson et al., 2003; O'Brien et al., 2001), Griffin and colleagues two studies (2008, 2012) involved use of the AIM2 assessment (Print et al., 2007) with the latter study also using the adapted AIM assessment (O'Callaghan, 2001) and the SAVRY (Borum et al., 2006) was used in four studies (Lodewijks et al., 2010; McEachran, 1995; Rennie & Dolan, 2010; Vincent et al., 2011). Of these studies using risk assessments, it was only possible to make inferences from the total scale scores for PFs in four (Griffin & Vettor, 2012; McEachran, 1995; Pearl et al., 2009; Vincent et al., 2011), as PFs were not analysed at an individual level.

For seven studies (Clingempeel and Henggeler 2003; Griffin et al., 2008; Griffin & Vettor, 2012; Lodewijks et al.; McEachran, 1995, 2010; Rennie & Dolan, 2010; Vincent et al., 2011) the types of PFs measured appeared most consistent with the three basic categories of individual characteristics, social bonding, and healthy standards and beliefs (Hawkins et al., 1992; Werner & Smith, 1992). Examples of individual characteristics were: individual competencies, resilient personality, IQ, skills. Examples

of social bonding were: peer relationships, strong attachment and bonds, strong social support, use of an emotional confidant. Examples of healthy standards and beliefs were: pro-social involvement; strong commitment to school or work; positive attitude towards intervention and authority; accepts responsibility for offence.

Whilst there was a cross-over between these categories and the five domains that RFs and PFs are frequently grouped into (Hawkins et al., 2000; Jenson & Fraser, 2006; Blum et al., 2002), the remaining studies appeared to classify PFs according all or some of the five domains: 1) individual, 2) family, 3) school, 4) community, 5) peer-related. Five studies grouped PFs according to all five domains (Carr & Vandiver, 2000; Jimerson et al., 2004; Loeber et al., 1991; Pearl et al., 2009; Stouthammer-Loeber et al., 2004). Here, attention to the community domain was often restricted to a question on membership to organisations/church and individual factors often included healthy attitudes. Loeber and colleagues (2007) focussed on individual, family and community factors, with some consideration given to low peer delinquency, but little emphasis on school related PFs, although truancy was considered as a RF. Onifade and colleagues (2011) focussed on factors with a potentially protective influence within the community and individual domains, whilst Pobanz (2000) gave greater consideration to school, individual and family domains, largely neglecting peer and community domains other than some reference to attending church and skills relevant for making friends,.

How Protective factors were measured in relation to risk factors

In the current review, eight studies measured PFs as separate to RFs (Lodewijks et al., 2010; Rennie & Dolan, 2010; Vincent et al., 2011; Griffin et al., 2008; Griffin & Vettor, 2012; McEachran, 1995; Pearl et al., 2009; Pobanz, 2000). For example in the

SAVRY, ‘resilient personality traits’ or ‘strong social support’ did not directly map on to any RFs within this assessment. Six studies predominantly measured PFs on a continuum with or as opposite to RFs (Loeber et al., 2007; Loeber et al., 1991; Stouthammer-Loeber et al., 2004; Carr & Vandiver, 2001; Jimerson et al., 2004; Onifade et al., 2011), for example, Carr and Vandiver (2001) used the RF ‘poor self concept’ and the PF ‘positive self concept’, and Stouthammer-Loeber and colleagues (2004) tested several variables to identify whether they had a promotive effect, risk effect or both, therefore these factors were not conceptualised as intrinsically different. However for some studies not all items had a positive end on the continuum (Loeber et al., 2007, 1991; Stouthammer-Loeber et al., 2004), or some factors were only measured as protective (Carr & Vandiver, 2001) or risky (Jimerson et al., 2004) with no counterpart. In summary, the majority of studies, although only just, conceptualised PFs as something inherently different from RFs. Of the strong quality studies, three measured RFs and PFs as parallel concepts and three measured them as different concepts.

Follow-up

Six studies were retrospective (Carr & Vandiver, 2001; Griffin et al., 2008; Griffin & Vettor, 2012; McEachran, 1995; Lodewijks et al., 2010; Pearl et al., 2009) and nine prospective (Clingempeel & Henggeler, 2003; Jimerson et al., 2004; Loeber et al., 2007; Loeber et al., 1991; Onifade et al., 2011; Pobanz, 2000; Rennie & Dolan, 2010; Stouthammer-Loeber et al., 2004; Vincent et al., 2011). A disadvantage of prospective studies is the lengthy time period and resources required to follow-up the sample. This is an advantage of retrospective studies as the follow-up period has occurred (Young, Mazyck & Schulz, 2006). Attrition rates for applicable studies were above 80% in all

but two studies and therefore were rated as strong in this section of the quality assessment. For Clingempeel and Henggeler's study (2003), whilst the drop-out rate was 30%, independent samples t-tests and chi-square analysis revealed similarities on relevant variables between dropouts and completers. For Jimerson and colleagues' study (2004) the completion rate was unclear.

The follow-up period ranged across studies from 12-months (Jimerson et al., 2004; Pearl et al., 2009; Pobanz, 2000; Rennie & Dolan, 2010) up to a potential of 15-years (Griffin et al., 2008; Griffin & Vettor, 2012). In Carr and Vandiver's (2001) study the length of follow-up was unclear however it was reasonable that it could have been more than 12 months. Sixty percent of studies (n=9) had a follow-up period of two years or more (Clingempeel & Henggeler, 2003; Lodewijks et al., 2010; Loeber et al., 2007; Stouthammer-Loeber et al., 2004; Vincent et al., 2011; Griffin et al., 2008; Griffin & Vettor, 2012; McEachran, 1995; Onifade et al., 2011), which Baskin and Sommers (1998) considered a sufficient time to identify 'temporary cessation' from offending and the processes that instigate and maintain desistance.

Relationship between protective factors and desistance/re-offending

Some, but not all PFs discriminated between desisters and re-offenders. Structure and/or supportive relationships discriminated between desisters and re-offenders in eight studies, these could include but were not limited to family and peer factors. Across these studies the following factors measured in adolescence were important (*1*)for desistance generally: caretaker-child relationship (RIOC=0.47), caretaker enjoyment of child (RIOC=0.26), getting along with caretaker (RIOC=0.36), discipline (RIOC=0.35), counter control (RIOC=0.62) and supervision (RIOC=0.40) (Loeber et al., 1991), low

physical punishment from caretaker (OR=2.7) and good relationships with peers (OR=5.3) (Stouthammer-Loeber et al., 2004); familial structure and support ($F(1,74)=6.77$, $p<0.01$, $r=.29$) and having many friends ($F(1,62)=4.27$, $p<0.05$, $r=.25$) (Carr & Vandiver, 2001); family involvement ($r=-0.282$, $p<0.01$) (Pobanz, 2000); emotional support ($\beta=-0.16$, $df=21$), discipline ($\beta=-0.25$, $df=21$) and friendships ($\beta=-0.59$, $df=21$) for female general re-offenders, or boundaries and rules ($\beta=-0.19$, $df=28$), discipline ($\beta=-0.12$, $df=28$) and friendships ($\beta=-0.09$, $df=28$) for male general re-offenders (Jimerson et al., 2004); (2) *for desistance from violent offences*: emotional bonding with peers ($F(1,73)=6.81$, $p<0.05$) (Clingempeel & Henggeler, 2003); strong social support (AUC between .32 and .36, $p\leq 0.05$) and strong attachment bonds (AUC between .30 and .35, $p\leq 0.05$) (Lodewijks et al., 2010); (3) *for desistance from sexual re-offences*: positive relationships with professionals ($\chi^2=6.36$, $p<0.05$) and having at least one emotional confidant ($\chi^2=6.24$, $p<0.05$) (Griffin et al., 2008).

However, a number of variables related to structure and support systems were not predictive. High positive parenting or high supervision (Loeber et al., 2007) and strong social support or strong attachment and bonds (Rennie & Dolan, 2010) were not predictive of general desistance; boundaries and rules, parent-child communication, and monitoring did not predict female general re-offending; and emotional support, parent-child communication, and monitoring did not predict general male re-offending (Jimerson et al., 2004); mother warmth, mother-child warmth, mother firm control, or family cohesion were not related to desistance from violent offences (Clingempeel & Henggeler, 2003); appropriate levels of supervision from carers did not predict sexual re-offenders (Griffin et al., 2008).

General family factors that did not specifically relate to structure or support were

also found to protect against re-offending. These were: caretaker's negative attitude to antisocial behaviour (RIOC=0.34) for general desistance (Loeber et al., 1991); positive emotional coping from significant adults ($\chi^2=4.64$, $p<0.05$) and positive attitudes from significant adults ($\chi^2=5.24$, $p<0.05$) for sexual re-offenders (Griffin et al., 2008). General family factors not related to desistance/re-offending were: communication about child's activities, socioeconomic status and single-parenthood (Loeber et al., 1991); family criminality, family substance use or family mental health (Jimerson et al., 2004); positive adult role models (Carr & Vandiver, 2001); low parental stress (Loeber et al., 2007).

Factors specifically related to the individual adolescent and their desistance/re-offending consisted of behaviours, characteristics, peer associations and internal resources such as attitudes and skills. In Loeber and colleagues study (1991) the following factors relating to the individual were associated with general desistance: (1) Individual characteristics: low physical aggression (RIOC=0.41), low oppositional defiant disorder (RIOC=0.68), low attention deficit symptoms (RIOC=0.64), low depression (RIOC=0.56), low manipulative behaviour (RIOC=0.37), accountability (RIOC=0.47), perceived likelihood of getting caught (RIOC=0.45), trustworthiness (RIOC=0.74); (2) School attitude/behaviour: good educational achievement (RIOC=0.38), low school suspension (RIOC=0.37), low truancy (RIOC=0.57), good school motivation (RIOC=0.34); positive attitude to school (RIOC=0.52); (3) Peer-associations: low peer delinquency (RIOC=0.58); few bad friends (RIOC=0.61). In Stouthammer-Loeber and colleagues' research (2004) factors associated with general desistance were: being accountable (OR=4.7), believing one is likely to be caught (OR=2.5 in early adolescence; OR=3.2 in late adolescence), low non-physical aggression (OR=2.6), having many skills for getting jobs (OR=1.8), positive interaction with the interviewer (OR=2.6) and a peer-

associated factor of low peer substance use (OR=2.7 in late adolescence; OR=2.6 in late adolescence). In this study, similar and different factors across multiple points, for example early and late adolescence, were related to desistance. They also concluded that there was little evidence in their research that the same factors that predicted onset of offending, also predicted desistance.

Characteristics, behaviours and internal resources were also found to be predictive in other studies. In the study undertaken by Rennie and Dolan (2010) the only significant individual predictor of general desistance was resilient personality traits ($\text{Exp}\beta=2.86$, $p=0.05$, $\text{CI}=1.00$ to 8.26), relating to intellectual ability, cognitive skills, self-esteem, problem-solving, calm mood and adaptability. In Carr and Vandiver's research personal characteristics, including positive self concept, high self esteem, positive attitude towards school rules, positive attitude towards police rules, good temperament and support seeking behaviours, discriminated between desisters and general re-offenders ($F(1,74)=6.52$, $p<0.01$, $r=0.28$). Jimerson and colleagues (2004) found that factors negatively associated with re-offending for females were: self effectiveness ($\beta=-.320$, $df=21$), running away ($\beta=-.088$, $df=21$), drug use ($\beta=-.090$, $df=21$), sexual activity ($\beta=-.301$, $df=21$); and for males were: parent-child communication ($\beta=-.175$, $df=28$), mental health ($\beta=-.019$, $df=28$), alcohol use ($\beta=-.034$, $df=28$), use of free time ($\beta=-.042$, $df=28$), peer influence ($\beta=-.088$, $df=28$), educational goals ($\beta=-.011$, $df=28$) and progress towards graduation ($\beta=-.251$, $df=28$). This was the only study in the review to investigate potential difference in specific PFs between males and females. The authors concluded that there are both unique and similar indicators of recidivism/desistance for males and females. Furthermore, Griffin and colleagues (2008) found that the following individual resources predicted desistance from sexual offences: positive leisure interests ($\chi^2=9.51$,

$p < 0.01$), above average intelligence ($\chi^2 = 8.47$, $p < 0.01$), positive talents/interests ($\chi^2 = 6.30$, $p < 0.05$) and positive evaluations from work/education staff ($\chi^2 = 6.36$, $p < 0.05$).

The following factors regarding the individual were not found to be significant

(1) *for general re-offenders*: cognitive factors, neurocognitive factors, low peer delinquency, intolerant attitude towards delinquency, low interpersonal callousness, or high perceived likelihood of getting caught (Loeber et al., 2007), attitude to delinquency, involvement in jobs/chores, level of anxiousness or shyness (Loeber et al., 1991), low non-physical aggression in early adolescence, several cognitions and beliefs, substance use and academic achievement (Stouthammer-Loeber et al., 2004), pro-social involvement, positive attitudes towards interventions/authority, and strong commitment to school (Rennie & Dolan, 2010), any school-related factors, communication or mental health for females, sexual activity for males, or peer substance use, anger management, sensation seeking, and self-control for either males or females general (Jimerson et al., 2004); (2) *for desistance from violent offenders*: positive physical achievement and social competence (Clingempeel & Henggeler, 2003); (3) *for sexual re-offenders*: strengths associated with attitude towards the offence and treatment, sexual knowledge, problem-solving skills, positive goals, communication skills, sense of safety in home/care environment, and use of social network (Griffin et al., 2008).

Onifade and colleagues (2011) found that neighbourhood and socioeconomic factors associated with the 'resilient block', which had lower rates of recidivism, was higher rates of school completion, higher participation in work and a higher prevalence of rental properties/single parent households (log mean decreased by 0.55, $p < 0.05$).

Interestingly, this latter community-based factor is more likely to be identified as a RF than a PF within the general literature (e.g., McCord, Widom, & Crowell, 2001). There

was a lack of support for the general association between these community factors and desistance (Jimerson et al., 2004; Loeber et al., 2007) or more specifically the attendance of a community organisation (Carr & Vandiver, 2001; Loeber et al., 1991; Stouthammer-Loeber et al., 2004) in other studies.

Desistance was associated with other positive outcomes in early adulthood, for example being in employment or education (persister 21.3%; desister 43.9%, $p > 0.01$; Stouthammer-Loeber et al., 2004), more emotional support ($F(1,76)=6.46$; $p < 0.05$); greater job satisfaction ($F(1,76)=6.69$; $p < 0.05$) and higher quality relationships with friends ($F(1,76)=7.86$; $p < 0.01$) (Clingempeel & Henggeler, 2003). Desistance was also associated with: low levels of non-physical aggression ($OR=4.2$), low peer substance use ($OR=5.3$) and positive interactions with interviewers ($OR=0.4$) in early adulthood (Stouthammer-Loeber et al., 2004). It was not however associated with educational attainment, romantic relationships or caring for children (Stouthammer-Loeber et al., 2004).

Six studies analysed total scores for PFs within a risk assessment. Of the four studies involving the SAVRY, the score for the Protective Scale significantly predicted violent re-offending ($AUC=0.28$, $p < 0.01$; $R^2=0.7$, $\beta=-.788$, $p > 0.01$) in Lodewijks and colleagues' study (2010); predicted violent re-offending and re-offending in general in Rennie and Dolan's study (2010) ($Exp\beta=0.72$, $p=0.05$, $CI=0.51$ to 1.00 ; $Exp\beta=0.60$, $p=0.01$, $CI=0.41$ to 0.88 respectively); related to non-violent re-offending, although not 'any' re-offending (i.e., violent and non-violent offending and general 'violations') or violent re-offending in Vincent and colleagues' study (2011); and discriminated between non-re-offenders and both violent and non-violent re-offenders ($F(2,105)=8.43$, $p < 0.01$) in McEachran's study (1995), although not between violent and non-violent re-offending.

The first three of these studies were assessed as strong quality. Griffin and Vettor's study (2012), rated as moderate quality, found that the total PFs scores included in the AIM2 and adapted AIM assessments for intellectually disabled youngsters, predicted general desistance (AUC=0.703, CI: 0.55-0.85; $p<0.05$; AUC=0.717, CI: 0.57-0.87; $p<0.05$ respectively) but not desistance from sexual offences. In Pearl and colleagues study (2009), rated as moderate quality, the protective scale on the SDRRC significantly predicted general re-offending ($r=-0.33$, $p<0.01$).

Relationship between risk and protective factors

In the majority of studies both RFs and PFs, either in combination or independently, discriminated between re-offenders and desisters (Clingempeel & Henggeler, 2003; Lodewijks et al., 2010; Stouthammer-Loeber et al., 2004; Carr & Vandiver, 2001; Griffin et al., 2008; Griffin & Vettor, 2012; Jimerson et al., 2004; McEachran, 1995; Pearl et al., 2009). In two studies PFs helped differentiate between recidivists in high risk groups (Lodewijks et al., 2010; Griffin et al., 2008) and in Onifade and colleagues study (2011) the resilient block had a negative effect on the relationship between risk scores and recidivism. In the research by Lodewijks and colleagues PFs also appeared to operate at low levels of risk. In Griffin and Vettor's study (2012) the inclusion of strengths factors made very little difference to the prediction of sexual re-offending (AUC=0.79, $p<0.01$ for strengths and risks score; AUC=0.78, $p<0.01$ for risks score alone). In Pobanz's (2000) study the inclusion of the PF 'family involvement' resulted in small overall improvements of 2.3% when compared to a risk only model, and found some, although limited, support for an additive rather than an interactive model of resilience. In taking the study by Loeber and colleagues (1991) in its entirety, there was

some support that the same concept could act as either a risk or PF, with for example the former increasing initiation of offending and the latter increasing the likelihood of desistance. In McEachran's study (1995) the inclusion of PFs did not appear to contribute towards the prediction of violent re-offending, which was predicted by RFs alone. Furthermore, in Loeber and colleagues research (2007) only RFs significantly discriminated between desisters and persisters, and in Vincent and colleagues research RFs alone were predictive of violent re-offending.

Discussion

Main findings

The current review aimed to examine previous research findings using a systematic approach, regarding the association between PFs and the transition of young people from offending to desistance. Four main objectives were identified:

1) Explore whether PFs are related to desistance for young offenders

The findings of the review supported previously noted literature that studies use different terminology to label PFs (Shader, 2003; Stouthamer-Loeber et al., 2004).

Whilst Loeber and colleagues intentionally made a distinction between 'protective' and 'promotive' factors, other studies used terms such as 'strengths' and 'assets' when 'PFs' would appear more appropriate and befitting. Additionally, PFs within studies could be categorised into varying domains, reinforcing the discrepancies and incongruence in the way PFs have been explored, defined and researched.

Of the 15 studies in the review, only one did not find a relationship between any PFs measured and re-offending/desistance (Loeber et al., 2007). This study measured cognitive, physiological and psychosocial protective factors (labelled as 'promotive

factors' within the study) and the quality assessment of the study was strong. Of the remaining 14 studies, PFs were found to be related to, or predictive of, re-offending/desistance, with some factors having better discriminatory ability than others, or some factors appearing better for a particular group of desisters/re-offenders. The findings therefore indicated that PFs are, to some degree, related to desistance from crime for young offenders. This finding is consistent with research on general delinquency, i.e., that some PFs are related to non-offending/offending (see: Elliot, 1994; Fourgere & Daffern, 2011; Gilgun, 1999b; Hawkins et al., 1992; Herrenkohl et al., 2003; McCord, 1982; Morash & Rucker, 1989; Shader, 2003).

Whilst in some studies PFs had utility in discriminating specifically between desisters of violent or sexual offences and violent or sexual re-offenders (Clingempeel & Henggeler, 2003; Griffin et al., 2008; Lodewijks et al., 2010; Rennie & Dolan, 2010), in studies comparing general desistance with desistance specifically from sexual/violent offences, PFs appeared to be better at differentiating or predicting desistance generally (Griffin & Vettor, 2012; McEachran 1995; Rennie & Dolan, 2010).

2) Examine which PFs help young offenders desist from crime

In two studies, one rather than multiple PFs helped distinguish between desisters and re-offenders. In Pobanz's (2000) study this one factor was family involvement (Pobanz, 2000) and the only factor found to be significant in Rennie and Dolan's (2010) study was resilient personality. However, consistent with previous literature on offending verses non-offending (Hartman et al., 2009) most studies found that multiple PFs were important in helping young offenders to desist from crime. Whilst a number of similar factors between different studies commonly protected young offenders from re-offending,

for example positive attachments with peers, caretakers or other significant adults; appropriate discipline and structure; high perceived likelihood of getting caught; accountability; low aggression, findings were not consistently demonstrated. For example, single studies found mother warmth, parent-child communication, low aggression in early adolescence and high perceived likelihood of getting caught, were not related to desistance. This inconsistency between studies may be explained by variance in factor definition/measurement, and differences in age, gender, ethnicities and offender groups between and within samples. Illustrating the potential for differences between sub-groups, single studies included in the review found some predictors varied according to gender (Jimerson et al., 2004) and age (Stouthammer-Loeber et al., 2004). Additionally Pearl and colleagues (2009) found that ethnicity was significantly related to re-offending. As such, it is difficult to make firm conclusions about which specific PFs helped young offenders to desist from crime, however general themes and preliminary inferences can be identified.

Taking the findings collectively from all included studies, the PFs that appeared to help young offenders desist from crime could predominantly be grouped into the following categories: social bonding and supportive relationships; structure, supervision and discipline; healthy beliefs/standards of behaviour; personal characteristics. However, this finding could be a consequence of these factors being most frequently measured within studies. Consistent with previous findings (Hawkins et al., 1992; Simoes et al., 2008) support was found for bonding and quality relationships outside the family having a protective influence. Additional categories that appeared important, although were less frequently cited as significant factors within the studies were: general family factors, school factors and peers attitudes/behaviours. The above categories are more of a hybrid

of the five domains (see Blum et al., 2002) and three basic categories (see Hawkins et al., 1992; Werner & Smith, 1992) identified within the literature. Within the current review there was a lack of general support for PFs from the community domain helping young offenders to desist from crime. This is contrary to the view that community factors can help protect youngsters from engaging initially in delinquent behaviours (Garbarino, 1999; Battistich & Hom, 1997; Opinas et al., 1999). This finding may support previous suggestions that desistance and onset of offending have different predictors (Stouthamer-Loeber et al., 2004). However, as with Stouthammer and colleagues findings, making such interpretations between different studies should be done with caution because of the absence of controls and the number of potentially confounding variables. Additionally, community factors did not appear to be investigated to the same extent as with other domains although, even when measured, results were not as favourable.

Findings from two separate studies exploring factors in early adulthood associated with desistance (Clingempeel & Henggeler, 2003; Stouthammer-Loeber et al., 2004) supported earlier studies that employment may act as a positive indicator for desistance, however the latter study did not support previous research that romantic relationships and caring for children are associated with desistance (Gibbens, 1984; Irwin, 1970; Trasler, 1979). Clingempeel and Henggeler's study (2003) additionally found greater emotional support and quality relationships with friends, providing support for the potentially positive effects of alternative sources of belonging and relatedness.

3) Explore the relationship in the research to date between RFs and PFs for desistance/re-offending

As previously noted, there is a lack of consensus within the literature about whether PFs are independent of, or opposite to, RFs (Luthar et al., 2006; Shader, 2003).

This was also evident in the current review, with eight studies measuring PFs as different to RFs and six measuring them as opposite poles of the same factor. There was some evidence that it was possible to measure RFs and PFs as two ends of the same variable, either on a continuum or as a dichotomy, and they could demonstrate either a risk or protective effect (Carr & Vandiver, 2001; Jimerson et al., 2004; Loeber et al., 2007, 1991; Onifade et al., 2011; Stouthammer-Loeber et al., 2004). However in these studies, some factors exhibited neither a risk nor protective effect, or some factors only acted as RFs or PFs. Therefore it appears that whilst PFs might be part of the same underlying construct as some RFs, some may also be independent of these.

The relationship between RFs and PFs has been noted as being unclear previously (Communities that Care, 2005), with interactive, additive and challenge models proposed within the literature (Fergus & Zimmerman, 2005; Rutter, 1979; Zimmerman & Arunkumar, 1994). The current review was able to make only limited inferences regarding how these factors related to each other because the majority of included studies failed to analyse this in detail, and made no reference to the challenge model. In the study by Griffin and colleagues (2008), support was found for the interactive model where PFs appeared to interact with RFs to reduce the risk of re-offending, even when individuals were believed to be particularly risky. Similarly, in the study undertaken by Lodewijks and colleagues (2010), PFs had a buffering effect in high risk groups and the authors concluded that there was an interactive effect of PFs and RFs. However, in this study, PFs also had a buffering effect in the low risk group, which Hoge and colleagues (1996) suggested was not consistent with the interactive model. Other studies concluded from their findings that PFs might buffer or moderate the relationship between risk and re-offending (Onifade et al., 2011; Rennie & Dolan, 2010) which could be indicative of

an interactive effect.

In sum, there appeared to be greater support for PFs interacting with RFs to moderate between risks and desistance, however this finding should be interpreted with caution. The only study where the additive model explicitly showed more promise was in the study by Pobanz (2000), where he concluded that his findings demonstrated modest support for the additive model. When logistic regression or ROC analysis was performed on a range of individual factors (rather than scale scores) to identify the best predictive variables, often the resultant models that best predicted desistance/re-offending consisted of a combination of RFs and PFs (e.g., Griffin et al., 2008; Jimerson et al., 2004; Stouthammer-Loeber et al., 2004). This suggests that regardless of the relationship between RFs and PFs, both are important to measure as they could make independent contributions to predicting desistance.

Further considerations for the interpretation of findings

The research included in the review was predominantly undertaken in the US, which is likely to limit the generalisability of these findings to other countries. The sample was exclusively male in 67% of studies and was 80% male overall, making findings more applicable to male young offenders rather than females, especially as some differences between PFs for male and female re-offending was found (Jimerson et al., 2004). The findings of the review may also not be generalisable to different ethnicities and types of offenders to those within included studies, however multi-ethnic groups, in addition to violent, sexual and general offenders were included. Whilst the heterogeneity between the studies and samples may be problematic for data synthesis and comparisons, common findings between studies based on different measures of re-offending (i.e., ‘arrests’, ‘convictions’, ‘self-report’) and differently termed factors (i.e., ‘promotive’,

‘protective’ ‘assets’ and ‘strengths’) shows promise for the interpretation and applicability of findings across different measures of desistance and PFs. Therefore it should provide a more coherent picture for practitioners and researchers. It is of note, that in all studies, the findings regarding which PFs related to desistance were limited by those factors studied. Therefore, whilst some conclusions can be made in the current review regarding significant PFs and their relationship with RFs, new studies examining different PFs, measured in different ways, may yield different results. The current review could be used to inform future research of which PFs to measure, so that the results of prior studies can be tested.

Desistance was limited to a 12-months minimum offence-free period within the review, in recognition that following-up participants for lengthy periods can be challenging and to increase the potential number of studies eligible for inclusion. However, this is an overly simplistic definition of desistance and is more consistent with what Maruna and Farrell (2004) termed ‘primary desistance’. The findings of the review should be interpreted in light of the limitations of the definition used.

Samples used in the review were recruited from a range of offender populations, for example treatment programmes, probation, detention facilities, a clinical assessment centre, community school samples. As a result, samples are likely to include clinical and non-clinical samples and as such the results of the review are less likely to be biased towards groups of either high or low risks. In summary, the findings of the review should have applicability to a range of young offenders aged 10-19 years of either high or lower risk, particularly males living in the US. It is hoped that the positive focus of the review, rather than the traditional tendency to concentrate on risks (Rogers, 2000) will encourage practitioners to interpret these findings into their practice, albeit with the above

constraints, and as a result focus on interventions that promote wellbeing, resources and resilience rather than solely designing programmes with the intention of addressing risk.

Additional Strengths and limitations of the current review

Attempts were made to ensure that search terms were comprehensive, for example through initial exploding of terms and use of a thesaurus. A number of databases were systematically searched, as well as additional methods of searching Google, contacting relevant professionals and searching relevant reference lists, to enhance the quantity of applicable studies. It has been argued that dissertation studies should be included in reviews to ensure a more complete identification of relevant literature, (Egger, Dickerson & Smith, 2007). The inclusion of relevant dissertation studies within the selection process was a strength of the review as it enhanced the comprehensiveness of data and reduced potential publication bias, where published studies are considered more likely to show positive results (Song et al., 2009). However, dissertation studies are more likely to be methodologically flawed and can be time consuming to retrieve (Vickers & Smith, 2000).

To provide a more inclusive approach, reference lists of shortlisted articles were scanned to identify further articles of potential relevance. However the initial screen of studies contained in reference lists was subjective, as decisions about the potential relevance of studies were made according to the title. This process introduced similar bias to using snowball samples, because the expansion of the search relied on the citation in shortlist articles, regardless of how systematic or unbiased the original selection of literature was. Additionally, contacting specific professionals for potential studies can lead to bias through inclusion of their papers. Two of the selected papers were authored by the current author providing potential for bias and a conflict of interest. Attempts were

made to resolve this dilemma through using an additional person, unrelated to the studies, to assess their quality and extract data. Furthermore, only including studies available in English may have biased the results.

The inclusion/exclusion criteria led to the omission of some key studies, for example Hoge and colleagues' study (1996) was excluded because their analysis was conducted on the basis of re-offending rates rather than using relevant comparator groups, and thus their findings on significant PFs associated with lower levels of re-offending were neglected within the review. However, whilst stringent inclusion/exclusion criteria had downfalls, the benefit was that it could optimise the chances that: studies were appropriate, measured similar concepts, findings were comparable, and an impartial means of selection was used (Shin & Hartnick, 2008). Furthermore, using quality assessments is not commonplace for observational studies (Mallen et al., 2006) and therefore maximising the inclusion of studies that were more methodologically robust was a strength of the review, even though the assessment was not in its entirety an established tool.

The review predominantly included studies using officially recorded data to define re-offending/desistance. The heavy reliance on recorded crime meant that the extent of re-offending amongst samples was likely to be underestimated (Barbaree & Marshall, 1990; Laub, 1997) and therefore young people might have been inaccurately labelled as desisters. However some, albeit a minority of studies, did rely on self-report of re-offending. Small sample sizes for some studies (e.g., Griffin & Vettor, 2012) and low rates of either re-offending or desistance in some samples can make it difficult to generalise the results and conclusions between studies. Also, for the majority of studies sampling did not involve randomisation which may have increased bias. Another

limitation was that although efforts were made to reduce heterogeneity through more stringent inclusion/exclusion criteria, there continued to be some disparities between samples, which meant that data from studies using different samples and methodologies were synthesised to provide themes and commonalities. However, a strength of the current review was that heterogeneous data was acknowledged and interpreted qualitatively, although this limited the extent that data could be translated beyond the primary studies. As a result of the qualitative nature of the review, it was not possible to report overall statistical significance of different factors across studies, however statistical significance was used to signify potentially important findings within studies.

For the majority of included studies, some part of the sample, exposure or analysis was ignored because it did not meet the reviews inclusion criteria. Ignoring these unrelated samples, exposures and analysis helped to maintain the focus of the review, however through using only part of the research rather than the entire study, it separated relevant findings from the context of other related findings. As a result some interesting findings from included studies have been neglected, for example which PFs were supported using other samples, the relationship between RFs and desistance/re-offending, and PFs involved in resisting delinquency, or desisting crime for less than 12 months.

Several studies included in this review involved validity studies for risk assessment tools, rather than exploratory studies investigating specific PFs. These studies made conclusions regarding total scale scores, rather than providing rich data depicting a range of relevant and significant individual PFs. Some studies used archival data to measure the extent PFs were present. Case files can be a valuable source of data for research, but can be incomplete and biased (Hayes & Devaney, 2004). It was therefore positive that a number of studies in the review used prospective research that relied on

gathering relevant data in real-time. For most of these studies, drop-out rates were low.

