UNDERSTANDING THE PERSONALITY TRAITS OF STREET-GANG INVOLVED INDIVIDUALS

by

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Abstract

This thesis contributes to the literature base regarding the psychology of street-gang membership by exploring the personality traits of street-gang members, with a specific focus on resilience. Academics have suggested that street-gang membership is the result of an integration between individual and environmental factors and recommend that research is conducted to explore these areas. Considering the negative impact of street-gang related violence, this area of research is crucial for individual street-gang members, the practitioners that work with them, and the wider community.

The first chapter provides an introduction to the thesis by outlining the rationale for this research and exploring some of the definitional difficulties in relation to two key constructs: street-gang membership and resilience. A commentary on the current need for this research, alongside historical background and the theoretical underpinnings of gang membership is provided. Subsequently, focus is given to the construct of resilience.

Chapter 2 presents the first systematic literature review conducted to explore the personality traits of male street-gang members. The review concludes by highlighting several personality traits that appear to be linked to street-gang membership including overall psychopathy, emotional traits (such as aggression), traits relating to autonomy, traits relating to identity, anti-social personality difficulties and resilience.

The third chapter of this thesis provides a critical evaluation of a resilience measurement tool, the Connor-Davidson Resilience Scale (CD-RISC; Connor & Davidson, 2003). Findings in relation to reliability and validity of the measure are promising. However, it is noted that there is currently no gold standard measurement tool of resilience, and the critique concludes that a more specific measure of resilience would be helpful for research and practice.

Chapter 4 presents an empirical research study investigating differences in scores on the Resilient Systems Scale (Maltby et al., 2017) between street-gang and non-street-gang involved individuals in custody in the U.K. No significant differences in scores on the sub-scales were found between street-gang and non-street-gang involved individuals. However, descriptive statistics offer some interesting results that may benefit from further exploration. The conclusion of this chapter highlighted the need to further explore the construct of resilience in order to ascertain whether this trait is associated with street-gang membership and/or leaving a street-gang.

The thesis conclusions presented in Chapter 5 consider the main findings in relation to previous literature, comment on the strengths and limitations of the thesis as a whole, discuss the implications for forensic practice, and make recommendations for future research.

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Chapter 1

Introduction

"Out of suffering have emerged the strongest souls; the most massive characters are seared

with scars"

– Kahlil Gibran, 1912

(Lebanese/American writer, poet and philosopher)

The focus of this thesis is understanding the personality traits of street-gang members, with particular focus on resilience. Specifically, Chapters 2 and 4 of this thesis will be focused on street-gang membership, and Chapters 3 and 4 will be focused on resilience. As such, relevant literature to both street-gang membership and resilience is outlined below.

The Current Context of Street-Gangs: Prevalence and Media Portrayal

"This war won't end: London gang murders on the rise" is the first news article in an internet search on street-gang membership. The article reports details of street-gang rivalry and its devastating impacts (Hughes, 2019). According to the Children's Commissioner (2019), there are currently 27,000 young people who self-identify as a street-gang member, 60,000 peripheral street-gang members (members by association) and a further 313,000 young people who know a street-gang member. Figures such as these highlight the prevalence of street-gang membership in the U.K. Over the last decade, street-gang involvement in the U.K. has received increasing academic and political attention (Gormally, 2015). Subsequently, the disturbing impacts of street-gang related crime are prevalent within U.K. media, and official statistics from the Metropolitan Police (MET) offer evidence for the extent of the issue. In 2018, 135 individuals were murdered in London alone (MET, 2021) with a high proportion of these attributed to street-gang violence. This number increased to 149 in 2019 (MET, 2021), in addition to approximately 1,300 street-gang related stabbings in London (Hughes, 2019). Finally, in 2020, the number of individuals murdered in London was

127, despite the national lockdown resulting from the Covid-19 pandemic. Half of these victims were aged under 24, highlighting concerns around serious youth violence and 31 of these were officially recorded as street-gang related (Hill, 2021; MET, 2021). The rate of increase in murders linked to street-gang violence is of particular concern; such murders have more than doubled in the last five years, with the youngest recorded victim of street-gang related violence in 2019 being just 14 years old (MET, 2021). Furthermore, it has been reported that young men of black and minority ethnic backgrounds (BAME) are being murdered in London at a rate unlike any other city in the U.K. due to "gang wars" (Hughes, 2019). Furthermore, the BBC has recently reported on a number of individuals known for their music, who have been murdered in the context of rival gangs and "drill wars" - a type of music associated with street-gang nominals (BBC, 2019; BBC, 2020; Haydock & Harte, 2020).

Traditional street-gangs associated with the U.K. such as The Firm (led by the Kray twins) and the Peaky Blinders, who were known for their "reign of terror" in their home cities (London and Birmingham respectively), have also been portrayed in the media through television series and films such as *Peaky Blinders* (Mandabach et al.,2013-present), *the Krays* (Medak, 1990) and *Legend* (Helgeland, 2015). It is noted in media reports and literature that street-gangs utilised intimidation and violence for control of territory in order to operate their businesses and earn money (Gangland, 2007).

In addition to growing media interest, there has also been increased interest from government departments and academic bodies in the U.K. on the topic of street-gangs. In 2018, HM Government published the Serious Violence Strategy, reporting on trends in street violence, risk factors for individuals becoming involved with street-gangs, county lines, and required interventions. Following this, in 2019, the House of Commons Serious Youth

Violence summary highlighted the need to understand street-gangs and to intervene effectively to reduce street-gang related crime.

The impact of street-gang related violence is extensive and further stretches limited resources in a range of organisations in the U.K. (e.g. the Criminal Justice System, hospitals, and mental health services; Coid et al., 2013). Furthermore, the Centre of Health and Disease control report that due to the health implications of street-gang membership, understanding youth violence and street-gang membership is one of their top priorities (Gillman et al., 2014). Likewise, research highlights that, in addition to the potential consequence of imprisonment for adolescent street-gang members, there are other potential significant consequences in adulthood including physical health problems, emotional well-being difficulties, reduced educational progress, and lower socioeconomic stability; thus further justifying the necessity of effective street-gang prevention programmes (Peguero, 2013).

The findings in the U.K. regarding the prevalence and impact of street-gangs are mirrored in other countries. For example, in 2015 in the U.S.A, the National Gang Intelligence Centre (NGIC) reported that at least 50% of law enforcement jurisdictions indicated street-gang related crime had notably increased over the last two years. In addition, the Whitehouse recently created 'National Gang Violence Prevention Week' to highlight the need for intervention from support services (The Whitehouse, 2019). In Jamaica, it is reported that a high proportion of all violence is related to gang activity ("*Another Battle in an Unwinnable War*," 2010). In South Africa, street-gang rivalry resulted in over 900 deaths in 2019 (Bax et al., 2019) and maybe most notably in El Salvador, where two notorious gangs are located, it is reported that the murder rate has spiked with 100 street-gang related deaths per 100,000 residents (Zaidi, 2019).

Despite an increase in research conducted on gangs, there remains a notable gap in research in relation to street-gang members in the U.K. (Maitra, 2020). As noted above, the

real-life impacts of street-gang affiliation and street-gang related crime are reaching unprecedented levels in the U.K. As such, there is a clear need for research into this area in order to inform practice and ultimately reduce street-gang formation (Bolger, 2019).

Defining Gangs and Gang Membership

The word gang is of Germanic origin, originally meaning "a journey". In Middle English, the term was later used to describe "a set of things or people which go together" (Oxford English Dictionary, n.d.). The term "gang" is defined in the Cambridge dictionary as "A group of young people, especially young men, who spend time together, often fighting with other groups and behaving badly" (n.d.). As highlighted above, the importance of research into gangs is essential, however to enable this, there needs to be a clear understanding of what a gang is (Wood & Alleyne, 2010). Despite ongoing research, there is still a lack of consensus about the definition of gangs generally and gang membership both in practice and in academic literature (Esbensen et al., 2001). Such disparities in definitions can lead to difficulties when conducting research and collating research findings.

Academic definitions of gangs date back to the 19th century. In 1890, American gangs were referred to as the "plankton of society" who have their own ideality (Scott, 1956). In 1927, Thrasher defined a gang as being a structured group (with strong loyalty to each other), who have a definite territory usually in a lower-class area and have leaders who strive to keep their place, members who are capable of planned actions, a traditional initiation procedure, and an established identity. Throughout the early literature, four recurring themes appear to exist among definitions of gangs: self-recognition as an identifiable group; labelling by society as a group; delinquent and/or criminal acts; and a willingness to use violence in order to achieve goals (Witty, 1932).

Definitions of gangs continued to grow through the 20th century, with Klein et al. (1991) explaining that gangs do not differ significantly from each other, therefore definitions

are fairly broad. In 1992, Miller proposed a specific definition of gangs to be "a self-formed association of peers, united by mutual interests, with identifiable leadership and internal organisation, who act collectively or as individuals to achieve specific purposes, including the conduct of illegal activity and control of a particular territory" (p. 21). Following this, in 1998, law enforcement agencies ranked the importance of characteristics that identify a gang - committing crime together, having an identifiable name, and "hanging out" were considered to be the most important aspects of a gang (U.S. Department of Justice).

Goldstein (1991) argued that the definitions offered prior to 1991 are helpful, however suggested that what constitutes a gang differs according to the political, cultural and economic climate at the time. In the early 21st century, academic definitions of gang membership focused on gang members characteristics (Gordon, 2000). Shropshire and McFarguar (2002) highlight a helpful distinction between crime firms and gangs by arguing that crime firms are groups of individuals who join exclusively to engage in criminal activity, whereas gangs form for a variety of social and psychological reasons and members engage in a wide range of activities, one of which can be offending. Howell (1998) however, suggests the absence of criminality in defining a gang leads the definition of gang membership to be too broad. Sharp et al. (2006) tried to encompass the various aspects cited as gang related to define a "gang" as:

> A group of three or more, that spends a lot of time in public spaces, has existed for a minimum of three months, has engaged in delinquent activities in the past 12 months, and has at least one structural feature, i.e., a name, leader, or code/rules. (p. 14)

Despite great growth in defining a gang, there is still ongoing debate as to what constitutes a gang. Interestingly however, it appears that the four main themes highlighted in early literature (self-recognition, labelling by society, delinquent acts, and a willingness to

use violence) are still highlighted as prevalent, with the introduction of control of territory and a structure or hierarchy. Subsequently, the NGIC (2015) highlighted the importance of considering that there are different types of gangs (e.g., prison gangs, extremist gangs and street-gangs), indicating a need for specific and separate definitions.

In the late 90s the Eurogang network was created and tasked to assimilate the current research from America and Europe to develop a consensual understanding of troublesome youths/gangs (Medina et al., 2013). This is considered to be the most notable network of gang researchers to date (Wood & Alleyne, 2010). During the early stages of this research, the Eurogang network noted that there are different types of gangs, each of which needs to be understood; one such type was street-gangs. The network reports that the street-oriented aspect of gangs is what elicits fear and concern and therefore requires research to inform policy and programs. This specific research resulted in the Eurogang definition of "street-gang" as "any durable, street-oriented youth group whose involvement in illegal activity is part of their group identity" (Weerman et al., 2009, p. 20). In relation to street-gang membership, this is the most widely cited definition to date (Wood & Dennard, 2017). Please see Chapter 2 for further comment on the Eurogang definition of street-gang membership.

Although the Eurogang definition is widely cited, some research uses different information by which to label an individual as being street-gang involved or not. For example, self-report has been cited as useful in this specific population (Knox, 1991). Esbensen et al. (2001) simply asked individuals if they were members of a street-gang and what this meant to them. However, self-report alone may result in the underreporting of street-gang membership due to the issue of social desirability (Egan & Beadman, 2011). Wood and Alleyne (2010) suggest combining self-report and use of official records, to provide a more inclusive and global understanding of street-gang membership.

As highlighted, there is also an increasing political interest in the field of street-gangs. In an attempt to end confusion surrounding the term street-gang and allow comparison between research studies, the Gangs Working Group (2009) defined a street-gang as:

> A relatively durable, predominately street-based group of young people who (1) see themselves (and are seen by others) as a discernible group, (2) engage in a range of criminal activity and violence, (3) identify with or lay claim over territory, (4) have some form of identifying structural feature and (5) are in conflict with other, similar gangs. (p.21)

However, in 2010, a joint review undertaken by HMP Inspectorate of Probation, Prison and Constabulary concluded there was no common understanding of what constituted a street-gang between those individuals working in the community or in custody in the U.K. (2010). Esbensen et al. (2001) highlighted that definitions will always vary depending on who is using the definition (i.e., researcher, practitioner, or policy maker).

In addition, it is important to comment on the ethical implications of the use of the term "gang". Hallsworth and Silverstone (2009) suggest abandoning the term "gang" due to associated stereotypes. Alongside this, StopWatch (a coalition campaign group centred around fair policing) report that the U.K. street-gang matrix is damaging to young people as it is based on negative stereotyping which isn't always rooted in evidence and can lead to discrimination (Williams, 2018). Additionally, in America, individuals labelled "gang members" are more likely to receive longer prison sentences in comparison to other, non-gang related offenders (Esbensen et al., 2001).

Despite the above difficulties and implications, defining gang membership, specifically street-gang membership, is considered necessary for the purpose of conducting research (Wood & Alleyne, 2010). It is noted throughout the literature that more research is

needed on defining street-gang membership (Esbensen et al., 2001; Klein et al., 1991; Wood & Alleyne, 2010).

Overarching Theories of Street-Gang Membership

In addition to understanding what a street-gang is, it is essential to understand how a street-gang forms and why individuals may become street-gang members (Wood & Alleyne, 2010). Explanations of street-gang membership stretch over almost a century, with academics providing a range of theories and research findings.

The Chicago school of street-gang research presented the earliest published theories of street-gang formation. The first of which was reported by Thrasher (1927), termed Social Disorganisation Theory. This theory suggested that economic instability in disadvantaged areas led to the collapse of conventional social systems such as the church, school and family. This gradual breakdown meant the systems were weakened and unable to meet the populace's needs; in turn, this led to street-gang formation as individuals needed to satisfy their needs. Shaw and McKay (1931) further built on this theory arguing that disorganised neighbourhoods culturally transmit criminal traditions, similar to any other cultural element. They suggested families in poor inner-city areas had low levels of authority over their children, who, once they were exposed to delinquent traditions, then engaged in the delinquent behaviour themselves. They suggested that if the social systems failed to adequately meet the needs of young people, then young people would form groups such as street-gangs which provided the social system necessary to meet their needs. This deviation from conventional norms is passed through generations via socialisation. Similarly, Shaw and McKay reported that it was the environment that determined whether or not an individual would become street-gang involved. Lastly for this era, Sutherland (1937) noted that criminal behaviour is prevalent across all classes and therefore proposed the Differential Association Theory; i.e., claiming that young people become delinquent by associating with individuals

who are "carriers" of delinquent norms and therefore developing the attitudes and skills necessary to become delinquent themselves. However, this school of research has been met with several criticisms. First and foremost, this research focuses on street-gang involvement as purely criminal, showing limited specificity to street-gang formation itself (Wood & Alleyne, 2010). Furthermore, it suggests that people lack choice and are motivationally empty (Emler & Reicher, 1995). Thornberry (1998) reported that although important, having delinquent peers is not an adequate, stand-alone explanation for street-gang membership. Finally, Caulfield (1991) reports that this research was driven by selection bias whereby it only looked at disadvantaged areas of society.

Akers (1993) merged the theory of Differential Association and Operant Conditioning to form the Social Learning perspective as to why youth street-gangs form. Akers reports that the general social learning mechanisms whereby norms, rules and motivations of behaviour are learnt, combined with the roles of positive and negative social mechanisms, condition the individual toward or away from crime (Akers, 1985; Bandura, 1977). However as noted by Winfree et al. (1994), problems with causal sequencing remain unanswered whereby research has not yet defined which comes first - associations, definitions or reinforcements. Additionally, later theories suggest greater complexity and specificity regarding the prominent factors is needed in order to explain street-gang involvement (Wood & Alleyne, 2010).

Another early general theory that has been applied to the formation of street-gangs is Strain Theory, first presented by Cohen in 1955. Cohen suggested that difficulties result from society's universal expectation of individuals to achieve a number of goals, however only a limited number of individuals have the opportunity and access to do this. This inequality combined with societal pressure, places strain on the individual. Relating this to street-gang formation, Cohen argued that individuals experience strain from status frustration and

therefore align themselves with likeminded individuals in addition to targeting middle class individuals who they view as having taken their opportunities. Additionally, Cohen suggested that strain is caused when individuals are inadequately socialised to enable them to accept the means available to them to achieve goals. This social deprivation leads to feelings of self-hatred, guilt and low self-esteem whereby a child blames themselves for not meeting societal expectations, and copes with this by seeking alternative avenues for status achievement such as street-gang membership (Cohen, 1955; Wood & Alleyne, 2010). However, Webster et al. (2006) criticised this theory for not being able to explain why many youths who experience strain do not offend. Furthermore, Knox and Tromanhauser (1991) suggested Strain Theory did not account for individuals who are street-gang involved yet were wealthy and had good family support.

Following this, Gottfredson and Hirschi (1990) developed Control Theory as an explanation for general offending. Similar to the early theories, Control Theory attributes delinquency to deteriorating social structure within communities, alongside inadequate child rearing and the absence of key relationships; moreover, it suggests that individuals offend to achieve short-term gains such as financial reward. In relation to street-gang membership, Thornberry (2006) suggested that Control Theory can predict the onset of street-gang membership, however, also suggested that the theory did not provide an adequate explanation as to why there is continued street-gang involvement. Additionally, this theory suggests inadequate child rearing (namely, a lack of discipline) can result in an individual joining a gang. However early research from Klein (1995) found that many street-gang members were heavily disciplined though the use of physical punishment by authoritarian fathers; thus suggesting that a lack of discipline alone cannot account for gang membership.

Subsequently, Thornberry and Krohn developed the Interactional Theory (2001). They elaborated on earlier theories by proposing that street-gang membership results from a

reciprocal relationship between the individual and factors from multiple domains. These include delinquent peer groups, inadequate social structures, weakened social bonds, and a learning environment that fosters and reinforces delinquency. Furthermore, they highlighted that within street-gangs not all members are alike and concluded that individual differences also contribute to why individuals may join a street-gang.

Consequently, individual differences such as psychological factors, personality traits and identity started to gain academic attention as having a role in the formation of street-gangs. Wood and Alleyne (2010) suggested a multi-disciplinary framework which encompassed ideas from early theories of street-gang formation and the role of psychological factors. This illustrated a pathway into and out of criminality and/or street-gang membership. The inclusion of both psychological factors (psychopathy, hyperactivity, anxiety, IQ, and mental health problems) and criminological factors (reinforcement of offending and opportunity for criminal learning) led to this unique theory of street-gang formation. This multidisciplinary approach addresses previous shortcomings in prior theories, accounts for factors from multiple domains, and offers some evidence-based suggestions as to why individuals may join street-gangs; therefore, it could be argued that this is the most robust theory to date.

It is these later theories (Thornberry & Krohn, 2001; Wood & Alleyne, 2010) that have guided the author's thinking throughout this thesis by taking direction from their conclusions that individual differences appear to be associated with street-gang formation.

Overall, it is clear that the formation of street-gangs is a complex topic with research suggesting that gang formation can be a result of an interaction between multiple domains (Thornberry, 2006; Thornberry & Krohn, 2001; Wood & Alleyne, 2010).

Specific Factors Relating to Street-Gang Membership

As well as overarching theories of street-gang membership, research has also explored specific factors relating to street-gang membership. Having an understanding as to what factors impact upon the likelihood that an individual will join or leave a street-gang is central to reducing street-gang violence (Dodd, 2019).

Firstly, looking to factors relating to why individuals join street-gangs. Sanchez-Janowski (1991) suggested that many youths see themselves as making a rational choice to join a street-gang because they see personal advantages to street-gang membership. Early research by Hill et al. (1999) found that living in a deprived neighbourhood, having familial problems, being absent and/or low achieving in school, having negative peer influences, and individual level factors (such as drug use and self-reported violence) all significantly predicted that an individual would join a street-gang. Research conducted over the last two decades has found consistent support for juvenile delinquency, negative life events, negative peer networks and poor parental supervision as specific factors as to why individuals may join street-gangs (Klein & Maxson, 2006; O'Brien et al., 2013). However, such research has been criticised for focusing on criminality and being overly simplistic. Through discussions with street-gang individuals in custody, Curry (2004) purported that there are five key factors as to why some young people joined local street-gangs: to gain a sense of belonging; for protection; for financial gain; to acquire status; and for pleasure, such as being provided with laughter and friendship. This study provides in-depth, field-based data.