Several studies included within the review focussed on re-offending rather than desistance, where this was the case, often factors negatively associated with re-offending were used and interpreted as being associated with desistance. Pobanz (2000) found that even though family involvement scores predicted decreased likelihood of re-offending, when added to risk scores they were better at predicting recidivism than desistance, suggesting that these two processes can yield differing results. Therefore it would have been more desirable if all studies had analysed desistance as a process in itself. The fact that several studies failed to do this is indicative that there continues to be a greater focus on adversity rather than positive youth development.

The focus of this review was on those PFs that helped young people cease offending, rather than on desistance itself. For example, whilst 'desistance' was a search term, articles would only be retrieved if they additionally contained terms related to PFs. However, research on desistance and PFs are derived from different disciplines (i.e., Criminology and Developmental Psychology) and therefore do not share the same terminology (Fitzpatrick, 2011). Consequently, the review potentially neglected relevant research on desistance that could have offered a great deal regarding factors that protect individuals from committing further offences. Whilst such research may use potentially different methodologies and definitions to the majority of included studies, it would appear that in a practical sense more desistance studies could have been included in this review. Fitzpatrick (2011) examined the relationship between desistance and resilience and concluded that whilst differences do exist, they share many similarities, and the connecting of research outcomes from these could prove beneficial. The same could also be said for PFs (i.e., similar to desistance it defines a process involving the individual and

their environment, and emphasises optimistic potential outcomes). Therefore a recommendation for future reviews, ideally using a systematic approach, would be to build on the current review by additionally integrating more desistance research to provide a more robust framework for the rehabilitation of young offenders.

Despite its limitations, the current review appears to be the first attempt to identify PFs that help young offenders desist from crime and examine the relationship between RFs and PFs using a systematic approach.

Conclusions and recommendations for practice

The current review found support for the importance of PFs in helping young offenders to desist from crime. Particularly relevant PFs for this group related to social bonding/supportive relationships, supervision/discipline, healthy beliefs/behaviours and personal characteristics. Additionally, general family factors, school factors and peer attitudes/behaviours had some utility in discriminating between re-offenders and desisters. There was some evidence from a limited number of studies, that there might be differences in factors that protect males and females from crime, and for desistance from specific types of crime. Future research should test how the PFs identified in this review function for different subgroups of desisters/re-offenders in comparison to control groups. Furthermore, it could be valuable to explore the usefulness of additional PFs, including those identified in the desistance research. This continues to be a relatively under-developed area of research compared to studies on risk, and therefore a number of potentially significant PFs could remain undetected.

Regarding the relationship between RFs and PFs, the model that gained most support from studies included in the review was the interactive model, where PFs are conceptualised as buffering against RFs to reduce re-offending. However, no clear

conclusions could be reached and further research is required regarding the relationship between RFs and PFs. It is also recommended that a shared terminology for PFs is used by researchers and practitioners. It is likely that the inconsistent use of terminology within the research literature creates confusion and difficulty with comparing studies.

Regarding practice, the review supports the assessment of PFs alongside RFs to evaluate an offender's risk of re-offending/ likelihood of desistance. Such assessments could result in more accurate classifications of offenders, regarding risk of future criminality, and more effective use of resources and offender management. As previously highlighted, re-offending results in significant costs to society, it would appear that through increasing the emphasis and use of PFs within the criminal justice system it has the potential to reduce this cost. It is recommended based on the current findings that more risk assessments tools should incorporate PFs.

Finally, it would appear that increasing the likelihood of protective processes for the individual could promote desistance, for example through providing skills and opportunities for: developing emotionally close relationships, employment, positive peer groups and being accountable. Therefore it would appear reasonable that if offender treatment programmes sought to promote positive and protective internal and external resources, in addition to reducing RFs, it could increase the likelihood of offenders desisting from crime and simultaneously could enhance their overall wellbeing. This way of conceptualising offender interventions is similar to the Good Lives Model (Ward, 2002; Ward & Stewart, 2003; Ward & Gannon, 2006), which is a strengths-based rehabilitation theory (Ward & Maruna, 2007). Such an approach appears to be gathering momentum, at least in North America (McGrath, Cumming, Burchard, Zeoli, & Ellerby, 2010) and would be supported by the current review.

Rationale for Chapters Three and Four

The current systematic literature review demonstrated that protective factors, which included personal characteristics, appear to have a significant influence with regard to youth people's offending behaviour. One of these relevant characteristics was 'resilient personality'. Whilst the review focused on desistance and re-offending, this finding prompted the authors' interest in whether personal resiliency was also important in relation to young people who have offended/not offended. A question that has currently been left unanswered is whether a young person's resilient traits or internal resiliency is different or similar for groups of young people who have offended, compared to those who have not offended. Additionally, it was indicated within the review that protective factors might impact differently on desistance from different 'types' of offences. Little is known about the personal resiliency of different 'types' of offenders. Consequently, Chapter Four has attempted to answer these questions, through a comparison between offending and non-offending groups, and has attempted to add to our understanding regarding the personal resiliency of young people who have sexually offended and non-sexually offended. However, in order to study the personal resiliency of offending and non-offending groups, it has to firstly be operationalised and measurable. In the following chapter, namely Chapter Three, a measure for assessing personal resiliency has been identified, explored and critiqued.

CHAPTER THREE

A CRITIQUE OF A PSYCHOLOGICAL ASSESSMENT: RESILIENCY

SCALES FOR CHILDREN AND ADOLESCENTS

(RSCA: PRINCE-EMBURY, 2007)

Introduction

Assessing 'risk' of an individual's dangerousness and likelihood to offend/reoffend is an important part of Forensic Psychology (Packer & Borum, 2003; Rogers, 2000). However, the traditional emphasis of risk and deficits, with little regard for those factors that mediate risk, has been criticised (Rogers, 2000). In more recent years, the growing research on resilience by developmental and positive psychologists has begun to influence the field of criminal psychology, particularly the literature related to juvenile delinquency (Bartol, 2006). Additionally, caring professions have been focussing assessments of resilience and strengths-based interventions for over a decade (Craig, Browne & Beech, 2008). 'Resilience' generally refers to the ability to positively overcome negative experiences (Bremer, 2006; Naglieri, Goldstein, & LeBuffe, 2010; Prince-Embury, 2008a) and according to Masten (2001) is part of an individual's normal development. Thus, the study and evaluation of why some children and adolescents commit crime and others do not, when exposed to the same risk factors, is evidently relevant to a discipline involved in understanding criminal behaviour.

The current review focuses on the Resiliency Scales for Children and Adolescents (RSCA). The RSCA was developed by Dr. Prince-Embury in 2007, and expanded on the Resiliency Scales for Adolescents (RS(adol): Prince-Embury, 2006). Prince-Embury designed the tools to measure the personal qualities that were central to resiliency, using language that was accessible to and used by young people. Originally the tools were designed to assess resilience in normative populations, although Prince-Embury (2010a) has since supported its use with clinical samples. Her aim was to provide an assessment of resilience that could: act as a screening tool, inform intervention, assist with prevention strategies, and be used in education, counselling and other services (Prince-Embury,

2007). This is consistent with the notion that resilience is of multi-disciplinary interest (Herrman et al., 2011). An in-depth overview of the research and theory related to resilience is beyond the scope of this review (see Chapters One, Two and Four for a more detailed review), and therefore it will commence with only a brief summary of the measurement of resilience and of the RSCA. The main body of the review will examine the scientific properties of the RSCA tool and its relevance to clinical and normative populations. The review will conclude with an overall evaluation of the strengths and limitations of this tool.

Overview of the Tool

Background to the measurement of resilience

Within the literature, there has been disagreement about the concept of and processes involved in resilience (Philippe, Laventure, Beaulieu-Pelletier, Lecours, & Lokes, 2011; Windle, Bennett, & Noyes, 2011), which in turn has inevitably caused difficulties for researchers trying to measure this phenomenon (Naglieri, Goldstein, & LeBuffe, 2010). There is currently no consensus of how to define resilience (Herrman et al., 2011). However, it has been suggested that this does not pose a major problem, because the domains used to operationalize resilience are comparable between most definitions (Walsh, Dawson, & Mattingly, 2010).

Individual, family and community protective factors related to resilience have been identified. These protective factors are the traits and processes that promote resilience (Afifi & MacMillan, 2011), they include social connectedness, life satisfaction, optimism, peer acceptance, self efficacy and effective coping (Banyard & Williams, 2007, Benzies & Mychasiuk, 2009; Black & Lobo, 2008). Resilience has therefore emerged as

a multidimensional concept, with a complex interplay between internal factors and the environment (Prince-Embury, 2010a; Greenspan, 2002), which makes the assessment of resiliency difficult (Prince-Embury, 2007). The assertion that resilience is a construct of personality which mediates the way an individual responds to their environmental challenges makes the assessment of resilience more accessible (Waaktaar & Torgersen, 2010). Here, instead of resilience being synonymous with the experience of trauma, it is believed that individuals possess resilient attributes prior to the occurrence of adversity (Bonnanno et al., 2002). Thus, the measurement and study of resilience does not need to focus exclusively on subjects exposed to trauma, but can instead focus on all individuals whether from a 'normal' or clinical sample. Resilience is considered to be dynamic, rather than fixed and therefore is flexible to the demands of different environments and can adapt over time (Philippe et al., 2011).

In recent years researchers have made some progress in their attempts to quantify resilience (Naglieri et al., 2010) and as a result at least 20 scales have been published (for a list of these scales see Appendix 11). However, many of these scales have been used infrequently, there is limited evidence about which scales are more favourable (Windle et al., 2011) and there is limited support for the reliability and validity of these instruments (Hoge, Austin, & Pollack, 2007). In a recent methodological systematic review of 15 resiliency scales (which did not include the RSCA), Windle and colleagues failed to find a 'gold standard' and concluded that further work to validate all these scales was necessary. Furthermore, it has been indicated that resilience-based research and assessment tools need to be more practical for widespread use (Masten & Powell, 2003).

Traditionally, resilience has been viewed as a dichotomy, where individuals were seen to be either resilient or not (Naglieri et al., 2010). However, the use of Likert scales

enables resilience to be conceptualized and measured in a graded way, although it has been suggested that the use of Likert-based scoring in the measurement of resilience may increase acquiescence bias (Friborg, Martinussen, & Rosenvinge, 2006). Resilience can be self-reported or rated by significant others (Hermann et al., 2011). Self-report provides access to the individuals interpretation of their experience (Prince-Embury, 2007) although can also be more susceptible to distortions through socially desirable responding.

Overview of the RSCA

The RSCA is a published measure, normed on an American population. It is a self-report questionnaire designed for use with children and adolescents aged 9-18 years. In order to make the questionnaire accessible to younger age groups, items contained in the RSCA were written at third-grade reading level, corresponding to the level expected for a child of approximately 8-years old. Additionally, it is claimed that the items were designed free from gender-bias (Prince-Embury & Courville, 2008b). The RSCA contains 64 items and takes approximately 10-minutes to complete. It uses a five-point Likert scale for response options ranging from 0 (never) to 4 (almost always). The measure consists of three scales: Mastery, Relatedness and Emotional Reactivity, which Prince-Embury (2007) argues reflect three core resilience-related constructs that have emerged from developmental theory. The Mastery and Relatedness scales represent the personal resources available to the young person and are quantified through their score on the Resource Index. Emotional Reactivity is believed to relate to a vulnerability to pathology when the youngster is faced with adversity (Prince-Embury & Courville, 2008a). The Vulnerability Index represents the extent that the young person's perceived

resources correspond with their reactivity and arousal to stress. A brief description of the RSCA scales, subscales and indexes is provided in Table 3.1.

Table 3.1

A description of the scales, subscales and Indexes contained within the RSCA

Scale Name	Scale Description	Number of Items	Sub-scales (items)
Mastery	An aspect of personal resource that is believed to positively enhance the cause-and-effect relationship the child has with their environment (White, 1959). It relates to the young person's competence, such as their positive outlook; problem-solving abilities; and their flexibility to their experience of doing well/not well.	20	Optimism about ones life currently and in the future (N=7) Self-efficacy to master one's environment and problem-solve (N=10) Adaptability to learn from mistakes and receive criticism (N=3)
Relatedness	An aspect of personal resources. It relates to the theory that a sense of belonging and connectedness to others helps the youngster to feel supported in the face of adversity; protected from negative consequences and enhances their positive sense of self (Prince-Embury & Courville, 2008)	24	Trust in one's relationships (N=7) A sense of Support to whom one can turn to (N=6) A sense of Comfort in the presence of others (N=4) Tolerance of difference within relationships (N=7)
Emotional Reactivity	A risk feature of personal resiliency (Prince-Embury, 2007). It relates to the youngsters experience of difficult feelings and their ability to regulate these emotions.	20	Sensitivity to stimuli (N=6) Recovery skills (N=4) The degree of Impairment from emotional upset (N=10)
Resources Index	Represents the personal resources available to the young person. It is calculated by adding the Mastery and Relatedness Scales.	----	The purpose of these indexes is to provide a screening tool to assess which youngsters have an increased likelihood of developing clinical symptoms when the tool is administered to groups (Prince-Embury, 2005)
Vulnerability Index	Represents the discrepancy between the youngster's emotional reactivity and perception of their personal resources. Prince-Embury views resilience as interacting with vulnerabilities.	-----	

The development of the RSCA involved a number of stages, including:

- Reviewing the literature;
- Clinical reflections;
- Interviews with young people;

- A blind review of the scales;
- A pilot study for preliminary analysis of its validity and reliability;
- Development of two indexes;
- Extension of the RS(adol) to children;
- Developing Norms.

The manual provides Scale T-Scores, cumulative percentages, and subscale scaled-scores; for males, females and the total sample. Scorings are differentiated between 9-11 year olds, 12-14 year olds and 15-18 year olds. Scale scores can not be summed to provide an overall measure of resilience, instead scores from all three scales contribute independently towards an individual's Resiliency Profile. For the 'Mastery' and 'Relatedness' scales high scores indicate resilient resources. For the 'Reactivity' scale high scores indicate vulnerability. In addition to providing scoring procedures and an overview of the tools development, the manual gives guidance on the administration and interpretation of the tools in addition to detailing their statistical properties.

Research on the RSCA

Since the RSCA and its predecessor the RS(adol) are relatively new psychometric tests, there have been few studies published on them. To the author's knowledge, nine studies have been published within journals using the Prince-Embury's Resiliency Scales (2006, 2007, see Appendix 12). It would appear that the vast majority of published research related to the RSCA has been conducted by Prince-Embury and her colleagues with few independent studies.

Criteria used to evaluate the RSCA

To examine the scientific properties of the RSCA, the appropriateness of its norms, its reliability and its validity was assessed. Furthermore, the findings of a study undertaken by Windle and colleagues (2011), regarding a quality assessment of 15 resilience measurement scales, which unfortunately did not include the RSCA, was compared with this review of the RSCA, in order to evaluate it against other existing measures.

The psychometric properties of the RSCA

The accuracy of assessments relies on how dependable the tools used to make these judgements are (Regier et al., 1998). According to Parkinson (2010), ‘a good test’ should be reliable valid and unbiased, in that it should not differentiate scores on the basis of demographics such as race, or as a consequence of the way the test is worded; and be objective and standardised, so that every person given the test is treated the same way and compared against a representative group.

For psychometric tests to be of use, they need to be both reliable and valid (Goodwin, 2009). Reliability refers to the precision of the measure so that results are not influenced by random error (Wasserman & Bracken, 2003). For self-report measures, two types of reliability are important: internal and test-retest reliability (Russell & Purcell, 2009). Validity relates to how accurate the measurement is (Kaufman & Sternberg, 2010) and includes three types: content, construct and criterion validity (Goodwin, 2009). It is important to be able to derive psychological meaning from the scores of psychometric tests (Smith & Smith, 2005). For this reason measures are standardised, so that the test

can be replicated by different examiners, and test scores can be compared against a standard group (Coaley, 2010). To statistically analyse results, psychometric tests should ideally be ratio scales or interval scales (Kline, 1986). Whilst Likert scales, as employed within the RSCA, are typically categorised as ordinal (Elmes, Kantowitz, & Roediger, 2011), because the responses to several items are summed, resultant data can be treated as interval and traditional statistical analysis used (Gamst, Der-Karabetian, & Liang, 2011). In this section, it will be evaluated whether the RSCA has the characteristics required for a ‘good test’.

Reliability

Internal reliability.

To test whether the items within each scale of the RSCA measured the same construct, Prince-Embury (2007) calculated the average correlation between items using Cronbach’s alpha coefficient (Cronbach, 1951). This coefficient is relevant for use with data produced from a Likert scale and is a favoured method to estimate internal reliability (Pett, Lackey, & Sullivan, 2003). According to George and Mallery (2003), alpha coefficients between .90-to-1.0 are excellent, .80-to-.89 are good, .70-to-.79 are acceptable, .60-to-.69 are questionable, .50-to-.59 are poor and less than .50 are unacceptable.

Analysis of the Mastery, Relatedness, and Emotional Reactivity scales yielded good-to-excellent internal reliability for each of the three age bands, using a normative sample of children and adolescents (Prince-Embury, 2007), and a sample of children and adolescents with psychiatric disorders (Prince-Embury, 2010a). Both studies also found the internal reliability of the Resource and Vulnerability Index to be excellent. A

breakdown of the alpha-coefficients for the RSCA scales across each age bands for both the standardised and clinical sample is provided in Table 3.2. In an independent study of 100 9-17 year olds admitted to an inpatient psychiatric unit in America (Kumar et al., 2010), alpha coefficients of between .91 and .94 were found for the three RSCA scales. There is support therefore, from a small number of studies that the items within each of the RSCA global scales appear to measure the same constructs. In the methodological review by Windle and colleagues (2011), three adult measures out of the 15 resiliency scales received overall superior ratings: The Connor-Davidson Resilience Scale (CD-RISC: Connor & Davidson, 2003), the Resilience Scale for Adults (RSA: Friborg, Barlaug, Martinussen, Rosenvinge, & Hjemdal, 2003) and the Brief Resilience Scale (BRS: Smith et al, 2008). These had alpha coefficients of .89, between .67 and .90, and between .80 and .91, respectively. Therefore, the RSCA global scales demonstrated high internal consistency, which in many cases was higher than these alternative resiliency measures.

Prince-Embury (2007, 2010a) additionally calculated the internal consistency of the sub-scales for each age band using the same statistical method (see Table 3.2). The Adaptability subscale had poor internal consistency for the 9-11 year old standardised sample, questionable internal consistency for the 12-14 year old standardised sample and was unacceptable in the 9-14 year old clinical sample; indicating that this three-item subscale might not be reliable or developmentally appropriate for these groups (Kumar et al., 2010; Prince-Embury, 2007). Similarly the Optimism and Tolerance subscales had questionable internal reliability for the 9-11 year old standardised sample and 9-14 year old clinical sample. All other subscales had acceptable-to-good internal reliability for the child samples. For the adolescent samples, the internal reliability of each subscale was

good-to-excellent. Therefore, in review of the reported internal consistency of these subscales, it would appear that for some, the items do not reliably measure the underlying constructs when used with children, thus it would seem sensible to instead use scale scores, rather than subscale scores, when conducting research with this group. However, the above findings regarding internal consistency indicated that the RSCA's scales and subscales are reliable for use with adolescents.

Table 3.2

Alpha coefficients for of the RSCA scales and subscales when used with a normative and clinical sample of children and adolescents

Scale/Subscale/ Index	Normative sample (Prince-Embury, 2007)			Clinical sample (Prince-Embury 2010)	
	9-11 year olds (N=226)	12-14 year olds (N=224)	15-18 year olds (N=200)	9-14 year olds (N=110)	15-18 year olds (N=178)
Mastery	.85	.89	.95	.82	.93
Optimism	.69	.78	.89	.63	.87
Self-efficacy	.77	.83	.91	.75	.90
Adaptability	.56	.61	.82	.44	.81
Relatedness	.89	.91	.95	.90	.94
Trust	.78	.83	.90	.80	.83
Support	.71	.73	.85	.73	.84
Comfort	.76	.81	.88	.76	.86
Tolerance	.68	.75	.87	.75	.85
Reactivity	.90	.91	.94	.89	.92
Sensitivity	.75	.80	.86	.73	.80
Recovery	.83	.81	.87	.73	.92
Impairment	.88	.88	.92	.85	.88
Resource Index*	.93	.94	.97	.91	.96
Vulnerability Index*	.93	.94	.97	.91	.94

*Composite score reliability estimate calculation

A limitation of the studies discussed above, is that samples were exclusively from America. Using the normative sample of children from her 2007 study, Prince-Embury

(2009) analysed the internal consistency of the global scales across race/ethnicity and found a high level of the internal consistency, with alpha coefficients ranging from .83 to .90 for Black participants (N=75), .88 to .92 for Hispanic participants (N=82), and .88 to .92 for White participants (N=293). Support has also been found for a high level of internal reliability of the RS(adol) (Prince-Embury, 2006), which was the version the RSCA before it was extended to include children, using a sample of 726 Chinese undergraduates, with a mean age of 20.7 years (Cui, Teng, Li, & Oei, 2010). In this study the global scales and subscales demonstrated good-to-excellent internal consistency (α =.84 to .95). According to Klein (1986), reliability studies should use a minimum of 200 participants. Of the five studies discussed in this section, only two had sample sizes above 200 for each group. Therefore, in review of the studies related to the internal consistency of the RSCA, whilst overall the scales appear to have high internal reliability, further research using larger and more diverse samples is needed to add to this evidence base.

Test-retest reliability.

As a dynamic construct (Philippe et al., 2011) a person's level of resilience will change over time rather than stay fixed. It would therefore not be expected that the measurement of resilience would be as stable over time as the measurement of intelligence for example, and this should be borne in mind when interpreting test-retest reliability. However, over a short period of time it would be expected that resiliency profiles and scores would not change too drastically, and if they did, they would not be sensitive enough to measure treatment change (Prince-Embury, 2010b).

Prince-Embury (2007) tested the stability of the RSCA through participants

recompleting the RSCA between three and 61 days after initial testing. She used a normative sample of 9-14 years olds, and 15-18 year olds. The test-retest correlation coefficients were corrected and Cohen's (1996) Formula 10.4 was used, which is claimed to be a more accurate calculation than just subtracting the test mean from the retest mean (Lichtenberger & Kaufman, 2009). The test-retest reliability can be considered good if correlation coefficients of .70 or above are demonstrated (Litwin, 1995). The corrected correlation coefficients for the child and adolescent samples for global scales ranged from .79 to .88, and from .77 to .90 for the indexes. For the child sample, coefficients for the subscales ranged from .62 to .83, with the Optimism, Adaptability and Support subscales yielding the less satisfactory correlation test-retest coefficients of between .62 and .69. The adolescent sample demonstrated more stability over time with coefficients for subscales ranging from .74 to .85.

In summary, the test-retest correlation coefficients of the RSCA were generally good, with the exception of three subscales when used with a younger age group. On the whole, they demonstrated greater stability for adolescents, and also across groups when the global scales and indexes were used. These results were generally comparable to the test-retest correlations for the three best rated resiliency scales by Windle and colleagues (2011). For example, the test-retest correlation for the RSA was between .69 and .84, (Friborg et al, 2003), the intra-class correlation coefficient (ICC) for the CD-RISC (Connor Davidson, 2003) was .87 and the BRS (Smith et al, 2008) had ICCs of between .69 and .62. However, as noted by Prince-Embury (2010b) the sample size for her 2007 study was small and evidence for the test-retest reliability of the RSCA is needed from different and larger samples. Cui et al. (2010) yielded moderate test-retest coefficients in their study of 42 Chinese undergraduates who recompleted the RS(adol) three weeks after

initial testing. The reliability coefficients in this study were between .70 and .86 for the global scales and subscales, with the exception of the sensitivity subscale which was .62. However, again it should be noted that the sample size for this study was small, and that the global scales generally outperformed the subscales.

Validity

Content validity.

Content validity refers to the extent that the test is representative of the subject matter and is often limited by poorly theoretical definitions of the concept (Raykov & Marcoulides, 2011). Using the criteria provided by Windle and colleagues (2011), the RSCA would appear to score the maximum for content validity. The target population is specified, it has clear aims and concepts, pilot work was undertaken and adolescents themselves were involved in the development of the RSCA. Differing definitions of resilience predominantly involve strengths, and incorporate both internal and external factors. Contrary to this, the RSCA are focused on vulnerabilities in addition to strengths, and mostly neglect the dimensions of resilience external to the individual, such as family (Hall, 2010). However, in the manual, Prince-Embury (2007) clearly sets out her intention to measure ‘personal resiliency’ and provides clear theoretical evidence of how the constructs used in the RSCA relate to personal resiliency.

Face validity is related to content validity and refers to the qualitative assessment that the items measure the construct in a meaningful way for respondents (Raykov & Marcoulides, 2011). On the surface, the items contained within the RSCA appear to be developmentally appropriate for its target population, and the questions appear to have relevance to the constructs they are attempting to tap into, for example ‘I am good at

figuring things out' for self-efficacy. Therefore, this psychometric test appears to have face validity. Face validity is important because it relates to the quantitative validity and reliability of the test, such as the content validity and internal reliability (Balsis, Segal, & Donahue, 2009). However, Guilford (1959) would argue that when testing latent concepts such as ego-resiliency, face-validity can be counterproductive, because socially desirable responding may increase. Thus, the apparent face validity of the RSCA could potentially influence the extent that responses are distorted.

Construct validity

Tests of convergent and discriminative validity are used to provide support for construct validity. Convergent validity relates to the measures used to operationalise the construct being correlated when theoretically they should be similar and discriminative validity is when the measure differentiates between other operations or groups, as would be theoretically predicted. Confirmatory factor analysis is a good method for evaluating the construct validity of a psychometric test (Heppner & Sechrest, 2002; Stapleton, 1997).

Following a theoretical and empirical review of resilience, pilot studies, and an exploratory factor analysis, Prince-Embury (2007) constructed the RSCA based on three constructs. She subsequently sought to test the relationship between the existing scales and subscales of the RSCA using confirmatory factor analysis and a number of different goodness-of-fit measures. Prince-Embury and Courville, (2008a) found the goodness-of-fit for the three-factor model was better than the one- or two-factor model for the normative sample, this result was replicated when this sample was analysed by gender and different age groups (Prince-Embury and Courville, 2008b). Additionally, this three-factor model provided an adequate fit for the data gained from 726 Chinese

undergraduates (Cui et al., 2010). These studies demonstrate that the RSCA is measuring a multidimensional phenomenon and supported the theoretical assertion that resiliency is multidimensional.

As hypothesised, sub-scales loaded on to the relevant overarching scales (Prince-Embury & Courville, 2008a) and thus the construct validity of the 10-subscale and three-scale structure was supported. However, Adaptability and Comfort related to both the Mastery and Relatedness scales, suggesting these are linked; additionally contrary to previous empirical results, there were no significant differences between males and females in the way the subscales loaded onto the scales. As predicted, based on the theoretical review, Mastery and Relatedness scales were highly and positively correlated ($r=.85$), and the Emotional Reactivity scale had a moderate negative relationship with all the other subscales (Prince-Embury, 2008). Whilst the confirmatory factor analysis, supported the internal structure of the test and was largely consistent with theory, this does not conclusively evidence that the construct being measured was resilience. Furthermore the evidence for its convergent validity was limited because the sample used by Prince-Embury and Courville (2008a, 2008b) was the same as the normative sample on which the RSCA was based (Prince-Embury, 2007), therefore cross-validation is still required.

If the RSCA measured personal resilience (i.e., individual resources to protect against unfavourable outcomes and a relatively small vulnerability to stress) it would be expected that control groups had higher levels of resources and decreased vulnerability compared to individuals diagnosed with mental health problems. When a clinical group was compared to a matched control group, the average score on the Resource Index was significantly lower ($T=42$ for clinical group, $T=54$ for control group; $p<0.01$; $d=1.08$),

and the score on the Vulnerability Index was significantly higher ($T=60$ for clinical group, $T=46$ for control group; $p<0.01$; $d=-1.41$). Additionally, the scale scores demonstrated significant differences between these two groups in the expected direction. These findings were replicated when clinical groups were broken down into their specific disorders. In a different study, although utilising the same samples, Prince-Embury (2008) undertook a Discriminate Function Analysis to determine whether parent education, gender, RSCA scale scores, RSCA Index scores or the Beck Youth Inventories-II scales (BYI-II; Beck, Beck, Jolly, & Steer, 2005) best discriminated between clinical and non-clinical samples. As predicted, based on her review of the literature, Prince-Embury found the Vulnerability Index was the best discriminator, and that when this was removed from the analysis the Resource Index became the best predictor of clinical status. These preliminary studies provided evidence of discriminate validity of the RSCA and thus for the validity of the construct it purports to measure.

In additional studies using the same sample groups, Prince-Embury (2007) found further support for the convergent and discriminative validity of the RSCA, through comparing it with other psychometric measures that were predicted to have a relationship with resilience. For example, the Mastery scale, Relatedness scale and Resource Index of the RSCA was found to have a strong positive correlation with the Piers-Harris-2 measure of children's self concept (Piers, Harris, & Herzberg 2002) and self-concept as measured by the BYI-II (Beck et al., 2005). These scales/indexes demonstrated a moderate to strong negative correlation with self reports of female bullying and victimisation as measured by the Reynolds Bully Victimisation Scale (BVS: Reynolds, 2003) for children. The Reactivity scale and Vulnerability Index of the RSCA had a strong negative correlation with the Piers-Harris-2; a positive moderate-to-strong correlation with

psychopathology, measured by the BYI-II scales; and a positive moderate-to-strong correlation with self reported bullying and victimisation, measured by the BVS.

Therefore, a number of studies provide support for the construct validity of the RSCA. In applying the quality assessment measure used by Windle and colleagues (2011) it is likely the RSCA would gain a maximum score for construct validity, along with eight of the 15 resiliency measures analysed within the review. However, many of the studies on the RSCA employed small samples, some as small as 40, and all these studies utilised the same wider sample. Therefore, these results need to be replicated in diverse and large samples.

Criterion validity

Criterion validity compares scores on the test of interest with outside criterion. Criterion validity is demonstrated when the test is correlated with another test measuring the same construct (Myers & Hansen, 2012; Rust & Golombok, 2008), called concurrent validity, and when test results predict a future outcome, called predictive validity.

There is currently no ‘gold standard’ that can be compared to the RSCA to test its concurrent validity (Windle et al., 2011). However, from the literature published on the RSCA, it would appear that it has not been correlated with any other resiliency assessments and therefore there has been an absence of attempts to provide evidence of its concurrent validity. Cui and colleagues (2010) claimed their research provided support for the concurrent validity of the RS(adol). They found a moderate-to-strong relationship between Mastery and Resilience scales with positive affect, measured by the Positive and Negative Affect Scale (PANAS: Watson, Clark, & Tellegen, 1988), and a moderate-to-strong positive relationship between the Reactivity scale and negative affect on the

PANAS and with the College Stress scale (CSS: Li & Boey, 2002). However, the PANAS and CSS do not claim to measure resilience, instead the PANAS measures positive and negative mood and the CSS considers ‘academic hassle’, ‘personal hassle’ and ‘negative life events’. It appears that this study instead provides support for convergent validity. Whilst on its own concurrent validity is not sufficient for a test to be scientifically sound; for example, if two tests that both purport to measure resilience are correlated this does not mean that they both actually measure resilience; it is an important property for a psychometric measure to have (Rust & Golombok, 2008).

To the knowledge of the current author, there is no support provided for the predictive validity of the RSCA. Cui and colleagues (2010) claim that they found support for the predictive validity of the RS(adol) through using multiple regression to analyse the ability of the RS(adol) scales to predict affect balance, calculated using PANAS scores. However, predictive validity relates to predictions of performance or behaviour in the future, not in the present (Myers & Hansen, 2012; Raykov & Marcoulides, 2011; Rust & Golombok, 2008) and therefore needs to be measured through longitudinal studies. Providing evidence that the RSCA scores can predict positive or negative outcomes could be important to informing prevention and intervention strategies (Mowder, Cummings, & McKinney, 2010). The RSCA thus lacks sufficient criterion-related validity. Windle and colleagues (2011) observed within their study of resiliency measures, that the majority of authors did not provide information about the criterion validity, and all measures failed to score on this psychometric property. Therefore, this indicates that there is a general paucity of resiliency measures with evidence of criterion validity. Parkinson (2010) asserts that criterion validity is important in the construction of psychometric test.

Norms

To provide meaning to an individual or group score, normative data needs to be established to define and provide a reference point for this score (Kline, 1986).

Normative data has been provided for the RSCA (Prince-Embury, 2007) using a standardisation sample, involving an equal number of male and female adolescents (aged 15-18, N=200) and children (aged 9-11, N=226; aged 12-14, N=224). Stratified sampling was employed. The sample was drawn from rural, urban and suburban areas across twenty states of America. In order to match the existence of disorders experienced by the general American child and adolescent population, five percent of this sample included clinical cases. Norming decisions were based on the analysis of differences between scores and psychometric properties for different demographic variables. As a result, different normative data was provided across three different age bands, and whilst general norms to include males and females were recommended, normative data that was sex-specific was also provided. This data was not differentiated on the basis of race, as no significant differences between scores were found. Some preliminary data has been provided for the mean scores and standard deviations of the RSCA using a sample of juvenile offenders (Mowder et al., 2010) and a sample with psychiatric problems (Kumar et al., 2010; Prince-Embury, 2007, 2010), which could be used for the comparison of specific populations (i.e., forensic and clinical groups). A limitation of the norms provided for the RSCA is that this data has not been provided for countries outside of the USA. Additionally, compared to some psychometric measures, the size of the normative sample for each age group is fairly modest.

Conclusions

The RSCA appears to be well grounded in a theoretical base. Additionally it appears to have the capacity to respond to the dynamic nature of resilience, and has the potential to meet its objectives as a multi-disciplinary tool for screening, prevention and intervention. The practical nature of the RSCA, in that the wording has been simplified, it is quick to administer and easy to score, makes widespread use possible. However, whilst there is an acknowledgement and attempt to measure the multidimensionality of resilience, the RSCA exclusively focuses on internal mechanisms and fails to directly measure other resiliency-related phenomenon that is external to the individual, such as the availability of others, opportunities to achieve and the level of exposure to adversity. Within the manual, Prince-Embury (2007) acknowledged that the scales do not explicitly measure environmental factors related to resilience, however she justifies this through claims that what the youngster takes to their environment and their personal response to environmental circumstances is very important to their wellbeing. Therefore she argues that the RSCA is designed to predominately assess the individual's ego-resiliency or personal attributes, some of which incorporates the extent that they perceive others to be accessible to and supportive of themselves.

Within this review, it is apparent that the RSCA has demonstrated strengths in relation to its objectivity, for example its use of bias-free language, normative data, evidence of internal and test-retest reliability, and empirical support for its content and construct validity. Validity is multifaceted and psychometric tests should demonstrate that more than one type of validity is high (Raykov & Marcoulides, 2011). The increased focus on construct validity for the RSCA fits with the high use of this form of validation for psychometrics related to measuring traits (Rust & Golombok, 2008). Goldstein

(2006) asserts that the RSCA represents “a scientifically grounded, reasoned approach to evaluating resiliency through the eyes of the most important stakeholders in the system; our youth” (p. 2). Thus the RSCA’s psychometric properties could overall be regarded as ‘a good test’.

However, there are limitations regarding the extent the RSCA appropriately meets scientific criteria. It lacks criterion-related validity, support outside the USA, and most of the limited number of studies conducted on this tool involved research by its author and her colleagues rather than independent researchers. Additionally, many of these studies utilized the same sample of youngsters as those that were collected for the original development of the RSCA. Therefore, a direction for future research in this area is to undertake longitudinal studies to assess the predictive validity of the RSCA, analyse the correlation of the RSCA with other recognised resiliency measures and increase empirical support for the RSCA with studies involving larger and more diverse samples, including samples from outside the USA. A further weakness of the RSCA is that it has no test for response-bias. In the same way many attitudinal scales suffer from problems with socially desirable responding (Coaley, 2010) it is likely that the measurement of ones resilience will have similar difficulties.

Overall, in a field that currently has no ‘gold standard’ for the assessment of resilience (Windle et al., 2011) the RSCA appears to show promise. When compared with Windle and colleagues’ top three resiliency measures, it performs as well if not better than these for a number of its properties. When using the RSCA with children, it is advisable to use the global scales and indexes, as the support for the scientific properties of its subscales are not as robust for this group. In only half a decade there has been a growing body of research involving the RSCA, some of which has included support for

its use with clinical and forensic populations. With the increasing influence of positive psychology in the forensic field (Bartol, 2006) the measurement of resilience is topical, particularly in relation to children and adolescents. Furthermore, through assisting professionals to identify vulnerable youngsters and target resources to improve their capacity to overcome negative experiences, the RSCA appears to have the potential to greatly benefit society.

Rationale for Chapter Four

In conclusion, the RSCA could usefully be employed within the field of forensic psychology to potentially assist with our understanding of why some children and adolescents commit crime and others do not. Whilst it has been previously used within one forensic study to consider the resiliency profiles of juvenile offenders (Mowder et al., 2010), this study did not use a control group and therefore was unable to draw conclusions about the similarities and differences in personal resiliency between young people who have, and who have not, committed offences. In the next chapter a piece of empirical research is presented that uses the RSCA to compare personal resiliency between offending and non-offending populations. Therefore, in a field traditionally focussed on risk, through using a measure of resiliency which has generally demonstrated adequate-to-good psychometric qualities, and through use of a control group, the research study has the potential to improve our understanding of youth offending.

CHAPTER FOUR

COMPARING RESILIENCE OF YOUNG PEOPLE WHO HAVE SEXUALLY OFFENDED WITH THOSE WHO HAVE NON-SEXUALLY OFFENDED AND WITH NON-OFFENDING CONTROLS

Abstract

It has emerged through research that risk factors alone cannot explain why some young people commit offences. The literature suggests that resilience could be important to understanding different outcomes for young people, including why some who are exposed to risk factors do and do not offend. The current study examined whether resiliency, using scores for 'Mastery', 'Relatedness' and 'Reactivity' (Resiliency Scales for Children and Adolescents: Prince-Embury, 2007), differed between a sample of 144 males who had not offended (40%), non-sexually offended (24%), and sexually offended (36%). A MANOVA found significant differences in personal resiliency between groups. Post-hoc comparisons showed that the non-offending group differed significantly to the non-sexually offending group for 'Reactivity' and to the sexually offending group for all three scales. Comparisons between males who had exclusively sexually offended and those who had non-sexually offended revealed differences for 'Mastery' scores. Logistic regression analyses identified that personal resiliency was a significant predictor of group membership even after controlling for previous experience of adversity. Within each group, two different resiliency profiles emerged through clustering data. One profile was relatively distinct to each group and one profile was similar across groups. Overall, the study supported that there are some differences in personal resiliency between offending and non-offending groups, and between sexually and non-sexually offending groups. Limitations of the current study and implications for practice are discussed. Recommendations are made for future research to advance knowledge about the role of resilience in offending behaviour, and develop an evidence base for the inclusion of resilience and protective factors within rehabilitative interventions.

Introduction

Youth offending in England and Wales has been estimated to cost the economy alone up to 11 billion pounds (National Audit Office, 2010), and these significant financial costs are an issue for many different countries (Fougere & Daffern, 2011). Additionally, victims of crime may suffer considerable psychological, physical and financial difficulties. For governments and citizens alike, it is therefore an important target to prevent and reduce crime, including youth offending. Over recent years public funds have been focussed on socially excluded young people in order to help manage such problems, however often at this point of intervention difficulties are already entrenched (Social exclusion taskforce, 2006). Furthermore, with the present government cuts to the funding of public services, it is possible that social problems could be exacerbated. It is therefore important to consider fresh ways to tackle the problem of youth crime, which can be supported through communities as well as the public sector, and which emphasise prevention in addition to the treatment of behaviours that have already occurred. Research into resilience may help to provide such solutions. To explore what factors might help young people who have faced difficulties to resist crime, the current study examined the personal resiliency of young males who have non-sexually and sexually offended, and compared this to the resiliency of non-offending males. Before detailing the research and its findings, the literature on resiliency and offending is discussed.

The concept of resilience

‘Resilience’ is an umbrella term for various concepts associated with positive adaptation following exposure to adversity (Masten & Obradović, 2006). It has been

defined as the resistance to environmental or psychosocial risk factors (Rutter, 2006; Rutter, Giller, & Hagell, 1998), the avoidance of negative or achievement of positive outcomes in the context of adversity (Wyman et al., 1999), thriving despite considerable threats to development (Masten, 1994) and overcoming the adverse effects of exposure to risk and trauma (Fergus & Zimmerman, 2005). Whilst positive adjustment, coping and confidence are all concepts associated with resilience, Fergus and Zimmerman (2005) argue that as either outcomes or components of the resilience process, they are distinct. The conceptualisation of resilience has changed over time (Ahern, 2006; Naglieri, Goldstein & LeBuffe, 2010) and can be regarded as a category (i.e., 'resilient' or 'not resilient'), or on a continuum (Hunter & Chandler, 1999; Naglieri et al., 2010). Furthermore resilience has been defined as a personality construct (Block & Kremen, 1996; Letzringa, Block, & Funder, 2004, Smeekens, Riksen-Walraven, & Van Bakel, 2007) or array of qualities (Gilligan, 2001), and as an outcome or process (Olsson, Bond, Burns, Vella-Brodrick, & Sawyer, 2003). The definition of resilience is therefore not concrete or operationalised in a universal way (Ahern, 2006; Herrman et al., 2011).

The systematic study of resilience was launched in the 1970's (Zimmerman & Arunkumar, 1994) and can be traced back to the study of coping and stress (e.g., Garmezy & Rutter, 1983; Werner, Bierman, & French, 1971). With an increasing focus on resilience, for example within developmental psychology (Fraser, Kirby, & Smokowski, 2004) alongside other disciplines, there now exists a considerable amount of literature on this topic (Masten et al., 1999). The focus of resilience research on young people has included: mental health (e.g., Collishaw et al., 2007), adjustment following sexual abuse (e.g., Rosenthal, Feiring, & Taska, 2003; Spaccarelli & Kim, 1995; Wilcox, Richards, & O'Keeffe, 2004), exposure to maltreatment (e.g., Afifi & MacMillian, 2011), street youth

(e.g., Malindi & Theron, 2010), living in cities (e.g., Reynolds, 1998; Tiet, Huizinga, Byrnes, 2009), being in care (e.g., Hines, Merdinger, & Wyatt, 2005; Osterling & Hines, 2006) and homelessness (e.g., Rew, Taylor-Seehafer, Thomas, & Yockey, 2001).

Therefore resilience in youth has been studied across a variety of diverse areas. However, the ambiguity and lack of consensus regarding the measurement and meaning of resilience as noted above, is likely to increase the difficulty and decrease the value of synthesising and comparing data from different resilience studies.

Research has revealed that up to 70% of ‘at risk’ children achieve positive outcomes without major developmental disruptions (Bernard, 2004; Kirby & Fraser, 1997). This would indicate that exclusively focussing on risk factors would not accurately predict future outcomes. Resiliency factors can be significant in models of risk (Gilgun, 1999) and can improve the prediction of outcomes (McKnight & Booker-Loper, 2002). The findings contained within the systematic review presented in Chapter Two supported this notion in relation to protective factors. However, research findings have been inconsistent regarding the number of adolescents who simultaneously have experienced high levels of adversity and optimistic outcomes (Vanderbilt-Adraince & Shaw, 2008). For example Cicchetti and Rogosch (1997; 2007) found that maltreated children, when compared to non-maltreated children, had significantly lower resiliency scores and significantly lower levels of adaptive functioning averaged over a three-year period. However, it has been argued that resilience is acquired as a normal part of development (Masten, 2001; Masten & Powell, 2003) and as such, for most people resilient responses occur naturally (Newman, 2004), rather than developing specifically in response to adversity. There has been supportive evidence that the factors that foster resilience are valuable for both individuals who have and have not been exposed to high

levels of adversity (Fergusson & Horwood, 2003) and that some exposure to lifetime adversity may increase resilience outcomes when compared to no exposure to adversity (Seery, Holman, & Silver, 2010). According to Luther and Cicchetti (2000) ego-resilience specifically, does not require prior exposure to adversity. Ego resiliency refers to an individual's capacity to endure and respond to problems and situations in a flexible and resourceful manner (Arend, Gove, & Sroufe, 1979). Here, resiliency is conceptualised as an internal rather than an external mechanism.

In contrast to the exclusively internal conceptualisation of resiliency, as the concept of resilience has evolved, it has been viewed as an interaction between the person and their environment (Ahern, 2006; Schoon, 2006), with resilience developing at an individual level, within relationships, in a family context and within a wider social environment (Garmezy, 1991; Masten & Obradović, 2006). Resilience itself can be viewed as a protective factor (Fougere & Daffern, 2011). For example, in the study undertaken by Rennie and Dolan (2010) 'resilient personality traits' were protective against general desistance as measured by the Structured Assessment of Violent Risk in Youth (SAVRY; Borum, Bartel, & Forth, 2006). However, resilient processes have in turn been viewed as the interaction between risk and protective factors (Olsson et al., 2003) and some models explain resilient outcomes as resulting from processes involving protective factors, risks and assets (Masten, Cutuli, Herbers, & Reed, 2009). Furthermore, resilience factors have been used to collectively describe protective factors/processes (i.e., factors that most optimally benefit those exposed to risk factors) and compensatory factors/processes (i.e., factors that equally benefit individuals regardless of whether they have been exposed to risk factors) (Fergusson & Horwood, 2003).

Taken together, this illustrates the complexity and confusing use of terminology contained within the study of resilience. Within the research literature, attributes associated with resilient characteristics and resilience more generally include: good cognitive functioning, high self-efficacy, positive self-esteem, social competence, the ability to gain positive affirmation and attention from others, positive interactions with others, an 'easy' temperament, self-regulation of emotions and behaviours, support from at least one person, positive friendships, problem solving abilities, and a positive sense of purpose and future (Beardslee, Schultz, & Selman, 1987; Benard, 1997; Dishion & Connell, 2006; Efta-Breitback & Freeman, 2004; Garmezy, 1993; Masten, 2001; Rutter, Giller, & Hagell, 1998; Tschann, Kaiser, Cheney, Alkon, & Boyce, 1996; Werner, 1984; Yates & Masten, 2004).

Resilience can not be directly measured, but instead can only be inferred (Luthar & Zelazo, 2003). As a consequence of the lacking consensus about the constituent components of resilience, operational definitions have differed across research studies (Luthar, Cicchetti, & Becker, 2000). An example of one measure used to quantify resilience is the Resiliency Scale for Children and Adolescents (RSCA: Prince-Embury, 2007), which according to Goldstein (2006) represents "a scientifically grounded, reasoned approach...for understanding processes within the youth's thinking, that interact with immediate family and extended community to offset the negative effects of adversity" (p.2). Chapter Three contains a detailed description of this measure. In brief, the RSCA is made up of three scales; the first two are 'Mastery' and 'Relatedness', which are associated with personal resources, and the third is 'Reactivity', which is used to measure a youth's emotional vulnerability. Using the RSCA, it has been possible to distinguish different profiles of personal resiliency among clinical, normative and

offending populations through cluster analysis procedures (Kumar, Steer, & Gulab, 2010; Mowder, Cummings, & McKinney, 2010; Prince-Embury & Steer, 2010). Whilst there was a high rate of vulnerability in these studies for samples that had experienced more negative outcomes, such as institutionalisation/attendance of offending or psychiatric facilities, at least one cluster reported average resiliency. This indicated that resiliency can differ between individuals with similar outcomes, and that the extent of disruption caused by adversity to an individual's level of personal resiliency may vary for that individual in different circumstances and at different times (Kumar et al., 2010).

Resilience is generally regarded as a dynamic process (Luthar et al., 2000; Olsson et al., 2003; Philippe et al., 2011) that can be enhanced at any point. Through conceptually framing resilience in this way, it provides optimism and potential to recover from adverse experiences (Newman, 2004) through interventions such as resilient therapy (Hart, Blincow, & Thomas, 2007). This supports the notion that a person can use their resilient resources to overcome risk, even after they have succumbed to poor outcomes. The terminology used in this chapter has attempted to reflect the dynamic nature of human functioning and conduct by referring to groups as young people who have, or have not, offended, or as 'offending groups', rather than pathologising them as 'young offenders'.

Youth Offending

Research indicates that the overwhelming majority of young people who have offended generally, or more specifically with a sexual offence, have histories involving exposure to some form of trauma, for example, loss, separation, maltreatment, neglect, domestic violence (Boswell, 1996; Creeden, 2005; Fonagy et al., 1997). The very fact that these young people have committed offences would suggest that at the time of

offending they were not able to demonstrate a positive outcome in the face of adversity, and therefore did not, at that time, demonstrate 'resilience' (in the context of resilience being conceptualised as an outcome, rather than as personal qualities or a process).

Adversity can impact on an individual's vulnerability to dysregulation, and when feeling overwhelmed by their emotions, individuals might resort to anti-social behaviours in attempt to re-regulate and to attain a sense of control and self-efficacy (Gilgun, 2006).

An explanation for why the majority of young people who are exposed to adversities are able to live pro-social and law-abiding lives (Gilgun, 2006) is that they have protective variables that make them less vulnerable to antisocial outcomes (Rutter, 1987; Bremer, 2006).

It has therefore been proposed that the capacity to transcend adverse experiences and become resilient is mediated by the interaction between protective factors, risk and outcome (Rutter, 1985). Here, young people who have offended are conceptualised as individuals who do not possess the necessary resources, either internally and/or externally, or are unable to use their available resources, to help them overcome risks (Gilgun, Klein, & Pranis, 2000). This suggests that when resilience is defined in this way, the young person who offends may be viewed as not possessing those qualities commonly associated with resilience (for example, mastery, relatedness and/or emotional control; Prince-Embury, 2007) to enable them to appropriately manage the risky situation. However, it additionally infers that a young person ordinarily may be able to demonstrate high levels of resilient qualities in their day-to-day life, but in the given situation and time, they are unable to access or appropriately utilise these qualities, which could result in poor outcomes. This explanation of resilience is consistent with the view put forward

by Loeber and colleagues (2007) that “resilience does not mean that individuals exposed to adversity never display delinquent behaviour” (p.870).

Protective factors related to desistance from youth offending were defined and explored in Chapter Two. The research for those factors associated with and protective against general or sexual offending are presented below and are classified in a consistent way to how Prince-Embury (2007) operationalised resilience (i.e., through ‘Mastery’, ‘Relatedness’ and ‘Reactivity’). However, the categories in which resilient qualities can be conceptualised are not necessarily distinct, but instead are likely to be inter-related. For example if a young person has a high sense of relatedness to others, they are more likely to receive constructive affirmation from others which may encourage them to positively view their own self-efficacy and future prospects. Additionally, strong attachments are likely to increase positive coping styles (Gilgun, 1996).

A number of risk and protective factors for offending, and sexual offending more specifically, can be grouped under the overarching heading of ‘mastery’. Mastery refers to an individual’s level of optimistic, self-efficacy and flexibility to the experience of doing things well (Prince-Embury, 2007). Risk factors associated with mastery and youth offending include poor achievement and academic performance (Denno, 1990; Elliot & Voss, 1974; Maguin & Loeber, 1996; Shader, 2003); school truancy, expulsion and drop out (Hawkins et al., 2000; West, 1982); low IQ (Koenen, Moffitt, Caspi, Rijdsdijk, & Taylor, 2006); verbal and language deficits (Snowling, Adams, Bowyer-Crane, & Tobin, 2000); difficulties processing information (Guerra, Huesmann, & Hanish, 1995); problems with cognitive abilities (Siegel & Welsh, 2008) and a lack of orientation towards future goals (Steinberg & Scott, 2003). The research literature offers some support to offending behaviour being associated with poor social cognitive skills

(McGuire, 2002), such as problem solving skills (Leadbeater, Hellner, Allen, & Aber, 1989), which are linked to self-efficacy. As a result the majority of structured cognitive programmes for offending groups, across several countries, have sought to enhance problem-solving skills (McGuire, 2005). Within this, it is assumed that if individuals are equipped with the appropriate skills and resources to solve problems to meet needs in positive and pro-social ways, for example through employment and relationships, it may promote rehabilitation. Factors associated within the literature as having a protective influence through potentially preventing groups from engaging in offending behaviour include: intelligence (Lösel & Bender, 2003), life satisfaction (MacDonald, Piquero, Valoist, & Zullig, 2005), increased self efficacy (Born, Chavalier, & Humblet, 1997), a positive self concept (Chassin, Eason, & Young, 1981), a stronger sense of optimism about the future (Howard & Johnson, 2000) and making opportunities to reinforce a sense of achievement (Bartol, 2006).

The following are risk factors related to mastery and young people displaying sexually harmful behaviour: academic difficulties (Veneziano & Veneziano, 2002), poor problem solving abilities (Prentky, Harris, Frizell, & Righthand, 2000) a low-average IQ (Ferrara & McDonald, 1996), low self-esteem (Katz, 1990), lack of self-sufficiency and pessimism (Hunter & Figueredo, 2000). According to Gilgun (2004), accomplishing something positive can act as a protective factor for this group. In summary, this research indicates that young people who have offended, either generally or sexually would be likely to have a lower sense of mastery when compared to young people who have not offended.

Risk and protective factors for offending and sexual offending can also be grouped into factors associated with a young person's sense of relatedness. Relatedness

refers to a sense of belonging to kin, friends, a social support network and attachments (Germain & Gitterman, 1995). Studies regarding young people who did not involve themselves in delinquent behaviour, even though they were at risk of doing so, found that these resilient youngsters had: a stronger sense of attachment, better skills at engaging and eliciting assistance from others; supportive relationships with parents, extended family, extra-familial relationships and institutions (Howard & Johnson, 2000, Lösel & Bliesener, 1990; McCord, 1982; Shader, 2003; Werner, 1987) and greater satisfaction with their social support (Lösel & Bliesener, 1990). Campbell and Harrington (2002) identified poor social commitment and isolation as resources that are often absent in people who have offended and other studies have shown that grief, loss and rejection are also significant factors for this group (Youth Justice Trust, 2003; Boswell, 1996). Other risk factors associated with youth offending include deficits in social skills, poor attachments to caretakers, lack of support, negative relationships between the caretaker and child (Bartol, 2006; Denham, Blair, Schmidt, & DeMulder, 2002; Loeber, Stouthamer-Loeber, Van Kammen, & Farrington, 1991) and rejection from peers (Dodge, 2000).

Risk factors associated with relatedness and sexual offending by adolescents include: social isolation, deficits with social skills and interpersonal competence, anxiety in social situations, intimacy deficits in relationships with adults, poor relationships with peers, and high levels of emotional loneliness (Katz, 1990; Knight, & Prentky, 1993; Långström & Grann, 2000; Leon, Ragsdale, Miller, & Spacarelli, 2008; Powis, 2002; Way, 2005). There is support that the presence of an emotional confidant and a sense of belonging to peers, family or the community can serve as protective factors against sexual offending (Borowsky, Hogan, & Ireland, 1997; Gilgun, 1990). Worling and Curwen

(2001) suggested that because these young people often do not experience emotionally and physically intimate peer relationships, sexually harmful behaviour could represent one way in which they attempt to satisfy their intimacy needs. Research indicates that adolescents who have sexually offended are likely to have attachment difficulties (Marshall & Barbaree, 1990), which could consequently affect their overall vulnerability in terms of a lack of relatedness, poor emotional coping, and a sense of personal inadequacy (Ward, Polaschek, & Beech, 2006). The literature would therefore signify that young people, who have offended, either generally or sexually, are likely to have a lower sense of relatedness compared to those who have not offended.

Prince-Embury's (2007) third and final construct of resiliency is 'Emotional Reactivity' which refers to an individual's degree of sensitivity, ability to regulate and recover from affect and their level of impairment whilst emotionally upset. Young people who have committed non-sexual and sexual offences are generally regarded as being more reactive or vulnerable to emotional upset. For example, risk factors associated with offending behaviours include aggression (Loeber & Hay, 1996; Loeber et al., 1991; McLaren, 2000; Rutter & Garmazy, 1983), a difficult temperament (Lösel & Bender, 2003), a lack of positive coping mechanisms (Marsland & Hammersley, 2006), impulsivity and poor emotional control (Patterson, DeGarmo, & Knutson, 2000; Stoolmiller, 2001). General aggression and antisocial characteristics are also associated with young people who display harmful sexual behaviours (Kavoussi, Kaplan, & Becker, 1998; Moeller, 2001; Wieckowski, Hartsoe, Mayer, & Short, 1998). Furthermore, it has been found that emotional health may serve as a protective factor against harmful sexual behaviour (Borowsky et al., 1997), and that emotional competence may be protective against sexual rumination (Leon et al., 2008). Negative mood and emotion is considered

a common trigger to adolescents committing sexual offences (Way & Spieker, 1997; Richardson & Graham, 1997). In summary, it would appear that young people who have offended generally and sexually have many similar risk factors present and protective factors absent. Consequently, it has been debated whether these offenders are in fact a homogenous or heterogeneous population.

Do young people who have sexually offended need to be distinguished from young people who have non-sexually offended?

Young people who have offended sexually and generally share many qualities and characteristics (Milner & Crimmins, 1995; Spaccarelli, Bowden, Coatsworth, & Kim, 1997; Nisbet, Rombouts, & Smallbone, 2005), as demonstrated above. Furthermore, there is support that many young people who have sexually offended also engage in non-sexual criminal behaviour (Ryan et al, 1996) and are more likely to re-offend with a non-sexual, rather than a sexual, offence (Epps & Fisher, 2004). However, there are also research findings to indicate differences exist between these groups, for example differences regarding non-sexual delinquency (Driemeyer, Yoon, & Briken, 2011), capacity to relate to peers, personality qualities, abusive histories (van Wijk et al., 2007; van Wijk et al, 2006) and perceived peer isolation (Miner & Munns, 2005). One explanation for findings that these groups are similar as well as different, could be variations in the composition of the sex offending samples in terms of their offending behaviour, between studies. It might be that sexually offending groups who have also generally offended (i.e., ‘generalists’) have more in common with non-sexual offending groups, and groups that have exclusively offended with a sexual offence (i.e., ‘specialists’) have greater differences to non-sexual offending groups (see Pullman &

Seto, 2012; Wolf, 2008). In general however, the mixed results between studies would indicate that whilst sexual and non-sexual offending groups may follow similar pathways to criminal behaviours, they do not follow exactly the same pathway, and therefore on the whole they appear to be distinct groups.

In a recent meta-analysis, Seto and Lalumière (2010) concluded that sexual offending can not fully be explained by risk factors for general offending and instead that there are 'special explanations' for this, such as early exposure to pornography or sex, atypical sexual interests and different levels of exposure to abuse and neglect. Some factors also differed between these groups that could relate to a sense mastery, relatedness, or emotional reactivity. For example, young people who had committed sexual offences had lower scores for cognitive abilities, were significantly more socially isolated, had lower scores for interpersonal skills and had more anxiety and self-esteem issues. However, no significant differences were found between these groups for a number of factors that would be likely to impact on 'Mastery', 'Relatedness' and 'Reactivity'; for example, self-reported conduct problems, antisocial attitudes, social competence or social skills, childhood attachment or family relationship problems, general intelligence, verbal intelligence and performance intelligence. Therefore, this would suggest that whilst sexual and non-sexual offending groups can generally be considered as distinct groups, it may be difficult to distinguish between these groups in relation to their levels of personal resiliency.

Pilot study comparing resilience between these groups

Griffin (2008) undertook a pilot study using a sample of 52 young males aged 16 to 18 years, to compare resilience between males who had sexually offended (37%), non-

sexually offended (25%) and not offended (38%), using the RSCA (Prince-Embury, 2007). As indicated within the literature (e.g., Loeber & Hat, 1996; McLaren, 2000; Powis, 2002; Shader, 2003; Steinberg & Scott, 2003; Way, 2005), differences were found between offending (sexual and non-sexual) and non-offending groups. Significant differences were found between males who had sexually offended and not offended for 'Relatedness', and between males who had non-sexually offended and not offended for 'Mastery' and 'Reactivity'. In support of some literature regarding resiliency-related factors (e.g., Seto & Lalumière, 2010), no significant differences were found for the RSCA scores between males who had sexually and non-sexually offended.

Whilst the pilot study demonstrated the feasibility of a study comparing these groups on scores derived from the RSCA, it did not measure or account for the level of adversity the young person was exposed to, did not control for treatment, (in that many young people in the two offending groups had received significant interventions regarding their offending behaviours), non-parametric tests were required because of the distribution of data and the sample sizes were small.

The current study

The current study aimed to:

- Analyse the similarities and differences in the levels of personal resiliency between young males who had sexually offended, non-sexually offended and not been convicted or cautioned for any type of offence.
- Extend and improve the original pilot study through using samples that had not received significant interventions for their current offences and through use of larger samples to allow for greater confidence in the findings.

- Additionally measure exposure to adversity, with a view to exploring whether this would be likely to impact on resiliency scores and outcomes.

It has been indicated within the literature that the reasons why young people commit offences, both sexual and non-sexual, can partly be attributed to their lack of resilience to appropriately deal with the adversities they face. In the current study, ‘resilience’ was predominantly conceptualised as qualities that can encourage positive adaptation. This definition of resilience was therefore limited to ‘personal resilience’ (i.e., individual resources to protect against unfavourable outcomes and a relatively small vulnerability to stress) and encompassed young people’s perceptions of their sense of mastery, relatedness and emotional resistance/control. It is noteworthy that through conceptualising resilience in this way, the current study is not designed to provide a more ecological understanding of resilience and consequently may de-emphasise environmental aspects of resilience. Therefore, whilst the natural interplay between the young person and their environment is likely to impact on their emotional vulnerability, how they perceive themselves and what their view is of their support systems, any external mechanisms associated with resilience are not explicitly measured. Within the current study scores on the RSCA for ‘Mastery’, ‘Relatedness’ and ‘Reactivity’ (Prince-Embury, 2007) were compared between experimental and control groups to determine their levels of personal resilience (also referred to as ‘resilience’).

Hypotheses were derived from the empirical research discussed above regarding the presence of risk factors and absence of protective factors related to optimism, cognitive skills and intelligence (e.g., Denno, 1990; Shader, 2003; Ferrara & McDonald, 1996; Howard & Johnson, 2000; Koenen et al., 2006; Lösel & Bender, 2003; MacDonald et al., 2005; McGuire, 2002; Siegel & Welsh, 2008; Steinberg & Scott,

2003); interpersonal skills and social supports (e.g., Bartol, 2006; Borowsky , 1997; Campbell & Harrington, 2002; Denham et al., 2002; Howard & Johnson, 2000; Långström & Grann, 2000; Leon et al., 2008; Shader, 2003), and emotional health, aggression and coping (e.g., Borowsky et al., 1997; Loeber & Hay, 1996; Lösel & Bender, 2003; McLaren, 2000; Marsland & Hammersley, 2006; Moeller, 2001; Patterson et al., 2000; Stoolmiller, 2001; Wieckowski et al., 1998). In the literature it is recognised that distinctions exist between groups who have offended sexually and non-sexually. However, it would appear that these groups share many similarities regarding low cognitive intelligence, poor interpersonal skills and behavioural difficulties; with young people who have sexually offended potentially having greater difficulties, although not significantly, in the former two areas (Seto & Lalumière, 2010). Whilst it was recognised that these qualities do not directly map onto those concepts measured by the RSCA, as related concepts they were used to inform the hypothesis.