A recent systematic literature review by Raby and Jones (2016) concluded that individuals join street-gangs as a result of a combination of risk factors from varying domains. Risk factors included: family factors (such as poor parental attachment, low parental supervision and parental abuse); school factors (such as suspension); individual factors (such as familiarity with drugs and antisocial behaviour); community factors (such as poverty); peer associations; and psychological difficulties (such as psychological distress).

However, the authors highlight that although there appears to be consistency in results, there is no clear directionality to these factors, therefore it is difficult to ascertain whether these were what drew individuals to gang involvement or whether they are a result of gang activity.

Finally, Waters (1927) suggested a key reason why an individual would join a street-gang related to the ability of other street-gang members to meet their psychological needs that had not been met by the individual's parents; this, nearly a century later, is still considered a prominent factor as to why an individual may join a street-gang (McDaniel, 2012; Pyrooz & Sweeten, 2015).

The current stance of research into why individuals join street-gangs seems to conclude this to be a combination of factors. For example, Decker and Van Winkle (1996) consider factors relating to joining street-gangs as 'push and pull' factors. Factors such as a need for protection, having family members who are also gang members, alienation and stress within family, education or a community, are considered factors that 'push' young people towards street-gang. They are considered to be internal factors which drive the individual towards membership. Pull factors are considered external variables that 'pull' an individual towards this lifestyle due to their perceived benefit of joining a street-gang. Pull factors for street-gang membership include financial gain, protection from victimisation, connectedness, status and respect (Harris et al., 2011; Tonks & Stephenson, 2019).

Research has also explored factors relating to desistance from street-gangs, which is vital to enable practitioners to support gang-affiliated individuals in leaving a street-gang (Bolden, 2013). Giordano et al. (2006) suggest individuals leave street-gangs as a result of changes in identity leading them to change their friendship choices. More recently, factors found to be important in desistance from street-gangs include maturity (Carson & Vecchio, 2015), support and significant others (Decker et al., 2014), self-reflection (Rice, 2015), becoming a parent (O'Neal et al., 2016), and geographical separation (Bolden, 2013).

Research by Berger et al. (2017) consider leaving a street-gang in line with push and pull factors (towards a non-street-gang lifestyle). They concluded desistance to be a result of a combination of push factors including victimisation and burnout, and pull factors including family responsibilities. These findings were mirrored in a recent systematic review by Tonks and Stephenson (2019), who concluded there to be a range of push and pull factors underpinning why an individual may leave a street-gang. From reviewing the literature, they report a range of factors that can result in gang desistance such as significant others, victimisation, disillusionment, self-reflection, parenthood, and maturation.

An interesting recent finding in relation to street-gang behaviours during the current Covid-19 pandemic was that a truce was called between rival street-gangs in South Africa in order to support the country in delivering essentials to those in need. The street-gang members recognised that they were best placed to help those in need as they have extensive experience in distribution alongside a detailed knowledge of their region. This portrays gang membership in a more positive light (CBS, 2020) and highlights the impact that external circumstances can have on the behaviour of street-gang involved individuals.

As mentioned above, individual and psychological factors are receiving growing interest as being related to why individuals are joining and/or desisting from street-gangs. More specifically, research over the last couple of decades has started to explore the link between personality traits and street gang involvement (Alleyne & Wood, 2010; Chu et al., 2014; Dupéré et al., 2007; Egan & Beadman, 2011; Mallion & Wood, 2018; Wood et al., 2014). It is difficult to conclude the causality of this link; it is unclear whether these traits are present prior to street-gang involvement, or as a result of street-gang involvement. This is particularly notable when thinking about the general age of joining a gang in comparison to the age of personality developing. Overall, research into both joining and desistance have

indicated personality as being a prominent factor and has highlighted the need for further research (Raby & Jones, 2016; Wood & Alleyne, 2010).

Resilience

One individual personality trait that is starting to receive attention in academic literature relating to street-gangs, is resilience (Mallion & Wood, 2018), however, research results regarding the association between this trait and street-gang membership are varied (Egan & Beadman, 2011). Chapters 3 and 4 of this thesis are on the topic of resilience, as such a discussion of resilience is provided below.

Firstly, it is important to consider the definition of resilience. The word resilience is derived from the Latin "resilire' which means "to recoil or rebound" and was first used in the 1620's to depict something springing back. The word resilient was not used figuratively about individuals or groups of people until the 1850s where it was used to describe being resistant to something (Frydenberg, 2017). Following this there have been varied dictionary definitions of the word, with the Collins English dictionary defining resilience as "the ability to bounce back after facing adversity" (n.d.). The current Oxford English Dictionary defines resilience as "the ability of people or things to recover quickly after something unpleasant, such as shock or injury" (n.d.).

Individual resilience has been portrayed in fairy tales, art and literature whereby heroes overcome great obstacles due to their strength of character and ability to be adaptive (Campbell, 1970). Empirical research began to explore the concept of resilience following a school of research in the 1960's into the aetiology of psychopathology. This research originated from studies that were starting to explore children who were believed to be 'at risk' for serious problems due to their biological heritage, perinatal hazards or their environments (Masten et al., 2009). However, researchers were intrigued by the common observation that despite the presence of serious issues, some children developed quite well;

the reasoning for this was recognised as important for scientific theory as well as practice. Therefore, these investigations inspired the first generation of research into what is now termed "resilience" (Masten et al., 2009).

With the academic research, resilience has generally been defined as "patterns of positive adaptive behaviour during or following significant adversity or risk" (Masten et al., 2009, p. 118). This definition suggests that for someone to be defined as 'resilient', there must be a judgement that an individual is 'doing okay' in relation to a set of expectations, in addition to a significant exposure to risk or adversity that has posed a threat to expected good outcomes. Masten et al. (2009) note that the meaning of resilience and its operationalisation within research has been the topic of considerable debate (Luthar & Brown, 2007; Masten 1999). Following two of the biggest British research studies of human development - the National Child Development Study (1958) and the British Cohort study (1970) - Schoon (2006) drew upon the data and defined resilience as the ability to adjust positively to adverse conditions. This definition has been deemed useful due to its concise yet encompassing nature (Schoon, 2006). The American Psychological Association (APA; 2014) reports resilience to be the process of adapting well in the face of adversity, trauma, tragedy, threats or even significant sources of stress, however Southwick et al. (2014) suggest that although this definition is useful, it does not reflect the complex nature of resilience. Furthermore, Pietrzak and Southwick (2011) highlight that research often takes a binary approach when considering resilience; reporting it as present or absent. They suggest that in reality, resilience most likely exists on a continuum that may be present in varying degrees across multiple life domains. Masten offers support for this notion and defines resilience as "referring to the capacity of a dynamic system to adapt successfully to disturbances that threaten the viability, function or development of that system" (Southwick et al., 2014, p. 4). This definition is

commended as it can be used across system levels including family, community, and societal contexts (Southwick et al., 2014).

Research by Bonanno (2004) highlights the importance of understanding that resilience is different from recovery. He highlights that 'recovery' is where normal functioning temporarily gives way to psychopathology (e.g., symptoms of depression) whilst an individual recovers, and then gradually returns to pre-event levels. This is in contrast to resilience, which is seen as the ability to maintain a stable equilibrium during and following the distressing event. In addition, Bonanno (2004) reports that research tends to focus on the absence of resilience and presence of issues such as chronic grief and PTSD, which leads to the misconception that resilience is rare. He evidences this through a recent review of the literature which found that the vast majority of individuals exposed to loss, violence, or life-threatening events, do in fact show healthy functioning suggestive of resilience (Bonanno, 2004). Furthermore, Bonanno (2004) highlights that there are multiple and often unexpected pathways to developing resilience, suggesting that resilience is a complex trait that is difficult to define.

Research has demonstrated that resilience is a multidimensional characteristic that varies with context, time, age, gender and culture, as well as within individuals' differing and evolving life circumstances (Garmezy, 1985; Rutter et al., 1985; Seligman & Csikszentmihalyi, 2000). Specifically, Luthar (2006) suggests resilience will fluctuate over time as new vulnerabilities and strengths arise from differing and challenging life circumstances, suggesting resilience to be an ever-changing state. Likewise, through her review of the concept of resiliency, Windle (2010) reports that resilience is changeable due to the underpinning concept that resilience requires exposure to a significant threat or adversity. She indicates that as a result, resilience will naturally vary across the life course dependant on

those experiences and on the assets and resources available to the individual, their life and their environment that facilitate their capacity for adaptation.

Luther et al. (2000) suggest that resilience is a broad term to define and therefore precision could be gained by using specific terms to describe a specific type of resilience, for example psychological resilience (Windle et al., 2008), educational resilience (Sacker & Schoon, 2007) and cognitive resilience (Glymour et al., 2008). More recently, Psychological Systems Theory suggests there are three types of resilience: Engineering; Ecological; and Adaptive Capacity (Maltby et al., 2017). Maltby et al. (2017) explain that different forms of resilience contribute to different life domains. Ecological resilience applies to life domains that require future goal orientation (e.g., work and education). Engineering resilience informs life domains where maintenance is required (e.g., health and well-being), and Adaptive Capacity is applied to life domains where functioning needs to be maintained in order to prevent a crisis state (e.g., job burnout or stressful experiences). This theory will be discussed further in Chapter 4.

Overall, the multidisciplinary panellists of the International Society for Traumatic Stress Studies concluded that resilience is a complex construct and definitions may vary dependant on the context of the individual, organisations, societies, and cultures (Southwick et al., 2014). Therefore, to enable a deeper understanding as to why some individuals can remain positive in difficult circumstances, exploring what might form the basis of resilience alongside developing a universal definition of resilience is needed (Windle et al., 2008).

As noted, resilience in street-gang members is beginning to receive attention. Through her practice, the author observed street-gang members adapting to and functioning within a custodial environment whilst citing numerous traumatic experiences, leading her to question what may be behind this ability and providing some practical insight into this potential association. Through forensic academic research, resilience has been reported to be a

protective factor against offending (Efta-Breitback & Freeman, 2004), has been incorporated into several violence risk assessment tools (Fougere & Daffern, 2011), has been found to be more prevalent in street-gang members in comparison to non-street gang members (Adams, 2004) and some research has found factors related to resilience (such as self-efficacy and determination) to be linked to reducing reoffending (Moffitt et al., 2002). In relation to street-gang membership specifically, Albert (2007) interviewed former street-gang members and reported that increased resilience was cited as the main factor supporting these individuals to desist from their street-gang. With this in mind, resilience in street-gang members could be an important concept to explore (regardless of whether it is higher or lower than other populations) as if resilience can be fostered and empowered in street-gang members through interventions, it could have substantial impacts such as improving well-being, reducing reoffending or desisting from street-gang membership.

Aims for Thesis

Research into the field of street-gang membership is gradually growing, however as noted above, there is a clear need for further exploration into the topic. The current position of research highlights that street-gang membership is likely to be the result of an interaction of individual and environmental factors. Given the devastating impacts of street-gang membership on the individual and the wider society, understanding these factors is imperative. Understanding the psychology of street-gang members is a current research recommendation amongst academic experts in the field; it is considered necessary in order to inform practice and reduce street-gang related violence. Therefore, the overall aim of this thesis is to contribute to the developing knowledge base regarding the psychology of street-gang membership by exploring personality traits and more specifically, resilience. For clarity, the definition of street-gang membership this thesis is working to overall is the Eurogang definition of street-gang as "any durable, street-oriented youth group whose involvement in

illegal activity is part of their group identity" (Weerman et al., 2009, p. 20). This is due to its extensive use within the current literature suggesting it to be the most appropriate and accurate definition of street-gang membership to date. Further comment will be made on the specific definition of street-gang membership used in Chapter 2 and Chapter 4. To fulfil the above aims, this thesis integrates three specific pieces of work which will be outlined below.

Overview of Chapters

Chapter 2 presents a systematic literature review of current literature regarding street-gang membership and personality traits. An extensive search was undertaken, findings were analysed through narrative synthesis, and the implications are discussed in relation to practice, strengths, limitations, and future research. One of the conclusions highlights the current variation in findings regarding street-gang membership and the personality trait of resilience.

Taking forward the findings from the systematic literature review and exploring why these findings may be present, Chapter 3 presents an overview and critique of a specific resilience measurement tool; the Connor Davidson Resilience Scale (CD-RISC; Connor & Davidson, 2003). This psychometric was critiqued due to its current use in practice around the world, alongside its aim to quantify resilience being relevant to the findings of the systematic literature review (whereby results may vary due to non-specific measurement tools). The discussion explores the use of the measure in practice and research and concludes more specific resilience measurement tools are needed for both.

With these conclusions in mind, Chapter 4 presents an empirical study investigating whether there is a difference in resilience between street-gang involved individuals and non-street-gang involved individuals in custody. The study utilises a quantitative methodology whereby the researcher asked individuals in custody to complete the Resilient Systems Scale (Maltby et al., 2017). This is a newly developed resilience measurement tool that specifies

resilience into three sub-scales. Statistical analysis undertaken were a MANOVA and several subsequent independent samples *t*-tests. Findings are discussed in relation to practice and future research need.

Finally, Chapter 5 draws together the relevant findings from these three chapters to provide some understanding of the psychology of street-gang members, specifically personality traits and their potential levels of resilience. The findings of this thesis are used to direct future research aims and discuss implications for practice in relation to reducing street-gang membership.

Chapter 2

Understanding the Personality Traits of Street-Gang Involved Individuals: A

Systematic Review of the Literature

Abstract

Street-gang involvement is receiving increasing attention due to the devastating impact it has on both the individual street-gang member and the wider community. Despite a reasonable body of research, few conclusions have been drawn regarding the individual characteristics of street-gang members. Therefore, the aim of this chapter was to systematically review the literature exploring personality traits in male street-gang involved individuals. A systematic search of six electronic databases was carried out, reference lists of relevant articles were manually screened and contact with experts was made. This was followed by applying specific inclusion and exclusion criteria and quality assessment of potentially relevant articles. A total of 20 articles were identified for inclusion in the review. Quality scores showed 70% of studies included were of very good quality, indicating a robust evidence base from which to draw conclusions. A narrative synthesis of findings identified the themes of: psychopathy; emotional traits; autonomy; identity; anti-social personality difficulties and resilience. Recommendations for future research include further exploration of resilience, self-esteem and callous-unemotional traits in street-gang members, exploring personality traits in female gang members, and understanding the current barriers to providing support. It is noted that this review reports several personality traits in street-gang members that could be considered as negative. These findings should therefore be understood and considered in relation to the support and interventions that could be utilised with these individuals as opposed to using these findings to stigmatise these individuals. However, such findings are congruent with the current climate of street-gang violence in the community and therefore could be used to inform interventions and practitioners.

Understanding the Personality Traits of Street-Gang Involved Individuals: A Systematic Review of the Literature

As outlined in Chapter 1, street-gang membership in the U.K. is known to have devastating impacts on both street-gang involved individuals and the wider community. Over the last few years in London alone, the number of murders attributed to street-gang violence and the number of stabbings related to street-gangs has increased (MET, 2021). Events such as these have a negative impact on the victims, the perpetrators, their families and the wider community, in addition to stretching resources in organisations that are already struggling such as the Criminal Justice System (CJS), hospitals, and mental health services (Coid et al., 2013). It is understandable therefore, that in the last decade street-gang involvement has received increasing academic, political, and media attention (Gormally, 2015). However, it is also well documented that further research is required to understand street-gang members in order to prevent individuals from joining street-gangs, to support street-gang involved individuals to leave a street-gang, and ultimately to reduce street-gang related violence (Dodd, 2019; Macfarlane, 2019; Maxson & Klein, 1996). Academic experts have highlighted differences between types of gangs (i.e., street-gangs, prison gangs, motorcycle gangs) and across genders (i.e., male gang members and female gang members) requiring separate and specific focuses for research. As such, this chapter will be focusing on male street-gang members.

Defining Gang Membership

As discussed in Chapter 1, the most widely used definition of street-gangs to date is the Eurogang definition: "any durable, street-oriented youth group whose involvement in illegal activity is part of their group identity" (Weerman et al., 2009, p. 20). The Eurogang network was developed in order to enable a collaborative and comprehensive understanding of the diversity of street-gang involved youth. The network was formed from over 100

European and American researchers and scholars, who attended a series of workshops and meetings from 1998 onwards (Klein & Maxson, 2006). They outlined their three primary aims as: building knowledge regarding the European socio-economic conditions and institutional processes that encourage the social exclusion and subsequent emergence of youth gangs; creating a framework for multi-method, comparative, cross-national research on youth violence in group contexts and circulating and utilising this knowledge to inform the development of effective local, national and international responses to emerging street-gang related issues (the Eurogang Project, n.d.).

For their definition, the Eurogang network highlight a distinction between gang "definers" and gang "descriptors". Definers are elements that are crucial to characterising a group as a gang, whereas descriptors refer to elements that help to describe particular elements of a group such as gender or ethnicity (Weerman et al., 2009). The Eurogang network believes that elements such as group names, symbols and tattoos were helpful but were not essential in defining whether a particular group was a gang or not and therefore considered these to be descriptive aspects (Heisted, 2017). Similarly, Klein and Maxson (2006) agreed that the definition of a gang should not be limited by descriptors such as ethnicity, gender, clothing, crime patterns etc.

The Eurogang definition of street-gang membership therefore has four defining components that they operationalised for research purposes: durability; street-oriented; youthful; and identity via illegal activity (Wood & Alleyne, 2010). Durability suggests a street-gang must be of at least several (i.e., three) months and is intended to differentiate gangs from short-term collections of individuals (Heisted, 2017). The second element of street oriented is particularly relevant to thinking about the specific street-gang (as opposed to prison gang, motorcycle gang etc…). This suggests that a street-gang member spends most of their time away from the home, work or school and the Eurogang network highlight that it is

unimportant that the street-oriented element actually occur on the street, it merely has to be away from the home/school (Weermen et al., 2009). The next component is youth whereby the definition highlights members should be in their adolescence or early twenties, specifically the majority of the group to be within 12-25 years of age (Heisted, 2017). Finally, identity via illegal activity states that delinquent or criminal activity is a part of the group's culture and this group identity is separate from the individual group members (Weerman et al., 2009). For research purposes, the network developed a survey that uses a funnelling technique to determine whether the respondent would be classified as a street-gang member under the Eurogang definition (Weerman et al., 2009).

The definition has been praised as the most conceptually appropriate definition of a street-gang for its attempt to provide researchers with consistency for identifying and characterising street-gang members (Aldridge et al., 2012). Subsequently, the definition is the most prominent definition used in research surrounding street-gang membership (Wood & Dennard, 2017). It has been used in research such as exploring the construct of street-gang violence (Klein & Maxson, 2006), female street gangs (Miller, 2001), personality and street-gangs (Mallion & Wood, 2018), and street-gang joining (Melde & Esbensen, 2011).

However, there is some debate amongst professionals regarding the accuracy of the definition. The definition suggests that criminality is central to street gang involvement, which is supported by Wood and Alleyne highlighting that their argument is compelling following their review of street-gang definitions (2010). However, some academics argue that criminality is not a central component to a street-gang and therefore the Eurogang definition is limiting (Bennett & Holloway, 2004; Shropshire & McFarguar, 2002). Furthermore, academics suggest that street-gangs are not limited to youth members but often consist of both adults and youths (Coid et al., 2013; Knox, 2000); further suggesting the scope of the Eurogang definition is too narrow.

The available literature does show a common thread of themes associated with street-gang membership. These themes include a group, structural or hierarchal feature (Miller 1992; Sharp et al., 2006; The Gangs Working Group, 2009), criminality (Miller, 1992; Weerman et al., 2009; Wood & Alleyne, 2010), control or association to an area/territory (Miller 1992; The Gangs Working Group, 2009) and self-report of street-gang membership (Esbensen & Weerman, 2005; Wood & Alleyne, 2010; see Chapter 1 for further discussion).

Overall, however, there is still ongoing debate as to the usefulness of the Eurogang definition, and generally in how to define a street-gang (Aldridge et al., 2012; Bennett & Holloway, 2004; Tonks, 2019; Wood & Alleyne, 2010).

Factors Relating to Street-Gang Membership: Personality

A key area of exploration within street-gang membership research is factors relating to why individuals join gangs and as highlighted in Chapter 1, the literature suggests one of these to be an individual's personality. Personality is a complex construct with a plethora of research having been conducted focusing on understanding and defining it (Winarick, 2019). When trying to understand personality, academics highlight the importance of considering both nature (such as genetics and biology) and nurture (such as upbringing and the environment). This has led to two over-arching approaches to understanding personality: trait personality theories which explain personality to be the traits that predict an individual's behaviour and suggest personality to be biologically based and therefore unchangeable and behaviour based approaches, which explain personality to develop through learning and habits. Most arguments suggest that personality arises from an interaction between nature and nurture (e.g., Allport, 1961; Eysenck, 1952; McLeod, 2017).