Hypotheses

- (1) Young males who have offended will demonstrate less personal resiliency than those who had not offended, through reporting significantly lower levels of ‘Mastery’ and ‘Relatedness’ and higher ‘Reactivity’.
- (2) No significant differences will be found between RSCA scores for young males who had committed sexual and non-sexual offences.
- (3) Differences in personal resiliency between groups will remain significant after controlling for exposure to adversity.

The present study additionally sought to distinguish profiles of personal resiliency amongst males who had not offended, sexually offended and non-sexually offended,

similar to previous studies on clinical samples (see Kumar et al., 2010; Prince-Embury & Steer, 2010) and offending populations (see Mowder et al., 2010).

Whilst the study of resilience has significantly expanded over recent years, there have been few empirical studies that have examined resilience in offending groups (Fougere & Daffern, 2011) or compared resilience between groups who have and have not committed offences. In fact, there have been limited studies comparing offending and non-offending groups in general (Youth Justice Board, 2005). The need for identifying and promoting resilience within assessments and interventions has been particularly pertinent within the field of adolescents who have displayed harmful sexual behaviour (see Gilgun, 1999; O'Callaghan, 2002; Print et al., 2007). However, to the author's knowledge, there have not been any previous studies that have measured and compared resiliency between young people who have sexually and non-sexually offended.

Comparing resilience between different groups of young people who have offended with those who have not offended would add to the current knowledge base regarding the relationship between resilience and offending behaviour. According to Goldstein (2008) "the evaluation and understanding of an individual's perception of mastery, relatedness and emotionality play a critical role in treatment planning, far beyond the role played by symptoms and impairment." (p. 3). Through a focus on the personal qualities of those who have succeeded when faced with adversity, compared to those who have not, such research could potentially provide direction for the development of preventative and rehabilitative interventions and strategies.

Method

Sample

The current study used an opportunity sample, whereby the author had previous communication with professionals from within all organisations recruited. Initial contact to recruit participants was made via email with four youth offending teams (YOTs), one children's services, one school, one sixth-form college, one Connexions team and two specialist therapeutic services. Two YOTs, one specialist therapeutic provider, one college, and one connexions team provided consent to access samples from within their organisations. All organisations were based in the North-West or East-Midlands of England. A breakdown of the samples gained from each of these organisations is provided in Table 4.1. Access to the majority of the samples was as follows: males who had not offended through the sixth form college (81%), males who had non-sexually offended through YOTs (66%) and males who had sexually offended through a specialist therapeutic service (96%).

Table 4.1

Numbers contributed by organisations towards the total sample (N=144)

Organisation	Not offended	Offended non-sexually	Offended sexually
Youth Offending Service	0	23	2
Sixth-form College	46	5	0
Specialist Therapeutic service	0	0	50
Connexions	11	7	0
Total Sample	57	35	52

The total sample of 144 consisted of 57 (40%) young males who had not offended, 35 (24%) young males who had offended with a non-sexual offence, and 52 (36%) young males who had sexually offended. The meaning of ‘offending’ varied across groups. For example none of the young males in the non-offending group were known to have received a caution or conviction for criminal behaviour according to self-report and reports from their senior teacher or connexions worker. Those in the non-sexual offending sample had either self-reported receipt of a caution or conviction for criminal behaviour, or were involved with a youth offending service as a result of criminal behaviour. For this group, criminal behaviour involved exclusively: violent offences (n=5; 14%), burglary (n=2; 6%), criminal damage (n=1; 3%), drugs offences (n=1; 3%), arson (n=1; 3%), public order offences (n=2; 6%), driving offences (n=1; 3%), possession of an offensive weapon (n=1; 3%) and multiple offences including violence (n=19; 54%), or involving criminal damage and public order offences (n=2; 6%). The sexual-offending group had either been formally processed through the criminal justice system (n=42; 81%), or were dealt with informally through the child welfare route after displaying harmful sexual behaviour (n=10; 19%). All ‘offences’ identified through the latter route were serious enough to warrant extensive specialist intervention. For this group, 29% (n=15) had additionally committed non-sexual offences that resulted in a criminal charge or conviction.

The age of the total sample ranged from 13-to-18 years (mean=16.29, SD=1.2 years). The ethnicity of the total sample was 82% white British, Irish or Polish (n=118); 8% mixed white British and black Caribbean, black African, Asian Pakistani or Asian Iranian (n=11); 6% black African or Caribbean (n=8); 5% Asian Pakistani or Iranian (n=7). Using the classifications: ‘average’, ‘below average’ and ‘above average’,

educational ability was identified by professionals on the basis of available cognitive and academic information. The educational ability for the total sample was 29% below average (n=41), 56% average (n=81) and 15% above average (n=22).

Measures

The RSCA (Prince-Embury, 2007)

The RSCA was used to quantify resilience in the present study. Chapter Three provides information regarding the RSCA's description, research, psychometric properties and norms. In brief, the RSCA is a published measure for use with children and adolescents aged nine to 18 years. It is a self-report questionnaire, taking approximately 10 minutes to complete. Raw scores can be converted into standardised scores (mean=50, SD=10) according to gender and three age groups (9-to-11; 12-to-14; 15-to-18 years) based on norms derived from an American population. The RSCA consists of three scales, which according to Prince-Embury (2007) represent core characteristics of personal resiliency; these are 'Mastery', 'Relatedness' and 'Reactivity'. The scales are made up of a series of sub-scales identified through factor analysis. Table 4.2 provides details of the scales, sub-scales and the associated number of items used to operationalise personal resiliency within the RSCA. In total there are 64 items that are responded to using a five-point Likert scale ranging from 0 (never) to 4 (almost always).

Elevated total scores for 'Mastery' and 'Relatedness', and low total scores for 'Reactivity' are suggestive of a higher degree of personal resiliency. Whilst it is not possible using the RSCA to obtain one score that is indicative of resilience, the 'Resources Index' provides an overall indication of an individuals resources through summing 'Mastery' and 'Relatedness' scores. Additionally, the 'Vulnerability Index'

Table 4.2

Scales, sub-scales and the associated number of items used to operationalise personal resilience within the RSCA

Scale	Description	N	Sub-scales	N
Mastery	Relates to the young person's positive outlook, perception of their problem-solving abilities and of their flexibility to experience doing things well.	20	Optimism about current and future life	7
			Self-efficacy to master environment and problem-solve	10
			Adaptability to learn from mistakes and receive criticism	3
Relatedness	Relates to the young person's perception of their level of trust, comfort and tolerance within their relationships and the extent that their relationships are supportive.	24	Trust in relationships	7
			Support to whom one can turn to	6
			Comfort in the presence of others	4
			Tolerance of difference within relationships	7
Emotional Reactivity	Relates to the young person's perception of how easily they are to upset, whether their functioning is impaired when they are upset and their capacity to bounce back after being upset.	20	Sensitivity to stimuli	6
			Recovery skills	4
			The degree of Impairment from being emotional upset	10

provides an indication of vulnerability through subtracting the score for 'Resource Index' from the 'Reactivity' score. The present study used the standardised scale scores for 'Mastery', 'Relatedness' and 'Reactivity' as these were considered to provide richer information, compared to Index scores, regarding personal resiliency for the different groups. There is support for the construct validity, content validity, internal reliability and test-retest reliability of the RSCA (Kumar et al., 2010; Prince-Embury, 2007; Prince-Embury, 2010; Prince-Embury & Corville, 2008a, 2008b), and overall its psychometric

properties are relatively good when compared to other resiliency measures (see Chapter Three).

Adversity scale

In a recent review of instruments measuring childhood adversity, all nine identified tools relied on either self-report or an interview format with the child/young person (Burgermeister, 2007). In the present study, personal resiliency was the primary measure of interest and adversity was measured in order to assess whether resiliency scores were predictive of offending status after taking exposure to adversity into account. In the absence of resources to provide appropriate support to the young person, it was not viewed as ethical by the author to question the young person for the purposes of the present research about specific exposure to adverse events. To respond to the requirements and ethical considerations of the current study, a professionally-reported measure of adversity was devised by the author (see Appendix 13), therefore this scale was not standardised. It was not deemed necessary to have knowledge of exposure to specific adverse events to answer the research question. As such, and to not be overly intrusive to the young person's background, the scale required the professional involved to rate the level of adversity the young person had been exposed to across their lifespan from 0 (no adversity) to 6 (severe adversity). Where the young person had been exposed to multiple examples of adversity, professionals were asked to consider the most serious example and if appropriate increase the score for overall severity.

The validity of the adversity score was dependent on how well professionals knew the young person via file information and personal contact. Professionals reported knowing participants 'very well' in 49% of cases, 'quite well' in 28% of cases, 'a little' in

20% of cases and 'not well' in 3% of cases. The access to information about young people's exposure to adversity was variable across the different organisations. For example, the specialist therapeutic service usually had access to extensive file information detailing prior adversity and YOT's frequently had access to this information, although this would depend on the extent the young person and their family were previously known to services. Overall, it was more likely that access to this type of information would be more limited within Connexions and the sixth form college. Inevitably, as a result the validity of adversity scores for samples gained from these organisations was more likely to be questionable. However, in order to maximise the quality and accuracy of the information gained from Connexions, personal advisors were asked to recruit young people whom they had a good knowledge of in a social inclusion capacity, rather than selecting those to whom they solely provided careers advice. Similarly, within the college setting a Senior Tutor was responsible for completing the adversity scale, because they had responsibility for the pastoral care of their students and thus had access to sensitive information about students. For those students who the tutor did not necessarily have a good knowledge of, the scale was completed as part of a student-tutor contact session, where information about the young person's prior adversity could be further explored.

When creating the adversity scale, in attempt to decrease the level of subjective responses between raters, examples of potential adverse events were provided next to the adversity scores. Nineteen examples of adverse events were taken and adapted from the Negative Life Events Inventory (Wills, Vaccaro, & McNamara, 1992) and the Holmes-Rahe Life Stress Inventory (Holmes & Rahe, 1967), amongst other available measures. Twenty-one professionals, responsible for rating the adversity scale in the current study

and who were qualified psychologists, social workers, teachers, YOT workers and connexions workers, were asked to score each example of an adverse event from 0 (no adversity) to 5 (very high adversity)¹ regarding their perception of the level of adversity it would be likely to cause for a typical adolescent. Additionally, professionals were asked to provide clarification regarding the context their scores were based on (see Appendix 14 for professional ratings and descriptions for each example of an adverse event). For example, 'hospitalisation of a parent' was commonly perceived as a short temporary stay in hospital with support available from family members for the duration, rather than a long stay in hospital.

An intraclass correlation coefficient (ICC) of .74 ($p < .01$) was estimated for the reliability of a single rating. In general, ICC values greater than .70 are considered acceptable (Scientific Advisory Committee for the Medical Outcomes Trust, 2002). The adversity scale was constructed using the mode as the professional consensus of which scores were to be assigned to each adverse event, and descriptors were used to reduce ambiguity for the given examples. Table 4.3 provides the examples of adverse events and associated scores, which were provided as guidance to raters for completing the adversity scale. As an unpublished measure, the inter-rater reliability of the adversity scale was assessed for 10% of ratings completed in the current study ($n=14$), using cases where two professionals had a knowledge of the same young male. The inter-rater reliability of the adversity scale yielded a Cohen's kappa of .79 ($p < .01$) which according to Fleiss' classifications (1981) can be regarded as 'excellent'.

¹ Please note that a score of '6' was allocated when a young person had been exposed to multiple adverse events that scored '5' on the adversity scale.

Table 4.3

Examples of adverse events and associated scores provided as guidelines within the adversity scale

Adversity Score	Examples of adverse events
0	No exposure to adversity
1	Not accepted at college/school of choice Moving home (e.g., moving a short distance with family)
2	Temporary hospitalisation of a parent (where support from others is available for the duration the parent is in hospital) Victim of property crime (e.g., mobile phone theft; single incident of burglary); Death of grandparent, aunt or uncle (who are not primary carers); Breaking up with girlfriend/boyfriend (e.g., short term and more superficial relationship) Failing an exam (e.g., where have opportunity to re-sit)
3	Divorce of parents; Leave home at an early age (where likely to increase long term difficulties e.g. become involved in anti-social group, suffer financial hardship, lack social support); Problematic peer relationships (general difficulties); Permanent exclusion from school
4	Serious illness (e.g., Cancer, HIV); Single incident of abuse (emotional, physical, sexual); Family suffering severe financial difficulties Victim of violent crime (e.g., stabbing; assault involving a degree of trauma)
5	Death of a parent / primary carer; Become incapacitated (e.g., loss of limb); Suffered abuse over a prolonged period (emotional, physical, sexual) Suffered extensive, prolonged, serious bullying

Procedures

Participating organisations identified the approximate sample size that could be obtained on the basis of accessibility of participants and the study's sampling criteria, that is, males, aged 12-to-18 years, and at the beginning of treatment (for groups who had offended) to prevent intervention effect from confounding results. It was negotiated with

organisational representatives whether they or the researcher would distribute questionnaires to consenting participants. This decision was based on the preference of the organisation, likely preference of participants, and organisational procedures favouring that the researcher did not directly approach service users.

Regardless of how forms were distributed, all young males followed written instructions provided in an information sheet, self-completed the resiliency questionnaire, and completed an additional proforma regarding offending status (i.e., whether they had received a caution or conviction for an offence, and if relevant, the type of offence). Forms were anonymised, and participants were assigned an identifier that corresponded to a number on the forms so that the resiliency questionnaire, proformas, and adversity scales could be linked together. All forms were placed in a sealed envelope after completion to ensure confidentiality. All young people had an opportunity to debrief with an organisational representative following completion of the questionnaire.

None of the participants chose to withdraw from the study, although the questionnaires of three participants were discarded from the current study due to indiscriminate responding, or likely distorted responding recognised through descriptive analysis of the scores. Less than 10% of completed questionnaires had missing responses for one or more items, and none contained more than the two admissible missing items per scale, or one admissible missing item per sub-scale (Prince-Embury, 2007). The value for missing responses was estimated through prorating by sub-scale, as per guidance in the manual.

Professionals involved with participants completed the adversity scale and a proforma regarding information on age, offence status, ethnicity, educational ability, and how well they knew participants. Information on educational ability was considered

important in response to the research supporting IQ as a factor that impacts on risk and resilience (Ferrara & McDonald, 1996; Koenen et al., 2006; Lösel & Bender, 2003; Shader, 2003). Problems were encountered with obtaining participants from some YOTs, due to staff illness, other priorities arising for staff, and service users failing to attend pre-arranged appointments.

The use of a psychometric test and use of scaling was chosen as the preferred method to collate resilience and adversity information because it allowed results to be generalised and was a relatively cheap, time-efficient and minimally intrusive method (Robson, 1993; Bruce, Pope, & Stainstreet, 2008). Additionally, using the current methodology, anonymity of responses was optimised, which may have encouraged more honesty (Cohen, Manion, & Morrison, 2005). Furthermore, it allowed participant's self-perceptions to be measured, which would not have been easily accessed through retrospective analysis of file information or observational methods.

Data Analysis

Prior to undertaking the current study, analysis was performed to estimate the minimum sample size to gain acceptable power (the probability of detecting an actual effect). According to Cohen (1988) 80% power is an acceptable threshold. Power analysis for a Multivariate Analysis of Variance (MANOVA) procedure was performed using D'Amico, Neilands, and Zambarano's (2001) published syntax, which was revised to fit the specific purpose of the present study (see Appendix 15). A random sample of ten participants per group was taken from the pilot study (Griffin, 2008) as a dummy dataset, in order to supply estimates of group means and standard deviations on which power calculations were based. Using the syntax, data was saved in a matrix form that

allowed sample sizes to be easily adjusted until an acceptable level of power was produced when running a set of MANOVA commands. Using this procedure, it was estimated that a minimum sample size of 30 in each group was required to produce 84% power.

The characteristics of the data were initially explored using the statistical package Predictive Analytics SoftWare (*PASW Statistics 18*). Chi-Square tests were used to establish whether there were significant group differences in ethnicity and educational ability. In order to satisfy the assumptions of chi-square tests, regarding expected counts of less than five in cells, ethnicity data was reclassified into fewer variables (i.e., 'white' and 'non-white'). A Kruskal-Wallis test was performed to explore the age differences between groups because the assumption of homogeneity of variances was violated.

Data from the Resiliency Scales met parametric assumptions for each of the groups, consequently a MANOVA was performed to test for group differences in 'Mastery', 'Relatedness' and 'Reactivity'. Standardised scale scores were used as they corrected for age. Wilks' lambda was the chosen MANOVA test statistic, as advised by Dancey and Reidy (2004), and Tabachnick and Fidell (1996). As an initial significant MANOVA is argued to 'protect' subsequent Analysis of Variance (ANOVA) against Type 1 error (Bock, 1975), follow-up analysis was undertaken using one-way ANOVAs. However, in recognition that this 'protection' is contentious (Field, 2005) Bonferroni correction was applied by adjusting the alpha to 0.016 (i.e., 0.5 divided by the number of dependent variables). For MANOVA and ANOVA procedures, unequal samples were handled by using Type III sum of squares (see Hill & Pawel, 2006). Pairwise comparisons were performed using Sidak post-hoc tests. Sidak was selected because it is considered flexible enough to meet the needs of unequal sample sizes, but has less impact

on statistical power (Keppel & Wickens, 2004) and therefore should not overcorrect for Type 1 error, which can be a concern when using the Bonferroni technique (Field, 2005). Within the literature, it has been implied that the composition of the sexually offending sample could influence findings regarding their similarities and differences with non-sexually offending groups (see Pullman & Seto, 2012; Wolf, 2008). To help ensure the results were not confounded by the fact that 29% of the group who had sexually offended additionally offended with a non-sexual offence, this analysis was re-run removing those males who had non-sexually offended from within the sexual-offence group.

A Multivariate Analysis of Covariance (MANCOVA) could not be performed to examine the impact of exposure to adversity on resiliency scores, because adversity data was ordinal, was not normally distributed, and violated the assumption of homogenous regression slopes. An independent Kruskal Wallis test was conducted to determine whether there were significant group differences in exposure to adversity. Following this, a series of binary logistic regressions were performed, informed by previous findings from post-hoc analysis, to test the hypothesis that resilient qualities would predict group membership after controlling for adversity. The forward stepwise method was used because it allowed for adversity, in addition to other potentially confounding factors, to be entered into the regression model first. This made it possible to determine whether resilience variables predicted group membership above and beyond other significant factors.

Finally, cluster analysis was performed for each group to identify how resiliency profiles were differentiated within the groups. A two stage approach was used to identify whether profiles could be differentiated according to the Resiliency Scales. Using Ward's

(1963) agglomerative-hierarchical technique prototypal profiles were estimated. Up to 5% of outliers were removed to avoid clusters being distorted by extreme scores. The cubic clustering criterion employed by Kumar and colleagues, (2010) and Prince-Embury and Steer (2010) could not be replicated, as this option is not available within PASW 18, which was used within the present study. Instead, Akaike's Information Criterion (AIC) was used to determine the number of clusters in each group. After identifying profiles for each sample, a one-way ANOVA was undertaken to determine whether age was differentiated by the different profiles, alongside chi-square tests for educational ability and exposure to adversity. The low numbers of participants in offending samples meant that ethnicity could not be analysed when the number of groups doubled, as in cluster analysis, because data failed to meet the requirements of cross-tabulations.

Ethics

Exposure to adversity was measured via a single score rated by professionals. This was to protect the young person from needing to complete trauma-based questionnaires and to keep sensitive information regarding specific details of adverse events they had encountered private, as such details were not necessary to the research. The questionnaire completed by young males was strengths-based, designed for children and young people and as such was not envisaged to cause distress. However, to minimise any potential risks, all young people had an opportunity to debrief at the time of completing the questionnaire, and contact information on the Samaritans was provided within the research information. Ethical approval was gained from the University of Birmingham Ethics Committee (see Appendix 16). A costs/benefits analysis highlighted that harm to participants would be minimal, and that significant benefits could result from

undertaking this study with regard to informing the development of preventative and rehabilitative strategies. Safeguards were put in place to ensure the confidentiality of participants and appropriate storage of data. Additionally the requirements of the Data Protection Act (1998) were upheld.

Results

The age, ethnic composition and educational ability of the non-offending, non-sexually offending, and sexually-offending groups are contained in Table 4.4. It is of note that the ethnic composition in the groups who offended (non-sexual and sexual) was almost exclusively white, whereas the group who had not offended comprised of a larger proportion of non-whites. Furthermore, whilst the majority of the sample was of average educational ability for all groups, the group who had not offended had a greater number of above average males, and the group who had sexually offended had fewer below average males. Chi-square analysis revealed that there was no significant difference for educational ability (below average; average; above average) between the groups ($\chi^2=7.17$, $p>.05$), however there was a significant difference for ethnicity (white; non-white) between groups ($\chi^2=24.70$, $p<.01$), which would make sense in consideration of the large absence of non-white participants within samples who had offended, compared to the sample who had not offended. A Kruskal-Wallis test revealed a significant difference between groups for age.

Table 4.4

A comparison of the three different groups' characteristics (N=144)

		Not offended	Offended non-sexually	Offended sexually	P- value
Age (in years)	Range	15-to-18	13-to-18	14-to-18	<.001
	Mean (SD)	16.57 (SD=.9)	15.44 (SD=1.3)	16.89 (SD=.8)	
Ethnicity (% within group)	White	91% (n=32)	94% (n=49)	63% (n=36)	<.001
	Mixed	3% (n=1)	2% (n=1)	16% (n=9)	
	Black	3% (n=1)	4% (n=2)	11% (n=6)	
	Asian	3% (n=1)	0% (n=0)	11% (n=6)	
Educational Ability (% within group)	Above Average	9% (n=3)	13% (n=7)	21% (n=12)	.130
	Average	57% (n=20)	67% (n=35)	46% (n=26)	
	Below Average	34% (n=12)	19% (n=10)	33% (n=19)	

Group differences in personal resiliency

Hypothesis 1 & 2: Males who had offended would demonstrate less personal resilience than those who had not offended, and no significant differences would be found between males who had committed sexual and non-sexual offences

The mean Resiliency Scale scores, standard deviations (SD) and 95% confidence intervals (CI) are provided in Table 4.5. Young males who had offended sexually had the lowest mean scores for 'Mastery' and 'Relatedness'. Young males who had offended non-sexually had the highest mean scores for 'Reactivity'. As hypothesised, young males who had not previously offended had higher levels of personal resiliency, in that they had elevated 'Mastery' and 'Relatedness' mean scores, and lower 'Reactivity' mean scores

compared to the groups who had offended. The group who had non-sexually offended had the highest degree of variability of scores across the scales, particularly for ‘Relatedness’ and ‘Reactivity’, potentially indicating that these young males were more likely to perform differently to one another regarding personal resilience. However, in real terms, the difference in the variation of scores between groups was small (i.e., up to three units). Unexpectedly, analysis of 95% Confidence Intervals (CI’s) suggested that there was a considerable overlap in mean ‘Mastery’ and ‘Relatedness’ scores between the groups who had not offended and who had non-sexually offended, indicating no, or minimal, real difference between the populations for these components of personal resilience. Additionally, for the two groups who had offended, there was a small overlap in scores for ‘Mastery’ and a larger overlap for ‘Relatedness’ and ‘Reactivity’.

Table 4.5

Descriptive statistics for ‘Mastery’, ‘Relatedness’ and ‘Reactivity’ scores across the three different groups (N=144)

Offending Condition	Resiliency Scale scores								
	Mastery			Relatedness			Reactivity		
	Mean	SD	95% CI	Mean	SD	95% CI	Mean	SD	95% CI
Not offended	47.82	5.99	46.24 to 49.41	48.40	7.30	46.47 to 50.34	50.00	7.74	47.95 to 52.05
Non-sexually offended	46.94	8.35	44.08 to 49.81	46.57	9.29	43.38 to 49.76	58.31	10.40	54.74 to 61.89
Sexually offended	43.27	7.40	41.19 to 45.35	43.50	8.39	41.20 to 45.80	54.92	9.87	52.18 to 57.67

A MANOVA, which was used to test whether there was a difference between group membership (young males who had not offended, non-sexually offended and sexually offended) and Resiliency Scale scores, revealed a significant main effect (Wilks' $\lambda=.82$, $F(6,278)=4.96$, $p<0.01$, partial $\eta^2=.10$). Three separate ANOVA's found that group membership had a significant effect on 'Mastery', 'Relatedness' and 'Reactivity' scores ($F(2,141)=5.94$, $p<.01$, partial $\eta^2=.08$; $F(2,141)=4.95$, $p<.01$, partial $\eta^2=.07$; $F(2,141)=9.41$, $p<.01$, partial $\eta^2=.12$ respectively). An examination of individual mean difference comparisons across all three groups, using Sidak post-hoc analysis, found that males who had not offended and males who had sexually offended had significantly different 'Mastery', 'Relatedness' and 'Reactivity' scores. Males who had non-sexually offended only differed significantly to the non-offending group on the 'Reactivity' scale. There were no significant differences found for personal resilience between the two groups who had offended. The results of post-hoc analysis are presented in Table 4.6.

When 'generalists' (i.e., males who had additionally committed a general offence) were removed from the sexually offending sample, multivariate, univariate and pairwise analysis comparing males who had exclusively offended with a sexual crime (i.e., 'specialists') and males who had non-sexually offended, revealed similar results to the previous analysis presented above (Wilks' $\lambda=.78$, $F(6, 248)=5.33$, $p<.01$, partial $\eta^2=.11$; Mastery: $F(2,126)=6.59$, $p<.01$, partial $\eta^2=.10$; Relatedness: $F(2,126)= 6.13$, $p<.01$, partial $\eta^2=.10$; Reactivity: $F(2,126)=9.86$, $p<.01$, partial $\eta^2=.10$). However, in contrast to the above where the sexually offending group contained both 'generalists' and 'specialists', post hoc analysis comparing only the 'specialist' sexually offending group with the non-sexually offending group, revealed significant differences for 'Mastery' ($p<.05$). With

males who had exclusively sexually offended demonstrating lower levels of mastery than the non-sexually offending group. These findings are presented in Table 4.6.

Table 4.6

Comparisons of mean differences in resiliency scores between groups (N=144)

Offending Condition	Resiliency Scale scores								
	Mastery			Relatedness			Reactivity		
	Mean Difference	p-value	95% CI	Mean Difference	p-value	95% CI	Mean Difference	p-value	95% CI
Not offended versus Non-sexually offended	.88	.919	-2.83 to 4.60	1.83	.654	-2.41 to 6.07	-8.31	<.001	-13.10 to -3.53
Not offended versus Sexually offended (original grouping: OG)	4.56	.003	1.24 to 7.87	4.90	.006	1.12 to 8.69	-4.92	.018	-9.20 to -.65
Non-sexually offended versus Sexually offended (OG)	3.67	0.60	-.11 to 7.46	3.07	.241	-1.24 to 7.39	3.39	.259	-1.48 to 8.27
Not offended versus Exclusively sexually offended	5.07	.002	1.60 to 8.54	6.03	.002	1.84 to 10.21	-5.70	.012	-10.40 to -1.00
Non-sexually offended versus Exclusively Sexually offended	4.19	.030	.31 to 8.06	4.19	.092	-.48 to 8.87	2.61	.545	-2.64 to 7.86

Where a significant difference was found between the three original groupings, effect sizes were calculated using Glass's delta (Δ ; Glass, McGaw, & Smith, 1981), and power calculation had previously been undertaken which helped protect against its poor

performance for small sample sizes (Hess & Olejnik, 2004). Glass's Δ used the SD of the control group because SD's could not be pooled due to unequal numbers in groups. The effect sizes for differences between the group who had not offended and the group who had sexually offended for 'Mastery', 'Relatedness' and 'Reactivity' were 0.76, 0.67, and 0.64, respectively. The effect size for the difference between the group who had not offended and the group who had non-sexually offended was 1.07 for the 'Reactivity' scale. All these effect sizes exceeded the minimum effect size value recommended for social science data, although only the latter was approximately approaching a moderate effect (see Ferguson, 2009).

The impact of other variables on group membership

Through preliminary analysis, it had already been established that ethnicity was a potentially confounding variable. It additionally was explored whether exposure to adversity (ranging from 1(minimal) to 6 (very high)) could have potentially impacted on previous results. A Kruskal-Wallis test revealed that exposure to adversity was significantly different between these groups ($H(2)=45.31$, $p<.01$), and therefore may account for differences found between groups. The range of adversity scores for each group, alongside the median, which is considered the best measure of central tendency for ordinal data (Coolican, 2009; Sanders, 2010), is provided in Table 4.7. On average, the group who had not offended was rated lowest for exposure to adversity, and the group who had sexually offended was rated highest.

Table 4.7

Descriptive statistics for adversity scores across the three different groups.

Adversity Score	Not offended	Offended non-sexually	Offended sexually
Range	1-to-5	2-to-6	2-to-6
Median	3	4	4.5

Hypothesis 3: Differences in personal resiliency between groups would remain significant after controlling for exposure to adversity

Forward stepwise binary logistic regression analyses were used to test the hypothesis that resiliency scores would remain significant predictors of group membership after controlling for exposure to adversity. For the purpose of logistic regressions, adversity data needed to be grouped as low (scores ≤ 2), moderate (score = 3); high (score = 4) and very high (score ≥ 5), to ensure crosstabs contained no empty cells. Regression analyses were additionally performed to examine whether personal resiliency profiles would remain significant after controlling for ethnicity, as this had been identified within the current study as a potentially confounding variable. Despite group differences for the variable age, this was not controlled for within a regression model, because it had already been controlled for through use of the RSCA scores that were corrected for age. Table 4.8 presents the findings from a number of logistic regression analyses.

Table 4.8

Binary logistic regressions to analyse whether personal resiliency predicted group membership after taking into account exposure to adversity and ethnicity (N=144)

Measure and Group	Factor	B (SE)	Wald's χ^2	P- value	95% CI for Exp B			Nagel- kerke's R ²	% Correctly Classified
Mastery controlling for Adversity	Adversity	1.06 (.22)	24.17	<.001	1.89	2.88	4.39		
<i>Groups:</i> <i>Sexually offended</i> V	Mastery	-.08 (.03)	7.15	.007	.87	.92	.98		
<i>Not sexually offended</i>	(Model incl. intercept)							.28	71.5
Mastery controlling for Ethnicity	Ethnicity	2.16 (.76)	8.02	.005	1.95	8.70	38.87		
<i>Groups:</i> <i>Sexually offended</i> V	Mastery	-.08 (.03)	8.71	.003	.88	.92	.97		
<i>Not sexually offended</i>	(Model incl. intercept)							.21	67.4
Relatedness controlling for Adversity	Adversity	1.04 (.21)	24.10	<.001	1.87	2.83	4.29		
<i>Groups:</i> <i>Sexually offended</i> V	Relatedness	-.05 (.03)	4.49	.034	.90	.95	1.0		
<i>Not sexually offended</i>	(Model incl. intercept)							.32	72.2
Relatedness controlling for Ethnicity	Ethnicity	2.25 (.77)	8.61	.003	2.11	9.46	42.41		
<i>Groups:</i> <i>Sexually offended</i> V	Relatedness	-.06 (.02)	7.57	.006	.90	.94	.98		
<i>Not sexually offended</i>	(Model incl. intercept)							.20	67.4
Reactivity controlling for Adversity	Adversity	1.22 (.23)	27.19	<.001	2.14	3.39	5.36		
<i>Groups:</i> <i>Offended</i> V	Reactivity	.07 (.03)	9.09	<.003	1.03	1.08	1.13		
<i>Not offended</i>	(Model incl. intercept)							.42	77.1
Reactivity controlling for Ethnicity	Adversity	2.43 (.58)	17.86	<.001	3.68	11.35	35.01		
<i>Groups:</i> <i>Offended</i> V	Reactivity	.08 (.02)	12.08	.001	1.04	1.08	1.13		
<i>Not offended</i>	(Model incl. intercept)							.32	72.2

The previous MANOVA analysis had indicated a significant difference for ‘Mastery’ and ‘Relatedness’ between groups who had not offended and who had sexually offended only. However, strictly speaking, analysing the data using these two groups was not binary (i.e., not offended verses offended; or sexually offended verses not sexually offended) in that males who had non-sexually offended would be excluded from the analysis even though they contribute towards the binary groupings. In previous tests, males who had offended non-sexually differed from neither of the other two groups significantly regarding ‘Mastery’ and ‘Relatedness’ scores, however the difference in their ‘Mastery’ scores was approaching levels of significance when compared to males who had sexually offended ($p=0.06$). This, in addition to the difference found for these scales between only non-offending and sexually offending groups, indicated that personal resiliency for males who had committed this particular type of offending should be considered separately. Therefore, forward stepwise logistic regression analyses were conducted for the binary categories sexually offended verses not sexually offended (with the latter group consisting of males who had non-sexually offended and who had not offended).

This analysis revealed that the scores for ‘Mastery’ made an independent significant prediction to males sexually offending, above and beyond the effects of both exposure to adversity and ethnicity (Wald’s $\chi^2=7.15$, $\beta = -.08$, $p<.01$, OR = 0.92 and Wald’s $\chi^2=8.71$, $\beta = -.08$, $p <.05$, OR = 0.92, respectively). Additionally, the scores for ‘Relatedness’ made an independent significant prediction to males sexually offending, above and beyond the effects of both exposure to adversity and ethnicity (Wald’s $\chi^2=4.49$, $\beta = -.05$, $p<.05$, OR = 0.95 and Wald’s $\chi^2=7.57$, $\beta = -.06$, $p <.01$, OR = 0.94, respectively). A regression model using both adversity and ‘Mastery’ or ‘Relatedness’

factors resulted in 72% of participants being correctly classified and explained approximately 30% of the variance (Nagelkerke's $R^2 = 0.28$ and 0.32 , respectively).

For 'Relatedness' previous analysis had indicated that there was a significant difference between both groups who had offended (sexually and non-sexually) with males who had not offended, but not between the offending groups. Therefore, forward stepwise logistic regressions were conducted for the binary categories not offended verses offended (with the latter group consisting of males who had non-sexually offended and who had sexually offended). This analysis revealed that the scores for 'Reactivity' made an independent significant prediction to males offending non-sexually and sexually, above and beyond the effects of both exposure to adversity and ethnicity (Wald's $\chi^2=9.09$, $\beta = .07$, $p<.01$, OR = 1.08 and Wald's $\chi^2=12.08$, $\beta = .08$, $p <0.01$, OR = 1.08 respectively). A regression model using both adversity and 'Reactivity' factors resulted in 77% of participants being correctly classified and explained 42% of the variance (Nagelkerke's $R^2 = 0.42$).

Resiliency profiles identified through cluster analysis

After removing one outlier for the non-offending group and two outliers for the sexual offending group, two profiles of personal resiliency, labelled A and B, could be identified for each of the three groups examined: males who had not offended, males who had non-sexually offended and males who had sexually offended. These are graphically presented in Figure 4.1. Table 4.9 provides the means and standard deviations of Resiliency Scale scores for the different profiles identified through cluster analysis. Using classifications based on normative data provided in the Resiliency Manual (Prince-Embury, 2007), profiles A and profile B in the group who had not offended, might be descriptively

classified as below average-to-average resources/average vulnerability, and above average resources/below average vulnerability, respectively. For males who non-sexually offended, profiles A and B could, respectively, be described as below average resources/high vulnerability and average (upper) resources/average vulnerability. These clusters unlike those for other groups, had a slight cross over between scores for resources (i.e., ‘Mastery’ and ‘Relatedness’), although scores for reactivity were very distinct, as indicated by 95% CI’s for the mean. Profiles A and profile B in the group who had sexually offended, could be classified as low resources/high vulnerability, and average (lower) resources/average vulnerability, respectively.

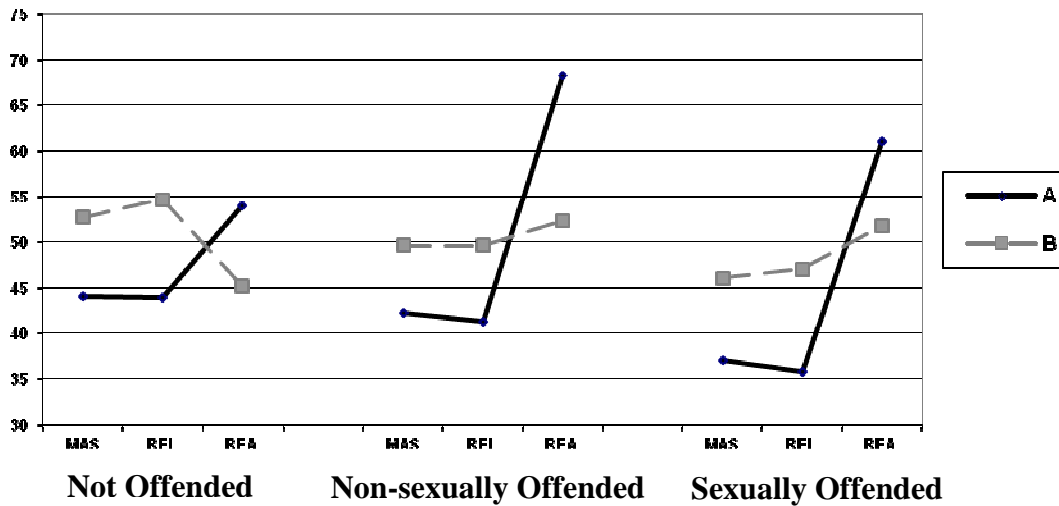


Figure 4.1. Profiles of personal resiliency, based on mean scores, for males who have not offended males who have non-sexually offended and males who have sexually offended.

Profile A for the group who had not offended and profile’s B for the groups who offended non-sexually and sexually were similar. Fifty-seven percent of the non-offenders fitted profile A, and the two B profiles contained 63% and 62% of young people who offended non-sexually and sexually, respectively. It therefore would appear that the majority of the

sample shared a similar level of personal resiliency that could be approximately characterized as average resiliency. Profile A for the two groups who had offended were underpinned by a similar pattern, although males who had sexually offended had lower ‘Mastery’, ‘Relatedness’ and ‘Reactivity’, these clusters were not very resilient. Profile B for the group who had not offended appeared distinct to this group and represented high or superior resilience. This was the only profile where individual’s resources (i.e., ‘Mastery’ and ‘Relatedness’) exceeded their level of reactivity.

Table 4.9

Descriptive statistics for ‘Mastery’, ‘Relatedness’ and ‘Reactivity’ by profiles of personal resiliency for the three groups (N=141)

Group	Resiliency Profile	N	%	Mastery			Relatedness			Reactivity		
				Mean	SD	95% CI	Mean	SD	95% CI	Mean	SD	95% CI
Not offended	A	32	57	44.13	3.90	42.72-45.53	44.00	5.63	41.97-46.03	53.97	7.15	51.39-56.55
	B	24	43	52.71	4.78	50.69-54.73	54.71	3.71	53.14-56.28	45.21	5.00	43.10-47.32
Non-sexually Offended	A	13	37	42.38	6.69	38.34-46.43	41.38	8.27	36.39-46.38	68.38	6.55	64.43-72.34
	B	22	63	49.64	8.17	46.01-53.26	49.64	8.62	45.82-53.46	52.36	7.12	49.21-55.52
Sexually Offended	A	19	38	37.11	6.48	33.98-40.23	35.74	5.74	32.97-38.50	61.05	9.32	56.56-65.55
	B	31	62	46.13	4.66	44.42-47.84	47.13	4.94	45.32-48.94	51.81	8.06	48.85-54.76

A one-way ANOVA showed that age did not significantly differentiate between profile A and profile B for males who had not offended, males who had non-sexually offended, or males who had sexually offended ($F=1.03$, $F=1.91$ and $F=.18$ respectively, $p>.05$). For Chi square analysis between different clusters across groups, in order to meet requirements of cross-tabulations, categories were collapsed into two classifications. Adversity was classified as (1) low-to-moderate exposure (scores of ≤ 3); (2) high-to-very high exposure (scores of ≥ 4), and educational ability became (1) below average; (2) average or above average. Educational ability did not significantly differ between profiles A and B for groups who had not offended, non-sexually offended or sexually offended ($\chi^2=2.46$; $\chi^2=1.29$ and $\chi^2=.76$ respectively, $p>.05$), neither did exposure to adversity ($\chi^2=.40$; $\chi^2=1.86$ and $\chi^2=1.44$ respectively, $p>.05$).

Summary of main findings

In summary, both offending groups had lower average scores for 'Mastery' and 'Relatedness', and higher scores for 'Reactivity'. Additionally, males who had offended sexually significantly differed to males who had not offended for 'Mastery', 'Relatedness' and 'Reactivity', and males who had offended non-sexually significantly differed to males who had not offended for 'Reactivity'. No significant differences in personal resiliency was found between the two groups who had offended, although when males who had both non-sexual and sexual offenses were excluded from the sexual offending sample, significant differences were found for 'Mastery'. The above findings for the original three groups of males remained significant after controlling for exposure to adversity, and also after controlling for ethnicity which was identified as a potentially confounding variable.

Exploratory investigation of resiliency profiles within the three groups, through cluster analysis, revealed that each group could be separated into two different profiles. One profile emerged for the non-offending group that was specific only to this group and was characterised by superior resiliency. One profile was fairly similar between the two offending groups, characterised by high vulnerability, and a separate profile was similar between all three groups characterised by average resiliency. It could be concluded that the majority (just over 50%) of males who had not offended, had non-sexually offended and had sexually offended, appeared to share similar qualities of personal resiliency. Adversity, educational ability and age, did not differ significantly between the profiles in any of the groups.

Discussion

The purpose of the current study was to identify similarities and differences in personal resilience between young males who had sexually offended, non-sexually offended and not offended, using the RSCA (Prince-Embury, 2007). 'Resiliency' was comprised of separate scores on three scales: 'Mastery', 'Relatedness' and 'Reactivity'. It was hypothesised that males who had offended would have significantly lower 'Mastery' and 'Relatedness', and significantly higher 'Reactivity', than males who had not offended, and that scores would not significantly differ between the two offending groups. It was expected that results would remain significant after controlling for adversity, thus showing that personal resiliency differentiated between groups. Finally the current study explored whether different resiliency profiles could be distinguished between the groups.

Findings revealed a more complicated picture than was initially predicted, and whilst in the main, support was found for the initial hypothesis that young people who had offended were less resilient than those who had not offended, the differences were not significant for two of the three constructs of personal resiliency in the non-sexual offending groups. In support of hypothesis 1, a significant difference in personal resiliency was demonstrated for each scale between young males who had sexually offended and young males who had not offended. However, an unexpected result was that males who had non-sexually offended only significantly differed to those who had not offended on the scale measuring the male's experience of, and difficulty regulating, upset feelings (i.e., Reactivity scale). No significant differences in personal resiliency were initially found between the two offending groups which supported hypothesis 2. However, when males who had committed both sexual and non-sexual offences were removed from the sexual offending sample, differences were found between these groups for the scale measuring their perception of personal competence, their ability to have a positive future and their flexibility to the experience of doing things well (i.e., Mastery scale).

Therefore, on closer inspection, hypothesis 1 and 2 were only partially supported. As predicted, in hypothesis 3, results remained significant after controlling for exposure to adversity. It is of note that exposure to adversity was a significant predictor of group membership and that models including both adversity and resiliency variables correctly classified participants in more than 70% of cases. Each group could be clustered into a further two categories that appeared to be differentiated by resiliency scores only, with no differences found between groups for exposure to adversity, age or educational ability. Both similarities and differences were found between groups regarding the clustering of

resiliency profiles, and a very distinct profile was identified for males who had not offended. Overall however, approximately 60% of participants from all groups demonstrated a profile generally resembling ‘average resiliency’.

Comparing scores for personal resiliency between groups

The findings that young males who had sexually offended are likely to be less optimistic, are less competent and are less flexible to the experience of doing things well (i.e., scored lower on the Mastery scale), and had a lower sense of connectedness to others (i.e., scored lower on the Relatedness scale) is supported by previous literature. For example, it was consistent with previous ‘mastery’ related findings that these males are more likely to have poor problem solving abilities (Prentky et al., 2000), a lack of self-sufficiency, low self-esteem and greater pessimism (Hunter & Figueredo, 2000; Katz, 2000). It is also consistent with previous ‘relatedness’ findings that sexually offending males tend to be socially isolated (Awad & Saunders, 1989; Marshall, 1989,1998), lack intimate relationships (Marshall, 1998; Powis, 2002) and have poor social and interpersonal skills (Katz, 1990; Knight & Prentky, 1993; Långström & Grann, 2000; Leon et al., 2008; Way, 2005). Additionally, the finding that young males in sexual and non-sexual offending groups were more likely to be emotionally reactive (i.e., sensitive, have greater difficulty regulating affect and have greater impairment from emotional upset, as measured by the Reactivity scale) than males who had not offended, could be explained by previous findings that they are more likely to be aggressive (Loeber & Hay, 1996; Loeber et al., 1991; Kavoussi et al., 1998; McLaren, 2000; Moeller, 2001; Rutter & Garnezy, 1983; Wieckowski et al., 1998), lack positive coping skills (Marsland & Hammersley, 2006), have poor emotional control (Patterson et al., 2000; Stoolmiller,

2001) or experience negative mood states (Richardson & Graham, 1997; Way & Spieker, 1997).

The unexpected finding, that 'Mastery' and 'Relatedness' scores did not significantly differ between males who had non-sexually offended and not offended, may be explained by limitations of the current methodology, these are discussed in greater detail below. This could include socially desirable responding by the non-sexual offending group, the committal of offences without being caught or failure to self report offending by the non-offending group, or might be indicative of a number of males who had not offended being likely to receive cautions or convictions for offences in the future. Alternatively, whilst males who had non-sexually offended were typically more likely to have slightly lower scores for these resilient resources than males who have not offended, as supported within the literature regarding their poorer achievement (Denno, 1990), lack of orientation towards future goals (Steinberg & Scott, 2003), poorer problem solving (Leadbeater et al., 1989) and poorer attachments, social support, and social skills (Bartol, 2006; Campbell & Harrington 2002; Denham et al., 2002; Loeber et al., 1996; Van Kammen & Farrington, 1991), they might also share many similarities, preventing differences from being significant. For example, self-esteem is an important part of resiliency (Daniel & Wassell, 2002) and in her preliminary analysis Prince-Embury (2007) found that self-concept, as measured by the Beck Youth Inventory-II (Beck, Beck, Jolly, & Steer, 2005) was highly and positively correlated with adolescent scores for 'Mastery' and 'Relatedness' ($r=.80$ and $.70$ respectively), however, in some studies self-esteem has not significantly differed between offending and non-offending groups (e.g., Baker & Ireland, 2007; McLoughlin, 2000).

Furthermore, it may be that individuals who have non-sexually offended should not be treated as one uniform group. It is possible that significant differences exist between different offending-types, and that factors prevalent in groups who committed some types of offences were more similar to the males who did not offend compared to those who had perpetrated other types of offences. For example, in a meta-analysis conducted by Jolliffe and Farrington (2004), there was some support that empathy might significantly differ between individuals who had violently and non-violently offended. Similarly Syverson and Romney (1985) found differences between these two groups regarding full scale IQ and verbal intelligence. In a study by Baker and Ireland (2007), groups who had not offended significantly differed from groups who had violently offended for executive functioning, but not with groups who had non-violently offended. It was not possible for the present study to differentiate results based on different types of offending due to the small sample size, although this could be an area for future research to explore.

The results that 'Relatedness' scores were lower, although not significantly different, for males who sexually offended compared to males who non-sexually offended, might be indicative of their greater social isolation and inferior interpersonal skills, alongside their similar difficulties with social incompetence, social problems and poor attachments (Seto & Lalumière, 2010). The similar scores between offending groups for their sense of relatedness is further supported by findings that young people who have sexually and non-sexually offended share characteristics regarding their perceived competence at developing peer relationships and approval (Butler & Seto, 2002; Ford & Linney, 1995). In the current study, males who had non-sexually offended, on average had a higher degree of emotional reactivity than other groups, although this

did not differ significantly to the sexual offending group. This may be indicative of the greater likelihood for males who have non-sexually offended to use substances (Seto & Lalumière, 2010). For example, problems with using substances have previously been associated with poor or maladaptive emotional regulation (Sher & Grekin, 2007; Tice, Bratslavsky, & Baumeister, 2001). Similarities in levels of 'Reactivity' between these offending groups adds weight to previous findings regarding their similar coping strategies (Spaccarelli et al., 1997), affective and internalising/externalising behaviours (van Wijk, Vreugdenhill, & Bullens, 2004) and conduct problems (Seto & Lalumière, 2010).

Whilst initially, no significant differences for personal resiliency were found between the two offending groups, further analysis revealed significant differences for 'Mastery'. In further analysis, the potential contamination of non-sexual offending behaviour within the sexual offending group was removed so that males who had exclusively sexually and non-sexually offended were compared. A typology for males who display harmful sexual behaviour based on 'specialists' (exclusive sexual offending) and 'generalists' (include both sexual and non-sexual offending) has been proposed within the adolescent literature (e.g., France & Hudson, 1993; Seto & Barbaree, 1997). Here, generalists are believed to share a greater number of characteristics with males who have non-sexually offended (Wolf, 2008). These typological distinctions have received some preliminary support (Butler & Seto, 2002; Chu & Thomas, 2010; Seto & Pullman, in press; Wolf, 2008), therefore providing justification for making this distinction in subsequent analysis. The finding that young males who had exclusively sexually offended had a significantly lower perceived sense of mastery than the non-sexually offending group, could be explained by Seto and Lalumière's (2010) findings that sex

offending groups tend to have a lower self-esteem compared to their non-sexual offending counterparts. Low self-esteem is likely to negatively impact on a youths report of their self competence, optimism for the future and flexibility to the experience of doing things well (see Karademas, 2006; Pajares, 2006; Scholz, Gutiérrez Doza, Sud, & Schwarzer, 2002; Schwarzer, Bäßler, Kwiatek, Schröder, & Zhang, 1997). In summary, in consideration of whether young people who have sexually offended are a distinct offending group, as put forward by van Wijk et al. (2006, 2007), it would appear from the current study that some males who have offended sexually have dissimilar resiliency from a non-sexually offending group regarding their perception of the personal resource 'Mastery'.

Adversity and personal resiliency

It has been proposed that personal resiliency is a normal part of development (Masten, 2001; Masten & Powell, 2003) and therefore can occur naturally, without exposure to prior adversity (Fergusson & Horwood, 2003; Luther & Cicchetti, 2000). However, the present study measured adversity because of its potential to confound results. For example, risk factors associated with general or sexual offending include prior abuse (Lee, Jackson, Patterson, & Ward, 2002; Romano & De Luca, 1996; Widom, 1989); family conflict, breakdown and dysfunction (Araji, 1997; Lee et al., 2002; Farrington, 1992); low income (West, 1982; West & Farrington, 1973) and disruption to education (Challen & Walton, 2004; Farrington, 2002; Maguin et al., 1995; West, 1982). In the current study, exposure to adversity significantly differed between groups, with males who had committed offences tending to have been exposed to a greater amount of adversity. The literature, which indicates that offending groups often have histories of

abuse, trauma and separation (Boswell, 1996; Creedon, 2005; Fonagy et al., 1997), provided support for this finding. It is of note that on average, the non-offending group experienced a moderate degree of adversity, however, within the present study, adversity was defined as a normal developmental process for adolescents, and as such low exposure included failure of an exam or the break-up of a romantic relationship. This being said, consistent with Masten's (2001) definition of resilience, males who had not offended had good outcomes (i.e., not previously being in trouble with the law) in spite of experiencing some level of threats to their adaptation or development.

In agreement with claims that adversity and risk factors, by themselves, do not fully explain why young people offend sexually or non-sexually (Gilgun, 1996, 2006; Werner & Smith, 1992), analyses demonstrated that even after controlling for adversity, scores on relevant resiliency scales continued to predict group membership (sexual verses no sexual offending for 'Mastery' and 'Relatedness'; and offending verses no offending for 'Reactivity'). The current finding that models utilising both adversity and resiliency factors correctly classified group membership for over 70% of participants, mirrored previous findings that resiliency can add to models of risk (Gilgun, 1999; McKnight & Booker-Loper, 2002).

Profiles of personal resiliency

The personal profiles found within the current study were compared to Prince-Embury and Steer's (2010) normative sample and Mowder and colleagues (2010) offending sample. However, unlike the latter study, profiles for resiliency sub-scales were not identified, instead only global scales were used, consistent with the analysis conducted by Prince-Embury and Steer (2010), and Kumar and colleagues (2010). Like

the three other studies that analysed resiliency profiles using the RSCA, the current study found that different profiles of personal resiliency were exhibited within each group. Within the current study there were two profiles for each group, which differed to Prince-Embury and Steer's (2010) identification of three profiles to represent their normative sample, and Mowder and colleagues' (2010) four profiles for their offending sample. It is likely that these differences are attributable to the current study having a considerably smaller sample size and using only male participants. Both Price-Embury and Steer (2010), and Mowder and colleagues (2010) found that young females, which accounted for between 50% and 76%, of their samples, respectively, tended to have higher levels of personal resilience than males. This made it difficult to directly compare profiles between these former studies and the current study.

In the present study, 43% of males who had not offended had a profile of 'above average resources/below average vulnerability' and therefore reported superior levels of personal resiliency. This cluster of males had similar, although slightly less, resiliency in comparison to the profile labelled 'high resiliency' in Prince-Embury and Steer's (2010) normative sample. From Mowder and colleagues (2010) sample of young people who had offended, their 'high vulnerability' cluster were similar to the 37% of males who had non-sexually offended in the current study and were classified using the profile 'below average resources/high vulnerability'. Finally, the most vulnerable group in the present research, which consisted of 38% of the sample of males who had sexually offended, were labelled 'low resources/high vulnerability', and most closely represented Mowder and colleagues' (2010) 'low resource vulnerability' group. Therefore, these distinct profiles that emerged through the current study were comparable to those from other studies using normative and offending groups.

Mirroring the findings of all three previous studies (Kumar, 2010; Mowder et al., 2010; Prince-Embury & Steer, 2010), one of the profiles for each group represented approximately average levels of personal resiliency. This non-offending group was called 'below average-to-average resources/average vulnerability' (57% of sample), this non-sexual offending group was classified 'average (upper) resources/average vulnerability' (63% of sample), and this sexual offending group was labelled 'average (lower) resources/average vulnerability' (62% of sample). As indicated by the profile descriptions, each group had subtle differences in their level of personal resiliency. Thus average resiliency was expressed slightly differently across the groups, with the two offending groups being most similar. The males who had sexually and non-sexually offended in this group, most closely represented the normative sample labelled 'average resiliency' in Prince-Embury and Steer's (2010) study, and Mowder and colleagues' (2010) 'average resiliency and vulnerability' cluster. The males who had not offended in this group appeared well placed in between Prince-Embury and Steer's (2010) 'average resiliency' and 'low resource vulnerability' profiles for their normative sample.

The distinct profiles that emerged within the current study followed the expected pattern, whereby males in the non-offending group had superior resilience, males in the non-sexual offending group had low levels of resilience and males in the sexual offending group were most vulnerable. However, these profiles represented the minority of the sample (between 37 and 42%). In explanation of why they found average resiliency in their clinical sample and low resource vulnerability in their normative sample, Prince-Embury and Steer (2010) suggested that mild symptoms, or lack of insight, might explain the former result; and reduced access to services, and poor detection or identification, may explain the latter result. This could similarly be hypothesised for the present study.

Average personal resiliency in offending groups could be indicative of less frequent and less serious offending behaviour or a lack of insight into their difficulties. Alternatively, as a dynamic process (Luthar et al., 2000; Olsson et al., 2003; Philippe et al., 2011) it might be that the time lapse between offending and completing the resiliency questionnaire could account for changes to resilient profiles, especially since the criminal justice system does not always immediately process cases. For example, it may be that as a result of the identification of and consequences enforced due to offending behaviours some individuals became more attuned and/or motivated to control emotional reactivity, and experienced more support from their network which in turn impacted on their sense of mastery and relatedness.

A further explanation could be that these young males had resilient resources at the time of offending, but in the context in which they offended they were prevented or unmotivated to draw on these resources due to other factors or barriers. This latter explanation has coherence with the assumption that offending groups may not be able to access the resources they need to overcome risks (Gilgun et al., 2000), and propositions within the Good Lives Model (Ward & Gannon, 2006; Ward & Stewart, 2003) of internal and external barriers preventing the attainment of important goals, or the meeting of priority needs, through appropriate and non-offending means. Loeber and Farrington (2000) found in their longitudinal study that, for some, minor offending can be underpinned by universal emotions, such as a desire for excitement, which can be part of the ordinary developmental and learning experience through trial and error. For such young people, it would not necessarily be expected that they had significantly deficient levels of personal resiliency.

The profile 'below average-to-average resources/average vulnerability' for the non-offending group, might be suggestive of a need for further assessments of vulnerability and difficulties, in that resources were bordering 'below average'. This notion was similarly put forward by Prince-Embury and Steer (2010) for their 'low resource vulnerability' cluster. Screening may help prevent this group from offending or having general difficulties in the future. Alternative explanations could be that this group have offended previously but have not been caught or honest about this, or that other protective factors not measured by the RSCA additionally account for their positive outcome of not offending. It is of note, however, that despite this cluster perceiving themselves as having lower resources compared to the average resiliency profiles for the offending groups, when their 'Reactivity' scores were also considered, their overall scale scores did not reflect particular vulnerability.

Limitations of the study and recommendations for future research

The current study utilised a sample of convenience. Harvey and Delfabbro (2004) criticise the use of opportunity samples in this type of research because they do not necessarily represent the population of interest. The size of the current sample exceeded estimates derived through priori power analysis, of what was deemed sufficient for tests using a MANOVA. Furthermore, for regression analysis, sample sizes were greater than the 10 to 15 cases per predictor that is commonly advocated (Field, 2005). However, for cluster analysis, whilst there is no accepted rule of thumb for the size of samples (Dolnicar, 2002; Mooi & Sarstedt, 2011), it is likely that the use of larger samples for each group would have resulted in more clusters and more valid and optimal profiles being identified. In the three other known studies using cluster analytic techniques with

the RSCA, the minimum number of participants in a group was 100 (Kumar et al., 2010), whereas the current analysis used groups with between 35 and 56 participants. Therefore, caution should be exercised when interpreting different profiles of personal resiliency for the different groups, due to the small numbers within each sample. Future research should attempt to replicate the cluster analysis using larger sample sizes.

In some analyses in the current study, males who had sexually offended were treated as a homogenous population, despite some indication from prior studies that it could be helpful to separate them into males who have exclusively offended sexually (specialists) and males whose sexual offence is one of many offences they have committed (generalists). Similarly, there is some suggestion from previous research that it might be unhelpful to put all non-sexual offenders into one category, and instead classifications such as violent versus non-violent offences have been used. If future studies could access sufficient sample sizes, it may be useful to differentiate and break down non-sexual and sexual offending groups further, based on types or diversity of offending.

The current study failed to match samples or use randomisation, which is likely to have limited the validity and generalisability of findings. For example, there were significant discrepancies between the number of white and non-white participants in offending and non-offending groups. However, a strength of the current study was that it did attempt to control for potentially confounding variables, identified through a literature search or through significant diversity in demographic variables between the three groups. Whilst in the present study the ethnic composition between groups was significantly different, Prince-Embury (2009) found high levels of internal consistency for the RSCA Scales across different racial/ethnic categories (see Chapter Three). Additionally, using

regression analysis, results regarding group differences for scale scores were shown to remain significant after controlling for ethnicity. Variation in ages between groups was resolved through using T-scores, which have been adjusted to account for age differences in personal resiliency (see Chapter Three). Furthermore, educational ability was measured in the present study because IQ, general cognitive abilities and academic performance had been identified within the literature as influential to resiliency (Block & Kremen, 1996; Masten, 2001; Tiet et al., 1998) and offending behaviour (Ferrara & McDonald, 1996; Guerra et al., 1995 Koenen et al., 2006; Snowling et al., 2000; Veneziano & Veneziano, 2002). The failure of the current study to show significant differences between groups regarding educational ability might be explained by these factors genuinely not differing between the groups. Alternatively, it might be that as a result of the classification and subjective measurement of educational ability, whereby professionals rated participants as 'below average', 'average', and 'above average' on the basis of cognitive and academic information, these factors were not appropriately operationalised or captured. This would have made it possible for cognitive functioning to have confounded results. In recognition of this limitation, future studies should use more objective measures of cognitive functioning, for example, the Wechsler Adult Intelligence Scale (Wechsler, 1981; Weschler, 1997; Weschler, 2008) and Wechsler Intelligence Scale for Children (Weschler, 1991; Weschler, 2003). However this would have considerable resource implications to a study, and as such was beyond the scope of the current research.

A constraint of using the RSCA T-scores was that they were developed based on an American sample (Prince-Embury, 2007) and therefore are not necessarily applicable or appropriate to use with a UK sample. However, this concern was lessened by the fact

that T-scores were consistently used for the entire sample, and therefore would be expected to have impacted similarly on each of the groups used in the present study. The RSCA only focuses on the internal mechanisms of personal resiliency and appears to ignore the measurement of external factors that are similarly associated with resilience, such as the environment and family (Garmezy, 1991; Masten & Obradović, 2006). Prince-Embury (2007) answers to this limitation by suggesting that how the young person experiences these environmental factors are likely to impact on their personal resiliency, as measured by the RSCA. A further limitation was that the adversity scale was not a standardised scale and therefore had not been tested in relation to the robustness of all its' psychometric properties. Therefore whilst some attempts had been made to encourage and test for the reliability of scores between raters, and the face validity of the scale, assurances can not be given regarding other important qualities such as its concurrent validity and internal consistency.

Furthermore, both the RSCA and the adversity scale only measured the rater's perception of personal resiliency and exposure to adversity, which relied on a subjective assessment dependent on their level of insight and knowledge. The study also suffered from the general limitations regarding use of psychometric questionnaires, that is, use of predetermined responses and scale scores limiting the richness of information regarding, in this case, the individual experiences of resiliency and adversity (Robson, 1993). Furthermore, without a built-in social desirability scale, there was no formal screening for the honesty or sincerity of responses on the RSCA. Consequently, results could have been confounded by distorted responding. It is recommended that future research could improve on the present study by additionally administering to participants a measure of social desirability. However, Seto and Lalumière's (2010) findings, that no significant

differences existed for impression management between sexual and non-sexual offending groups, shows promise regarding the interpretation of the current results. This being said, their findings regarding young people who had sexually offended having significantly lower self-esteem, could impact on how this group completed the RSCA as a whole, reinforcing that this study is limited to the perception the young males had about their personal resilience, rather than an objective measure of their actual resiliency.