Psychosocial theories include Bandura's Social Learning Theory that suggests personality forms from what an individual learns and has reinforced (1977) and from Sartre, who suggested personality is based on our past experiences (Kavirayani, 2018). A large-scale

study using factor analysis was done by Allport and Odbert (1936) who found 4,500 traits that could be used to describe individuals. These traits are stable and cannot be changed and were categorised as cardinal traits (i.e., ruling passions/obsessions that dominate a person's behaviour), central traits (found in some degree in every individual) and secondary traits (seen in only certain circumstances). Allport's Trait Theory highlights the uniqueness of an individual and believes that personality is biologically determined at birth and shaped by a person's environmental experience. As a result, Allport defines personality as the dynamic organisation within an individual of the psychophysical systems that determine their characteristics, behaviour and thought (1961). Another widely known theory of personality was proposed by Eysenck (1952) who suggested personality is based on biological factors and their type of nervous system that impacts their ability to adapt to their environment. Through his behavioural work with soldiers who were hospitalised, Eysenck suggested personality was represented by two dimensions; extraversion/introversion and neuroticism/stability. He later added the trait psychoticism (1966) and suggested all traits could be traced back to a biological cause. It is the combination of these traits that form a variety of personality characteristics, all of which he related back to early ideas presented by Hippocrates (Kretschmer, 1921). Critical evaluation of purely biological theories comes from non-conclusive twin studies (McLeod, 2017). Strengths of Allport's (1961) and Eysenck's (1952) work includes withstanding the test of time and not only defining personality but understanding its development by encompassing both nature and nurture, by highlighting a biological disposition towards specific personality traits combined with conditioning and socialisation during childhood. However, Cattell (1965) disagreed that personality can be understood by looking at only three dimensions of behaviour, suggesting it to be too broad. He identified 16 personality traits that were common to all individuals and split these into surface traits (obvious traits) and source traits (less visible and underlie several different

aspects of behaviour and are the most important when describing personality). He produced the established measure - the 16 personality factors test - which is still used today (McLeod, 2017). A somewhat simpler definition from Weinberg and Gould (1999) defines personality as simply the characteristics or blend of characteristics that make a person unique. The most widely accepted personality theory is informed by Allport and Odberts (1936) and Cattell's work (1965) and is known as the Five-Factor Model (Costa & McCrae, 1994). This states that personality can be understood through five core factors known as the acronym 'OCEAN': openness to experience; conscientiousness; extraversion; agreeableness; and neuroticism. As opposed to trait theories of personality, the Five-Factor Model suggests that each personality trait is on a spectrum therefore individual differences in personality are accounted for (Lim, 2020). The model has also been researched across different cultures and is the most widely accepted theory of personality to date (Lim, 2020). The Five-Factor Model incorporates both nature and nurture into how our personality forms, with support being provided by twin studies (Jang et al., 1996) and cultural studies (Costa & McCrae, 2001; Yamagata et al., 2006). Critics of the Five-Factor Model note that it describes personality traits but does not explain how traits develops and comment that it is too broad (John & Srivastava, 1999).

Most recently, the American Psychological Association define personality as individual differences in characteristic patterns of thinking, feeling and behaving (2021). This definition appears to concisely encompass years of personality research, alongside showing similarity to early definitions, suggesting these core ideas of what personality is have withstood the test of time. It is clear however, that the field of personality research is still ongoing and defining personality is one of the field's biggest tasks (Winarick, 2019).

As noted in Chapter 1, there is increasing research associating street-gang membership to personality factors (Egan & Beadman, 2011; Raby and Jones, 2016). Wood and Alleyne (2010) report there are individual personality traits that may lead individuals into

joining gangs, however they indicate that more research into the association between

personality traits and gang involvement needs to be conducted.

The Current Review

As highlighted in Chapter 1 and above, research is starting to explore the personality

traits of street-gang involved individuals. Therefore, the aim of this systematic literature

review is to identify and synthesise literature that focuses on the personality traits of male

street-gang members.

The review will focus specifically on male street-gang members (as opposed to other

types of gangs). As noted in Chapter 1, the Eurogang network highlight the importance of

separating types of gangs to ensure specificity. Additionally, Valdez (1997) suggests there is

variance between types of gangs in regard to their characteristics and therefore, to draw

specific conclusions, this indicates a need to focus on a specific type of gang. Street-gang

members (as opposed to prison gangs, motorcycle gangs, extremist gangs etc…) were chosen

due to their prominence in the U.K. and the highlighted impact of crime that is associated

with street-gangs. Finally, it would be impractical due to time and word limitations to include

all available literature on all gang types.

It is important to highlight the definition of street-gang being used for the purpose of

the selection of articles for inclusion in this systematic literature review. Firstly, due to its

prominence in research (Wood & Dennard, 2017) and the fact it is currently considered the

most conceptually suitable definition for research (Aldridge et al., 2012), the Eurogang

network definition of street-gang will be used when identifying research relating to street-

gang membership; "any durable, street-oriented youth group whose involvement in illegal

activity is part of their group identity" (Weerman et al., 2009, p. 20). To address the

criticisms highlighted above (i.e., this definition being too narrow in scope) the researcher

will broaden the definition of street-gang membership in line with the views of experts in the

field. As mentioned above the themes associated with street-gang membership include: a group, structural or hierarchal feature; criminality; control or association to an area/territory; and self-report of street-gang membership.

Academics and practitioners alike have noted that currently there is an incomplete picture of the psychology of street-gang membership and limited consideration has been given to the personality traits of street-gang involved individuals (Wood & Alleyne, 2010).

Understanding the personality traits of street-gang members will have several implications. Firstly, it may help to inform practitioners on how to support both street-gang members and those who are vulnerable to joining a street-gang. Furthermore, as noted by Raby and Jones (2016), the current lack of knowledge creates obstacles for services that are already stretched to design targeted and evidence-based interventions. Given the impact that street-gang membership can have both on the individual and on society, it is considered important to provide professionals with a review of current literature.

Method

Scoping Exercise

To ascertain whether prior systematic literature reviews had examined personality traits in street-gang involved individuals, a scoping search was conducted on 30th January 2020. The Cochrane Database of Systematic Reviews (CDSR), The Campbell Collaboration Library of Systematic Reviews and The Centre for Reviews and Dissemination (DARE) were searched and there were no existing systematic literature reviews identified. A wider online search was also completed using the search engine Google Scholar. This revealed a related narrative review exploring emotional processes and gang membership (Mallion & Wood, 2018). It is noted that there are multiple benefits to conducting narrative reviews as opposed to systematic literature reviews, such as allowing for greater creativity and not relying on a keyword search (Nakano & Muniz, 2018). However, although narrative reviews "provide

readers with up-to-date knowledge…this type of review does not describe the methodological approach that would permit reproduction of data nor answer to specific, quantitative research questions" (ACTA, 2007, p. 1). A related systematic review was also found which explored risk factors for male street gang affiliation, including individual factors (Raby & Jones, 2016); however, although personality was a feature in this review, it was not the focus.

Following this, a basic scoping search of the literature was completed to get a sense of the amount of relevant literature for this review. The electronic databases Web of Science and ProQuest Sociological Abstracts were searched. This scoping exercise identified a number of relevant articles, therefore a systematic review of the literature was deemed appropriate (Petticrew & Roberts, 2006).

Search Strategy

Search Terms

To ensure that an exhaustive list of relevant search terms was developed, the key concepts of the review were identified - namely, street-gang membership and personality. The author then identified synonyms for these concepts. Following this, the author considered the small number of articles found in the initial scoping search alongside the potential of missing relevant literature focused on a specific personality trait, but without the word personality (for example, literature looking at impulsivity or psychopathy). Therefore the decision was made to expand the term "personality" to try to include as many specific traits as possible, however it was acknowledged that this would likely retrieve a high number of articles.

To do this, time was spent identifying search terms by exploring theories and relevant literature on personality. Firstly, the author researched general theories of personality. This resulted in the established theories of the Five Factor Model suggested by Costa and McCrae (1992) and the 16 personality factors suggested by Cattell et al. (1970). Following this, the

author identified several areas of personality research that focused on forensic populations. This included the Psychoticism, Extraversion and Neuroticism model (PEN; Eysenck, 1996), the risk-need-responsivity model for offender assessment and rehabilitation by Andrews et al. (1990) and working with personality disordered offenders (NHS & NOMS, 2015). Through this search, the author identified a paper which specifically focused on personality traits in offenders (Sinha, 2016). Finally, the author explored the two reviews identified in the initial scoping search (Mallion & Wood, 2018; Raby & Jones, 2016). From this research, a comprehensive list of search terms was created. Multiple terms appeared in more than one of the aforementioned theories/articles. 'Wildcards' were added to terms (where deemed relevant) to broaden the search further.

Following the development of search terms for the concept of personality, a secondary scoping search was completed on 8th February 2020. The electronic database OVID – PsychArticles was used due to its ability to search individual terms. Following this, two search terms were removed from the list due to showing no search results. As expected, this scoping search retrieved an extensive amount of results, therefore wildcards were reduced to ensure the specificity of the word being searched.

Each search term for the concept of personality was grounded in psychological literature. Alongside this, the University of Birmingham specialist librarian for psychology deemed this list appropriate and comprehensive. The final search terms can be found in Figure 1 (terms in bold appeared in more than one of the specified theories/articles).

Figure 1

Search Terms for Electronic Database Searches

Gang OR Gangs OR "Gang Member*" OR Gangster* OR "Street Gang*"

AND

Personality OR "Personality type*" OR "Personality trait*" OR "Personality factor*" OR Disposition OR Temperament OR Character OR **Openness*** OR Conscientious* OR **Extrover*** OR **Agreeable*** OR Neurotic* OR **Antisocial** OR **Paranoid** OR Narcissis* OR Histrionic OR Avoidant OR Dependant OR **Psychopath*** OR **Aggressive** OR Cold OR Egocentric OR **Unempathetic** OR **Impersonal** OR Creative OR **Impulsiv*** OR "**Tough-minded**" OR Sociable OR **Lively** OR **Carefree** OR Active OR **Dominant** OR **Assertive** OR Surgent OR "**Sensation seeking**" OR **Venturesome** OR **Anxious** OR **Depressed** OR "Guilt feeling" OR "**Low self-esteem**" OR Tense OR Irrational OR **Shy** OR Moody OR Emotional OR Adventurous OR "**Pleasure Seeking**" OR Irritable OR **Independent** OR **Careless** OR **Sentimental** OR "Attention seeking" OR Unconcerned OR Impractical OR Unsophisticated OR **Intelligen*** OR **Suspicious** OR "Self-sufficient" OR "**Thick skinned**" OR "**Socially bold**" OR "**Tender-minded**" OR **Sensitive** OR "**Self-Reliant**" OR **Mistrusting** OR Doubtful OR **Vigilant** OR "Socially aware" OR "**Emotional* stab***" OR **Careful** OR **Relaxed** OR **Restrained** OR Warm OR Reasoning OR "Rule conscious*" OR Abstract OR Private OR Apprehensive OR Perfectionism OR "**Self-controlled**" OR Reactive OR Adaptive OR Matur* OR **Forceful** OR Spontaneous OR Nonconforming OR "Group-oriented" OR Affiliative OR Sceptical OR "Callous-unemotion*" OR Empathetic OR "Emotional* Intelligen*" OR Resilient OR Responsible OR Hyperactive OR Moral*

Data Sources

All databases were searched on 15th and 16th February 2020, and again on the 15th and 16th May 2021 to update the search results. Electronic databases were chosen through researching the relevant psychological, sociological and multidisciplinary databases which were accessed through the University of Birmingham's library resource - 'Find it.' Six electronic databases were searched: PsychINFO (1967-present); PsychArticles (1860-present); Sociological abstracts (1952-present); Social Science database (1911-present); Web of Science core collection (including the Social Science Citation Index; 1900-present); and Scopus (1960-present). PsychINFO, PsychArticles, Sociological abstracts and Social Science database were chosen based on their relevance to the topic. Web of Science and Scopus were chosen based on their well-established nature and multidisciplinary capacity. The exact search structure and results of each search can be found in Appendix A. References were managed through the ProQuest RefWorks management software.

Search Process

There were three stages to the search process. The first stage was using the search terms identified to search the electronic databases. To enable the search to be as inclusive as possible, it was decided at the initial searching stage not to restrict the article type (journal, editorial, book chapter). Alongside this, there were no date limits applied. This decision was made as personality is likely to be a stable, contributory factor to young peoples' street-gang membership, regardless of any changes in environmental and other factors over time. Therefore, this meant that both older and newer research was relevant to consider. Limits were applied to the searches in relation to language whereby articles that were not written in English were excluded due to the practicality of translating full articles. It is acknowledged that this may have limited the search results.

The second stage of the search process involved manually searching the reference lists of all full-text references screened for inclusion ($n= 176$).

Finally, contact was made with four experts in the field who have conducted research relevant to the review question to request their guidance (Professor Finn Esbensen, Professor Jane Wood, Dr Emma Alleyne and Professor Terrence Thornberry). Three experts responded, and Dr Esbensen added the author's contact details to the Eurogang network to enable reception of the latest research in the field. The e-mail sent can be found in Appendix B.

Selection and Screening of References

Selection and Screening Tool

Consideration was given regarding the most appropriate selection tool for the review. The decision was made to use the SPIDER (Sample, Phenomenon of Interest, Design, Evaluation, Research type; Cooke et al., 2012) tool due to its applicability to different research designs. The inclusion and exclusion criteria in addition to their rationales are detailed in Table 1.

Table 1

Inclusion/Exclusion Criteria

	Inclusion	Exclusion	Rationale
Sample	• Street-gang involved • Former street-gang involved if mixed with/compared to street-gang involved • Not gang involved if compared to street-gang involved • Male only • Any country • Any age	• Other gang type (e.g., prison gangs, mafia, far right gangs, extremist groups) or just offenders/delinquents • Only former street-gang involved • Only not gang involved • Female or mixed gender sample	• Street-gang: Need to separate gang type for specificity and variance in aspects; impractical to include literature on all gang types; impact of street-gangs such as violence and fear; defined by either Eurogang definition, or several identified elements from a group, structural or hierarchal feature; criminality; control or association to an area/territory; and self-report of street-gang membership (see introduction) • Gender: Research highlights gender differences requiring separate theoretical models (Deschenes & Esbensen, 1999); Unmanageable amount of literature using mixed samples • Country: Include all relevant research; explore cultural impacts • Age: Not all relevant articles separate youth/adult
Phenomenon of Interest	Personality traits, types or factors	Anything else	As highlighted in introduction; traits included are based on theories and research of personality
Design	Interviews, focus groups, psychometrics, questionnaires, personality assessments	No empirical design	Refined to empirical designs to ensure some validity and reliability

Evaluation	Themes, observations, opinions, experiences OR outcome measure from questionnaires, psychometrics or personality assessments	No empirical based method	Refined to empirical evaluation methods to ensure some validity and reliability
Research Type	• Qualitative, quantitative or mixed methods • Published articles • Peer-reviewed articles • Doctoral level theses	• Non-empirical papers, e.g., reviews, book chapters • Below doctoral level theses	• Qualitative, quantitative and mixed methods included due to exploratory nature of review • Due to large volume of results, references were limited to empirical research articles only • Undergraduate/master's dissertations excluded as the reliability/validity of these could be questioned and they are not considered to be peer reviewed; Doctoral theses included due to peer review during viva examination.

Selection and Screening Process

Ten thousand, six hundred and eleven references were retrieved from the electronic database searches. Duplicates were removed by hand searching (completed twice, to ensure precision), and 2,952 references were removed. The titles of the remaining 7,659 references were screened for inclusion and 6,573 irrelevant references were removed. The abstracts of the remaining 1,086 references were then screened for relevance and 910 references were removed. If relevance was not clear for both the title and abstract screen, then it was included until the next stage. This left 176 papers to screen through reading the full-text article. No articles were received from the experts contacted but seven additional articles were identified from the manual full-text reference list screen. This resulted in 183 articles to full-text screen. Ten articles could not be accessed through authors, the University of Birmingham library, or inter-library loans. Restrictions as a result of the Covid-19 pandemic meant the author could not access physical copies of these, and so they were excluded. This left 173 articles which were obtained from the University of Birmingham library and the full text was screened using the SPIDER tool. Following this, 153 references were excluded for not meeting the inclusion/exclusion criteria. This left 20 articles to be included in the review; these were all quantitative papers. The updated search retrieved 510 articles from the electronic database screen. One hundred and thirty-eight duplicates were removed, and the remaining 372 article titles were screened, with 286 references excluded. The abstracts of the remaining 86 articles were screened and 76 references were removed. The full text of the remaining 10 articles plus an additional article from a manual reference list screen were then screened using the SPIDER tool, however no articles met the inclusion criteria to be included in the review. The references excluded, alongside the reason for exclusion, can be found in Appendix C. A flow diagram of the full selection and screening process is presented below in Figure 2.

Figure 2

Flow Diagram of the Full Selection and Screening Process

| IDENTIFICATION | Number of references identified through electronic database searching when search terms and limits applied:

PsycArticles *n*= 1,306
PsycINFO *n*= 1, 314
Scopus *n*= 1,910
Social Science Database *n*= 1,129
Sociological Abstracts *n*= 3,645
Web of Science *n*= 1,817

Total *N*= **11, 121** | Number of references identified through other sources:

- Contact with experts in the field *n*= 0
- Manual search of full text screen references *n*= 8

Total *N*= 8 |

SCREENING

Duplicate references from electronic database Searches (*n*= 11,121):
Records removed *n* = 3, 090
Records remaining ***n* = 8, 031**

Titles screened for relevance (*n* = 8,031):
Records removed *n* = 6,859
Records remaining ***n*= 1,172**

Abstracts screened for relevance (*n* = 1,172):
Records removed *n* = 986
Records remaining ***n*= 186**

ELIGIBILITY

Full text papers screened for relevance:
Electronic databases and other sources
***n* = 194**

References excluded:
n = 174

Reference excluded for not meeting criteria *n* = 164

References excluded as no access *n* = 10

INCLUDED

Total number of references included in review ***n* = 20**
(Quantitative *n* = 20)

Quality Assessments

Quality assessment is the process of assessing and interpreting evidence by systematically considering its validity, results and relevance (Parkes et al., 2001). For systematic reviews, quality assessment is carried out as standard procedure to ensure that studies included are robust enough to answer the review question (Booth et al., 2016).

The assessor developed her own quantitative quality assessment checklist (see Appendix D). This was due to having studies of different methodologies including cross-sectional, case control and cohort, alongside having both journal articles and doctoral theses. The majority of the checklist was taken from the AXIS (Downes et al., 2016). This tool is for use with cross-sectional studies and has been used in published systematic literature reviews (Weeda & Butt, 2018; Wong et al., 2018). The assessor also used the Critical Appraisal Skills Programme (CASP) quantitative checklist for case-control (CASP, 2018a) and the CASP quantitative checklist for cohort studies (CASP, 2018b). The final checklist included 23 questions that were applicable to all studies alongside two additional questions for case-control studies and two additional questions for the cohort studies. Finally, the checklist had one additional question for the doctoral theses. It is acknowledged that this is not an established tool, however all questions (except the additional for doctoral thesis) were taken from reliable and valid tools alongside the assessor having the tool reviewed by a secondary independent psychologist. A scoring system was used whereby Yes = 2 (criteria met), Partial = 1 (criteria partially met), No = 0 (criteria not met) and Unknown= 0 (unable to rate). The maximum score for cross sectional studies was 46 and for case control studies and cohort studies was 50. If the paper was a doctoral thesis, this added 2 marks onto the total and if the paper had non-responders a further 2 marks were added onto the total. For example, a cross-sectional, doctoral thesis would have a total score of 48, a cohort journal article with non-

responders would have a total score of 52. Quality scores were converted into percentages and can be found in Appendix E.

Due to time constraints, a secondary reviewer was not employed, which the author acknowledges leaves the quality assessment as somewhat subjective. Prior to assessing the studies, it was decided that no studies would be excluded on the basis of quality. This was due to the view that all research, regardless of quality, had something to contribute to the review. However, it was still deemed necessary to assess the quality of papers as more weighting can be given to the findings of papers which are deemed to be of higher quality.

Data Extraction

Data extraction of quality assessed studies was completed in order to capture information relevant to this review question. The author developed a form for the purpose of extracting and recording the relevant data which can be found in Appendix F. Data were extracted from the studies as reported by the authors, including relevant conclusions and discussions; no further interpretations were made by the current author. In some instances, findings are discussed in reference to the study quality.

Data Synthesis and Analysis

Following quality assessment and data extraction, data were explored using a narrative synthesis approach. This was deemed the most suitable method of synthesis due to the high amount of empirical variation between the studies in the current review, and the method's ability to summarise characteristics and findings of a large body of research in a succinct and coherent manner (Evans, 2007). For the purpose of this review, narrative synthesis is defined as the integration of a broad range of quantitative data from across different studies in order to summarise results and tell a story of the findings (Popay et al., 2006). Data were synthesised into key themes.