Finally, the present study relied on examining significant differences between groups that were differentiated on the basis of offending behaviour. In the main, whether self-reported or not, offending behaviour was defined through formal proceedings with the criminal justice system. Only a small minority of males who had sexually offended did not go through this route, but nonetheless were referred by professionals for specialist treatment due to concerns regarding the seriousness of their behaviour. The large reliance on official proceedings to detect offending, through a caution or conviction, rather than using actual antisocial behaviours to specifically distinguish groups (as done in the study of Loeber, Pardini, Stouthamer-Loeber, & Raine, 2007; Loeber, Stouthamer-Loeber, Van Kammen, & Farrington, 1991; Stouthamer-Loeber et al., 2004), is likely to introduce bias regarding offending that goes unreported and undetected (Thornberry & Krohn, 2000; 2003). In a study by Farrington and colleagues (2006), there were 3.2 self-reported offenders, where classification did not solely rely on formal prosecutions, for every one offender based on official cautions or convictions. Therefore, because of how offending has been defined within the present study, there may be some males within the non-offending group who in real terms have offended either sexually or non-sexually although have not received a caution or conviction, and similarly there might be some males included within the non-sex offending group who have displayed sexually harmful

behaviour. This would be likely to contaminate results, because the clear distinction that exists in the study between these groups would not be real. Furthermore, the distinction between offending and non-offending groups has been questioned by Soothill and Francis (2009), in that all individuals could be at risk of being convicted for offending in the future. In light of these limitations, future studies could seek to use self-reports of actual anti-social or offending behaviours to define group membership (although it should be noted that this introduces its own set of limitations). It would also be interesting for a longitudinal research study to be undertaken, to assess resiliency and offending behaviours at regular intervals and determine the extent that offending groups with average resiliency re-offend compared to those with lower levels of personal resiliency, and examine the extent that males who have not offended but have lower personal resources tend to offend in the future.

Implications and recommendations

In consideration of the enormous cost to society of youth crime, including harmful sexual behaviours, it is to society's benefit that interventions reduce offending and offer effective rehabilitation. The overall results of the current study highlight some merit in facilitating greater resiliency and reducing vulnerability within rehabilitative work for youngsters who have committed non-sexual and sexual offences. In general, the findings demonstrate a value of undertaking interventions with males who have sexually offended, to build on and improve their perception of self-mastery, increase their sense of relatedness, and reduce their vulnerability to upset feelings. Additionally, the results support working with males who have non-sexually offended to address their level of sensitivity, impairment and recovery after feeling emotionally aroused. This work can be

facilitated informally within communities, as well as being undertaken more formally by public services, such as schools and social care. For example, significant others and community groups could help to positively develop the young person's self-efficacy and sense of belonging.

The findings of this study would not support a 'one size fits all' approach to improving resiliency for all young people who have offended. Instead, they highlight the need to assess the particular aspects of resilience that are important to foster within individuals. For example, not all males within each offending group demonstrated the same profile of personal resiliency. Whilst some males reported low resources and high vulnerability, others endorsed having average levels of personal resiliency. For this latter group, it might be that they require fewer resources to rehabilitate them, or that resources should be concentrated on targeting risk management and triggers to offending, rather than necessarily developing personal resiliency.

The present study additionally reinforces the value of using models of resiliency, alongside risk factors, to provide more accurate predictions of offending. This finding has support from the general literature (e.g., McKnight & Booker-Loper, 2002; Gilgun, 1999) and also supported the results of the systematic literature review in Chapter Two regarding re-offending. The study therefore highlights the potential utility of schools assessing the personal resiliency of young people who have been exposed to adversity but have not offended, as a mechanism for screening possible vulnerability, with the intention of building on resiliency to prevent future offending or problematic behaviour.

The findings of the current study support a move away from the traditional exclusive focus on risks (see Rogers, 2000), to additionally incorporate a focus of resiliency and protective factors into practice. Through building personal resiliency, and

thus rehabilitating through goal approach, as opposed to goal avoidance, it is likely to be more motivating and positive for individuals receiving the treatment (see Mann, Webster, Schofield, & Marshall, 2004; Wylie & Griffin, in press). Furthermore, through addressing some factors of personal resiliency, such as building a sense of relatedness, or self-esteem for sexual offending groups, or enhancing emotional regulation for both sexual offending and non-offending groups, it is likely to simultaneously impact on criminogenic needs (see Andrews, Bonta, & Hoge, 1990; Bonta & Andrews, 2007 for explanation of criminogenic needs). This argument is similar within the Good Lives Model (Ward & Gannon, 2006; Ward & Stewart, 2003), whereby the promotion of goals, through increasing the individuals capacity and reducing barriers to meeting their needs in pro-social ways, also attends to dynamic risk factors (see Ward & Gannon, 2006; Ward, Vess, Collie, & Gannon, 2006).

Emphasising the dynamic nature of resilience, Hackett (2006) reported, “young people who have sexually abused may have demonstrated non-resilient outcomes...to date, but this does not mean they are unable to respond if the circumstances are right” (p113). According to Obradović, Burt and Masten (2006), the transition to early adulthood is a time where the most significant changes in pathways to adaptation are evident. Therefore, any treatment that is focussed on developing resiliency might be optimal during this period of emerging adulthood, which is seen by Obradović and colleagues as a ‘window of both opportunity and vulnerability’ (p. 343). As advocated by Gilgun (2004) the process of accomplishing something can serve as a protective factor, and therefore treatment success in itself, especially through a strengths-based approach, is likely to provide this sense of accomplishment and have positive implications regarding rehabilitation.

The current findings provide support for there being both similarities and differences between males who have sexually and non-sexually offended. However, regarding the treatment of these groups, it is indicated that different approaches are required to address personal resiliency. Whilst it has emerged that both groups might need help regarding their levels of emotional reactivity, the sexual offending group, overall, would additionally appear to benefit from interventions to enhance their sense of optimism, competence, flexibility to the experience of doing things well, and sense of connectedness to others. This would be more compatible with the arguments that unique assessments and interventions are necessary for young people who have displayed sexually harmful behaviours, rather than the perspective that sexual and non-sexual offending groups can be treated as a one homogeneous population (for more details on this debate see Pullman & Seto, 2012).

Regarding future research, it is recommended that studies should build on the current research through periodically undertaking follow-ups to re-test levels of personal resiliency and offending behaviour, thus exploring how resiliency at different developmental stages relates to desistance, re-offending and the initiation of offending. Future research should seek to use larger samples, differentiate between ‘specialists’ and ‘generalists’ in the sexual offending sample, delineate non-sexual offending, include measures to detect response-bias, and potentially use improved measures or classifications of educational ability, adversity and offending behaviour. It is hoped that further investigation will lead to a better understanding of the role of personal resiliency in offending behaviour, in addition to improving knowledge about the treatment needs of youths who have sexually and non-sexually offended. Additionally, more research in this

area could potentially provide an evidence base for the utility of enhancing resilience and protective factors to address offending behaviour.

Conclusions

The findings of the current study suggest that males who have not offended have greater overall personal resiliency than males who have offended sexually, and have less emotional vulnerability when upset, compared to males who have offended non-sexually. This is not surprising given the non-resilient outcome of displaying offending behaviour. However, the findings also suggest that personal resilience is not the same for all individuals in each group. Instead two different profiles of resilience could be found within the groups, one where levels of personal resiliency were more promising, and one with lower personal resources and/or greater levels of vulnerability. The findings of the current research do not suggest that interventions need to exclusively shift from a risk reduction framework to a resilience-promotion model in order to prevent further offending. However they do offer support for adopting interventions to enhance aspects of personal resiliency in young people who have offended and indicate that such interventions would need to be assessment-led rather than applied generically to all groups who have offended.

CHAPTER FIVE

DISCUSSION OF THESIS

Summary of main findings

The aim of this thesis was to address the current paucity in knowledge and research on the relevance of protective factors and resilience to youth offending and desistance. In Chapter One of the current thesis, the value of investigating protective factors and resiliency for youth offending populations was highlighted through a brief review of the literature. This was upheld through contemporary beliefs that exclusively focussing on deficits and pathology can be problematic for the individual to whom the interventions are ‘done to’ and for the overall outcomes of rehabilitation. The potential advantages of a more positive approach with this group was explored, this included providing hope to practitioners, motivation to change for offenders and improving outcomes. Furthermore, it was recognised that positive factors and desistance are not studied enough within the discipline of forensic psychology and, as such, it was conceived that the current thesis could make a distinctive and important contribution to the study of youth offending.

Chapter Two, through a systematic review of the literature, found that protective factors could be instrumental in helping young offenders to desist from crime. These predominantly included factors involved in social bonding and supportive relationships; structure, discipline and supervision; healthy beliefs and standards of behaviour; and positive personal characteristics. The findings indicated that general family, school, and peer factors may also have a protective influence on preventing young offenders from continuing with criminal careers, as well as opportunities for employment in early adulthood. Some protective factors had relevance to desistance from sexual, violent and general offences, although in the main the factors studied appeared to perform better for desistance from crime in general, as opposed to desistance from specific types of crime.

Some protective factors were defined as part of the same underlying construct as risk factors and some were independent to risk factors. It would appear that protective factors might interact with risk factors to reduce the risk of re-offending, however this finding was inconclusive and based on a small number of studies. Regardless of the specific relationship between these two sets of factors, there was a general consensus that the models most predictive of re-offending and desistance tended to be comprised of both risk and protective factors. This indicated that the inclusion of protective factors can add a real value to risk assessments.

Chapter Three provided a critique of the Resiliency Scales for Children and Adolescents (RSCA: Prince-Embury, 2007), used to assess the personal resiliency of children and young people, and comprised of scales measuring ‘mastery’, ‘relatedness’ and ‘emotional reactivity’. Strengths of the RSCA included: its ability to respond to the dynamic nature of resilience, its ease of use, its objectivity, its internal and test-retest reliability, support for its content and construct analysis, and its theoretical underpinnings. However, limitations were also identified, for example the absence of the predictive validity of the RSCA and the potentially limited generalisability of its norms, which were based on USA populations. However, with the absence of a ‘gold standard’ to measure resilience, the RSCA provides a useful tool, that enables practitioners and researchers to focus on the positive attributes of children and young people, rather than exclusively measuring their deficits. As such, the RSCA could provide a real benefit to the field of forensic psychology.

Chapter Four demonstrated that the RSCA could usefully be used with youth offending populations. Through this original piece of research, the personal resiliency of males who had sexually offended, non-sexually offended and not offended was compared.

The findings indicated that personal resiliency differed between these groups, with controls having significantly superior levels of personal resiliency than males who had sexually offended in all three measured domains, and having significantly greater resiliency than males who had non-sexually offended for one domain, which related to their degree of emotional reactivity. Furthermore, males who had non-sexually offended, compared to males who had exclusively committed a sexual offence, had significantly better optimism, self-efficacy and flexibility to the experience of doing things well, when these constructs were measured collectively (i.e., ‘mastery’). These findings indicated that personal resiliency could be implicated within the pathways to pro-social behaviour. It also indicated that there might be different pathways to non-sexual and sexual offending, with the sexually offending group generally requiring help to increase their perceived levels of personal mastery and relatedness to others, and both offending groups generally needing assistance with decreasing their perceived levels of emotional reactivity.

Preliminary analysis comparing personal resiliency within each group through clustering procedures found a cluster representative of approximately average levels of personal resiliency could be identified for all three groups. Therefore some young people within the offending groups had personal resources that might divert them away from further offending or, at a minimum, which could be capitalised on within treatment. Additionally a second cluster was identified that typified superior levels of personal resiliency for the non-offending group and high levels of vulnerability for both offending groups. If resources are to be targeted, as in the ‘what works’ movement, these latter groups would appear to benefit from a greater degree of interventions. Finally, this research found that measuring personal resiliency alongside the risk factor exposure to

adversity, added value to the prediction of offending. Therefore consistent with the findings of the systematic review, using both risk and protective factors provided the best assessment model, rather than using either of these factors in isolation.

As demonstrated in this chapter, on the whole the overall aim of the thesis was achieved, despite some limitations which are summarised below. Furthermore, as illustrated in the summary of findings above, the following core objectives were accomplished: investigation of what protective factors were related to desistance, the identification and evaluation of a psychometric measure to assess personal resiliency, and empirical examination of the extent offending and non-offending groups differed regarding their personal resiliency. The relationship between risk and protective factors was additionally explored, however due to the limited number of relevant studies examining this, and the inconsistencies between prior studies on how protective factors were defined and measured, no clear and definitive conclusions could be made on this matter. However, inferences were made, in that greater support was demonstrated for an interactive relationship, and both the systematic review and empirical research provided confirmation for the improved predictive validity of risk assessments when protective factors or personal resiliency was included.

Based on the collective findings of the current thesis, a preliminary model of youth offending/re-offending has been proposed in Figure 5.1. However, it is important to note that this model is unlikely to have included all facets relevant to youth offending and re-offending, for example other factors such as risk and triggers have not been explored in detail within the current thesis. Therefore this model should be revised in light of the key findings from risk-based research, and should be developed as knowledge

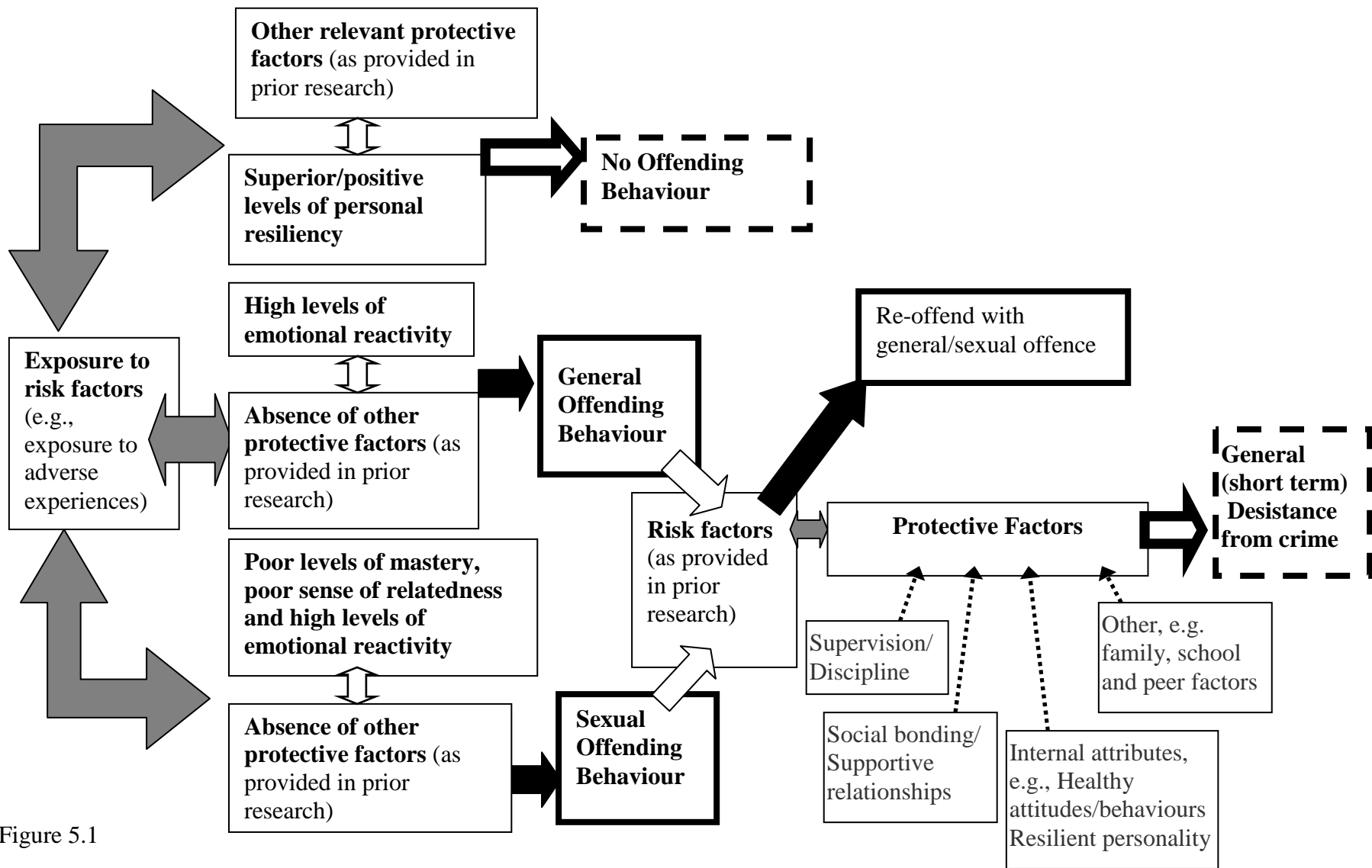


Figure 5.1

Preliminary model of youth offending/re-offending

emerges from new research regarding different protective factors and their specific interaction with different risk factors.

Limitations and recommendations for theory and research

It is not the intention to repeat all the limitations and recommendations identified and cited within each chapter. Instead this section will focus on the key limitations and recommendations that are relevant to the thesis in general.

The development of different theoretical models to explain resiliency has resulted in the use of inconsistent terminology to explain similar concepts (Jimerson et al., 2004). Consequently, it is difficult to link operational definitions to theoretical constructs (Haines & Case, 2008). Therefore, the ability of the current thesis to add to the deficient knowledge and research base may be limited by the way ‘protective factors’ and ‘resiliency’ have been defined, which will inevitably differ to definitions used in some theoretical models and empirical studies. As such, it could be difficult to synthesise the current findings with existing models in a coherent way. For example the RSCA is focused on measuring resiliency within the individual, which somewhat neglects those factors external to the individual that are believed by many to underpin ‘resiliency’. Therefore a recommendation for the field in general, is to seek to rethink and revise the current terminology and measurement of concepts such as resiliency and protective factors, to make it more uniform and consistent across different models, disciplines and research studies.

The measurement of ‘offending’ and ‘re-offending’ is also problematic. It has been proposed that whilst the vast majority of young people (up to 80 or 90%) admit to

behaviours that would constitute ‘offending’, only 20% are officially recorded as such (Platt, 2009). Inevitably, studies into offending behaviours are challenging, especially when definitions are predominantly based on official detection through a criminal justice route, as in the present research study on resiliency. Similarly the heavy reliance on official data to define re-offending was problematic within the systematic review. Not only was this measure likely to underestimate actual re-offending (Barbaree & Marshall, 1990; Laub, 1997), it did not reflect a holistic measure of behaviour change, it neglected potential shifts in positive identity, and it did not capture long-term desistance (McNeill, 2012). As such, both the research and systematic review make conclusions and recommendations based on flawed measurements of offending behaviour. Nonetheless, these measurements have commonly been used in research because of the impracticalities and questionable validity associated with other measures, such as self-report or for example definitions inclusive of occasional fighting, which is considered part of normal development for adolescents (Maccoby, 1986; Pellis, & Pellis, 2007; Smith-Khuri et al., 2004). Additionally, using these measures, the thesis extends knowledge of the relevance of protective factors and personal resiliency to groups that are, or have had, some formal involvement with the criminal justice system, and it is these individuals that usually involve the greater costs to society, at least in financial terms. However, it would be of interest for future research to explore personal resiliency and protective factors using more liberal and holistic measures to define behaviour and behaviour change. It would also be recommended that such research should compare similarities and differences in risk and positive factors between anti-social groups who are, and who are not, officially detected and processed through the criminal justice system.

Finally, a further limitation is that the current thesis assumes that offenders can be

studied as a group, based on the broad type of offences that they have committed, for example 'general', 'sexual' and sometimes 'violent' offence groups. However, current thinking is that offenders, including sexual and violent offenders, are not homogenous groups, but instead within these groups, individuals or sub-groups demonstrate diversity in relation to a number of variables (Evans, 2003; Fisher & Beech, 2004; Kemshall, 2001; Palermo, 2005; Palmer, 1998; van Wijk et al., 2006). The difference and value of comparing a non-sexually offending group with young people who had exclusively committed a sexual offence (i.e., specialists), rather than a sexually offending group inclusive also of non-sexual offending (i.e., generalists), was demonstrated in the study on personal resiliency. In response, it is recommended that future research should seek to identify and compare protective factors and personal resiliency for those different sub-groups and typologies of offenders that are believed to represent homogenous rather than heterogeneous populations, and as such findings should have greater validity.

Practical implications

The majority of research that exists studying juvenile sex offenders (JSOs) is dominated by the predilection that identifying risk factors associated with recidivism will benefit both the JSOs and treatment providers. (Efta-Breitbach & Freeman, 2004, p. 257)

Whilst the current thesis does not reject this notion, it does support the additional inclusion of protective factors and resiliency to maximise the assessment and rehabilitation of young people who have offended both sexually and non-sexually. Therefore positive factors, such as personal resiliency; supportive relationships;

boundaries and discipline, which appear to play a valuable role in the prevention of offending and/or re-offending, need to be given greater importance within forensic psychology, both in terms of research and practice. The findings of this thesis support the potential practical and theoretical utility of rehabilitation models that are rooted in positive psychology, such as the Good Lives Model. Additionally, as indicated within the systematic review, forensic psychology could benefit from a greater emphasis on desistance, rather than exclusively examining less positive behaviours such as re-offending.

We know from research, that many young people who have offended either generally or sexually will not commit general and/or sexual offences in adulthood (Blumstein & Cohen, 1987; Wilcox et al., 2004). Therefore, an important part of the assessment process is to predict who will and who will not re-offend. The current thesis provides support that the evaluation of protective factors and personal resiliency can enhance the predictive validity of assessment tools. Therefore it is recommended that risk assessments for these youngsters should continue to incorporate relevant positive factors, for example, as attempted within the SAVRY and AIM2 assessment models, rather than exclusively evaluating risks. As a result of being more holistic, rather than exclusively deficit orientated, it is anticipated that such assessments could encourage a sense of hope (Benard, 2006) and would be rooted in ethically-based practice (Gilgun, Keskinen, Jones, Marti, & Rice, 1999). For example, as discussed in Chapter One, through exclusively focussing on risks, young people can become categorised and publicly stigmatised according to their perceived dangerousness, with labels that are often difficult to modify and change (Franklin, 2008). Wakefield (2006) points out that such labels may prevent individuals from accessing employment and opportunities and therefore are likely to be

counterproductive to starting a new non-criminal life. Instead, the assessment of positive factors can show promise of change and mitigate against labels of 'high risk'.

Other important practical implications of assessing positive factors, such as personal resiliency and supportive relationships is that it could encourage strengths-based interventions, such as developing personal and social competencies, which should reinforce the positive appraisal of clients (Gilgun et al., 1999). It is therefore likely that assessment and treatment based on positive factors will motivate and empower young people to change, rather than feel weighed down by their problems as is emphasised through a risk focussed assessment (Jimerson et al., 2004). It is also likely that such assessments will seek to focus treatment on how the individual can correct their behaviours and develop in healthy ways through approaching goals, rather than emphasising the avoidance of behaviours, which often is sought as a consequence of risk-based assessments (Ward & Gannon, 2006). Hackett (2006) distinguished between a 'risk reduction' and 'resilience development' assessment framework. He noted that whereas both can meet the same objective of preventing further abuse, a 'risk reduction' approach will lead to a the emphasis of deficits and a resilience-based assessment will focus on competences, and as such will encourage the young person and their family to be active participants in identifying goals.

In light of findings that social bonding, supportive relationships, structure, discipline and supervision could be key to helping young people to desist from future offences, it is important that practitioners consider the supportive resources within the adolescent's environment and social context, in addition to the adolescents own personal strengths. This could have implications for transition packages for young offenders when they leave care or custodial settings. For example, if society and criminal justice

organisations want to truly rehabilitate offenders, then it might be important to not only provide interventions to build the young persons own internal resources, such as personal resiliency, but also to place them within healthy environments and develop their external resources, such as peer, family and community support, through work with their network and communities. The present thesis highlights the need for more empirical studies to investigate new protective factors, which could be important for practitioners to address in order to encourage the prevention and desistance from crime.

Whilst the current thesis supports a greater emphasis on positive factors in the assessment and rehabilitation of young offenders, it does not advocate for doing this at the expense of considering risks. Case (2006) claims this would be “throwing the metaphorical baby out with the bathwater” (p. 175), and Hackett (2006) warns that to focus on strengths and overlook risks would not be ethical and would be unsafe. The findings within this thesis reinforce the importance of both of these concepts, rather than the significance of one above the other.

Conclusion

Some people may be uncomfortable using terms such as ‘resiliency’, ‘protective factors’, ‘positive wellbeing’ and ‘good lives’ to relate to young offenders. However, particularly ‘risk averse’ societies and attitudes, whereby offenders become isolated and lack opportunities because of their perceived risk, are believed to increase the likelihood of re-offending (Erooga, 2008; Ward, 2007). It is likely that addressing risk and simultaneously promoting resilience and positive factors, to protect against future anti-social behaviours, will be most effective at reducing crime and protecting the public. Whilst the effectiveness of outcomes for such approaches have not yet been evidenced,

the current thesis supports the value of evaluating personal resiliency to help inform rehabilitative interventions, and of including protective factors within assessments of re-offending and desistance. Furthermore, the findings from the current thesis indicate that forensic psychology should better embrace the study of desistance and resilience, so as to provide a better understanding of the relationship between risk and resilience, and how resilience and protective processes can be maximised in order to reduce risk.

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APPENDICES

Appendix 1: Details of professionals contacted via email

1.1: Professionals contacted via email to explore whether there were additional relevant publications

1. **Identify the main components of the system.** The system consists of a **client** and a **server**. The client is responsible for sending requests to the server, and the server is responsible for processing these requests and returning responses.

Please Note: All professionals responded to my correspondence

Sample email sent to professionals:

To Dr _____,

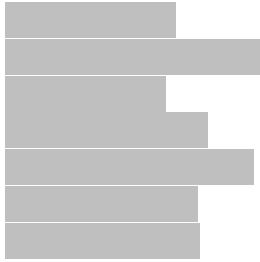
I am currently undertaking a Doctorate in forensic Psychology at the University of Birmingham, England and work as a senior clinical practitioner undertaking therapy with young people who have displayed sexually harmful behaviour.

As part of my thesis I am conducting a systematic literature review on protective factors which help young offenders to desist from re-offending. As part of my systematic search I came across your *articles/research* _____. I am emailing you, as I have identified that you are an expert in this field and wondered whether you may have any articles or studies, either published or unpublished, that you would be so kind as to forward me. I am hoping to include all relevant research, fitting my inclusion criteria, on this topic. If this is possible, I would be very grateful.

Kind regards,

Helen Griffin

1.2: Professionals contacted via email to request copies of unpublished studies



Sample email sent to professionals:

To Dr _____

I am currently undertaking a Doctorate in forensic psychology at the University of Birmingham, England and work as a senior clinical practitioner undertaking therapy with young people who have displayed sexually harmful behaviour.

As part of my thesis I am conducting a systematic literature review on protective factors which help young people to desist from re-offending. As part of my systematic search I came across your *dissertation/ research paper entitled* _____. It would appear from what I have read regarding this study that this research could be very important to consider in my review. I am hoping to include all available information on this topic.

I am emailing you to see if you would be so kind as to forward me the details of this study. If this is possible, I would be very grateful.

Kind regards,

Helen Griffin

Appendix 2: Details of literature sources, search strategies, search terms and syntax used in the current systematic review

2.1 *Cochrane Library Search*

Conducted on 22nd January 2012

#1	<u>(adolescen*):ti,ab,kw or (youth*):ti,ab,kw or (young*):ti,ab,kw or (teen*):ti,ab,kw or (child*):ti,ab,kw or (minors):ti,ab,kw or (boys):ti,ab,kw or (girls):ti,ab,kw or (juvenile*):ti,ab,kw, from 1990 to 2012</u>	110885
#2	<u>(prison*):ti,ab,kw or (lawbreakers):ti,ab,kw or (offen*):ti,ab,kw or (delinquen*):ti,ab,kw or (crim*):ti,ab,kw or (perpetrator*):ti,ab,kw or (convicts):ti,ab,kw, from 1990 to 2012</u>	1223
#3	<u>(reilen*):ti,ab,kw or ("Protective factor*"):ti,ab,kw or (moderat* NEAR/3 risk):ti,ab,kw or (resource*):ti,ab,kw or (strengths):ti,ab,kw or (assets):ti,ab,kw, from 1990 to 2012</u>	14062
#4	<u>(desist*):ti,ab,kw or ("subsequent offen*"):ti,ab,kw or ("subsequent crim*"):ti,ab,kw or ("repeat offen*"):ti,ab,kw or ("repeat crim*"):ti,ab,kw or ("serial offen*"):ti,ab,kw or ("persistent offen*"):ti,ab,kw or ("serial crim*"):ti,ab,kw or (cease NEAR/3 offen*):ti,ab,kw or (cease NEAR/3 crim*):ti,ab,kw or (stop NEAR/3 offen*):ti,ab,kw or (stop NEAR/3 crim*):ti,ab,kw or (reoffen*):ti,ab,kw or (re-offen*):ti,ab,kw or (recid*):ti,ab,kw, from 1990 to 2012</u>	204
#4	<u>(#1 AND #2 AND #3 AND #4), from 1990 to 2012</u> (Limits: Date 1990-2012)	2

2 Clinical Trials

2 Results

2.2 *Web of Science Search*

Conducted on 22nd January 2012

Topic=((youth*) OR (adolescent*) OR (young*) OR (teen*) OR (juvenile*) OR (child*) OR (minors) OR (boys) OR (girls)) AND Topic=((offen*) OR (delinquen*) OR (crim*) OR (prison*) OR (convicts) OR (lawbreakers) OR (perpetrator*)) AND Topic=((("Protective factor*") OR (strengths) OR (resilien*) OR (assets) OR ("resource*") OR (moderat* NEAR/3 risk)) AND Topic=((desist*) OR (reoffen*) OR (re-offen*) OR (recid*) OR ("repeat offen*") OR ("repeat crim*") OR ("subsequent offen*") OR ("subsequent crim*") OR ("serial offen*") OR ("serial crim*") OR

("persistent offen*") OR (cease NEAR/3 offen*) OR (cease NEAR/3 crim*) OR (stop NEAR/3 offen*) or (stop NEAR/3 crim*))

Timespan=1990-2012. Databases=SCI-EXPANDED, SSCI, A&HCI.

Lemmatization=Off

86 Results

Limits:

Document Type: Exclude proceedings paper, book chapter, editorial, review =79

Language = English: 77 Results

77 Results

2.3 *PsycARTICLES Search (OVID) Full Text*

Conducted on 22nd January 2012

1	adolescen\$.ab,hw,id,po,sh,tc,ti.	4518
2	young\$.ab,hw,id,po,sh,tc,ti.	6342
3	teen\$.ab,hw,id,po,sh,tc,ti.	253
4	boys.ab,hw,id,po,sh,tc,ti.	2460
5	girls.ab,hw,id,po,sh,tc,ti.	2146
6	youth\$.ab,hw,id,po,sh,tc,ti.	1461
7	offen\$.ab,hw,id,po,sh,tc,ti.	830
8	delinquen\$.ab,hw,id,po,sh,tc,ti.	795
9	crim\$.ab,hw,id,po,sh,tc,ti.	1250
10	prison\$.ab,hw,id,po,sh,tc,ti.	504
11	convicts.ab,hw,id,po,sh,tc,ti.	6
12	lawbreakers.ab,hw,id,po,sh,tc,ti.	1
13	perpetrator\$.ab,hw,id,po,sh,tc,ti.	181
14	desist\$.ab,hw,id,po,sh,tc,ti.	17
15	reoffen\$.ab,hw,id,po,sh,tc,ti.	31
16	re-offen\$.ab,hw,id,po,sh,tc,ti.	7
17	recid\$.ab,hw,id,po,sh,tc,ti.	211
18	(repeat adj offen\$).ab,hw,id,po,sh,tc,ti.	6
19	(repeat adj crim\$).ab,hw,id,po,sh,tc,ti.	0
20	(subsequent adj offen\$).ab,hw,id,po,sh,tc,ti.	3
21	(subsequent adj crim\$).ab,hw,id,po,sh,tc,ti.	3
22	(serial adj offen\$).ab,hw,id,po,sh,tc,ti.	0
23	(serial adj crim\$).ab,hw,id,po,sh,tc,ti.	0

24	(persistent adj offen\$).ab,hw,id,po,sh,tc,ti.	1
25	(cease adj4 offen\$).ab,hw,id,po,sh,tc,ti.	0
26	(cease adj4 crim\$).ab,hw,id,po,sh,tc,ti.	0
27	(stop adj4 offen\$).ab,hw,id,po,sh,tc,ti.	0
28	(stop adj4 crim\$).ab,hw,id,po,sh,tc,ti.	0
29	(protective adj factor\$).ab,hw,id,md,sh,tc,ti.	175
30	strengths.ab,hw,id,md,sh,tc,ti.	600
31	assets.ab,hw,id,md,sh,tc,ti.	70
32	resilien\$.ab,hw,id,md,sh,tc,ti.	343
33	resource\$.ab,hw,id,md,sh,tc,ti.	2309
34	(moderat\$ adj4 risk).ab,hw,id,md,sh,tc,ti.	92
35	child\$.ab,hw,id,po,sh,tc,ti.	16133
36	juvenile\$.ab,hw,id,po,sh,tc,ti.	530
37	minors.ab,hw,id,po,sh,tc,ti.	31
38	1 or 2 or 3 or 4 or 5 or 6 or 35 or 36 or 37	24541
39	7 or 8 or 9 or 10 or 11 or 12 or 13	2934
40	14 or 15 or 16 or 17 or 18 or 19 or 20 or 21 or 22 or 23 or 24 or 25 or 26 or 27 or 28	249
41	29 or 30 or 31 or 32 or 33 or 34	3452
42	38 and 39 and 40 and 41	5
Date = 1990 to 2012: 5 Results		

5 Results

2.4 National Criminal Justice Reference Service (NCJRS) Abstracts Database Search

Conducted on 22nd January 2012

all((youth*) OR (adolescent*) OR (young*) OR (teen*) OR (juvenile*) OR (child*) OR (minors) OR (boys) OR (girls)) AND all((offen*) OR (delinquen*) OR (crim*) OR (prison*) OR (convicts) OR (lawbreakers) OR (perpetrator*)) AND all(("Protective factor*") OR (strengths) OR (resilien*) OR (assets) OR ("resource*") OR (moderat* N/3 risk)) AND all((desist*) OR (reoffen*) OR (re-offen*) OR (recid*) OR ("repeat offen*") OR ("repeat crim*") OR ("subsequent offen*") OR ("subsequent crim*") OR ("serial offen*") OR ("serial crim*") OR ("persistent offen*") OR (cease N/3 offen*) OR (cease N/3 crim*) OR (stop N/3 offen*) or (stop N/3 crim*))

674 Results

Limits:

Date = 1990 to 2012: 409 Results

Language = English: 408 Results

Exclude: Government & Official Document, Book, News, Instructional Material/Guideline, Book Chapter , Annual Report, Literature Review, Conference Proceeding, Statistics/Data Report, General Information, Case Study, Speech/Lecture, Bibliography, Reference Document =133

133 Results

2.5 *Applied Social Sciences Index and Abstracts (ASSIA) Database Search:*

Conducted on 22nd January 2012

all((youth*) OR (adolescent*) OR (young*) OR (teen*) OR (juvenile*) OR (child*) OR (minors) OR (boys) OR (girls)) AND all((offen*) OR (delinquen*) OR (crim*) OR (prison*) OR (convicts) OR (lawbreakers) OR (perpetrator*)) AND all(("Protective factor*") OR (strengths) OR (resilien*) OR (assets) OR ("resource*") OR (moderat* N/3 risk)) AND all((desist*) OR (reoffen*) OR (re-offen*) OR (recid*) OR ("repeat offen*") OR ("repeat crim*") OR ("subsequent offen*") OR ("subsequent crim*") OR ("serial offen*") OR ("serial crim*") OR ("persistent offen*") OR (cease N/3 offen*) OR (cease N/3 crim*) OR (stop N/3 offen*) or (stop N/3 crim*))

40 Results

Limits:

Language = English: 40 Results

Date = 1990 to 2012: 40Results

40 Results

2.6 *Social Services Abstracts*

Conducted on 22nd January 2012

all((youth*) OR (adolescent*) OR (young*) OR (teen*) OR (juvenile*) OR (child*) OR (minors) OR (boys) OR (girls)) AND all((offen*) OR (delinquen*) OR (crim*) OR (prison*) OR (convicts) OR (lawbreakers) OR (perpetrator*)) AND all(("Protective factor*") OR (strengths) OR (resilien*) OR (assets) OR ("resource*") OR (moderat* N/3 risk)) AND all((desist*) OR (reoffen*) OR (re-offen*) OR (recid*) OR ("repeat offen*") OR ("repeat crim*") OR ("subsequent offen*") OR ("subsequent crim*") OR ("serial offen*") OR ("serial crim*") OR ("persistent offen*") OR (cease N/3 offen*) OR (cease N/3 crim*) OR (stop N/3 offen*) or (stop N/3 crim*))

57 Results

Limits:

Date = 1990 to 2012: 55 Results

Language = English: 55 Results

55 Results

2.7 Sociological Abstracts

Conducted on 22nd January 2012

all((youth*) OR (adolescent*) OR (young*) OR (teen*) OR (juvenile*) OR (child*) OR (minors) OR (boys) OR (girls)) AND all((offen*) OR (delinquen*) OR (crim*) OR (prison*) OR (convicts) OR (lawbreakers) OR (perpetrator*)) AND all(("Protective factor*") OR (strengths) OR (resilien*) OR (assets) OR ("resource*") OR (moderat* N/3 risk)) AND all((desist*) OR (reoffen*) OR (re-offen*) OR (recid*) OR ("repeat offen*") OR ("repeat crim*") OR ("subsequent offen*") OR ("subsequent crim*") OR ("serial offen*") OR ("serial crim*") OR ("persistent offen*") OR (cease N/3 offen*) OR (cease N/3 crim*) OR (stop N/3 offen*) or (stop N/3 crim*))

89 Results

Limits:

Date = 1990 to 2012: 80 Results

Language = English: 79 Results

Exclude Conference Paper = 78 Results

78 Results

2.7 PsycINFO (OVID) 1987 to January Week 3 2012 Search

Conducted on 22nd January 2012

1	Adolescent\$.ab,hw,id,po,sh,tc,ti	129308
2	young\$.ab,hw,id,po,sh,tc,ti.	123759
3	teen\$.ab,hw,id,po,sh,tc,ti.	12079
4	boys.ab,hw,id,po,sh,tc,ti.	28117
5	girls.ab,hw,id,po,sh,tc,ti.	29753
6	youth\$.ab,hw,id,po,sh,tc,ti.	43152
7	offen\$.ab,hw,id,po,sh,tc,ti.	26195
8	Delinquent\$.ab,hw,id,po,sh,tc,ti.	13604
9	crim\$.ab,hw,id,po,sh,tc,ti.	41255
10	prison\$.ab,hw,id,po,sh,tc,ti.	12889
11	convicts.ab,hw,id,po,sh,tc,ti.	138
12	lawbreakers.ab,hw,id,po,sh,tc,ti.	37
13	perpetrator\$.ab,hw,id,po,sh,tc,ti.	8588
14	desist\$.ab,hw,id,po,sh,tc,ti.	528
15	Reoffen\$.ab,hw,id,po,sh,tc,ti.	653
16	re-offen\$.ab,hw,id,po,sh,tc,ti.	366
17	recid\$.ab,hw,id,po,sh,tc,ti.	4592

18	(repeat adj offen\$).ab,hw,id,po,sh,tc,ti.	215
19	(repeat adj crim\$).ab,hw,id,po,sh,tc,ti.	19
20	(subsequent adj offen\$).ab,hw,id,po,sh,tc,ti.	51
21	(subsequent adj crim\$).ab,hw,id,po,sh,tc,ti.	69
22	(serial adj offen\$).ab,hw,id,po,sh,tc,ti.	41
23	(serial adj crim\$).ab,hw,id,po,sh,tc,ti.	41
24	(persistent adj offen\$).ab,hw,id,po,sh,tc,ti.	108
25	(cease adj4 offen\$).ab,hw,id,po,sh,tc,ti.	6
26	(cease adj4 crim\$).ab,hw,id,po,sh,tc,ti.	2
27	(stop adj4 offen\$).ab,hw,id,po,sh,tc,ti.	30
28	(stop adj4 crim\$).ab,hw,id,po,sh,tc,ti.	17
29	(protective adj factor\$).ab,hw,id,md,sh,tc,ti.	6101
30	strengths.ab,hw,id,md,sh,tc,ti.	17378
31	assets.ab,hw,id,md,sh,tc,ti.	2599
32	Resilien\$.ab,hw,id,md,sh,tc,ti.	11511
33	resource\$.ab,hw,id,md,sh,tc,ti.	82794
34	(moderat\$ adj4 risk).ab,hw,id,md,sh,tc,ti.	1175
35	child\$.ab,hw,id,po,sh,tc,ti.	349114
36	juvenile\$.ab,hw,id,po,sh,tc,ti.	17495
37	minors.ab,hw,id,po,sh,tc,ti.	1073
38	1 or 2 or 3 or 4 or 5 or 6 or 35 or 36 or 37	505134
39	7 or 8 or 9 or 10 or 11 or 12 or 13	71017
40	14 or 15 or 16 or 17 or 18 or 19 or 20 or 21 or 22 or 23 or 24 or 25 or 26 or 27 or 28	5812
41	29 or 30 or 31 or 32 or 33 or 34	115342
42	38 and 39 and 40 and 41	160

Limits

Date: 1990 to current= 157 Results

Language: English = 151 Results

151 Results

2.9 Science Direct

Conducted on 22nd January 2012

Search fields: title, abstract, publishers keywords, and author (tak)

tak(youth* or adolescent* or young* or teen* or juvenile* or child* or minors or boys or girls) AND tak(offen* or delinquen* or crim* or prison* or convicts or lawbreakers or

perpetrator*) AND tak("Protective factor*" or strengths or resilien* or assets or "resource*" or moderat* W/3 risk) AND tak(((desist* or reoffen* or re-offen* or recid* or "repeat offen*" or "repeat crim*" or "subsequent offen*" or "subsequent crim*" or "serial offen*" or "serial crim*" or "persistent offen*") OR (cease W/3 offen* or cease W/3 crim* or stop W/3 offen* or stop W/3 crim*))

(Limits: Subject: Arts and Humanities, Psychology, Social Sciences. Dates: 1990 to 2012)

13 Results

2.10 Ovid MEDLINE(R) 1946 to January Week 3 2012 Search

Conducted on 22nd January 2012

(Source for all = Journals (peer-reviewed journal, non-peer-reviewed journal, and peer-reviewed status unknown))

1	adolescen\$.ab,hw,id,po,sh,tc,ti	1455952
2	young\$.ab,hw,id,po,sh,tc,ti.	533085
3	teen\$.ab,hw,id,po,sh,tc,ti.	17750
4	boys.ab,hw,id,po,sh,tc,ti.	49886
5	girls.ab,hw,id,po,sh,tc,ti.	52263
6	youth\$.ab,hw,id,po,sh,tc,ti.	29873
7	offen\$.ab,hw,id,po,sh,tc,ti.	16266
8	delinquen\$.ab,hw,id,po,sh,tc,ti.	8499
9	Crim\$.ab,hw,id,po,sh,tc,ti.	36804
10	prison\$.ab,hw,id,po,sh,tc,ti.	17917
11	Convicts.ab,hw,id,po,sh,tc,ti.	130
12	lawbreakers.ab,hw,id,po,sh,tc,ti.	15
13	perpetrator\$.ab,hw,id,po,sh,tc,ti.	2687
14	desist\$.ab,hw,id,po,sh,tc,ti.	174
15	reoffen\$.ab,hw,id,po,sh,tc,ti.	171
16	re-offen\$.ab,hw,id,po,sh,tc,ti.	107
17	recid\$.ab,hw,id,po,sh,tc,ti.	2955
18	(repeat adj offen\$).ab,hw,id,po,sh,tc,ti.	122
19	(repeat adj crim\$).ab,hw,id,po,sh,tc,ti.	1
20	(subsequent adj offen\$).ab,hw,id,po,sh,tc,ti.	15
21	(subsequent adj crim\$).ab,hw,id,po,sh,tc,ti.	33
22	(serial adj offen\$).ab,hw,id,po,sh,tc,ti.	7

23	(serial adj crim\$).ab,hw,id,po,sh,tc,ti.	4
24	(persistent adj offen\$).ab,hw,id,po,sh,tc,ti.	27
25	(cease adj4 offen\$).ab,hw,id,po,sh,tc,ti.	1
26	(cease adj4 crim\$).ab,hw,id,po,sh,tc,ti.	1
27	(stop adj4 offen\$).ab,hw,id,po,sh,tc,ti.	7
28	(stop adj4 crim\$).ab,hw,id,po,sh,tc,ti.	8
29	(protective adj factor\$).ab,hw,id,md,sh,tc,ti.	5833
30	strengths.ab,hw,id,md,sh,tc,ti.	24251
31	assets.ab,hw,id,md,sh,tc,ti.	2395
32	resilien\$.ab,hw,id,md,sh,tc,ti.	6734
33	Resource\$.ab,hw,id,md,sh,tc,ti.	153495
34	(moderat\$ adj4 risk).ab,hw,id,md,sh,tc,ti.	4911
35	child\$.ab,hw,id,po,sh,tc,ti.	1659047
36	Juvenile\$.ab,hw,id,po,sh,tc,ti.	56518
37	minors.ab,hw,id,po,sh,tc,ti.	3792
38	1 or 2 or 3 or 4 or 5 or 6 or 35 or 36 or 37	2708526
39	7 or 8 or 9 or 10 or 11 or 12 or 13	67791
40	14 or 15 or 16 or 17 or 18 or 19 or 20 or 21 or 22 or 23 or 24 or 25 or 26 or 27 or 28	3436
41	29 or 30 or 31 or 32 or 33 or 34	194619
42	38 and 39 and 40 and 41	41

Additional Limits

Date: 1990 to 2012= 41

Language: English = 39

39 Results

2.11 Ovid EMBASE (R) 1988 to January Week 3 2012 Search

Conducted on 23rd January 2012

(Source for all = Journals (peer-reviewed journal, non-peer-reviewed journal, and peer-reviewed status unknown)

1	adolescen\$.ab,hw,id,po,sh,tc,ti	842120
2	Young\$.ab,hw,id,po,sh,tc,ti.	377463
3	teen\$.ab,hw,id,po,sh,tc,ti.	18337
4	boys.ab,hw,id,po,sh,tc,ti.	52748
5	girls.ab,hw,id,po,sh,tc,ti.	55414

6	Youth\$.ab,hw,id,po,sh,tc,ti.	31935
7	offen\$.ab,hw,id,po,sh,tc,ti.	17379
8	delinquen\$.ab,hw,id,po,sh,tc,ti.	6519
9	crim\$.ab,hw,id,po,sh,tc,ti.	38965
10	Prison\$.ab,hw,id,po,sh,tc,ti.	15769
11	convicts.ab,hw,id,po,sh,tc,ti.	125
12	lawbreakers.ab,hw,id,po,sh,tc,ti.	14
13	perpetrator\$.ab,hw,id,po,sh,tc,ti.	3311
14	Desist\$.ab,hw,id,po,sh,tc,ti.	206
15	reoffen\$.ab,hw,id,po,sh,tc,ti.	262
16	Re-offen\$.ab,hw,id,po,sh,tc,ti.	170
17	recid\$.ab,hw,id,po,sh,tc,ti.	3513
18	(repeat adj offen\$).ab,hw,id,po,sh,tc,ti.	134
19	(repeat adj crim\$).ab,hw,id,po,sh,tc,ti.	2
20	(subsequent adj offen\$).ab,hw,id,po,sh,tc,ti.	19
21	(subsequent adj crim\$).ab,hw,id,po,sh,tc,ti.	39
22	(serial adj offen\$).ab,hw,id,po,sh,tc,ti.	14
23	(serial adj crim\$).ab,hw,id,po,sh,tc,ti.	15
24	(persistent adj offen\$).ab,hw,id,po,sh,tc,ti.	30
25	(cease adj4 offen\$).ab,hw,id,po,sh,tc,ti.	3
26	(cease adj4 crim\$).ab,hw,id,po,sh,tc,ti.	1
27	(stop adj4 offen\$).ab,hw,id,po,sh,tc,ti.	11
28	(stop adj4 crim\$).ab,hw,id,po,sh,tc,ti.	7
29	(protective adj factor\$).ab,hw,id,md,sh,tc,ti.	7335
30	strengths.ab,hw,id,md,sh,tc,ti.	27403
31	Assets.ab,hw,id,md,sh,tc,ti.	2495
32	resilien\$.ab,hw,id,md,sh,tc,ti.	8022
33	resource\$.ab,hw,id,md,sh,tc,ti.	168712
34	(moderat\$ adj4 risk).ab,hw,id,md,sh,tc,ti.	6433
35	child\$.ab,hw,id,po,sh,tc,ti.	1228338
36	juvenile\$.ab,hw,id,po,sh,tc,ti.	60109
37	minors.ab,hw,id,po,sh,tc,ti.	1931
38	1 or 2 or 3 or 4 or 5 or 6 or 35 or 36 or 37	1885864
39	7 or 8 or 9 or 10 or 11 or 12 or 13	65619
40	14 or 15 or 16 or 17 or 18 or 19 or 20 or 21 or 22 or 23 or 24 or 25 or 26 or 27 or 28	4117

41	29 or 30 or 31 or 32 or 33 or 34	217051
42	38 and 39 and 40 and 41	47

Additional Limits

Date: 1990 to 2012 = 45

Language: English = 45

45 Results

2.12 Francis (OCLC) search

Conducted on 23rd January 2012

Abstract and keyword fields searched (ab)

((ab: youth+ OR ab: adolescent+ OR ab: young* OR ab: teen* OR ab: juvenile+ OR ab: child* OR ab: minors OR ab: boys OR ab: girls) AND (ab: offen* OR ab: delinquen* OR ab: crim* OR ab: prison* OR ab: convicts OR ab: lawbreakers OR ab: perpetrator+) AND ((ab: protective w factor*) OR ab: strengths OR ab: resilien* OR ab: assets OR ab: resource+ OR (ab: moderat* n3 risk)) AND (ab: desist* OR ab: reoffen* OR ab: re-offen* OR ab: recid* OR (ab: repeat w offen*) OR (ab: repeat w crim*) OR (ab: subsequent w offen*) OR (ab: subsequent w crim*) OR (ab: serial w offen*) OR (ab: serial w crim*) OR (ab: persistent w offen*) OR (ab: cease n3 offen*) OR (ab: cease n3 crim*) OR (ab: stop n3 offen*) or (ab: stop n3 crim*)) and yr: 1990-2012 and dt="article" and la="english") or ((ab: youth+ OR ab: adolescent+ OR kw: young* OR kw: teen* OR kw: juvenile+ OR kw: child* OR kw: minors OR kw: boys OR kw: girls) AND (kw: offen* OR kw: delinquen* OR kw: crim* OR kw: prison* OR kw: convicts OR kw: lawbreakers OR kw: perpetrator+) AND ((kw: protective w factor*) OR kw: strengths OR kw: resilien* OR kw: assets OR kw: resource+ OR (kw: moderat* n3 risk)) AND (kw: desist* OR kw: reoffen* OR kw: re-offen* OR kw: recid* OR (kw: repeat w offen*) OR (kw: repeat w crim*) OR (kw: subsequent w offen*) OR (kw: subsequent w crim*) OR (kw: serial w offen*) OR (kw: serial w crim*) OR (kw: persistent w offen*) OR (kw: cease n3 offen*) OR (kw: cease n3 crim*) OR (kw: stop n3 offen*) or (kw: stop n3 crim*)) and yr: 1990-2012 and dt="article" and la="english")

Limits:

Language: English

Article Type: Article

Results: 22

Appendix 3: Inclusion/Exclusion Form

Article Title:				
Author(s):				
Date:				
Population	Young people aged 10 to 19 years at time of offending and assessment (at least initial assessment, where multiple assessments undertaken) Offenders	Yes	No	?
Exposure	Protective factors	Yes	No	?
Comparator	Desister or re-offender	Yes	No	?
Outcome	At a minimum of 12 months follow-up evidence of desistance from crime	Yes	No	?
Study Design	Cohort; Case Control	Yes	No	?
Other Factors	Year of publication: 1990 to 2012 Language of publication: English (NB: These were parameters usually defined within electronic databases)	Yes	No	?

Instructions

For any ?'s checked, seek to clarify information

Where "No" and "Yes" checked for same criteria, e.g., sample of children and adolescents were used, the group not meeting the criteria should be ignored and only the relevant variables are to be considered and discussed within the review

Where "No's" only checked for one or more criteria, study excluded from review

Appendix 4: Articles unable to access in full, and therefore excluded from study

The following articles could not be accessed, even when authors of articles were contacted via email and a copy of the article was requested.

Author (Date) of Publication	Title of Publication	How study identified	Type of Article
Graydon (2007) (aka Champan)	Protective factors and recidivism in Latino juvenile offenders - Dissertation	Systematic search of databases	Dissertation
Hall (2008)	Protective factors of juvenile offenders released on parole and their relationship to recidivism.	Systematic search of databases	Dissertation
Little (2002)	An evaluation of the San Diego Risk and Resiliency Check Up	Reference lists of shortlisted articles	Unpublished Study
Pittman (2004)	Offender and Community Reintegration: An Exploratory and Descriptive Study of Cultural Competency within Community Treatment and Correctional Reentry Programs	Reference lists of shortlisted articles	Dissertation

Appendix 5: Articles accessed in full and excluded after inclusion criteria was applied

Author (Date) of Publication	Title of Publication	Reason for Exclusion	How study identified
Benda (2001)	Factors that discriminate between recidivists, parole violators, and non recidivists in a 3-year follow-up of boot camp graduates.	Did not fit inclusion criteria for 'Population', age range 16 to 40 years.	Systematic search of databases
Benda, Toombs, & Peacock (2002)	Ecological Factors in Recidivism: A Survival Analysis of Boot Camp Graduates after Three Years	Did not fit inclusion criteria for 'Population', included adult sample.	Systematic search of databases
Benda et al., (2003)	Discriminators of types of recidivism among boot camp graduates in a five-year follow up study	Did not fit inclusion criteria for 'Population', included adult sample.	Contacting expert/ professionals
Born,Chevalier, & Humblet (1997)	Resilience, desistance and delinquent career of adolescent offenders.	Did not fit inclusion criteria for 'Outcome', i.e., groups defined by offence seriousness rather than absence of offending for follow-up period, thus desisters had 'very low rate of delinquency'.	Systematic search of databases
Byrd, O'Connor, Thackrey, & Sacks (1993)	The utility of self-concept as a predictor of recidivism among juvenile offenders.	Did not fit inclusion criteria for 'Comparator' or 'Exposure'.	Systematic search of databases
Contreras, Molina,& Cano (2011)	In search of psychosocial variables linked to the recidivism in young offenders	Did not fit inclusion criteria for 'Exposure' i.e., focus on risk factors.	Systematic search of databases
Chung, Hawkins, Gilchrist, Hill, & Nagin (2002)	Developmental Trajectories of Offending among Poor and Non-Poor Children	Did not fit inclusion criteria for 'Population' i.e., Anti-social group rather than 'offenders' e.g., includes general running away from home etc. Additionally, not easily fit into 'Comparator' groups. Additionally length of	Systematic search of databases

		desistance, not specified.	
Day & Ward (2010)	Criminal predictors and protective factors in a sample of youthful offenders	Did not fit criteria for 'Comparator' or 'Outcome', i.e., groups based on offending rate	Google search engine
Doherty & Laub, (2005)	Assessing an Age-Graded Theory of Informal Social Control: Are There Conditional Effects of Life Events in the Desistance Process?	Did not fit inclusion criteria for 'Outcome', in that desistance described as 'reduction in criminal offending', rather than distinguishing them as offence-free for a 12 month period (as per inclusion criteria)	Systematic search of databases
Hau & Smedler (2011)	Young male offenders in community-based rehabilitative programmes - self-reported history of antisocial behaviour predicts recidivism	Did not focus on protective factors i.e., 'Exposure' criteria. Does not fit 're-offence' criteria, in this study only 'suspected of new crimes'.	Systematic search of databases
Hoge & Andrews (1996)	An investigation of risk and protective factors in a sample of youthful offenders.	Did not fit 'Comparator' criteria, i.e., groups based on rate of re-offences, rather than comparing individuals who desist and those who re-offend.	Systematic search of databases
Jack (2002)	Psychopathy, risk/need factors, and psychiatric symptoms in high-risk youth: Relationships between variables and their link to recidivism.	Did not fit 'Comparator' or Outcome criteria, i.e., focus on risk factors and follow up to reoffending a minimum of 8, rather than 12, months.	Systematic search of databases
Jimerson, Sharkey, O'Brien, & Furlong (2004)	Santa Barbara Assert and Risk Assessment to predict recidivism among male and juveniles: An investigation of inter-rater reliability and predictive validity	Did not fit 'Outcome' criteria as follow-up period for desistance was only 6 months.	Contacting expert/ professionals
Kosterman, Graham, Hawkins, Catalano, & Herrenkohl (2001)	Childhood risk factors for Persistence of Violence in the Transition to Adulthood: A Social Development Perspective	Did not fit inclusion criteria for 'Population' i.e., sample have behaved in a violent way rather than offended.	Systematic search of databases
Kubrin & Stewart (2006)	Predicting who reoffends: The neglected role of	Did not fit inclusion criteria for 'Population',	Systematic search of

	neighborhood context in recidivism studies	i.e., mean age of sample was 36 years old.	databases
Laub, Nagin, & Sampson	Trajectories of change in criminal offending: Good marriages and the desistance process	Did not fit inclusion criteria for 'Outcome', in that desisters were described as 'approaching 0 arrests per year (0.2 arrests per year)', rather than distinguishing them as offence-free for a 12 month period (as per inclusion criteria)	Reference lists of shortlisted articles
LeCroy, Krysik, & Palumbo, 1998	Empirical validation of the Arizona risk/needs instrument and assessment process	Did not fit inclusion criteria for 'Population', i.e., small percentage of sample likely to be below 10 years old (11.5% of those with one referral for offence aged 8-to-11.99 years).	Google search engine
Lodewijks, Doreleijers, Ruiter, & Borum (2008)	Predictive Validity of the Structured Assessment of Violence Risk (SAVRY) during residential treatment	Did not fit inclusion criteria for 'Outcome' of 12 months follow-up, i.e., follow-up ranged between 7 and 23 months	Reference lists of shortlisted articles
Loeber, Farrington; Stouthamer-Loeber; Moffitt, & Caspi (1998)	The development of male offending: Key findings from the first decade of the Pittsburgh Youth Study.	Did not fit inclusion criteria for 'Study' i.e., involved summarising findings from previous studies rather than undertaking an original study in itself.	Systematic search of databases
MacRae, Bertrand, Paetsch, & Hornick (2011)	Relating risk and protective factors to youth reoffending: A two-year follow-up.	Did not fit 'Comparator' criteria, i.e., groups based on number of re-offences, rather than comparing individuals who desist and those who re-offend.	Google search engine
Mowder, Cummings, & McKinney (2010)	Resiliency Scales for Children and Adolescents: Profiles of juvenile offenders.	Did not fit inclusion criteria for 'Comparator' or 'Outcome'.	Systematic search of databases
Moffitt, Caspi, Harrington, & Milne (2002)	Males on the life-course-persistent and adolescence-limited antisocial pathways:	Did not fit inclusion criteria for 'Comparator' i.e., compared 'child-	Reference lists of shortlisted

	Follow-up at age 26 years	onset' and 'adolescent onset' groups rather than re-offenders and 'desisters', doesn't consider within group change.	articles
Penney, Lee, & Moretti (2010)	Gender Differences in risk factors for Violence: An Examination of the Predictive Validity of the Structured Assessment of Violence Risk in Youth	Did not fit inclusion criteria for 'Population', i.e., some of sample could not be classified as 'offenders', clarified through emailing the first author.	Systematic search of databases
Raine, & Liu (1998)	Biological predispositions to violence and their implications for biosocial treatment and prevention	Did not fit inclusion criteria for 'Study Design'.	Systematic search of databases
Raine, Venables, & Williams (1995)	High autonomic arousal and electrodermal orienting at age 15 years as protective factors against criminal behavior at age 29 years.	Did not fit inclusion criteria for 'Population', e.g., Anti-social group did not fit with definition for 'offenders' (i.e., antisocial youngsters appeared to be defined through antisocial personality dimensions, measured via psychometrics, and a behaviour checklist which included swearing and disobedience (See Raine, Venables & Williams, 1996 ¹).	Systematic search of databases
Raine, Venables, & Williams (1996)	Better autonomic conditioning and faster electrodermal half-recovery time at age 15 years as possible protective factors against crime at age 29 years.	Did not fit inclusion criteria for 'Population', e.g., Anti-social group did not fit with definition for 'offenders' (i.e., antisocial youngsters appeared to be defined through antisocial personality dimensions, measured via psychometrics, and a behaviour checklist which included swearing and disobedience (See Raine, Venables &	Systematic search of databases

		Williams, 1996 ³).	
Ryan, Hernandez, & Herz (2007)	Developmental Trajectories of Offending for Male Adolescents Leaving Foster Care	Did not fit inclusion criteria for Comparator, i.e., statistical analysis of results focused on comparisons between non-offenders and the desister/ chronic offenders groups, rather than between desisters and chronic offenders	Systematic search of databases
Sharkey (2003)	Examining the relationship between risk and protective factors and juvenile recidivism for male and female probationers.	Did not fit criteria for 'Outcome', i.e., follow-up period for desistance was only 6 months.	Systematic search of databases
Sharkey et al. (2003)	Evaluating the utility of a risk assessment to predict recidivism among adolescents	Did not fit criteria for 'Exposure', i.e., focus on risk factors.	Contacting experts/ professionals
Sigurdsson, Gudjonsson, & Peersen (2001)	Differences in the cognitive ability and personality of desisters and re-offenders: A prospective study among young offenders	Did not fit 'Population' criteria, i.e., sample aged 15 to 23 years	Systematic search of databases
Stouthamer-Loeber, Loeber, Farrington, Wilkström, & Wei (2002)	Risk and Promotive effects in the explanation of persistent serious delinquency in boys.	Did not fit inclusion criteria for 'Comparator' or 'Outcome', i.e., only 'persisters' (reoffenders) included in study, desistance not included as a variable.	Reference lists of shortlisted articles
Thompson & Pope (2005)	Assessing Juvenile Offenders: Preliminary Data for the Australian Adaptation of the Youth Level of Service/Case Management Inventory	Did not fit 'Outcome' criteria, i.e., follow-up for re-offending was 6 to 32 months	Systematic search of databases
Trulson, Marquart, Mullings, & Caeti (2005)	In Between Adolescence and Adulthood: Recidivism Outcomes of a Cohort of State Delinquents	Did not fit Population criteria, in that some youngsters over 19 years old at time of first assessment.	Systematic search of databases
Turner, Fain, & Sehgal (2006)	Validation of the Risk and Resiliency Assessment Tool for Juveniles in the Los Angeles County Probation System.	Did not provide enough detail on the study or results, e.g., analysis undertaken of the total score (net sum of risk	Systematic search of databases

		and protective factors) and recidivism, but not for just the protective factors and recidivism.	
Ullrich & Coid (2011)	protective factors for Violence Among Released Prisoners-Effects Over Time and Interactions With Static Risk	Did not fit inclusion criteria for 'Population'. Mean age of sample was 31 years old.	Systematic search of databases
Visher et al. (2004)	Returning Home: Understanding the Challenges of Prisoner Reentry: Maryland Pilot Study: Findings from Baltimore	Did not fit inclusion criteria for 'Population' e.g., used adult sample aged 19yrs+	Systematic search of databases
Walsh & Russell (2009)	Wilderness Adventure programming as an intervention for youthful offenders: Self-efficacy, resilience, and hope for the future.	Did not fit inclusion criteria, i.e., Comparator was treatment group and control group, as involved program evaluation; Outcome involved only 6 months follow-up.	Systematic search of databases
Wilson & Hinks (2011)	Assessing the predictive validity of the Asset youth risk assessment tool using the Juvenile Cohort Study	Did not fit inclusion criteria for 'Exposure', i.e., exclusive focus on risk factors (this was clarified through email to author)	Google search Engine
Yellin, Magee, & Hoffman (1998)	Heavy Mettle: Stories of Transition for Delinquent Youth	Did not fit inclusion criteria for 'Study Design'	Systematic search of databases

I Raine, A., Roger, D., & Venables, E. H. (1982). Locus of control and socialization. *Journal of Experimental Research in Personality*, 16, 147-156.