<center>**Results**</center>

The 20 articles synthesised are listed in Table 2 and throughout the following section, they will be referred to by their numerical assignment. The studies included employed only quantitative designs and all examined personality traits in relation to street-gang membership. Table 3 summarises the characteristics, findings and quality of each study.

Descriptive Overview of Results

Study Characteristics

All 20 studies meeting the inclusion criteria were included in the review, however not all aims of all studies were relevant to the review question and elements not meeting the inclusion criteria were omitted. All results included in the review explored personality traits in relation to street-gang involvement.

In relation to design, three studies used a case-control design (1, 4 & 18), two utilised a cohort design (7 & 9), and the remaining 15 employed a cross-sectional design. Some studies used established psychometric measures to assess personality. These included the Junior Eysenck Personality Questionnaire (JEPQ; Eysenck & Eysenck, 1975), the NEO-FFI-R (McCrae & Costa, 2004), the Rosenberg self-esteem scale (Rosenberg, 1989) and the PCL-R/PCL-SV (Hare, 1991); all of which have been evidenced as reliable and valid for assessing personality. Other studies created psychometric measures to assess personality traits and the remaining studies combined both established and non-established measures. In terms of assessing street-gang membership, all studies employed unique approaches. Studies 2, 8, 14, 15 and 20 used the established Eurogang definition (Weerman et al., 2009), however it should be noted this definition was only developed in 2009, and prior to this, there was no established definition of gang membership. The remaining studies used definitions which included the highlighted themes throughout the literature (as noted in the inclusion criteria) and were therefore within the broader definition of street-gang that this review utilised. The

studies used varying statistical methods to analyse their data depending on the study design and data type.

The location of the studies includes the U.K. (seven studies), U.S.A. (11 studies), Canada (one study), and Singapore (one study). The dates of the studies ranged from 1963 to 2018 and no start date was included in the search to ensure all relevant studies were included. All research was reported in English language. Regarding the type of publication, the review includes four doctoral theses and 16 journal articles.

Table 2

List of Final Articles Included in the Review

Study Number	Author	Title
1	Adams (2004)	The relationship between childhood traumatic experiences and gang-involved delinquent behaviour in adolescent boys
2	Alleyne, Wood, Mozova, and James (2015)	Psychological and behavioural characteristics that distinguish street gang members in custody
3	Burch (2013)	Effects of age, personality, and gang-affiliation on the self-reported false confessions of adjudicated male youth
4	Cartwright et al. (1980)	Multivariate analysis of gang delinquency: Iv. Personality factors in gangs and clubs
5	Chu et al. (2014)	Criminal attitudes and psychopathic personality attributes of youth gang offenders in Singapore
6	Coid et al. (2013)	Gang membership, violence and psychiatric morbidity
7	Craig et al. (2002)	The road to gang membership: Characteristics of male gang and non-gang members from ages 10 to 14.
8	Densley et al. (2014)	Social dominance orientation and trust propensity in street gangs
9	Dmitrieva et al. (2014)	Predictors and consequences of gang membership: Comparing gang members, gang leaders and non-gang-affiliated adjudicated youth
10	Egan and Beadman (2011)	Personality and gang embeddedness
11	Friedman et al. (1975)	A profile of juvenile street gang members
12	Kennedy (2013)	Gang membership and bullying: Examining one's level of self-esteem and resilience as protective factors

13	King (1963)	Adolescent males in a secure care setting: The relationship between psychopathy and gang affiliation
14	Mallion and Wood (2018)	Comparison of emotional dispositions between street gang and non-gang prisoners
15	Niebieszczanski et al. (2015)	The role of moral disengagement in street gang offending
16	Tapia et al. (2009)	A comparison between Mexican American youth who are in gangs and those who are not
17	Thornton et al. (2015)	Callous-unemotional traits and adolescents' role in group crime
18	Valdez et al. (2000)	Psychopathy among Mexican American gang members: A comparative study
19	Wang (1994)	Pride and prejudice in high school members
20	Wood and Dennard (2017)	Gang membership: Links to violence exposure, paranoia, PTSD, anxiety and forced control of behaviour in prison.

Table 3

Summary of Extracted Data

General	Study characteristics		Participants	Findings and conclusions (in relation to review question)	
Study, type, & country	Aims, design and location	Definitions, measures and reliability/validity of key concepts	Participant (PS) characteristics	Analysis and results	Conclusions, strengths and limitations, and quality score

1
 	
Adams, (2004)
 	
Doctoral thesis
 	
America
	To examine the relationship between childhood traumatic experiences and gang involved delinquent behaviour in adolescent boys.
	
	To examine differences in groups of adolescent boys' gang membership and delinquency, and on PTSD symptomology, emotional numbing and resilience
	
	Quantitative: Case control
	
	Residential treatment centre and high school
		Personality
		- Resiliency,
		- Emotional numbing,
		- Impact of trauma on personality: anxiety, generalized fear, loss of self-esteem, avoidance, withdrawal and denial in an attempt to cope
		
		Trauma Symptom Checklist for Children (TSCC):
		- 54 items that yield two validity scales (under response and hyper response) and six clinical scales (anxiety, depression, anger, posttraumatic stress, dissociation and sexual concerns).
		- Normative high internal consistency for 5/6 clinical scales which range from $\alpha = .82$ to $\alpha = .89$.
		- Remaining clinical scale is moderately reliable with $\alpha = .77$.
		- Reliability generally sufficient in both clinical and non-clinical samples.
		Behaviour Assessment System for Children (BASC):
			130 adolescent males
			
			Current and former street-gang involvement (sample group)
			
			Age 14-17
			
			African American and Hispanic (no percentage given)
			
			Recruited from children and family services, campus facilities, and group home sites. Adolescents admitted on directions from county court. Agency census (updated on weekly basis) was monitored to assist selection. Criteria was applied; residents must have juvenile delinquent or person in
				Analysis
				t-tests, correlation
				
				Results
				Street-gang involvement (*M*):
				- Sample: .36
				- Comparison: .14
				Resiliency – self-reliance (*M*):
				- Sample: 47.94
				- Comparison: 41.45
				Resiliency – self-esteem (*M*):
				- Sample: 49.94
				-Comparison: 47.74
				Emotional numbing (*M*):
				- Sample: 49.13
				- Comparison: 43.01
				PTSD symptomatology (*M*):
				- Sample: 52.04
				- Comparison: 43.67
				
				Emotional numbing was significantly correlated with street-gang involvement ($r=.47$, $p<.01$) and delinquency ($r=.25$, $p=.03$) among the sample PS.
					Conclusions
					- Means showed that the sample group (who had higher street-gang involvement) had higher levels of resiliency, higher levels of emotional numbing and higher levels of PTSD symptomatology.
					-Offers empirical data that describes a relationship between emotional numbing and street-gang involvement.
					  - Emotional numbing and street-gang involved behaviour:
					  - Sample PS would often justify their behaviour or victim blame – consistent to desensitisation to violence
					  - Responsibility often external, however if/when responsibility was taken it was only by individuals who had been in the treatment placement for longer than 6 months
					  - Sample PS seemed to struggle with empathy
					- Resiliency and street-gang involved behaviour:
					  - Those in sample had higher street-gang involvement and higher resiliency

- Measure that evaluates personality, behavioural problems, emotional disturbance and positive, adaptive personality features. Composed of two subscales; clinical and adaptive, which include various subscales.
- Reliability ranges from α= .64 to α= .89.
- Includes social desirability scale
Street-gang membership:
-A group or association of three or more people who may have a common identifying sign, symbol or name and who individually or collectively engage in, or have engaged in, criminal activity, which created an atmosphere of fear and intimidation. Delinquent behaviour is often displayed in the context of gang involvement.

Self-report delinquency scale (SRD):
- 51 item interview that assesses delinquency
- Used in a wide amount of research that is published, including by the Delinquency prevention team *Denver Youth Survey*):
- One component measures gang involvement
- Used in public domain for research purposes.

need of supervision status.

Comparison group was selected from local high school. They were identified by the school-based learning support team as 'at risk' students. This meant the students had been exposed to some trauma and so the school had been asked for help. They could not have any past or current JD (Juvenile Delinquent) or PINS (Person in Need of Supervision) status.

Sample group (residential treatment setting) *n*=65

Comparison group (high school boys) *n*=65

Sample PS interpersonal relations $F(1,138)$=5.64, p=.01 and self-reliance $F(1, 138) = 6.55, p$=.01 scores were significantly lower than those resilience variables in the comparison PS, however the relationship with parent $F(1,138)$= 2.96, p=.08 and self-esteem $F(1,138) = 2.96, p$=.08 were not significantly lower.

Joined street-gangs – 12% of sample PS said peer pressure was the most popular reason for joining street-gangs

- Self-reliance and interpersonal relationships were correlated with participation in street-gang involved delinquent behaviour
- Self-esteem didn't differ between groups - maybe because adolescence is a time where this is fairly low anyway
- Relationship with parents didn't differ – maybe because adolescent is a time where peer group is more influential than parents, and may have poorer relationship with parents generally
- Sample PS indicated peer pressure as the main reason to join a street-gang, which speaks to their resiliency levels; interpersonal skills poor as gave into peer pressure, and lower self-reliance, which speaks to their confidence levels in making their own decisions

Strengths and Limitations
+ Detailed analysis
+ Used established measures
- Can't generalise
- Street-gang involvement strictly forbidden in the residential setting, so this may have impacted their disclosure
- There were discrepancies between the results reported and the conclusions made

(79%)

2	To use Social Dominance Theory (SDT) as an organising concept to determine the psychological processes that distinguish street-gang involved youth from non-street-gang involved youth	Personality - Moral disengagement - Hypermasculinity - Social dominance orientation *Mechanisms of Moral Disengagement Scale*: - Assess participants endorsements of moral disengagement strategies - α=.82 (original study) - α=.87 (this study)	188 males G1: 73 non-street-gang youth who did not meet any criteria G2: 31 self-identified street-gang members, but did not meet the Eurogang criteria	Analysis One-way ANOVA, Chi-square, MANOVA and discriminant functional analysis Results Split into 4 groups (G1,G2,G3,G4)	Conclusions - Social dominance orientation, anti-authority attitudes, hypermasculinity, and the moral disengagement strategies euphemistic labelling, displacement of responsibility, and dehumanization were important variables in distinguishing street-gang membership.
Alleyne, Wood, Mozova & James (2015) Journal article England					
					- Street-gang members fitting the Eurogang definition (but not self-identified) did not differ from non-street-gang offenders on any of the measures.
	To compare street-gang youth with non-street-gang youth on attitudes and beliefs associated with aggressive and violent behaviour that reinforces street-gang status within and between street-gangs.	*Hypermasculine Value Questionnaire – Short Version*: - 16 item scale measuring hypermasculine attitudes and values - α = .91 (original study) - α= .59 (this study) *Social Dominance Orientation scale:* - The extent to which respondents endorse hierarchical attitudes between groups - α = .89 (previous studies) - α = .81 (this study)	G3: 61 street-gang members who met the Eurogang criteria but did not self-identify G4: 23 self-identified street-gang members who met the Eurogang criteria Between 16-18 years old (*M* = 16.88)	Crime committed: G2, G3 and G4 significantly higher than G1 on threatening people, fighting, robbery, physical assault (more aggressive) Threaten: (*p*<.001) G1: *M*=1.86, G2: *M*=2.87, G3: *M*=2.16, G4: *M*= 2.74 Fight: (*p*<.001) G1: *M*=2.34, G2: *M*=3.42, G3: *M*=2.84, G4: *M*= 3.39 Robbery: (*p*<.001) G1: *M*=1.70, G2: *M*=2.65, G3: *M*=2.15, G4: *M*= 2.44 Physical assault: (*p*<.001) G1: *M*=2.07, G2: *M*=3.16, G3: *M*=2.33, G4: *M*= 3.26	- Self-identified street-gang members who did not meet the Eurogang criteria scored significantly higher than non-street-gang youth on social dominance orientation whereas self-identified street-gang members who did meet the Eurogang criteria scored significantly higher than non-street-gang youth on euphemistic labelling, displacement of responsibility, and hypermasculine values. - Hypermasculine values were endorsed more by self-identified street-gang members fitting the Eurogang criteria than by non-street-gang youth.
	To determine whether these socio-cognitive processes distinguished street-gang involved youth from non-street-gang involved youth in a custodial setting Quantitative: Cross sectional	Street-gang membership - Eurogang definition 'A street-gang is any durable, street-oriented youth group whose involvement in illegal activity is part of its group identity' *The Youth Survey: Eurogang programme of research:*	58% White U.K./Irish 24% Black/Black British 12% Mixed Ethnicity 5% Asian 1% Other Participants were recruited from a male Young Offender Institution by a research assistant. All available YO's who met the research criteria were	Significant differences for: Euphemistic labelling: (*p*=.008) G1: *M*=12.81, G2: *M*=13.35, G3: *M*=11.84, G4: *M*=16.39 Displacement of responsibility: (*p*=.003) G1: M=15.05, G2: *M*=16.65, G3: *M*=14.89, G4: *M*= 19.87	Strengths and Limitations + Established measures with good reliability +Established definition of street-gang - Can't generalise

	Young Offenders Institute in the U.K.	- 89 items including demographic information which is designed to identify those who do and don't belong to a street-gang according to the Eurogang definitions *Group crime:* Assess the extent participants' groups were involved in crime Self- identification alongside above - Quality not reported	asked to participate in the study.	Dehumanization: (p=.04) G1: M=13.34, G2: M=16.16, G3: M=13.23, G4: M= 16.13 Hypermasculinity: (p=.032) G1: M=49.26, G2: M=54.23 G3: M=53.00, G4: M= 57.78 Social dominance orientation: (p=.003) G1: M=59.92, G2: M=72.81 G3: M=63.28, G4: M= 70.61 G3 scored significantly lower than G4 on euphemistic labelling and displacement of responsibility and G4 scored significantly higher than G1 on euphemistic labelling, displacement of responsibility, hypermasculinity Top variables predicting group membership were social dominance orientation (.82) and displacement of responsibility (.52)	- Doesn't take into account offence or other confounding factors (80%)
3 Burch (2013) Doctoral thesis America	To explore personality characteristics among street-gang affiliated male adjudicated youths in the context of false confession Research questions:	<u>Personality</u> - Not explicitly defined - Lit review explored psychoticism, neuroticism and extraversion *Junior Eysenck Personality Questionnaire* (JEPQ): - Self-report questionnaire assessing the personality of children from age 7-17, measures three major	74 males Former, current and non-street-gang members 13-14 years old: 20.3% 15-16 years old: 47.3% 17-18 years old: 32.4% White: 41.9%	<u>Analysis</u> One tailed independent t-test <u>Results</u> The mean score on Psychoticism (M = 7.53, SD = 3.29) was higher for the participants who were street-gang affiliated (n = 32) compared to those who were not street-gang	<u>Conclusions</u> - There was substantial statistical evidence with a very large effect size to support the hypothesis that the mean score for the Psychoticism personality dimension of the street-gang affiliated participants was much greater than that among the participants who were not street-gang affiliated.

	Are there any differences in psychoticism between non-street-gang and street-gang affiliated adjudicated male youth? (Others not related to review) Quantitative: Cross sectional Non secure residential treatment facility for adjudicated youths	dimensions; psychoticism, neuroticism and extraversion. - Extraversion/neuroticism α =.7-.9 - Psychoticism α = .7 Street-gang membership - Not defined - reported 'street-gang affiliated', group structure and adjudicated youth suggests involvement in crime *Self-report* Demographic information questionnaire - Quality not reported	Black: 44.6% Hispanic: 5.4% Asian: 2.7% American Indian: 2.7% Other: 2.7% Recruitment method not explicitly stated, they were approached at the treatment centre, given information and consent obtained	affiliated (n = 42), (M = 4.57, SD = 2.36). The hypothesis, which proposed that the mean score on the psychoticism personality dimension would be the same for street-gang affiliated participants and non-street-gang affiliated participants was rejected at α = .05, as indicated by t (72) = -0.506, p <.001. Additionally, a very large effect size (Cohen's d = 1.05) implied that the results also exhibit a high degree of practical/clinical significance.	Strengths and Limitations + Established measure of personality +Ethnically diverse sample - Poor reliability and validity of street-gang membership (79%)
4 Cartwright et al. (1980) Journal article America (assumed due to location of authors)	To compare a group of club boys to street-gang members on eleven factors from the Objective Analytic Personality Factor Battery Quantitative: Case control Tests completed in a lab but context not stated	Personality Assertiveness, manic smartness, comention, exuberance, cortertia, anxiety, realism, self-realization, asthenia, stolidness and pessimistic (definitions for each provided in the paper) *Objective Analytic Personality Factor Battery*: - Measured personality factors, still considered experimental at the time - Reliability assessed through split-half technique and judged as appropriate	320 males Current street-gang members (n= 238) Aged between 11-24 M=17 years 5 months for street-gang members M= 16 years 8 months for club boys 'Racially mixed, with the ratio of approx. 1 white to 3 black'	Analysis Correlation Results Nothing statistically significant (however analysis a little unclear) Judged by Mean (M): Assertiveness: Street-gang: 0.465 Club: 0.543 Exuberant: Street-gang: 0.518 Club: 0.643	Conclusions - No simple linear relationships exist between personality factors and street-gang membership - Gang boys appear less assertive, less exuberant, less realistic and less self-realized but more manic smart (judged by means) - Cattell and Scheier (1961) describe these three factors as the neurotic triad, suggesting that if people are found with these traits, they are likely to be more neurotic - Data is in favour of ideas proposed by Gordon (1967) who argues that street-gang members join street-gangs in

- Validity estimated by mean loadings on each factor (reported by Cattell and Warburton, 1967) – deemed appropriate Street-gang membership Classified into types of gangs by behaviour: - Conflict gang (fighting, group fighting, carrying a weapon) - Criminal gang (theft, robbery) - Retreatist type (narcotics use and homosexuality) - Diffuse gang (low degrees of above behaviour) - Multiple type (high degrees of above behaviour) *Self-report of behaviour which researchers then assigned to category by criteria:* - Younger gangs: The street-gang is classified as falling into a given type if any 2/3 behaviours are engaged in frequently by 25% or more of the membership, or if 1/3 is engaged in by 50% or more - Older gangs the parallel requirements are 2 behaviours with 40% or more, or 1 behaviour with 60% or more - Quality not reported	Recruitment not commented on Comparison group: club boys (*n*=82)	Realism: Street-gang: 0.520 Club: 1.103 Self-realization: Street-gang: 0.557 Club: 0.570 Manic smart: Street-gang: 0.317 Club: 0.016 Compared types of street-gangs to each other as defined earlier and found they were significantly different on assertiveness, alertness and stolidness between groups, but not all groups (not apparent which)	(unconscious) hopes of calming underlying psychological disturbance associated with dependency conflicts. - An overall summary of these several results may be offered as follows: Boys who go into street-gangs rather than into adult-sponsored clubs do tend to have greater personality disturbance, though not greater manifest anxiety. They appear to have many of the characteristics presumably required for success in a middle-class world however they seem to lack realism in their approach to the external world. Strengths and Limitations + Good range of personality traits, all defined clearly - Outdated now - Analysis a little unclear - Classification of street-gangs by behaviour, relevant at the time but research has since grown (66%)

5 Chu et al. (2014) Journal article Singapore	To compare criminal attitudes and psychopathic attributes of street-gang and non-street-gang youth offenders Hypothesis: The street-gang affiliated youth offenders would have significantly more psychopathic personality traits than the non-street-gang affiliated youth offenders Quantitative: Cross sectional Two Singaporean youth correctional institutions	Personality Psychopathy: Traits include dishonest charm, grandiosity, lying, manipulation, remorselessness, unemotionality, callousness, thrill-seeking, grandiose-manipulative, callous unemotional, impulsive irresponsible *Youth Psychopathic Traits Inventory* (YPI): - 50 item self-report measure that assesses psychopathic traits in adolescent aged 12 years and above - Quality not reported Street-gang membership Youth offenders were classified as 'street-gang affiliated' if they had stated their membership of specific youth street-gangs and/or had official records that indicated affiliation to specific youth street-gangs *Self-report and staff/intelligence documents* - Quality not reported	168 males Aged between 13-18 Former and current street-gang affiliates: - 107 (63.7%) were classified as being street-gang affiliated (35, 20.8% of this, reported they were currently affiliated) 53% Chinese 34.5% Malay 8.9% Indian 3.6% Other Recruited through youth correctional institutions	Analysis Univariate analysis and logistic regression Results YPI (*M*): Total: Street-gang: 107.71 Non-steet-gang: 103.11 (*p*<.05) Callous unemotional: Street-gang: 32.46 Non-street-gang: 32.31 (*p*-.05) Grandiose-manipulative: Street-gang: 37.40 Non-street-gang: 36.44 (*p*-.05) Impulsive-irresponsible: Street-gang: 37.85 Non-street-gang: 34.46 (*p*=.007, *d*= .44)	Conclusions - More psychopathic traits in street-gang - Impulsive/irresponsible traits significantly higher in street-gang, however this didn't remain significant when other pertinent factors taken into account Strengths and Limitations + Looks at street-gang affiliation and personality in a different culture + Defines street-gang membership well + Strong practice implications (treatment and identification) -Small sample -Use of self- report leaves open to bias - Recruitment method not clear (85%)
6 Coid et al., (2013)	To investigate associations between street-gang membership, violent behaviour, and psychiatric morbidity	Personality - Antisocial personality disorder – as defined in DSM-IV - Anxious - Depressed	4,664 males Street-gang member within the last four years, violent individual or non-	Analysis Logistic regression Results Psychiatric morbidity (%)	Conclusions - Overall, street-gang members, violent men and non-violent/non-street-gang men differ in their psychiatric morbidity and personality

Journal article England	in a nationally representative sample of young men and to identify explanatory factors. Quantitative: Cross sectional U.K. community	*Structured Clinical Interview for DSM-IV Personality Disorders Screening Questionnaire:* Traits relating to ASPD *The Hospital Anxiety and Depression scale* - Quality not reported Street-gang membership - Based on amount of violence - An individual had to endorse street-gang membership and have one or more of the following: involvement with friends in criminal activities, serious criminal activities or convictions, involvement in street-gang fights during the past 5 years *Self-report* - Quality not reported	street-gang and non-violent members Aged 18-34 Non- street-gang/non-violent (*M*= 26.6), violent (*M*=25.4), street-gang (*M*=25.1) Non-violent/non- street-gang: 59.8% White, 14.4% Black, 24% Indian, 1.7% Other Violent: 77.1% White, 10.6% Black, 11.2% Indian, 1% Other Gang: 34.1% White, 49.3% Black, 15.3% Indian, 1.2% Other Recruited through 'Mens' Health Magazine' where surveys sent out	Anxiety: Non: 10.6 Violent: 19.2 Street-gang: 58.9 Street-gang compared to non-street-gang: 2.25 (*p*<.01) Depression: Non: 9.4 Violent: 8.5 Street-gang: 19.7 Street-gang compared to non-street-gang: 0.18 (*p*<.001) Street-gang compared to violent: 0.27 (*p*<.01) ASPD Non: 3.6 Violent: 29.2 Street-gang: 85.8 Street-gang compared to non-street-gang: 57.39 (*p*<.0001), Street-gang compared to violent: 6.49 (*p*<.0001)	- Negative personality traits and psychiatric problems were more prevalent among violent men and street-gang members than among non-violent men, and both groups reported significantly higher use of psychiatric services. - ASPD hugely varied – although unsurprising - The high prevalence's of anxiety disorders and positive screening for psychosis among street-gang members were unexpected. Strengths and Limitations + Good generalizability, large sample + Presented some new findings (anxiety high in street-gang members) +Good quality score - Self-report: social desirability - Definition of street-gang member not clear/helpful - Recruitment method not clear (96%)
7 Craig et al. (2002) Journal article	To describe the frequency of street-gang membership during the pre-adolescent and early adolescent periods (ages 11, 12, 13, and 14)	Personality Defined by fighting, oppositional behaviour, inattention, hyperactivity, anxiety-withdrawal, prosocial behaviour *Social Behaviour Questionnaire* (SBQ):	142 adolescent males - Stable street-gang members (children who belonged to a gang at ages 13 and 14) - Unstable street-gang members (children who	Analysis MANOVA Results Teacher ratings of behaviour (age 10): Anxiety:	Conclusions - Teacher's ratings, there was differences in the means between stable street-gang, unstable street-gang and non-street-gang on anxiety, prosocial, hyperactivity and inattention – All of these were in the direction you would expect.

Canada	To examine the stability of belonging to a gang at ages 11, 12, 13, and 14 To compare the family, behavioural, peer and school profiles of boys who belong to a street-gang and boys who do not belong to a street-gang, at ages 11, 12, 13, and 14. Quantitative: Cohort School assumed	- Comprised of The Preschool Behaviour Questionnaire and the Prosocial behaviour questionnaire - α = .74-.91 - Teachers and mothers also rated the above Street-gang membership The individual had to belong to a group of individuals and this group together performed illegal activities *Self-Reported Delinquency Questionnaire* (SRDQ): - Self-report scale asking "in the last 12 months did you belong to a group (gang) who did illegal things" - Parents and teachers were asked the same question - α = .54-.87, however α is not specially known about reliability/validity of gang membership measurement	belonged to a street-gang at ages 13 or 14) - Non-street-gang members (no gang involvement at ages 13 or 14) Aged 10-14 All Canadian and mother had to speak French Recruitment method not reported	$F(2,139) = 6.87, p < .001$ Stable street-gang: $M=1.72$ Unstable street-gang: $M=2.55$ Non-street-gang: $M= 3.29$ Prosocial: Stable street-gang: $M =7.04$ Unstable street-gang: $M = 7.74$ Non-street-gang: $M =8.11$ Hyperactivity: $F(1,139) = 4.5, p < .01$ Stable street-gang: $M =1.56$ Unstable street-gang: $M = 1.67$ Non-street-gang: $M = .96$ Inattention: $F(2,139) = 3.24, p < .05$ Stable street-gang: $M = 3.56$ Unstable street-gang: $M =3.45$ Non-street-gang: $M = 3.44$	- Anxiety as a lot higher in non-street-gang - Hyperactivity is highest in non-stable street-gang members - Prosocial is highest in non-street-gang and lowest in stable street-gang - It appears stable street-gang members had more problems than unstable street-gang members, so this might influence their developmental trajectory - Post hoc testing indicated that stable street-gang members engage in more fighting behaviour, were less anxious, and more hyperactive than nongang members. Unstable street-gang members were more oppositional and inattentive than non-street-gang members. Strengths and Limitations + Used multiple measures +Over time + Looked at a very young sample - Definition of street-gang poor - Hard to read in terms of results - Hard to generalize (64%)
8 Densley et al. (2014)	Explores the extent to which factors influence defiant individualism in street-gang members	Personality -Defiant individualism *Social Dominance Orientation scale* and *Faith in people scale* (FIPS)	95 males (reduced from 107 due to missing data) Street-gang member vs street-gang associate	Analysis Means Results SDO: $M = 4.41$ (significantly higher to U.K. prison offenders of	Conclusions - Street-gang members exhibit a 'defiant individualist' social character - This is higher in street-gang members with higher rank, longer time in the street-gang and lower ability to trust

Journal article	Research questions: 1. To what extent do street-gang members exhibit a defiant individualist social character as proposed by Sánchez-Jankowski (2003) 2. What factors contribute to defiant individualism in a gang context? Quantitative: Cross sectional Local street-gang intervention project	- Assess attitude towards human nature by contrasting faith in people and mis anthropism - Quality not reported Street-gang membership Eurogang membership: durable and street orientated youth groups whose involvement in illegal activity is part of their group identity *Self-report:* Membership and status (low, middle or high), if said no then recorded as street-gang associates - Coefficient of reproducibility was 0.92, α = .869	Aged 15-30 (M = 19.89) All black/black British Recruitment through outreach workers who were familiar with the street-gang network and assisted with distribution and collection of questionnaires	M = 3.22, significantly higher than U.K. adult male sample of M = 2.5, comparable to U.K. prison street-gang members at M = 4.43) As hypothesized, street-gang members with higher rank, longer time in the street-gang, and lower trust propensity are higher in SDO propensity	Strengths and Limitations +Good measuring of street-gang membership – used established definition and street-gang intervention centre +Good exploratory research - Small element of personality -Doesn't account for group processes or interaction - Very confusing to understand (83%)
England					
9 Dmitrieva et al. (2014) Journal article America	To examine how self-esteem, psychopathy, and psychosocial maturity relate to street-gang status (low-level member, leader, and non-street-gang member). To examine whether changes in street-gang status predict changes in these traits.	Personality Self-esteem, psychopathy and psychosocial maturity (PSM) *Measure of self-esteem:* - 4 items adapted from other measures in an interview, and was similar to those in the Rosenberg Self Esteem Scale - α = .67, comparable results to RSE *Youth Psychopathic Trait Inventory* (YPI) – Evaluates three dimensions of psychopathy; grandiose-manipulation, callousness-	1,354 adolescent males started (follow up rates of 94%, 93%, 91%, 91%, 91%, 90%, 89%, 88%, 86%, 82%) All adolescents were 'serious adolescent offenders' and had been convicted through court - Street-gang leader - Low-level street-gang member - Current or former over 7 years	Analysis Multi-nominal Growth model Results Predictors of street-gang membership: - Low level predicted by lower self-esteem and lower responsibility - Higher self-esteem in older members linked to street-gang leadership -Overall having low self-esteem was associated with street-gang membership (whether at low- or	Conclusions - Low PSM predicted being a low-level street-gang member - Low temperance predicted being a street-gang leader - Lower self-esteem predicted future gang affiliation among youth street-gang members and leaders - Higher self-esteem in older street-gang leaders from street-gang members - Higher levels of grandiose-manipulative dimension of psychopathy predictive of street-gang leaders Strengths and Limitations

Hypotheses: Compared to non-members, low-level status would be predicted by lower scores of self-esteem and grandiose-manipulative dimension of psychopathy. Street-gang leader and top-level status would be predicted by higher scores of self-esteem and grandiose-manipulative traits. 2- Changes in street-gang status (i.e., becoming a low-level street-gang member or a street-gang leader) will predict future changes in psychopathic tendencies and levels of PSM. Quantitative: Cohort Correctional facility, youths' home or other agreed location	unemotionality and impulsivity-irresponsibility. - α= .94 *Psychosocial maturity:* –Battery of 6 self-report measures on youth development among 3 dimensions of psychosocial maturity: maturity, responsibility and perspective - Quality not reported, scores standardized over three times points *Weinberger Adjustment Inventory* - To measure temperance - Quality not reported *Psychosocial maturity inventory* and the *Future Outlook Inventory* - To measure responsibility - Quality not reported Street-gang membership -Not defined - categorised into street-gang leader, low-level street-gang member and non-street-gang member (structural) and serious adolescent offenders *Questions adapted from previous gang literature*: - Street-gang status was measured by asking whether the participant was ever involved in a street-gang, currently in a street-gang and was a	Started aged 14-17 and followed up for 7 years 44% African American 29% Hispanic 27% other Recruitment through 'Pathways to Desistance study' where serious adolescent offenders who had been found guilty of a serious offence in the juvenile/adult court system were enrolled in the study.	high-level) among younger youth but having high self-esteem during late adolescence predicted that a street-gang member may become a street-gang leader. Psychopathy not predictive of low-level street-gang membership, but grandiose-manipulative dimension of psychopathy emerged as a predictor of being a street-gang leader Higher scores on all 3 measures of PSM were associated with lower probability of being a street-gang member in the future Low-level member had lower scores on all three measures of PSM than non-street-gang members Street-gang membership at a later age was associated with greater scores on the impulsive-irresponsibly trait on YPI Street-gang leaders had elevated impulsive-irresponsibility scores at a young age and elevated grandiose-manipulative scores compared to low level and non-street-gang members.	+ Followed over time, showed patterns + Account for all confounding factors + Looked at the transition between adolescence and adulthood which appears central importance in timing - Self report - Street-gang not defined - Just looked at male youth, hard to generalize (78%)

		street-gang member vs a top member or leader. - Quality not reported		Longer time in a street-gang associated with higher grandiose-manipulative, impulsive-irresponsible traits and lower temperance.	
10 Egan & Beadman (2011) Journal article England	To explore personality constructs underlying street-gang embeddedness in British prisoners using the Five Factor Model to structure a variety of potentially relevant personality constructs into a simpler model. Hypotheses: 1. Negative feelings and antisocial personality will form superordinate and separate constructs 2. Deriving positive feelings from antisocial associates would be positively associated with antisocial rather than emotionally vulnerable personality traits.	Personality Self-esteem, impulsivity, self-control, neuroticism, extraversion, openness, conscientiousness and agreeableness *NEO-FFI-R:* - Questionnaire - Strong cross situational, longitudinal consistency & reliable for the general British population *Self-control and Impulsivity*: - A four item scales measuring self-control and impulsivity - Self-control α = .82 - Impulsivity α= .74 Street-gang membership Looked at street-gang embeddedness: How deep is someone into a street-gang (structure) and individuals in prison *Self-report scale:* Indicating if the individual was a member of a street-gang as a youth, immediately before conviction, currently and if they intended to join/ re-join a street-gang upon release	162 males Former, current, intending to join and non-street-gang Aged 21-60, *M* = 31.7 33%: White British 14%: Black Caribbean 13%: White other 12%: Asian 10%: Other 6%: Black African 6%: Black other Remainder: Omitted Recruited by approaching offenders in a Category B prison in London when they were secluded in their cells and given a questionnaire package which was collected the following evening, wing officers advised on persons thought unsuitable for	Analysis Correlation Results Antisocial personality and resilience both linked to many offender characteristics There are no significant pathways from resilient personality to street-gang involvement. Antisocial personality significantly predicted street-gang involvement, showing both direct (0.42) and indirect (0.44) effects Antisocial personality has a total causal effect of 0.50 on street-gang embeddedness. Commitment to negative peers – agreeableness: *r*=.44, *p*<.001	Conclusions - Antisocial personality is the main determinant for street-gang embeddedness - Resilience indirectly influenced street-gang embeddedness - Individuals with low agreeableness seek out similar peers, and this drives street-gang membership Strengths and Limitations + Used established measure of personality +Difficult population to research in so provides good data for this - Didn't report results simply (i.e., who reported street-gang and who measured what on personality) -Findings not applicable to juveniles, females or general British publish -Self report (79%)

	3. The main determinant of street-gang embeddedness to be antisocial personality. Quantitative: Cross sectional General category B prison in London	- Coded into scores to make cumulative weighted score of street-gang embeddedness - Self-report optimises confidentiality and other research has found to be applicable *Social Variable*: - Measured positive reinforcement, punishment, commitment to positive peers & negative peers and social isolation. - Positive reinforcement: α= .84 - Punishment: α = .83 - Commitment to peers: α =.77-.84	participation due to vulnerability or heightened risk and recent admissions also excluded		
11 Friedman (1975) Journal article America	To generate a profile of Philadelphia street-gang youth To fill the need for empirically derived information to determine the most salient factors which differentiate street-gang youths from non-street-gang youths Quantitative: Cross sectional Correctional facilities, community-	Personality Made up of many attributed, attitudes and feelings such as emotional disturbance, guilt, expectation of punishment from authority figure, impulsivity, reactions to work and study and expectations for success. Measured through multiple inventories (give out as part of 80 inventories): *Emotional Reaction Inventory: Psychotic-Like symptoms and Neurotic- like symptoms:* Developed for this study as measures of psychopathology; *Minnesota counselling inventory: Social relations scale:* Measured emotional and behavioural reactivity through a scaled questionnaire on disturbances	536 males Current, former and non-street-gang members Aged 15-18 years, *M* =16.6 61%: Black 39%: White Recruited from three correctional facilities, a community-based job training programme and a local-inner city public high school To reduce bias:	Analysis Stepwise multiple regression Results Predictors of street-gang membership: Delinquent self-image was 7th in predictor model (partial *r*= .13) Rotter internal external reinforcement scale was 9th in predictor model (partial *r*=.10) When took out violence, age and ethnicity: Parental defiance: Open defiance 1st in model (partial *r*=.38) Delinquent self-image: 5th in model (partial *r* =.18)	Conclusions - More street-gang members than non-street-gang members perceived themselves as delinquent - Street-gang members set unrealistic goals and limits for success, have unrealistically high expectations for success yet perceived less opportunity to be successful, this could provide motivation for street-gang affiliation as street-gang becomes vehicle for becoming successful - Street-gang members experience less guilt than non-street-gang members - Findings can be interpreted to represent a difference in the value orientation between street-gang and non-street-gang members – what they value differs i.e., a violent act may increase a

based job training programme and inner city public high school	in social relationships outside the family; *Danger and Excitement Needs:* 2 items combined to yield a score; *Need for Individuality:* Item which implies recklessness, dangerousness and antisocial behaviour; *The Wiltwyck Guilt Stories:* Reflecting guilt or pleasure; *The Wiltwyck Authority Stories*: How an authority figure would respond to a situation; *Significant incidents in relation to peer violence; Rotter Internal/External Reinforcement Scale:* What they attribute control to; *Delinquent Self-Image:* Item on perception of self as a delinquent and others view as delinquent; *Rotter Board Level of Aspiration* - Quality not reported (however range of made up items and established measures) Street-gang membership Not defined – individuals self-reported street-gang membership and were involved in criminal activity *The Gang Membership Criterion:* - The authors devised a questionnaire concerning street-gang activities. It indicated whether the subject had ever been a member of a street-gang. If indicated yes, also asked name, location and status.	- Residential/correctional subject groups, sampling was by consecutive admissions (405 boys, 92% completed entire set of tests) - Public high school group, sampling through intact advisory classes which were heterogenous with regard to ability level	Level of aspiration: 11th (partial *r* =.09) Wiltwyck guilt story: 12th (partial *r* = .08)	street-gang members power and status in his eyes, alongside seeming more masculine Strengths and Limitations + Extensive measures used, portion of these were established +Exploratory for its time and set some groundwork -Self report -Extremely long article and hard to decipher (81%)

		- Cross checked this with statement of membership, and with the gang control unit of the Philadelphia police department - Quality not reported			
12 Kennedy (2013) Doctoral thesis America	To investigate correlations between varying levels of self-esteem and resilience with deviant behaviours including street-gang membership and bullying. Hypotheses: 1- Adolescents who have a stronger sense of resilience will be less likely to identify with street-gang membership. 2- Street-gang members will have higher self-esteem and will be less likely to identify with these deviant peer groups. Quantitative: Cross sectional School	Personality Resilience and self-esteem (definitions provided for both) *The Resilience and Youth Development measure:* - Part of health kids survey, a self-report tool for monitoring school environment/student health risks. RYDM assesses 17 assets identified to discourage high risk behaviour. - Good internal consistency, but low reliability *The Rosenberg Self Esteem Scale:* - 10 items that measure positive, negative and overall self-esteem - Gold standard for evidence, found to be valid and reliable among students, test-retest is found at α=.82-.88 and internal consistency between α=.77-.88 Street-gang membership Defined by their involvement in street-gang activities including criminal activities and group activities	53 males Current street-gang members Aged 14-17 Ethnicity not reported Recruited by contacting the district superintendents and the school principle in low socioeconomic public schools. Targeted due to the national gang intelligence centre and previous literature commenting that common quality of most street-gang members is a low-income background.	Analysis MANOVA Results No statistically significant main effect for street-gang membership on the Rosenberg Self Esteem Scale and the Resilience and Youth Development Module. (Wilk's= .97, *p* - .05, Partial *r* = .03) (doesn't report mean number of people indicated as street-gang involved)	Conclusions - No observable main effects for street-gang membership on level of self-esteem and resiliency - Doesn't match other literature, author comments on why this is (developmental stage, poor methodology, lack of understanding from students) Strengths and Limitations +Established measures - Sample limited to 14-17-year olds, can't generalize -Many participants did not identify as street-gang member, therefore sample size on this part very reduced - Not causal (70%)

		The Gang Membership Inventory - 15 true/false items asking about gang activities in the last year. Individuals who score above half are classed as a street-gang member - Research suggests reliable, but lack of research on validity			
13 King (1963) Doctoral thesis America	To investigate two variables that have been associated with violent behaviour in adolescent males; psychopathy and street-gang affiliation. Research questions: 1. Will adolescent male street-gang members exhibit higher levels of psychopathy than non-street-gang peers on the Total score of psychopathy as measured by the PCL-R? 2. Will adolescent male street-gang members exhibit higher levels of psychopathy than non-street-gang peers on the Affective	Personality -Psychopathy *Psychopathy Check List -Revised*: - Semi-structured interview scored on which the individual matches the prototypical description of psychopathy. - Factor 1: Core personality traits of psychopathy - Factor 2: Behaviours associated with an antisocial lifestyle - Established measure - Completed some with assistant to establish inter-rater reliability (high) Street-gang membership A group of recurrently associating individuals with identifiable leadership and internal organization, identifying with or claiming control over territory in the community, and engaging either individually or collectively in violent or other forms of illegal behaviour	21 males Street-gang members: 14 Non-street-gang members: 7 Aged 14-17, $M = 16.6$ Street-gang member group: 79%: Mexican American 14%: African American 7%: Native American Non-street-gang member group: 57% Caucasian 29% Mexican American 14% African American Recruited by randomly selecting from a local care setting of adjudicated youths and then assigned to street-gang or non-street-gang group	Analysis One tail t-test Results Total PCL-R score: Street-gang: M= 27.971, Non-street-gang: M = 24.543 Sig = p=0.0492 Factor 1 – Affective: Street-gang: $M = 10.286$ Non-street-gang: M=8 Sig – p=.0295 (Author notes that the reliability was poor on the affective scale) Factor 2 – behaviour Street-gang: M= 13.857 Non-street-gang: M =14.314 Sig – p=.3023	Conclusions - Results indicated that street-gang members manifested higher levels of psychopathy than non-street-gang members as measured by the Total and Affective (Factor 1) scores. - Significant differences emerged overall between street-gang members and non-street-gang members on the variable of psychopathy, establishing the presence of a relationship between psychopathy and street-gang affiliation. - As four members revealed their identify as street-gang members during data collection, has hypothesised that this is consistent with the emotional component of psychopathy (desire not to paint in bad light, by hiding identity, the gang member is better able to obtain the trust of others in order to violate them for personal gain) therefore, the emotional component of psychopathy appears to be a discriminating factor between street-gang members and non-street-gang members