Appendix 6: Articles accessed in full and meeting inclusion/exclusion criteria

Author (Date) of Publication	Title of Publication	How study identified	Additional notes
Carr & Vandiver (2001)	Risk and protective factors among youth offenders.	Systematic search of databases	Article. Retrospective study using archival data. Ignore risk factors instead only focus on protective factors. Follow-up period not clear. Emailed author, feasible that follow-up over 12 months after initial offending, but unable to definitively clarify. Decision made to Include, but this lack of clarification will be reflected in quality assessment.
Clingempeel & Henggeler (2003)	Aggressive juvenile offenders transitioning into emerging adulthood: Factors discriminating persistors and desistors	Systematic search of databases	Article. Prospective study. Ignore risk factors instead only focus on protective factors.
Griffin, Beech, Print, Bradshaw, & Quayle (2008)	The development and initial testing of the AIM2 framework to assess risk and strengths in young people who sexually offend.	Systematic search of databases	Article Retrospective study using archival data. Ignore risk factors instead only focus on 'strengths' factors.
Griffin & Vettor (2012)	Predicting sexual re-offending in a UK sample of adolescents with intellectual disabilities	Contacting professionals	Article Retrospective study using archival data. Ignore risk factors/scales instead only focus on 'strengths' factors/scales.
Jimerson, Sharkey, Furlong, & O'Brien (2004)	Using the Santa Barbara Asset and Risk Assessment to examine the ecology of youths experiencing behaviour problems.	Contacting experts/ professionals	Article Prospective study. Ignore risk factors. Protective factors defined in this review study as those factors with a negative relationship with recidivism.
McEachran (2001)	The predictive validity of the PCL:YV and the SAVRY in a population of adolescent offenders.	Reference lists of shortlisted articles	Thesis. Retrospective study using archival data. Only offences post 18 years

			recorded as 'reconviction'. Ignore PCL:YV study as no reference to protective factors, and only focus on protective factors subscale, ignoring risk-based scales.
Lodewijks, Ruiters & Doreleijers (2010)	The impact of protective factors in desistance from violent reoffending: A study in three samples of adolescent offenders.	Systematic search of databases	Article. Retrospective study using archival data. Ignore two samples, as they do not appear to meet inclusion criteria, only focus on first sample where violent recidivism followed up through official statistics. Ignore risk scales, only focus on protective scale.
Loeber, Pardini, Stouthamer-Loeber, & Raine (2007)	Do cognitive, physiological, and psychosocial risk and promotive factors predict desistance from delinquency in males?	Systematic search of databases	Article. Prospective, longitudinal study using cohort of juvenile delinquents. Whilst sample first studies aged 7 years, assessment of moderate/serious delinquency, cognitive and physiological variables, and other predictor variables undertaken for age block 13-16 years, therefore met inclusion criteria. Review focussed on 'desisters' and 'persisters', ignore non-delinquent/delinquent comparators and ignore risk factors, instead only focus on 'promotive' variables.
Loeber, Stouthamer-Loeber, Van Kammen, & Farrington (1991)	Initiation, escalation and desistance in juvenile offending and their correlates	Reference lists of shortlisted articles	Article. Prospective, longitudinal study using cohort of juvenile delinquents. Number of samples included in this study will not be included in review, i.e., initiators; escalators; non-delinquents; or younger group of participants.

			Review will only focus on older group, comparing desisters to descalators (as re-offenders, even though this group has specific remit, in that they re-offend with less serious offences than previously).
Onifade, Petersen, Bynum, & Davidson II (2011)	Multilevel recidivism prediction: Incorporating neighborhood socioeconomic ecology in juvenile justice risk assessment.	Systematic search of databases	Article. Prospective study using archival data. Ignore risk factors and scales.
Pearl, Ashcraft, & Geis (2009)	Predicting juvenile recidivism using the San Diego Regional Resiliency Check-up.	Systematic search of databases	Article. Retrospective study using archival data. Ignore risk scales instead only focus on protective scales and resilience scores.
Platt (2009)	The protective factors of youth first involved in the justice system who desist	Systematic search of databases	Dissertation. Ignore risk factors, only focus on protective factors. Ignored 6 month follow-up data, only focussed on 12 month follow-up data.
Pobanz (2000)	Using protective factors to enhance the prediction of negative short-term outcomes of first-time juvenile offenders.	Systematic search of databases	Article. Prospective study using file and pre-post assessment data. Ignore analysis of treatment completion, offence seriousness and risk factors instead only focussed only on protective factors and recidivism.
Rennie & Dolan (2010)	The significance of protective factors in the assessment of risk.	Systematic search of databases	Article. Prospective study. Ignore post-dictive validity of protective factors and analysis of the Child Behaviour Checklist.
Stouthamer-Loeber, Wei, Loeber, & Masten (2004)	Desistance from persistent serious delinquency in the transition to adulthood	Systematic search of databases	Article. Prospective, longitudinal study using cohort of juvenile delinquents. Focus on 'desisters' and 'persisters' (i.e., re-

			offenders'), and ignore third group of 'non/lesser delinquents).
Vincent, Chapman, & Cook (2011)	Risk-Needs assessment in juvenile justice: Predictive validity of the SAVRY, racial differences, and the contribution of needs factors	Systematic search of databases	Article. Prospective study Ignore risk factors and subscales, only focus on protective factors subscale. Ignore analysis of race-ethnicity.
Werner (1990)	Antecedents and consequences of deviant behaviour	Reference lists of shortlisted articles	Article. Prospective, longitudinal study using cohort of juvenile delinquents. Ignore analysis on mental illness and antecedents to delinquency; only focus on 'crime-resistant' juvenile offenders and 'chronic' offenders.

Appendix 7: Quality assessment tool adapted from Effective Public Health Practice Project (1998) for studies used within the current review.

Name of study:

Date of Publication:

Authors:

Assessment of Quality (only score for relevant items, leave blank if specific item not relevant)	Guidance for Scoring each sub-section	Overall rating of quality, with guidance for each section
A) SAMPLING BIAS (called 'selection bias' in original tool)		STRONG <input type="checkbox"/> MODERATE <input type="checkbox"/> WEAK <input type="checkbox"/>
(Q1) Are the individuals selected to participate in the study likely to be representative of the target population? a) Very likely b) Somewhat likely c) Not likely d) Can't tell	<i>Score very likely</i> - are they randomly selected from juvenile offending population; <i>Score somewhat likely</i> - they may be representative if they are referred from a source list e.g., clinic, youth offending team/centre, in a systematic manner <i>Score not likely</i> - if they are self-referred <i>Can't tell</i> - if participants characteristics not appropriately described	Strong Both Qu1 & Qu2 =a Moderate all other combinations not included in 'strong' or 'weak' scoring criteria Weak
(Q2) Are participants in comparison groups appropriately selected, defined and representative of that population? a) Yes b) Partially c) No d) Can't tell (Added to current adapted version and original items removed from this section)	Yes - they are clearly defined and appropriately meet expectations for sample e.g., 'desister/ re-offender group', i.e., they have received a subsequent charge/conviction; have admitted to a criminal offence. Partially - they are clearly defined or somewhat meet expectations for sample e.g., 'desister/ re-offender group'. No - they are not clearly defined and do not t meet expectations for sample e.g., 'desister/ re-offender group'. <i>Can't tell</i> - comparator group characteristics not appropriately described to make judgement	Qu1 <u>or</u> Qu2 = c OR Qu1 & Qu2 = d
B) STUDY DESIGN (Added to current adapted version and original items removed from this section)		STRONG <input type="checkbox"/> MODERATE <input type="checkbox"/> WEAK <input type="checkbox"/>
Q1) Was the study design an appropriate study for answering the research question? a) Yes b) No c) Can't Tell	Yes - Study design enabled the study objectives to be adequately met and research question answered No - Study design did not enable the study objectives to be adequately met and research question answered. Another type of research design would have been more appropriate. <i>Can't tell</i> -not enough information provided to make this judgement	Strong Qu1, Qu2 & Qu3 =a Moderate all other combinations not included in 'strong' or 'weak' scoring criteria Weak
Q2) Has the study adequately answered the	Yes - All research questions were adequately answered	Qu1 =b OR

research question? a) Yes b) Partially c) No d) Can't Tell	Partially – Some, but not all research questions were adequately answered No - None of the research questions were adequately answered Can't tell - not enough information provided to make this judgement	Qu2 = c OR Qu3 = c OR Qu1 is c & Qu2 is d
Q3) Were the comparators useful? a) Yes b) Partially c) No d) Can't Tell	Yes - The comparators were very useful to answering the research question and meeting/or the objectives of the study Partially - The comparators had only some value to answering the research question and/or meeting the objectives of the study No - The comparators were not useful to answering the research question and/or meeting the objectives of the study Can't tell - comparator group characteristics not appropriately described to make judgement	
C) CONFOUNDING VARIABLES (<i>Added to current adapted version and original items removed from this section</i>)		STRONG <input type="checkbox"/> MODERATE <input type="checkbox"/> WEAK <input type="checkbox"/>
(Q1) Were other factors that could have accounted for findings appropriately controlled for? a) Yes b) Partially c) No d) Can't tell	Yes - Any or most other factors that could have accounted for findings were controlled for within study. Partially – Whilst some efforts were made to control for confounders, this was not adequate. No - It is likely to confounders mostly accounted for findings within the study. Can't tell - not enough information provided to make this judgement	Strong Qu1 =a Moderate Qu1 is b OR Qu2 =a <u>or</u> c Weak Qu1 =c <u>or</u> d & Qu2 = b
(Q2) Were potential confounders recognised and described? a) Yes b) No c) Partially	Yes -An adequate explanation was provided for potential confounders Partial -Reference was made to some confounders within study, but was not adequate No - No explanation was provided for potential confounders, or there are confounders that are very obvious within the study that are not recognised	
D) BLINDING		STRONG <input type="checkbox"/> MODERATE <input type="checkbox"/> WEAK <input type="checkbox"/>
(Q1) Were the outcome assessor(s) aware of the intervention, outcome or exposure status of participants? a) Yes b) No c) Can't tell	Assessors should be described as blinded to which participants were in the desister/re-offender group, or their exposure status. The purpose of blinding the outcome is to protect against detection bias.	Strong Qu1 & Qu2=b Moderate all other combinations not included in 'strong' or 'weak' scoring criteria
(Q2) Were the study participants aware of the research question? a) Yes b) No c) Can't tell	The study participants should not be aware of (i.e., blinded to) the research question. The purpose of blinding participants is to protect reporting bias.	

E) DATA COLLECTION METHODS AND REPORTING		STRONG <input type="checkbox"/> MODERATE <input type="checkbox"/> WEAK <input type="checkbox"/>
(Q1) Were data collection tools shown to be valid? a) Yes b) No c) Can't tell	Tools for primary outcome measures (both regarding re-offence status and measuring protective factors) must be described as reliable and valid. Reliability and validity can be reported in a study or in a separate study.	Strong Qu1, Qu2 & Qu3=a Moderate all other combinations not included in 'strong' or 'weak' scoring criteria
(Q2) Were data collection tools shown to be reliable? a) Yes b) No c) Can't tell	Sources from which data may be collected are: self reported data, assessment/screening	Weak Qu1 = b OR Qu1 & 2=c
(Q3) Was exposure to protective factors adequately reported? a) Yes b) No <i>(added to current adapted version)</i>	Yes – Clear indication provided of what protective factors participants were exposed to No - Unclear what protective factors participants were exposed to	
F) WITHDRAWALS, DROP-OUTS AND MISSING DATA		STRONG <input type="checkbox"/> MODERATE <input type="checkbox"/> WEAK <input type="checkbox"/>
(Q1) Were withdrawals, drop-outs or loss of follow-up reported in terms of numbers and/or reasons per group? a) Yes b) No c) Can't tell Not Relevant	If Relevant: Score Yes if the authors describe BOTH the numbers and reasons for withdrawals, drop-outs or loss of follow-up. Score No if either the numbers or reasons for withdrawals and drop-outs are not reported.	Don't score specific subsection if not relevant, use remaining subsection(s) to rate overall score Strong Qu2 & Qu3=a Or Qu2=a & Qu3=c
(Q2) Indicate the percentage of participants completing the study or were successfully followed-up (If the percentage differs by groups, record the lowest). a) 80 -100% b) 60 - 79% c) less than 60% d) Can't tell Not Relevant	If Relevant: The percentage of participants completing the study, or followed-up to the end of the study refers to the % of subjects remaining in the study at the final data collection period in all groups.	(if either Qu2 or Qu3 not relevant then Qu2 <u>or</u> Qu3=a) Moderate Qu2 = b & Qu3=a or c (if either Qu2 or Qu3 not relevant then Qu2 = b <u>or</u> Qu3= c) Weak Qu2 = c or d
(Q3) Was missing data reported and dealt with appropriately? a) Yes b) No c) Can't tell Not Relevant <i>(added to current adapted version)</i>	If Relevant: An example of missing data is where data was not known e.g., for assessment, due to non-responding of participants or incomplete file information. Yes - Missing data reported and dealt with appropriately No - Missing data not reported and/or not dealt with appropriately Can't tell - not enough information provided to make this judgement	OR Qu3 =b
G) Removed from current adapted version as not relevant, i.e., focus on intervention integrity		

(H) ANALYSIS (added to current adapted version and original items removed from this section)		STRONG <input type="checkbox"/> MODERATE <input type="checkbox"/> WEAK <input type="checkbox"/>
(Q1) Were appropriate statistical tests used for the study design and research question? Yes Partially No Unclear	Was the quantitative analysis appropriate to the research question being asked?	STRONG –yes MODERATE –partial WEAK – No or unclear
(I) OUTCOMES (added to current adapted version and original items removed from this section)		STRONG <input type="checkbox"/> MODERATE <input type="checkbox"/> WEAK <input type="checkbox"/>
(Q1) Were outcomes clearly described? a) Yes b) Partially c) No	Was it easy to make sense of the findings?	Strong Qu1, Qu2 & Qu3=a Moderate all other combinations not included in ‘strong’ or ‘weak’ scoring criteria
(Q2) Were numerical descriptions of important outcomes given? a) Yes b) No c) Unclear	Where outcomes were very important to the research question, were these presented numerically, rather than just descriptively?	Weak Qu1= c OR Qu1, Qu2 = b & Qu3= c
(Q3) Was there an appropriate follow-up period? a) Yes b) Partial c) No d) Unclear	Yes – There was an appropriate follow-up period of 12 months or more Partial – Part, but not all, of the sample was followed up for 12 months or over No – There was not an appropriate follow-up period of 12 months or more Unclear - not enough information provided to make this judgement	
Global Ratings:	1 Strong (no weak ratings) 2 Moderate (one weak rating) 3 Weak (two or more weak ratings)	

Appendix 8: Quality assessment outcomes for the 19 studies meeting PICO criteria

Authors of study	Year of study	Quality assessment outcome
Loeber, Pardini, Stouthammer-Loeber, & Raine	2007	Strong
Loeber, Stouthammer-Loeber, Van Kammen, & Farrington	1991	Strong
Pobanz	2000	Moderate
Werner	1990	Not assessed
Griffin, Beech, Print, Bradshaw, & Quayle	2008	Moderate
McEachran	1995	Moderate
Rennie & Dolan	2010	Strong
Griffin & Vettor	2012	Moderate
Platt	2009	Weak
Clingempeel & Henggeler	2003	Strong
Lodewijks, de Ruiter, & Doreleijers	2010	Strong
Carr & Vandiver	2001	Moderate
Onifade, Petersen, Bynum, & Davidson II	2011	Moderate
Pearl, Ashcraft, & Geis	2009	Moderate
Vincent, Chapman, & Cook	2011	Strong
Stouthammer-Loeber, Wei, Loeber, & Masten	2004	Strong
Jimerson, Sharkey, Furlong, & O'Brien	2004	Moderate

Appendix 9: Data Extraction Form

Title:

Author(s):

Year:

Source:

Study location (i.e., Country)?

Time frame:

Overall Aim(s) of study:

Population

Size of relevant sample (i.e., Re-offenders/Desisters):

Age of sample at the time offending and when protective factors were assessed:

Gender of sample:

Ethnicity of sample:

Type of offender (various/specific, if specific what type?):

How was offending defined (e.g., self report or official statistics)?

Other relevant information:

Exposure

What protective factors were assessed:

How were protective factors defined (e.g., were they just a positive way of framing risk factors?
Or were they something inherently different)

How was exposure to protective factors assessed/ How was data on exposure to protective factors collected?

Comparator

Type of re-offence (various/specific, if specific what type?):

Number of re-offenders:

How was re-offending defined (e.g., self report or official statistics)?

Number of desisters:

How was desistance defined (e.g., self report or official statistics)?

Length of follow-up period:

Outcome

Statistical analysis used:

Where protective factors related to desistance? Yes No

If yes, how was exposure to protective factors related to outcome i.e., desistance:

If applicable, relationship between risk and protective factors (e.g., Do protective factors make any contribution beyond the study of risk factors alone):

Limitations of study:

Conclusions:

Additional Notes:

Information in next section is based on the information gathered through the quality assessment tool (in Appendix 7)

Selection bias: Is the sample likely to be representative of the target population?

Study Design (i.e., cohort/case control):

Was design of the study appropriate and helpful to answering the research questions?

Were confounding variables appropriately accounted for, controlled and/or explained?

Was blinding utilised where feasible?

Were data collection tools adequate?

Were drop-outs and missing data appropriately reported and dealt with?

Were statistics and results reported clearly?

Overall Quality of study:	Strong	Moderate	Weak
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Appendix 10: Overall aims of studies

Authors and year of study	Summary of overall aims
Clingempeel & Henggeler, 2003	(1)To delineate adolescent risk and protective factors that discriminate between adult re-offenders and desisters (2)Consider differences in functioning between these groups in early adulthood.
Lodewijks et al., 2010	Examine impact of protective factors on desistance from violent re-offending in 3 samples, (only pre-trial sample met inclusion criteria for this review), regarding whether they were predictive of re-offending and how they interacted with risk.
Loeber et al., 2007	Identify 1)factors associated with moderate-to-serious delinquency; 2)factors predictive of desistance/persistence; 3)how well adjusted desisters are compared to persisters and non-delinquents.
Loeber et al., 1991	Consider 1)offense seriousness; 2)correlates for dynamic classification of offending accounting for re-offending over time or 3)independent of age; 4)correlates of initiation, escalation and desistance in offending; 5)extent initiation, escalation and desistance constituted different processes
Rennie & Dolan, 2010	Explore SAVRY protective factors regarding past behaviour and future desistance/re-offending.
Stouthammer-Loeber et al., 2004	Examine: 1)prevalence of persistent serious delinquency and what proportion desist; 2)extent desisters and persisters differ on positive outcomes. Identify: 3)which promotive/risk factors measured in adolescence predict desistance; 4)which promotive/risk variables are concurrently associated with desistance
Vincent et al., 2011	Examine 1)risk rating judgements verses numeric scoring approach for predicting recidivism; 2)contribution of dynamic risk factors; 3)whether there is differential predictive validity by race-ethnicity
Carr & Vandiver, 2001	Identify stressors, risk factors and protective factors among young offenders and how these are associated with recidivism.
Griffin et al., 2008	Preliminary analysis of the AIM2 assessment, including a small-scale reconviction study
Griffin & Vettor, 2012	Examine the ability of AIM2 and the adapted AIM assessment to predict sexual re-offending in adolescents with learning disabilities.
Jimerson et al., 2004	Examine predictive validity of the SB ARA
McEachran, 1995	Examine predictive validity of the PCL:YV and SAVRY.
Onifade et al., 2011	Investigate 1)what neighbourhood structural characteristics are identifiable at block group levels 2)types of block groups (based on neighbourhood socioeconomic ecology) can be identified; the relationship between derived block groups and recidivism
Pearl et al., 2009	Assess the predictive validity of the San Diego Regional Resiliency Check Up (SDRRC) for recidivism
Pobanz, 2000	Investigate whether protective factors discriminate between re-offenders and desisters above and beyond a risk assessment

Appendix 11: Measures of resilience

These measures have been identified through a systematic review undertaken by Windle et al., (2011) and the compendium of resilience-based measures put together by Hall (2010).

Name of Measure	Author (s)	Date (s) of publication	Target population
The Resiliency Scales for Children and Adolescents (RSCA)	Prince-Embury	2007	Children & Adolescents aged 9-18
The Dispositional Resilience Scale	Bartone	1989; 1991; 1995; 2007	Adults
The Ego-Resiliency (ER) 89	Block & Kremen	1996	Young adults (18-23yrs)
The Connor-Davidson Resilience Scale (CD-RISC)	(1) Connor & Davidson	2003	Adult
	(2) Cambell-Sills & Stein	2007	Adolescents (12-17yrs)
Youth Resiliency: Assessing Developmental Strengths (YR:ADS)	Donnon & Hammond	2003, 2007	Adolescents (12-17yrs)
The Resilience Scale for Adults (RSA)	(1) Friborg, Hjemdal, Rosenvinge, & Martinussen	2003	Adults
	(2) Friborg, Barlaug, Martinussen, Rosenvinge, & Hjemdal	2005	Adults
The Resiliency Attitudes and Skills Profile	Hurtes & Allen	2001	Adolescents (12-17yrs)
Adolescent Resilience Scale	Oshio, Kaneko, Nagamine, & Nakaya	2003	Young adults (19-23yrs)

California Healthy Kids Survey _ The Resilience Scale of the Student Survey	Sun & Stewart	2007	Children of primary school age
Devereux Early Childhood Assessment program (DECA)	LeBuffe & Naglieri	1998	Children aged 2-5 yrs
Devereux Student Strengths Assessment (DESSA)	(2) LeBuffe, Naglieri, & Shapiro	2009	Children aged 5-14 yrs
The Brief Resilience Scale	Smith, Dalen, Wiggins, Tooley, Christopher, & Bernard	2008	Adults
The Child and Youth Resilience Measure	Ungar, Liebenberg, Boothroyd, Kwong, Lee, Leblanc, Duque, & Maknach	2008	Adolescents and Young Adults (12-23 yrs)
The Adolescent Resilience Questionnaire (ARQ)-revised	Gartland, Bond, Olsson, & Sawyer	2006	Adolescents (11-19 yrs)
Resiliency Scale (RS)	Jew, Green, & Kroger	1999	Adolescents
The Resilience Scale	Wagnild & Young	1993	Adults
Psychological Resiliency	Windle, Markland, & Woods	2008	Adults
Ego Resiliency	Klohn	1996	Adults
Resilience Scale for Adolescents (READ)	Hjemdal, Friborg, Stiles, Martinussen, & Rosenvinge	2006	Adolescents (13-15 years)
Ego Resiliency	Bromley, Johnson, & Cohen	2006	Adolescents & Adults

Appendix 12: A summary of published research papers in relation to the RSCA

Author (s)	Year	Purpose of study	Sample
Prince-Embury & Courville	2008(a)	Studying the construct validity of the RSCA through comparing the one-, two-, and three- factor models of resilience using the RSCA.	650 American children and young people. This study utilized the normative sample for the original testing of the RSCA and detailed within the RSCA manual.
Prince-Embury & Courville	2008(b)	A study of the invariance across age and gender of the three-factor structure of the RSCA.	650 American children and young people. This study utilized the normative sample for the original testing of the RSCA and detailed within the RSCA manual
Prince-Embury	2008	To examine the concurrent validity of the RSCA with the Beck Youth Inventory-II (Beck, Beck, Jolly, & Steer, 2005) and analyse the validity of the RSCA at assessing whether there had been a clinical diagnosis of the youngster	200 American adolescents from a normative sample and 169 American adolescents from a clinical sample.
Prince-Embury	2009	To study the relationship between parent educational level and race and ethnicity with the scores on RSCA.	450 American children and demographic information about their parents. This study utilized the normative sample for the original testing of the RSCA and detailed within the RSCA manual
Cui, Teng, Li & Oei	2010	To study the psychometric properties and factor structure of the Resiliency scale for Adolescents (Prince-Embury, 2006) in Chinese undergraduates.	726 Chinese undergraduate students.
Kumar, Steer & Gulab	2010	To study whether there were significant differences in the resiliency profiles, as measured by the RSCA, of youngsters admitted to a psychiatric ward.	100 Children and adolescents aged 9-to-17 years. Who had been admitted to an inpatient psychiatric unit and diagnosed with psychiatric disorder. The psychiatric unit was located in a middle-to upper-middle class suburban community in America.
Prince-Embury &	2010a	To study and compare the resiliency profiles of normative	641 American children and young people were used within

Steer		and outpatient samples of youngsters, using the RSCA.	the normative sample and 285 American children and young people were used within the clinical sample. This study utilized the sample for the original testing of the RSCA and detailed within the RSCA manual.
Prince-Embury	2010a	To study the psychometric properties of the RSCA in a sample of children and adolescents with psychiatric disorders.	110 Children and 178 adolescents in America who were receiving outpatient treatment for psychiatric disorders.
Mowder, Cummings & McKinney	2010	To explore the resiliency profiles of juvenile offenders using the RSCA.	51 male and 164 female juvenile offenders in a maximum-security correctional facility in America.

Appendix 13: Adversity Scale

ID: _____

Please **circle** the most appropriate number on the continuum to mark the level of known adversity the young person has been exposed to across their lifespan (for multiple examples of adversity please indicate the most serious example) However, multiple examples of exposure to adversity is likely to result in an increase in the score for the overall severity.

Examples of exposure to adversity
(occurred at any stage in the past).

Continuum of Adversity

NB: this is not a definitive list, but is merely for **guidance** of how to rate the severity of the level of adversity faced by the young person:

	EXPOSED TO SEVERE DEGREE OF ADVERSITY
	<div style="display: flex; align-items: center;"> <div style="flex: 1; border-left: 1px solid black; position: relative; margin-right: 10px;"> <div style="position: absolute; top: 0; right: -5px; border-top: 1px solid black; border-right: 1px solid black; width: 5px; height: 50px; transform: rotate(90deg);"></div> </div> <div style="border: 1px solid black; width: 50px; height: 50px; display: flex; align-items: center; justify-content: center; font-size: 24px;">6</div> </div>
Death of a parent / primary carer; Become incapacitated (e.g., loss of limb); Suffered abuse over a prolonged period (emotional, physical, sexual) Suffered extensive, prolonged, serious bullying	<div style="border: 1px solid black; width: 50px; height: 50px; display: flex; align-items: center; justify-content: center; font-size: 24px;">5</div>
Serious illness (e.g., Cancer, HIV); Single incident of abuse (emotional, physical, sexual); Family suffering severe financial difficulties Victim of violent crime (e.g., stabbing; assault involving a degree of trauma)	<div style="border: 1px solid black; width: 50px; height: 50px; display: flex; align-items: center; justify-content: center; font-size: 24px;">4</div>
Divorce of parents; Leave home at an early age (where likely to increase long term difficulties e.g., become involved in anti-social group, suffer financial hardship, lack social support); Problematic peer relationships (general difficulties); Permanent exclusion from school	<div style="border: 1px solid black; width: 50px; height: 50px; display: flex; align-items: center; justify-content: center; font-size: 24px;">3</div>
Temporary hospitalisation of a parent (where support from others is available for the duration the parent is in hospital) Victim of property crime (e.g., mobile phone theft; single incident of burglary); Death of grandparent, aunt or uncle (who are not primary carers); Breaking up with girlfriend/boyfriend (e.g., short term and more superficial relationship) Failing an exam (e.g., where have opportunity to resit)	<div style="border: 1px solid black; width: 50px; height: 50px; display: flex; align-items: center; justify-content: center; font-size: 24px;">2</div>
Not accepted at college/school of choice Moving home (e.g., moving a short distance with family)	<div style="border: 1px solid black; width: 50px; height: 50px; display: flex; align-items: center; justify-content: center; font-size: 24px;">1</div>
	<div style="border: 1px solid black; width: 50px; height: 50px; display: flex; align-items: center; justify-content: center; font-size: 24px;">0</div>
	EXPOSED TO NO ADVERSITY

Appendix 14: Scores for adverse events and associated descriptions provided by 21 professionals

Adverse Event	Newly defined adverse event	N	Mode	variance	range	Clarification/Description
Serious illness		21	4	.33	3 to 5	Examples were cancer, disability, HIV, which is not necessarily life threatening
Victim of property crime		21	2	.66	1 to 4	Examples were mobilephone theft, burglary: single incident
Severe financial difficulties		21	3	1.01	2 to 5	Relates to poverty for young person and poverty for family
	Family suffering severe financial difficulties	17	4	.61	3 to 5	Family poverty, likely to limit young person's opportunities
Moving home		21	1	.46	1 to 3	Moving a short distance with family or through choice into independent living nearby family
Permanent exclusion from school		21	3	.39	2 to 4	People generally felt further clarification not required
Hospitalisation of a parent		21	2 & 3	1.3	1 to 5	Relates to short-term and long-term stay in hospital
	Temporary hospitalisation of a parent	13	2	.58	1 to 3	Short term and temporary, where support of others is available for duration of hospitalisation
Single incident of abuse (emotional, physical, sexual)		21	4	.25	3 to 4	People generally felt further clarification not required
Breaking up with girlfriend/ boyfriend		21	2	.83	1 to 4	This score generally given for short term, more superficial relationship
Failing an exam		21	2	.69	1 to 4	Not degree, get opportunity to resit
Death of relative who is not primary carer		21	2	.79	2 to 4	Included close friends, siblings, grandparents, aunt & uncle
	Death of grandparent, aunt or uncle	10	2	.18	2 to 3	
Victim of violent crime		21	4	.33	3 to 5	Examples were robbery with assault, stabbing, beaten up. Degree of

Adverse Event	Newly defined adverse event	N	Mode	variance	range	Clarrification/Description
						trauma involved
Not accepted at college/school of choice		21	1	.43	0 to 2	People generally felt further clarification not required
Suffered duration of abuse (emotional, physical, sexual)		21	5	.13	4 to 5	People generally felt further clarification not required
Divorce of parents		21	3	.50	2 to 4	People generally felt further clarification not required
problematic peer relationships		21	3	.70	1 to 4	involved general difficulties making friendships rather than one-off arguments
Suffered extensive serious bullying		21	5	.36	3 to 5	People generally felt further clarification not required – prolonged duration
Become incapacitated		21	5	.46	3 to 5	Examples were permanent loss of limb, may make individual more dependent on others and limit opportunities available
Death of a parent		21	5	.56	3 to 5	People generally felt further clarification not required
Leave home at an early age		21	3	.55	2 to 4	Where likely to increase long term difficulties e.g., anti-social group; financial hardship, absence of social support

Appendix 15: Syntax used for power analysis

i) Syntax to run on dummy dataset to get new matrix, based on scores in pilot study

```
MANOVA MasRS RelRS ReaRS by group(0,2)/  
WSFACTORS=score(3)/  
MATRIX=out(*)/  
DESIGN.
```

ii) Syntax to run power analysis for MANOVA, based on estimates from dummy dataset

```
MANOVA MasRS RelRS ReaRS by group(0,2)/  
WSFACTORS=score(3)/  
MATRIX=in(*)/  
power=f(0.5) exact/  
DESIGN.
```

Appendix 16: Ethical Approval for present study from the University of Birmingham

[Not available in the digital version of this thesis]