	(Factor 1) score as measured by the PCL-R? 3. Will adolescent male street-gang members exhibit higher levels of psychopathy than non-street-gang peers on the Behaviour (Factor 2) score as measured by the PCL-R? Quantitative: Cross sectional Secure care setting	*Interview* - Identified as street-gang or not-street-gang, done through personnel utilizing the 'Gang membership identification criteria' which states a street-gang member can be identified through any two of self-proclamation; tattoos; gang clothing; gang paraphernalia; gang related correspondence; witness testimony; or any other indicator of membership. - Quality not reported			Strengths and Limitations + Older study – good start to build upon + Established measure - PCL-R has not been validated for use with adolescents - Limited generalizability of results as conducted with incarcerated males aged between 14-17 - Gender of researchers may have influenced responders - Poor validity of street-gang membership measurement as half-way through the research 4 participants revealed they were street-gang members (87%)
14 Mallion & Wood (2018) Journal article England	To distinguish between street-gang and non-street-gang prisoners' levels of Trait Emotional Intelligence, Callous-Unemotional traits, anger rumination, aggression, and Anti-Social Personality Disorder while controlling for social desirability. Hypothesis:	Personality Trait-emotional intelligence, anti-social personality, callous-unemotionality and aggression *The Trait Emotional Intelligence Questionnaire – Short Form* (TEIQue-SF): - 20 item measure assessing global TEI. - High predictive validity, α= .86 *Million Clinical multiaxial inventory – 3rd edition* (MCMI-III): - Measures adult psychopathology, ASPD scale includes 17 items	73 males Street-gang: 44 Non-street-gang: 29 Age: *M* = 27.03 31.5%: White U.K./Irish 16.4%: Black Caribbean 13.7%: Black British 11%; Mixed race 9.6%: Black African 8.2%: White other 4.1%: Bangladeshi 2.7%: Asian other	Analysis Chi-square Results ASPD Street-gang: *M* = 79.89 Non-street-gang: M= 65.38 Sig – *p* = .004 Aggression Street-gang: *M* =116.86 Non-street-gang: *M* = 98.66 Sig – *p*=.017 Trait emotional intelligence	Conclusions - Significant differences between street-gang and non-street-gang on ASPD, aggression and TEI (street-gang higher on ASPD and aggression and lower on TEI) - ASPD, aggression and TEI predict street-gang involvement - No difference in CU traits Strengths and Limitations + Used established measures for street-gang and personality + Provides evidence for interventions - Small sample so hard to generalise

	Compared with non-street-gang prisoners, street-gang prisoners would express higher CU traits, higher anger rumination, and increased inclination to aggression, lower TEI, and be more likely to fulfil ASPD criteria. Quantitative: Cross sectional Category C prison	- α = .84 *The Inventory of Callous Unemotional Traits (*ICU): - 24 item self-report scale assessing CU traits in youths - α = .82, frequently used in offending populations *The Aggression Questionnaire:* - Measures 4 components of aggression: verbal, anger, physical and hostility - α = .94, commonly used in offending populations Street-gang membership Eurogang definition *The Eurogang Youth Survey:* - To be classified as a street-gang member, the individual had to meet the Eurogang criteria: include three or more people, exist for more than three months, meet in public places and accept and engage in illegal activity - Past research has found this to be a valid measure	1.4%: Indian 1.4%: Pakistani Recruited through volunteer sampling, Participants were approached by an independent person to ask if they would like to participate, this led to a snowball sampling technique with participants recommending their peers to take part.	Street-gang: *M* = 5.21 Non-street-gang: *M* = 5.57 Callous unemotional traits Street-gang: *M* = 22.91 Non-street-gang: *M* =21.48 Sig – *p* = 0.533 Importance of variable predicting street gang involvement (factor loadings of above .3 show importance to prediction): ASPD: .712 Aggression: .549 TEI: .457 CU traits: .150	- Not causal (91%)
15 Niebieszc-zanski et al (2015)	To explore the role of moral disengagement as a psychological process underpinning street-gang offending.	Personality Moral disengagement *Mechanisms of Moral Disengagement scale*	269 males Street-gang offender: 139 Non-street-gang offender: 130	Analysis *t*-test and ANCOVA Results MD total: Street-gang: *M* =92.70	Conclusions - There was significant effect of street-gang offending on level of moral disengagement. - Street-gang offenders demonstrated higher levels of moral disengagement

Journal article	To explore whether moral disengagement is related to street-gang offending specifically	Street-ang membership Eurogang definition of street-gang membership	Aged 16-68, $M = 26.80$	Non-street-gang: $M =71.49$ Sig $p<.001$, $r= .44$ Moral justification:	than non-street-gang offenders. This difference represented a medium-sized effect (Cohen, 1988). This was overall
England		*Questionnaire in line with Eurogang definition*	88% White 4% Black 4% Asian	Street-gang: $M = 16.06$ Non-street-gang: $M = 11.18$ Sig $p<.001$, $r= .50$	on moral disengagement. - Street-gang offenders showed significantly higher levels of moral disengagement on all factors too,
	Hypothesis: It was expected that street-gang offenders would demonstrate a higher level of moral disengagement in comparison to group offenders.	- Classified as street-gang offenders if they met Eurogang criteria - Quality not reported	3% Mixed Opportunistic sample with a questionnaire pack	Euphemistic language: Street-gang: $M = 12.09$ Non-street-gang: $M = 8.85$ Sig $p<.001$, $r=.42$ Advantageous comparison: Street-gang: $M =10.31$ Non-street-gang: $M = 7.73$ Sig $p<.001$, $r=.34$	including Moral justification, Euphemistic language Advantageous comparison, Diffusion of responsibility, Displacement of responsibility, Denial of consequences, Dehumanisation and Attribution of blame - Even when controlling for age, street-
	To explore differences in moral disengagement between four different offender types; street-gang offenders; those who have committed offences individually but who have spent time with a street- gang at some point in the past (street-gang affiliated); group offenders; and individual offenders.			Diffusion of responsibility: Street-gang: $M = 12.34$ Non-street-gang: $M = 9.88$ Sig $p<.001$, $r=.32$ Displacement of responsibility: Street-gang: $M = 10.35$ Non-street-gang: $M = 8.64$ Sig $p<.001$, $r=.25$ Denial of consequences: Street-gang: $M = 10.20$ Non-street-gang: $M = 8.30$ Sig $p<.001$, $r=.28$ Dehumanisation: Street-gang: $M = 10.53$ Non-street-gang: $M = 8.49$ Sig $p<.001$, $r=.25$	gang offenders still significantly higher on using moral disengagement Strengths and Limitations +Uses well established street-gang criteria +Explores a new area which has clinical implications - All self-report - Low response rate - Hard to generalise across offenders and general population - Can't comment on causation (79%)
	Quantitiative: Cross sectional			Attribution of blame: Street-gang: $M = 10.83$ Non-street-gang: $M = 8.42$ Sig $p<.001$, $r=.34$	

				Age difference significant, so controlled for this: There was a significant effect of street-gang offending on level of moral disengagement after controlling for the effect of age, $F(1, 245) = 15.38$, $p < .05$, $r = .24$, though this reduced the overall effect size.	
Two secure establishments: Category C prison and young offenders institute					
16 Tapia et al. (2009) Journal article America	To compare differences between Mexican American street-gang members and Mexican American youth who are not street-gang members on several demographic, educational, familial, cultural and psychological variables Quantitative: Cross sectional Not stated, assumed to be school/ probation office	Personality Anxiety, self-esteem, locus of control, sense of self-reliance, instrumental values (individuals conduct, e.g., being honest, ambitious) *Behavioural Assessment System for Children* (BASC): *Self- Report of Personality Adolescent Version* (SRP-A): - 182 true/false items - α = .67-.85 *The Value Survey*: - 18 terminal and 18 instrumental values - α = .74 and .71 - Factor analysis provided support for validity Street-gang membership Not defined – individuals self-reported street-gang membership	86 males Current street-gang member: 43 Non-street-gang member: 43 Aged 12-18 Street-ang members: $M = $ 16.3 Non-street-gang members: $M= $ 15.1 Ethnicity note reported, but all participants had to identify as Chicano or Mexican American Recruited from several probation departments and high schools. - Probationers/ school counsellors informed	Analysis *t*-test and chi squared Results No significant differences between groups on the personality measures Non-street-gang members 'somatised' their problems significantly more than street-gang members Values: - Ranked in order of what they value the most Terminal values: - Self-respecting: Ranked as 3 by street-gang and 8 by non-street-gang - Social recognition: Ranked as 8 by street-gang and 13 by non-street-gang Instrumental values:	Conclusions - No significant differences between groups on the personality measures - Non-street-gang members somatised their problems more than street-gang members – suggests street-gang members could be more independent - The terminal values ranked by street-gang members as higher than non-street-gang members were self-respect, social recognition and independence - The instrumental values ranked by street-gang as higher than non-street-gang were helpful, clean and capable - Loving and courageous were ranked higher by non-street-gang than street-gang - The instrumental value findings could be a reflection of how the individuals feel day to day, i.e., the non-street-gang members feel loved and therefore more courageous and capable

		which was corroborated by probation department/high school counsellor – street-gang members signed a statement of assent - Quality not reported	known street-gang members of the study; street-gang members randomly selected - Non-street-gang members randomly selected using a table of random numbers from a list of Mexican American adolescents from several high schools who had volunteered to participate in the study	- Independence: Ranked as 2 by street-gang and 15 by non-street-gang - Helpful: Ranked as 5 by street-gang and 11 by non-street-gang - Clean: Ranked as 6 by street-gang and 16 by non-street-gang - Courageous: 13 by street-gang and 5 by non-street-gang members - Capable: 15 by street-gang and 6 by non-street-gang	<u>Strengths and Limitations</u> + Basic data but shows difference in line with other literature + Shows specific sample + Used established methods to measure personality - Didn't define street-gang membership - Can't generalise - Could look at more confounding factors (76%)
17 Thornton et al. (2015) Journal article America	To examine the association of callous-unemotional (CU) traits with group offending (i.e., committing a crime with others; street-gang involvement) and with the role that the offender may play in a group offense (e.g., being the leader). Quantitative: Cross sectional Place convenient for participant, e.g. home, or restaurant	<u>Personality</u> Callous-unemotional traits and impulse control *The Inventory of Callous-Unemotional traits* (ICU) - 24 item instrument, α=.76 *Weinberger adjustment inventory*: - 8 item subscale, α = .74 <u>Street-gang membership</u> - Street-gang membership in the past 6 months, lifetime, or never - Committed index in a group vs. alone *Self-report questionnaire* - Quality not reported	1,216 males Current street-gang: 5% Former street-gang: 5% Non-street-gang: 90% Age, *M*= 15.29 46.2%: White Latino 38.1%: Black 15.7%: White non-Latino Recruited from juvenile justice systems across counties	<u>Analysis</u> Correlation <u>Results</u> CU traits positively correlated with street-gang membership *r*=.22, *p*<.0001 Impulse control correlated with street-gang membership *r*= -.17, *p*<.0001 CU and impulse control were both significant in predicting street-gang membership	<u>Conclusions</u> - CU traits were associated with adolescents' self-report of offending in groups and being in a street-gang. - The association between CU traits and street-gang membership was independent of previous offending but was not independent to group offending, suggesting that street-gang membership is more than just group offending <u>Strengths and Limitations</u> + Used established measures for CU + Accounted for and analysed with confounding factors - Based on self-report data - Not causal - Hard to generalize as specific to male adolescents who are first time offenders (76%)

18 Valdez et al. (2000) Journal article America	To compare and contrast PCL-SV data on community samples of Mexican American street-gang members, non-street-gang members and standard comparison samples of forensic/non-psychiatric, civil psychiatric and undergrad students Quantitiative: Case control Not commented on: presumed community	<u>Personality</u> Psychopathy *Psychopathy Checklist Screening Version* (PCL-SV): - 12 item scale derived from the 20 item PCL-R looking at 12 items representing psychopathy. - Gold standard, α = .71 <u>Street-gang membership</u> Not defined Drawn from a wider study so they identified street-gang members through focus groups, interviews and social and economic indicators - Quality not reported	75 males Street-gang members: 50 Non-street-gang members: 25 Age Street-gang: $M = 18.2$ years Non-street-gang: $M = 19.7$ years Ethnicity not reported Part of a larger study (national institute on drug abuse; NIDA), participants randomly selected from this The comparison group was selected by asking 3 members of each street-gang to nominate 5 non-street-gang involved males (but involved in delinquent behaviour), through this a list of participants was generated and 25 were drawn	<u>Analysis</u> *t*-test and chi-squared <u>Results</u> Overall, street-gang members had significantly higher mean total ($M = 12.6$; SD = 3.1, *p*<.01), affective ($M = 5.4$; SD = 1.9) ($t=2.8$,df=73,*p*=.007) and behavioural scores ($M=7.26$;SD=1.9)($t=2.1$,df= 73, *p* = .04). The highest mean item scores were; Adolescent antisocial behaviour (G:1.82, NG: 1.44); Poor behavioural control (G:1.46, NG:1.08) and Lack of remorse (G:1.32, NG: 1.04) consistently for both samples. The items with the lowest mean scores were superficiality (G:0.32 NG: 0.32) and grandiosity (G:0.64, NG:0.4). The street-gang and non-street-gang samples reported identical scores on "doesn't accept responsibility." (1.04) The street-gang sample had higher mean scores on the remaining items except for adult antisocial behaviour.	<u>Conclusions</u> - Large sample screened as relatively normal, however almost half needed a further interview to determine if clinically psychopath - Two street-gang members confidently identified as psychopaths vs zero of non-street-gang members - More than half street-gang members categorised as low, 44% as moderate and 4% high on psychopathy - Street-gang members had higher scores on total, affective and behavioural aspects than non-street-gang members - High scores on antisocial behaviour, poor behaviour controls and lack of remorse found in both samples - Street-gang members scored twice as high as non-street-gang members on lack of empathy. - Mean scores higher on adult antisocial behaviour as a higher proportion of non–street-gang members were asked the adult antisocial behaviour questions (due to their age) <u>Strengths and Limitations</u> + Data collected from randomly selected community-based samples + Takes into account why these were the results - Can't generalise sample as specifically Mexican American males

| | | | | - Deceitful (G:1.04, NG: 0.76); Lacks remorse (G: 1.32, NG: 1.04); Lacks empathy (G: 1.02, NG: 0.56); Impulsive (G:1.24, NG: 0.96); Poor behavioural controls (G:1.46, NG:1.08); Lacks goals (G: 1.18, NG: 0.84); Irresponsible (G:1.16, NG: 0.76); Adolescent anti-social behaviour (G: 1.82, NH: 1.44)

Item mean scores were statistically significant between the two samples on 6/12 items:
Deceitful $p<.05$; Irresponsible $p<.005$; Lacks empathy $p<.0005$; poor behavioural controls $p<.005$; Adolescent antisocial behaviour $p<.005$

Overall psychopathy score
M2= 4.0, df = 1, $p < .05$
Street-gang: High 4%, Possible 44%, Low 52%
Non-street-gang: High 0%, Possible 24%, Low 76% | - Evidence presents negative ideas on street-gang members

(73%) |
| 19

Wang
(1994)

Journal article | To compare street-gang and non-street-gang high school students along measures of self-esteem | Personality
Self-esteem

The Self-Esteem scale:
- Self-report scale comprised of 25 statements describing both positive and negative feelings of self-esteem. | 155 males

Street-gang: 49
Non-street-gang: 106

Age 16-18 | Analysis
ANOVA

Results
Street-gang members had significantly lower levels of self- | Conclusions
- Street-gang members have significantly lower levels of self-esteem compared to non-street-gang members
- Negative self-esteem was higher in street-gang members than non-street-gang members |

America	Hypothesis: Street-gang members would have lower levels of self-esteem than non-street-gang members Quantitiative: Cross sectional Two schools	Computes three scores; positive self-esteem, negative self-esteem and overall self-esteem - Positive self-esteem scale: α =.56 - Negative self-esteem scale: α=.73 - Test – retest reliability of overall scale after two months was r=.73 Street-gang membership Not defined - identified on the basis of referrals made by teachers and counsellors to a school programme that focused on social skills, coping strategies and adaptive problem solving, and individuals were only referred to this if they belonged to a street-gang - Quality not reported	78 Caucasian 77 African American Recruited from school in class	esteem than non-street-gang members. Negative self-esteem was higher in street-gang members than non-street-gang members, F=.43, p<.05	- This was the same for both Caucasian and African American street-gang members suggesting no ethnical difference, and suggesting this is due to the street-gang membership Strengths and Limitations + Took into account ethnicity + Good exploratory start – early paper - Can't generalize - Doesn't mention limitations or implications (63%)
20 Wood & Dennard (2017) Journal article England	To assess street-gang and non-street-gang prisoners levels of violence exposure, symptoms of PTSD, paranoia and anxiety Hypothesis: Compared to non-street-gang prisoners, street gang prisoners would report greater exposure to violence and would show higher symptom	Personality Anxious, PTSD and paranoid *Subscales of the MCMI-III*: - Anxiety subscale has 14 items, PTSD has 16 items and Paranoia subscale has 17 items - Anxiety α= .82, PTSD α= .89, Paranoia α = .86 Street-ang membership Eurogang definition *Eurogang Youth Survey items:*	65 males Street-gang: 32 Non-street-gang: 33 Aged 18-29, M =23.46 41.5%: Black/black British 38.5%: White 13.8%: Mixed race 3.1%: Asian/Asian British 3.1%: Chinese or Other ethnic group	Analysis Chi squared, t test and functional analysis Results PTSD Street-gang: M =20.56 Non-street-gang: M =17.94 p=.005 Anxiety Street-gang: M =17.75 Non-street-gang: M =15.94 p=.013	Conclusions - Compared to non-street-gang prisoners, street-gang prisoners have higher exposure to violence, higher symptoms of PTSD, were more paranoid and more anxious - Mental health and personality in street-gang members needs more attention in street-gang research - Street-gang membership may attract individuals with existing mental health problems/personality difficulties - Exposure to violence, PTSD, paranoia and anxiety were more important

levels of PTSD, paranoia and anxiety Quantitative: Cross sectional Prison	Reported as a street-gang member if they indicated yes to the four key items: having a stable group of friends, who spent a lot of time in public places, who accepted illegal activity in members and engaged in illegal behaviour together - Good construct validity and has been used in over 30 countries	Opportunity sampling within a young offenders prison and interviewed in a private area of the prison	Paranoia Street-gang: $M=25.5$ Non-street-gang: $M=22.00$ $p=.002$ Importance of variables predicting street-gang membership Exposure to violence: .760 Paranoia: .591 PTSD: .529 Anxiety: .463	predictors of street-gang membership than age or ethnicity Strengths and Limitations + Took into account confounding factors + Good exploratory for mental health/ personality in street-gang members +Good implications for practice - Can't know if prior to membership - Selection of traits limited - Sample size small, hard to generalise (85%)

Participant Characteristics

A total of 9,846 participants were included across the 20 studies; 142 in Canada, 168 in Singapore, 4,020 from the U.S. and 5,516 from the U.K. This shows the majority of participants are taken from Westernised cultures. The sample sizes for each study showed noticeable variation ranging from 21 (study 13) to 4,664 (study 6).

Samples consisted of men who were currently street-gang involved, as defined in the introduction using the Eurogang definition (Weerman et al., 2009) or had several indicators of street-gang involvement (group/structure/hierarchy, criminality, associated with or control over area/territory or self-reported as a street-gang member). If they were former street-gang members or non-street-gang involved, only data regarding the current street-gang members were included.

Youth, adult and a mixture of ages were included in this review due to the majority of research articles not separating by age within their studies. The lowest reported age was 10 (study 7) and the highest reported age was 68 (study 15). Three studies did not report the ethnicity of participants (12, 16, & 18). Of the remaining 17 studies, the majority had predominantly Black participants, with the next most common ethnicity being White. A wide variety of other ethnicities were also recorded in the 17 studies, for example Mexican American, Chinese and Mixed Ethnicity.

Quality of Included Studies

The quality score of the papers ranged from 63% (study 19) to 96% (study 6), with a mean of 78.45%. This indicated that on average, the research included is of good quality. The methodological strengths include the majority of papers having clearly stated aims/research questions with appropriate/replicable methods used. Most papers reported precise results, had relevant justifications for their decisions, and included a discussion of limitations and implications for practice. The main methodological weakness of these papers was that the

results could not be applied to the general population with the exception of one paper (study 6). Additionally, authors often failed to identify all confounding factors or to account for them in the analysis, and the sample size was rarely justified. Finally, it was often unclear as to whether ethical approval had been granted for the research or if there were conflicts of interest related to funding.

Overview of Findings

A variety of personality traits were identified through a narrative synthesis of the findings of the studies outlined above. From the list of traits highlighted in each study, a list of broad themes were developed. A visual representation of the themes can be found in Appendix G, and the results relating to each theme are reported below. Some traits were found to fit into multiple themes; in such cases, traits were assigned to the most relevant theme for the purpose of reporting and discussion.

Psychopathy.

Nine studies explored psychopathy and street-gang membership. This section is separated into psychopathy as a whole diagnosis and then broken down into specific traits associated with psychopathy.

Overall Psychopathy. Five studies explored overall psychopathy in street-gang affiliated individuals (3, 5, 9, 13 & 18). All studies reported a statistically significant higher presence of psychopathy in street-gang affiliated individuals in comparison to non-gang affiliated individuals. Chu et al. (2014) looked at psychopathy in a sample of youth offenders in Singapore and found psychopathy was higher in street-gang members than non-gang members. Similarly in an American sample, Burch (2013) found the mean scores on the Psychoticism scale of the JEPQ to be higher in street-gang affiliates compared to adjudicated youth who were not street-gang affiliated, with a large effect size suggesting high clinical significance and similarity across cultures. King (1963) found that street-gang members were

significantly different to non-gang members (adjudicated youth) on the total psychopathy and affective score, but not on behaviour score, whereas Valdez et al. (2000) found that street-gang members had significantly higher scores on all three measures in comparison to non-street-gang affiliated individuals who were reported as involved in delinquent behaviour. Additionally, during the process of data collection in Study 16 (King, 1963), four individuals revealed that they were street-gang members (as opposed to their original self-report of non-gang member) which the authors highlighted as evidence of street-gang members psychopathic behaviour. Valdez et al. (2000) categorised individuals into low, possible and high psychopathy, with 4% of street-gang members in the high category and 44% as possible (needing further interview), whereas 0% of delinquent individuals who were not street-gang involved were in the high category and only 24% were in the possible category. Finally, Dmitrieva et al. (2014) compared street-gang leaders to low-level street-gang members and non-gang members by following a group of males through their adolescence and found that street-gang membership at a later age was associated with early psychopathic traits. These studies provide strong evidence for the higher scores on measures of psychopathy, which indicates a higher presence of psychopathic traits within street-gang members as compared to non-gang members.

Impulsivity. Four studies assessed the trait of impulsivity in street-gang members (5, 9, 17 & 18). All studies found that street-gang members self-reported impulsivity or scored statistically significantly higher on impulsivity scales, in comparison to non-gang members, suggesting impulsivity to be a well-evidenced trait for gang membership. Chu et al. (2015) used the Youth Psychopathy Inventory and found street-gang members scored significantly higher than non-gang members on the impulsivity – irresponsible scale. Thornton et al. (2015) found impulsivity to be significantly related to street-gang membership as measured by the Inventory of Callous-Unemotional traits. Dmitrieva et al. (2014) found street-gang

members to have higher levels of the impulsivity-irresponsible and the grandiose-manipulative trait at a younger age when compared to low-level street-gang members. Finally, Valdez et al. (2000) found street-gang members had a higher mean score for impulsivity compared to delinquent individuals who were not street-gang members and there was a significant difference between the two groups on poor behavioural control. This presents a strong evidence base indicating that impulsivity is more prevalent in street-gang members as compared to non-street-gang individuals.

Lack of Empathy. Three studies explored the trait of empathy in street-gang individuals (1, 11 & 18). All studies report that street-gang members have a greater lack of empathy in comparison to non-gang members. Adams (2004) found street-gang members struggled with empathy in comparison to high school students, and likewise, Friedman et al. (1975) found street-gang members experienced less guilt and empathy in comparison to public school students. Interestingly, Valdez et al. (2000) reported that street-gang members scored twice as high compared to delinquent individuals who were not street-gang members on lack of empathy on the PCL-R. Overall literature indicates that street-gang members are likely to have lower levels of empathy compared to non-gang members.

Callous-Unemotional Traits (CU). CU traits are comprised of disregard for others, lack of affect and interpersonal callousness (Allen et al., 2018; Frick, 2004). These traits were measured in three studies with varying results (5, 14 & 17). Thornton et al. (2015) found that CU traits positively correlated with street-gang membership whereas Chu et al. (2014) and Mallion and Wood (2018) found no differences between street-gang and non-street-gang members on CU traits. All three studies used a comparison group of offenders and used established measures to assess this trait. It is therefore interesting that results differed. One explanation for these findings may be that all three studies were done in different countries (U.S., Singapore and U.K.), suggesting cultural influences on CU traits.

Emotional Traits

Lack of Feeling. This theme relates to emotional numbness, coldness, dehumanisation and desensitisation. Five studies (1, 2, 14, 15 & 20) all measured street-gang members in relation to lack of feeling. All studies found street-gang members to have difficulties in this area. Adams (2004) explored emotional numbness and reported that street-gang members had higher levels of emotional numbing than non-gang members (school children at risk from trauma) and that emotional numbness was significantly correlated to street-gang activity. Alleyne et al. (2015) and Niebieszczanski et al. (2015) examined dehumanisation in street-gang members. Both studies found this trait to be significantly higher in street-gang members than in non-street gang affiliated offenders. Mallion and Wood (2018) examined emotional intelligence and found this to be significantly lower in street-gang members compared to non-street gang offenders. Finally, Wood and Dennard (2017) highlighted that exposure to violence was a more important factor in predicting street-gang membership compared to age and ethnicity. The authors suggest this related to street-gang members desensitisation to violence, which influences their ability to engage in criminal activity.

Aggression. All three studies that measured aggression found this trait to be higher in street-gang involved individuals than in non-gang involved individuals (2, 7, & 14). Mallion and Wood (2018) found that street-gang members in prison had significantly higher levels of aggression compared to non-street gang offenders and that aggression was the second most important factor when predicting street-gang membership. Craig et al. (2002) found through post-hoc testing that street-gang members engaged in more fighting and were more oppositional than non-gang youths, implying that street-gang members have increased aggressive tendencies. Alongside this, Alleyne et al. (2015) found that in comparison to non-street gang offenders, street-gang members who self-identified, street-gang members who

met the Eurogang definition and street-gang members who self-identified and met the Eurogang definition were significantly higher on threatening behaviour, fighting, robbery, and physical assault. This finding again implies that street-gang members have higher levels of aggression.

      Anxiety. Three studies explored anxiety in gang members (6, 7 & 20). Coid et al. (2013) used a measurement tool for anxiety levels over the last week, suggesting this study was looking specifically at state anxiety. They used a sample consisting of 4,664 males and reported that 58.9% of the street-gang involved individuals reported anxiety. This was significantly higher than non-gang related individuals and the authors note this to be a surprising result. However, the life stressors associated with street-gang involvement (i.e., violence, instability) could explain this finding, making it less surprising. Wood and Dennard (2017) used the MCMI-III to measure trait anxiety and also found that street-gang prisoners had significantly higher levels of anxiety than non-street-gang involved prisoners. They also report that anxiety was a more important predictor of street-gang membership than age or ethnicity. Conversely, Craig et al. (2002) reported that street-gang members had significantly lower levels of anxiousness than non-gang members. This research used the SBQ which appears to also measure trait anxiety. One explanation for this differing result could be in relation to the assessment measure used; both Coid et al. (2013) and Wood and Dennard (2017) used well evidenced, established measurement tools, whereas Craig et al. (2002) used teacher observations and a less evidenced measure, which could have led to a less robust measurement of anxiousness. Furthermore, Craig et al. (2002) completed their study more than 10 years prior to the other two studies, indicating that personality research may have evolved in this time. Additionally, both studies that found anxiety to be higher in street-gang members were conducted in the U.K. (Coid et al., 2013; Wood & Dennard, 2017), whereas the study finding lower levels of anxiety was conducted in Canada (Craig et al., 2002).

Therefore cultural factors could go some way to explain this difference in findings. When considering these results, it should be noted that the U.K. studies have a combined sample of 4,729 whereas the Canadian sample was 142, suggesting a stronger evidence base for the U.K. studies.

Autonomy

Independence. Independence was examined in four studies (1, 4, 10 & 16). All studies reported that street-gang members were more independent or placed higher value on independence than non-gang members. Tapia et al. (2009) found that non-gang school students somatised their physical difficulties more often than street-gang members, which the authors suggest is indicative of street-gang members being more independent than non-gang members. They also reported that street-gang members ranked independence as the second most important value to them, compared to their non-gang counterparts who ranked it as the 15th most important value; demonstrating a clear difference between the two populations. Early research from Cartwright et al. (1980) reported that street-gang members join street-gangs in the hope of calming underlying disturbances of dependency conflicts, leading them to become more independent individuals. Adams (2004) reported that self-reliance was correlated with participation in street-gang related behaviour. Finally, Egan and Beadman (2011) suggested that street-gang members with low agreeableness have high levels of independence due to feelings of non-conformity to the general public. These studies show some evidence of street-gang members being more independent or placing a higher value on independence than non-street-gang individuals.

Attribution of Responsibility. Six studies explored how individuals attribute responsibility of their behaviour (1, 2, 9, 11, 15 & 18). Valdez et al. (2000) identified no difference, finding that both street-gang members and individuals who engage in delinquent behaviour but are not street-gang involved scored exactly the same on the "doesn't accept

responsibility" scale. However, the remaining five studies all reported that street-gang members have higher use of external attribution compared to non-gang members. Adams (2004) reported street-gang members often justified their behaviour through victim blaming, therefore externally attributing responsibility for their actions. Alleyne et al. (2015) provide statistical support for street-gang members not taking responsibility for their actions by reporting a significant difference between street-gang and non-street-gang (i.e. young offenders) on the displacement of responsibility scale, with street-gang members scoring higher on this scale. They also reported that displacement of responsibility was the top variable in a predictive model of street-gang membership. Alongside this, Friedman et al. (1975) found that the Rotter Internal External Scale was the ninth variable when predicting street-gang membership and likewise, Dmietrieva et al. (2014) found that low level street-gang membership was predicted by lower responsibility levels. Finally, Niebieszczanski et al. (2015) reported that street-gang members' scores were significantly higher than non-street-gang affiliated offenders on the three attribution scales of the moral disengagement scale. The difference in findings should be considered in relation to the difference in quality assessment scores whereby Valdez et al. (2000) had a lower quality score in comparison to the five studies that found a difference in groups, suggesting more weighting could be given to the studies that reported higher levels of external attribution in street-gang members than in non-street-gang individuals.

Identity

Self-Esteem. Four studies examined self-esteem with varied results being found (1, 9, 12 & 19). Dmietrieva et al. (2014) compared low-level street-gang members, street-gang leaders and non-gang members on their levels of self-esteem over time. They reported that future street-gang membership was predicted by low self-esteem in adolescents, low levels of self-esteem was predictive of low-level street-gang membership and higher self-esteem in

older individuals was predictive of street-gang leadership. This research had a large sample (1,354) showing good generalisability. Wang (1994) also found that street-gang members had significantly lower levels of self-esteem than non-gang involved school pupils. Conversely, Adams (2004) and Kennedy (2013) found no difference in self-esteem levels between street-gang members and school students who were not gang-involved. It should be considered that both studies finding an association between low self-esteem and street-gang membership were journal articles (Dmietrieva et al., 2014; Wang, 1994), whereas the studies that found no association were doctoral theses, which may arguably suggest lower quality. Despite this, the doctoral theses actually had higher quality scores, suggesting that more weight could be given to these results.

Sense of Self. One study examined individuals' sense of self in relation to street-gang membership (11). Friedman et al. (1975) found that more street-gang members viewed themselves as delinquent compared to public school students, suggesting that street-gang members have a sense of self which takes the form of delinquent self-image. More research would need to be done on the topic of sense of self to draw concrete conclusions.

Hypermasculinity. One study explored hypermasculinity in street-gang members (2). Scholars suggest that hypermasculinity is comprised of three distinct characteristics; the view of violence as manly, the perception of danger as exciting and callous behaviour towards women/femineity (Craig, 2019; Thompson & Pleck, 1986). Alleyne et al. (2015) found higher levels of hypermasculinity in street-gang members who self-identified and met the Eurogang criteria than in non-gang youth offenders. The authors reported that hypermasculinity was an important variable in distinguishing between street-gang and non-gang members.

Anti-Social Personality Difficulties (ASPD)

This theme is not specific to one personality trait but is still of both interest and relevance to this review as it encompasses a range of personality traits that are combined into a distinct diagnosis. A high volume of research explored this diagnosis in relation to street-gang membership.

ASPD was examined in six papers (4, 6, 8, 10, 14 & 18). Coid et al. (2013) compared 4,664 males (street-gang members, violent non-street-gang members, and non-violent non-street-gang individuals) on their anti-social personality traits. Of the participants who identified as street-gang members, 85.8% reported anti-social personality traits. Differences between street-gang individuals, violent men who were not street-gang members and non-violent, non-gang members were statistically significant. Egan and Beadman (2011) reported anti-social personality traits as the main determinant of street-gang embeddedness and as being a significant predictor of street-gang involvement in a sample of offenders in custody. In addition, Mallion and Wood (2018) found street-gang members had statistically significant higher levels of antisocial personality traits than non-street gang offenders. Similarly, Valdez et al. (2000) found statistically significant differences in levels of anti-social personality traits between street-gang and non-street-gang individuals. Lastly, Cartwright et al. (1980) commented that "gang boys" have greater personality disturbances due to their anti-social traits and Densley et al. (2014) indicated that street-gang members exhibit a "defiant individualist" nature, suggesting an anti-social tendency. It appears that the evidence base for street-gang members showing anti-social traits is strong with a combined sample of 5,389 males.

Resilience

Three studies looked at the trait of resilience in street-gang members (1, 10 &12), however results were heterogeneous. Adams (2004) assessed resilience in street-gang members compared to high school students and found that street-gang members had higher

levels of resilience. Kennedy (2013) also compared resiliency between street-gang members and high school students (non-gang members) but reported no difference in resiliency between the groups. Interestingly the sample consisted of individuals from the same school, noted for its low-income background, suggesting that the two groups had similar backgrounds to each other. However, Kennedy (2013) reported that these findings did not support other literature in the field and cites this as due to the age of the sample leading to a lack of understanding from the students and poor methodology. This is supported by the quality assessment score of 70%; one of the lowest scores in this review. Furthermore, Egan and Beadman (2011) reported that resilience indirectly influenced street-gang embeddedness; suggesting that the more resilient a street-gang member was, the more embedded in their street-gang they were.

Strengths and Limitations of Studies

The majority of studies reported methodological strengths and limitations in their discussions. All studies reported that their measurement of personality in specific samples meant that results could not be generalised to the wider population, with the exception of Coid et al. (2013) who utilised a large sample (4,664) of males in the community allowing for some generalisability of these results. Most studies reported their use of self-report to measure street-gang membership as a limitation as whether someone self-reports as a street-gang member or not can be influenced by social desirability bias. The studies included used a variation of study designs, providing a holistic data set. A limitation of a portion of the studies was that the recruitment method was either not reported or was not clear, leading to some ambiguity around the sample. However, in regard to street-gang membership, the Eurogang definition is suggested to be a strength in six of the most recent studies (2, 5, 8, 14, 15 & 20; 2014-2018). Furthermore it was noted throughout that several of the studies' results and methods were difficult to interpret, meaning there may be some inconsistencies in the

assessors' interpretations. Finally, the use of measures for personality hugely varied with some studies using established measures, others creating measures which may have reduced the reliability and validity of their results and others using standardised measures which were commonly used at the time but which may now be considered to be less reliable than newer measures.

Discussion

The key aim of this review was to systematically examine the literature exploring personality traits in street-gang involved individuals. Findings were grouped into key themes: psychopathy; emotional traits; autonomy; identity; anti-social personality difficulties; and resilience.

Due to the extensive list of search terms used for the concept 'personality', it was not surprising that a large number of results were obtained. Through utilising the SPIDER tool for inclusion criteria, the author was able to narrow the results down to the studies included within this review to ensure a specific focus for data synthesis. Due to the search strategy and data sources employed, a reasonable body of research encompassing most, if not all, relevant studies published in English was accessed.

Twenty studies met the inclusion criteria. All 20 studies adopted quantitative methodologies although used a variety of designs including cross-sectional, cohort, and case control. All studies used psychometric assessments to examine personality traits specific to street-gang members. Seventy percent of the studies were deemed to be of very high quality (over 80% quality assessment score), indicating the findings were drawn from data that is of good quality, which is considered a strength of this review.

Nine studies examined psychopathy in relation to street-gang membership, specifically overall psychopathy, lack of empathy, impulsivity and callous-unemotionality. Overall it appears that psychopathic traits are considered more common in street-gang

members in comparison to non-gang members. Specifically, all studies grouped into overall psychopathy, impulsivity and CU traits had some form of criminality in their comparison sample; they either used adjudicated youths, offenders, prisoners or individuals known for their involvement in delinquent behaviour. Therefore, due to the similarities in the comparison sample and the highlighted differences in psychopathic traits, it could be hypothesised that the factor leading to these differences was whether or not the individual was involved in street-gangs, however further research would be needed to confirm this. In contrast, the comparison groups in research exploring lack of empathy included some studies that utilised school students as the comparison sample. This clearly different sample showed that psychopathy of street-gang members is also different when compared to individuals who are not involved in criminal behaviour.

The findings of this systematic literature review indicate that psychopathy is associated to street-gang membership. Generally, the studies exploring psychopathy were completed in a variety of cultures including the U.S., the U.K., and Singapore, suggesting limited cultural impacts on the results. This could indicate that higher levels of psychopathy in street-gang members could be universal, however further research in other countries is needed to offer support to this conclusion.

Findings of studies exploring the prevalence of CU traits in street-gang members were varied. From the results it was difficult to conclude as to whether CU traits are more prevalent in street-gang members than non-street-gang members. It is of note that all three studies exploring these traits used an offending comparison group. Possessing CU traits is a predictor of non-gang related crime (Kahn, et al., 2013; Kimonis et al., 2014) which may account for the lack of differences between gang and non-gang members. However, further exploration of CU traits in street-gang populations would be needed to draw conclusions regarding differences between street-gang and non-street gang members. Interestingly, an

element of Callous-Unemotionality is lack of empathy and there was also variation between studies regarding differences in levels of empathy between street-gang and non-gang individuals. It may be helpful to explore other elements of Callous-Unemotionality in relation to whether there are differences between street-gang and non-gang members in order to unpick these findings further.

Overall there was variation in the ages and ethnicities of samples, supporting the idea that the findings of studies investigating psychopathy in street-gang members are generalisable. Finally, most of the studies exploring psychopathy in street-gang members used established measures such as the PCL-R (Hare, 1991), indicating a strong evidence base from which to draw these conclusions.

Seven studies explored emotional traits in relation to street-gang membership. There is clear evidence for aggression and lack of feeling being present in street-gang members and some evidence for anxiety in street-gang members. It is interesting that the two studies reporting higher levels of anxiety in street-gang members measured both state anxiety (Coid et al., 2013) and trait anxiety (Wood & Dennard, 2017), which could indicate that anxiety as a whole is prominent in street-gang membership.

Overall, these studies highlighted that street-gang members have higher levels of emotional numbing, higher levels of anxiety and are more aggressive than non-gang members, including both crime involved and non-crime involved individuals. Craig et al. (2002) explained that this was as a result of street-gang members' life experiences - generally they have had "worse" lives and faced tougher experiences than individuals who are not street-gang involved which results in the use of aggression and emotional numbness as a coping mechanism. Similarly, Coid et al. (2013) state that their finding of high levels of anxiety in street-gang members was surprising. However due to what street-gang members experience (Dodd, 2019; Hughes, 2019), alongside their noted poor attachments (McDaniel,

2012) and a lack of support systems (Albert, 2007), it appears that high levels of anxiety are perhaps explainable. It is however unclear as to the causality of these emotional traits, i.e., whether they are present prior to street-gang membership or are as a result of it.

The studies exploring these themes used varying comparison samples including offenders, ex-street-gang members, at risk children, and mainstream school children, suggesting that despite of the comparison group these specific emotional traits are higher in individuals with street-gang experience. Furthermore, the studies took place in a range of countries and participants varied widely in age and ethnicities, suggesting little impact of these confounding factors and indicating that these emotional characteristics could be directly associated with street-gang membership.

It could be said that both emotional traits and psychopathic traits are reflected through the reported statistics on street-gang related violence (MET, 2021) which shows field evidence of impulsive and callous behaviour, a lack of empathy and aggression. In addition, due to the high amount of trauma associated with street-gang members' experiences (Kerig et al., 2015), it isn't surprising they may experience emotional numbness and become desensitised to violence.

Nine studies investigated autonomy in relation to street-gang membership, specifically independence and the attribution of responsibility. All studies reported that street-gang members demonstrate higher independence in comparison to both non-gang offenders and to non-offenders. This aligns with current research in the field, for example Raby and Jones (2016) found that street-gang joining was related to poor parental attachment, parental abuse and suspension from school. It could be hypothesised that these childhood experiences meant these individuals developed independence earlier than their counterparts. Alongside this, Craig et al. (2002) reported that individuals join street-gangs as young as 10 years old, which is further supported by early research indicating gang members range in age

from 6-50 (Thrasher, 1927). All studies with the exception of Valdez et al. (2000), found that street-gang members attribute responsibility differently to non-gang members (i.e., externally and through victim blaming). Valdez et al.'s research was conducted with a very specific sample of Mexican adolescent youths in addition to having lower quality scores than the other studies, which may go some way to explain the difference in results. These findings contradict one of the key principles identified as central to joining gangs; that street-gang members meet the psychological needs that an individuals' parents couldn't, leading them to seek these out from a group of peers (McDaniel, 2012; Waters, 1927). Future research could explore group dynamics and autonomy as a central component to street-gang membership.

The theme of identity was drawn from the findings of six studies. There was notable variation in the findings in relation to self-esteem in street-gang members across studies. Adams (2004) and Kennedy (2013) found no differences in self-esteem. Dmietrieva et al. (2014) found differences in self-esteem within street-gang members dependant on status, and Wang (2004) reported that street-gang members had lower self-esteem than non-gang members. There are three possible explanations which could, in part, account for differences in findings. Firstly, the samples examined were mainly adolescent samples. Adolescence is a time where self-esteem is generally quite low (Adams, 2004). Secondly, all these studies were conducted in the U.S., therefore it might be helpful to look at this trait in other cultures to understand self-esteem further. Finally, a variety of measures were used to assess self-esteem with only one study using an established method. Overall, it appears that in younger populations there is no difference in levels of self-esteem between street-gang involved and non-gang involved individuals (potentially due to their age), however as an individual gets older it appears that if these low levels of self-esteem remain, then this could be linked to street-gang membership. In terms of sense of self, there was an association between a delinquent self-image and street-gang membership. These findings are in line with Social

Identity Theory which suggests that an individual's self-concept is derived from membership of a social group (Tajel & Turner, 1979) and is a theory that has often been used to explain street-gang membership (Goldman et al, 2014; Hennigan & Spanovic, 2012).

Furthermore, results indicated that street-gang members identify with hypermasculine norms aligning with the wide field of literature that explores the link between violence and masculinity (Klein et al., 2017; Pope & Englar-Carlson, 2001; Whitehead, 2005). As noted in the introduction, a central experience of street-gang membership is the violence that is inflicted between rival street-gangs and in the commission of crimes. As the wider literature shows evidence for a link between violence and masculinity as well as street-gang membership and violence, the finding of this systematic literature review of an association between hypermasculinity and street-gang membership lends support for a three-way interaction between street-gang membership, violence and hypermasculinity. However, there are queries around the causality of this interaction as it is unclear whether hypermasculinity is a pre-cursor or consequence of street-gang membership and/or violence. Future research would be helpful to explore this. In addition, it is of note that only male samples were used in the studies and therefore it would be interesting to explore whether female street-gang members display what would be considered to be hypermasculine traits.

Six studies explored anti-social personality difficulties in relation to street-gang membership. As noted by Wood and Alleyne (2010), there appears to be an incomplete picture of street-gang membership due to a lack of understanding around psychological aspects of these individuals. There is a strong evidence base that street-gang members have personality traits reflective of anti-social personality; this result was found both in community and prison samples in both the U.K. and the U.S. (a combined sample of 5,389 males), implying some grounds for generalisability. Additionally results suggest that street-gang members in custody have significantly higher levels of anti-social personality traits than

non-street gang members in custody. Research in the field suggests that offenders generally have high levels of anti-social traits (NHS & NOMS, 2015), therefore it is interesting that being in a street-gang further increases the likelihood of these traits. Regardless of the direction of causality, this finding could be useful for developing rehabilitative interventions.

Overall, this finding suggests that street-gang members have more maladaptive personality traits in comparison to individuals not affiliated to street-gangs. This is consistent with Coid et al.'s recognition that street-gang membership is stretching resources such as mental health services (2013) alongside Peguero's report that gang membership has a wide range of negative impacts (2013).

Three studies explored resilience in gang members with varied outcomes. Outcomes included resilience being greater in street-gang members than high school students (Adams,2004), a link between resilience and gang-embeddedness (Egan & Beadman, 2011) and no difference in resilience between street-gang members and high school students (Kennedy, 2013). Research by Adams (2004) and Kennedy (2013) included in this review was carried out as part of doctoral theses and Egan and Beadman (2011) was the only journal article that could be located that measured resilience in street-gang members, suggesting this to be a fairly new field of research which requires further exploration and research would benefit from going through a peer review process.

As highlighted in the introduction, an important concept to be aware of is whether personality traits are static or dynamic. It would be helpful to consider the above themes in terms of whether they are considered static or dynamic traits so that practitioners can use these findings in a meaningful way. Using both Allport (1961) and Cattell's (1965) theories of personality, it would appear that personality 'traits' (i.e., static factors that are consistent over time and rarely change) highlighted as related to street-gang membership from this review would include psychopathy, impulsivity, empathy, callous-unemotionality,

aggression, anxiety, alexithymia (inability to identify/describe emotions; lack of feeling), and anti-social personality difficulties. Through measuring these traits in individuals, it may be possible to identify individuals who are vulnerable to joining a street-gang and subsequently provide early intervention (before the individual becomes embedded) for the individuals.

In addition, it would appear the personality 'states' (i.e., dynamic factors that change across timeframe and context) related to street-gang membership would include autonomy, and masculinity. Therefore psychological interventions could directly target these dynamic traits with the aim of helping individuals leave a street-gang. Additionally, self-esteem is viewed as a long-term trait (i.e., it is static over a life course) but it is also noted that self-esteem adapts itself within certain contexts (Maslow, 1987). Intervening to increase levels of self-esteem may benefit street-gang involved individuals. Finally, resilience research does not conclude whether the trait is static or dynamic and there are ongoing arguments for both (Luthar & Brown, 2007; Masten & Monn, 2015). There is a plethora of research into whether static personality traits can be changed with limited agreement on the outcome (Caspi & Roberts, 2009; McCrae & Costa, 1994; Roberts et al., 2006). If these traits can be changed, then it is suggested that psychological programmes should aim to address all of the identified personality traits with a view to increasing the likelihood that individuals will desist from street-gang membership.

Another prominent idea associated with street-gang membership is push and pull factors (Decker & Van Winkle, 1996; see Chapter 1 for more detail). As mentioned in Chapter 1, a pull factor refers to something pulling an individual towards the street-gang, usually an aspect that an individual finds attractive such as the chance for excitement and status. A push factor could be, for example, a social, economic or cultural factor that pushes an individual towards the lifestyle. In regard to personality traits, several have been cited as push and/or pull factors for individuals joining street-gangs: Owen and Greeff (2015) cited

opportunities to increase self-esteem as a push factor for joining street-gangs; Esbensen and Huizinga (1993) and Sanchez-Janowski (1991) cited anti-social traits and prior delinquency as a push factor; several researchers have cited aggression as a push factor (Campbell, 1984; Miller et al., 1961; Sanchez-Jankowski, 1991); and several researchers have cited lack of identity as a push factor (Fagan, 1990; Moore, 1978). It would be beneficial for practitioners to have an understanding of push and pull factors, particularly in relation to traits in order to support individuals at risk of joining street-gangs or those who are already street-gang members.

In addition to the above, research in the field has cited some of the themes/traits found here as being linked to individuals desisting from street-gang membership, highlighting the need for practitioners who work with vulnerable individuals to have an understanding of the prevalence of certain traits in street-gang involved individuals. Tonks and Stephenson (2019) reported that street-gang members wanting a new, non-gang related identity and experiences of violence leading to difficulties (e.g., post-traumatic stress disorder), as being two factors that assist an individual to leave their street-gang. Furthermore, Owen and Greeff (2015) report through interviewing adolescent boys involved in street-gang membership that factors such as being able to own their own identity as separate to the gang identity and taking responsibility for their actions supported their disengagement from street-gangs. It is suggested that future studies pursue a more in-depth exploration of the personality traits reported in this review in terms of the association between such traits and joining or leaving a street-gang.

In summary, the findings show a range of personality traits that appear to be prevalent in street-gang members. It is important to acknowledge that the findings of this review present a predominantly negative view of street-gang members. It should be noted that the research obtained largely measured personality traits with negative connotations such as

psychopathy and emotional numbness. Although this is understandable and important given the negative impact that street-gangs can have, it is perhaps not helpful in relation to stigmatising these individuals. Therefore, this review should be considered a good starting point in understanding personality traits of street-gang members, however should not be viewed as providing a whole picture of gang members. As the recent truce in South Africa shows, street-gang members do have the capacity to utilise their skills in a positive way and are not just "bad people" (CBS, 2020), despite some of the findings presented here.

Strengths and Limitations of this Review

Many academics have reported that greater attention should be paid to the personality traits of street-gang members. In synthesising the findings of recent research, the current review adds to the knowledge base in this area. Wood and Alleyne (2010) note that personality traits of gang members is a highly complex topic. The current review is therefore helpful in providing a concise synthesis of the current research in this field.

The robust search strategy is considered a strength of this review. The search terms included were extensive and were all taken from established personality theories and relevant literature. Although this resulted in a large number of search results which was time consuming for the author, it ensured the search was comprehensive. Furthermore, publication bias was reduced through the wide range of data sources used, including electronic databases, manual reference lists, experts in the field, and the inclusion of doctoral theses.

Another strength of this review is the broad range of dates of literature included. The decision to not put in a date limit was made due to the history of research into gangs and this allowed the review to encompass as much literature as possible. Some earlier studies that were identified as potentially relevant could not be accessed however, which may have impacted upon results.

Only studies written in English were included due to feasibility of translating studies into English which may have resulted in some bias. However, a strength of the review is that it included studies from a variety of cultures and it was apparent that some of the traits found (e.g., psychopathy, lack of empathy and aggression) were similar across cultures. This suggests some specificity to street-gang membership.

Furthermore, it is of note that the decision was made to exclude studies on female street-gang members alongside mixed samples, ensuring a sole focus on male street-gang members. Whilst this focus allows potentially more accurate generalisations to be made about this population, it is recognised that the findings cannot be generalised to female street-gang members. There is a growing literature suggesting that female street-gang membership is increasing (Bain, 2019), as such it is suggested that the field would benefit from a further review of studies with female samples. Additionally, the majority of studies utilised small samples which were highly specific (i.e., current and former African American and Hispanic street-gang members), therefore limiting generalisability. The comparison groups throughout the studies were similar whereby they mainly consisted of offenders and/or individuals known for delinquent behaviour, which again may have limited generalisability.

All the studies included provide insight into a difficult population to research including both street-gang members (who often lack trust in professionals) and individuals in prison (whom are difficult to access; Egan & Beadman, 2011). Furthermore, the author made the decision to include literature relating to all age groups allowing for a wider scope of papers to be included. It is recognised that not specifying an age group in the selection criteria may be a limitation of the review, as samples may include youths who may only be street-gang involved temporarily, which may have skewed the findings.

Implications for Practice and Future Research

This review has contributed to the understanding of a complex and important field of research. As discussed in the introduction, the impact of street-gang involvement on both an individual street-gang member and the wider community can be devastating; as such, research in this field is crucial. In relation to this, it was suggested that increasing understanding of individual personality traits of street-gang members may help to inform practitioners in the field as to how to support these individuals, alongside enabling interventions to be altered in line with the specific needs of street gang members. It is hoped that through tailoring interventions to the specific needs of street-gang members, the efficacy of rehabilitation efforts would increase. More specifically, and in line with the findings of this review, it is suggested that interventions address personality factors which have been found to be particularly prevalent in street-gang members. For example, it would be beneficial for practitioners working with street-gang members to be aware of and address issues such as a lack of empathy, impulsivity, emotional numbness, aggressive tendencies, high levels of anxiety, and hypermasculine views.

Further research would benefit from exploring personality traits in female street-gang members to examine if there are any differences in relation to gender. Alongside this, other types of gangs could be examined, for example, prison gangs or outlaw motorcycle gangs, to ascertain whether there are differences between these groups and street-gang members. This review found varying results for the traits of resilience, callous-unemotionality and self-esteem, therefore future research should focus on exploring these traits further. In addition, this review has provided traits linked to street-gang membership, however on the whole causality cannot be determined from the studies included here, therefore further research would be helpful to understand whether these personality traits are as a result of street-gang membership or whether they preceded membership. Ultimately, the aim of research into street-gang members is to further our understanding into how to support these individuals to

desist from street-gang membership with the hope that this will reduce the negative impact on the individual and their community. Currently desistance research focuses on desistance from criminal activity, which although linked to street-gang membership, does not specifically increase our understanding as to why individuals join or leave gangs (Cuevas, 2019). Therefore further research into desistance factors specific to street-gang membership would be helpful. Linked to this, and as discussed above, it would be helpful to gain greater insight into the varying dynamic and static factors and how practitioners could use this knowledge to support both street-gang members and individuals vulnerable to joining street-gangs. Additionally, it is suggested that research is conducted to explore barriers that are potentially preventing academic research from being applied to practice.

Conclusion

This review identified a body of research exploring personality traits in male street-gang members. It synthesised findings from research conducted across the world and in different age groups. The findings from the review indicate that psychopathic traits are prevalent and higher in street-gang members in comparison to non-gang members, including both individuals with criminal backgrounds and non-criminal individuals. In addition, emotional traits such as a lack of feeling and aggression were also found to be more prevalent in street-gang members. Some evidence suggests street-gang members have higher levels of anxiety, with authors commenting this to be a surprising result, however in relation to current street-gang violence statistics, this could be seen to be a logical finding. Autonomy appears to be a key characteristic of street-gang membership (i.e., independence and attribution of responsibility), which interestingly conflicts with wider ideas regarding street-gang members having a group identity. Furthermore, personality traits relating to identity such as hypermasculinity and sense of self were found to be traits linked to street-gang membership. Finally, there seems to be a strong evidence base for a relationship between anti-social

personality difficulties and street-gang membership. There were varied findings around street-gang members' levels of self-esteem, callous-unemotionality and resilience, although it was noted that this is a fairly new field of research which requires further exploration. It is suggested that the synthesis of research provided in this review can be used to help inform current practice in supporting street-gang members to desist from offending and pursue a pro-social life, and to help practitioners identify individuals who are vulnerable to joining street-gangs.

Chapter 3

The Connor-Davidson Resilience Scale (CD-RISC): A Psychometric Critique

The Connor-Davidson Resilience Scale (CD-RISC): A Psychometric Critique

As highlighted in Chapter 1, one concept that is receiving increased attention in relation to street-gang membership is resilience. It appears that increased resilience has been linked to reducing reoffending (Moffitt et al., 2002), has been included in several violence risk assessment tools (Fougere & Daffern, 2011) and is considered to be a protective factor against offending (Efta-Breitback & Freeman, 2004). Research has also started to explore this concept in relation to street-gang membership. In 2007, through interviews with former street-gang members, Albert identified that when resilience increased, the individual street-gang member was more likely to desist from street-gang membership and the individuals themselves reported that this was due to their increased resilience. This suggests that increasing resilience levels in individuals involved in street-gang members could have substantial impacts such as desisting from street-gang membership, reducing their involvement in violence and/or street-gang related crime and supporting them to live a healthier life. Considering this, resilience may be an important aspect to understand and investigate in street-gang members. However before doing so, it is important to understand what resilience is and how it can be measured. As such, an in-depth discussion of resilience and how it is assessed is provided below.

As discussed in Chapter 1, it is widely recognised that defining the construct "resilience" is a complex task (Connor & Davidson, 2003; Windle, 2010). A well cited definition of resilience in early academic literature states resilience is the ability to bounce back from distressing situations and to deal with long term, ongoing stressful experiences (Block & Block, 1980; Lazarus, 1993). The term has mostly been used to describe individuals that seem to function unexpectedly well during a disturbance or in stressful conditions (Klohnen, 1996). Furthermore, the term is used to describe a personal quality of someone who may be expected to engage in delinquent behaviour following exposure to high

risk factors (such as trauma) but due to their "resilience", they do not do so (The Oxford Dictionary of Law Enforcement, 2007). More recently, much-cited resilience academic, Gill Windle, analysed the term from a range of disciplinary perspectives in order to clarify a universal definition that could be used to inform research, policy and practice. Her analysis states three necessities for resilience: the need for a significant disturbance; the existence of resources to oppose the impacts of the adversity; and adaptive coping or avoidance of a negative outcome. Based on this, the definition with the strongest underpinning academic evidence for resilience is the process of effectively negotiating, adapting to, or managing significant sources of stress or trauma (Windle, 2010).

Concerning origin, evidence suggests there are contextual, behavioural and personality factors that explain an individual's resilience (Hovarth & Massey, 2018). Research from developmental psychology suggests an individual's resilience is influenced by their early experiences (Rutter, 1999). There is conflict within the literature as to whether resilience is a personality trait or an adaptive state (Luthar & Cicchetti, 2000). If resilience is considered a personality trait, this suggests it is static and therefore cannot be changed (Skodol, 2010). If resilience is considered an adaptive state, this suggests it is dynamic and influenced by context (Watson et al., 2006) as well as being able to be enhanced and increased through use of coping mechanisms, changing the context, or through psychological intervention (Hovarth & Massey, 2008). It appears that most academic researchers and clinical practitioners consider resilience as the latter – i.e., an adaptive and dynamic state (Luansky et al., 2020; Windle, 2010).

Resilience has attracted a wealth of attention over the last 40 years across academic literature, clinical practice and policy makers (Block & Block, 1980; Bonanno et al., 2015; McGreavy, 2015) and its complexity could be addressed by better science and greater specificity of concepts (Masten, 2007). It is receiving increased interest from policy makers

in relation to its impact on health, well-being and quality of life (Windle, 2010). If resilience is an adaptive and dynamic state, then it can be set as a treatment target for various resilience related difficulties. Third-wave resilience research is beginning to focus on interventions that aim to enhance psychological resilience, for example face-to-face interventions and use of multimedia (Connor & Davidson, 2003; Helmreich et al., 2017).

Alongside conceptualising resilience, it is key that academics, clinical practitioners and policy makers are able to measure it. Definitional variation leads to inconsistencies in estimates of prevalence of resilience. For example, prevalence data varied from 25-84% in a review of resilience studies that compared rates of resilience in children exposed to different levels of risk (Vaderbilt-Adriance & Shaw, 2008). If measurement is lacking due to variation in definitions, this may also lead to inconsistencies relating to possible risk and protective processes, especially in fields such as forensic psychology (Haskett et al., 2006). This therefore suggests that if we can understand and utilise resilience to support individuals who are exposed to high risk factors to develop their resilience, then it may lead to increasing personal and public safety, improving well-being, and ensuring good and manageable use of resources (Luther et al., 2000).

A number of tools have been developed to measure aspects of resilience such as hardiness (Bartone, 1991), perceived stress (Cohen et al., 1983) and ego-resiliency (Klohnen, 1996), alongside resilience as a wider concept (Windle et al., 2011). However, these tools have not been widely used or used with specific populations (Mosack, 2002) and therefore lack generalisability, alongside uncertainty around their reliability and validity. A systematic review exploring 15 measures of resilience concluded that to date, there is no 'gold standard' measure of resilience (Windle et al., 2011). It appears the majority of resilience scales are self-report and based primarily on psychological resilience, which requires a higher level of validation work to ensure robustness across populations (Windle, 2010). From a review of the

resiliency literature, Vanderbilt-Adriance and Shaw (2008) conclude that 'global resilience' is an outdated term and recommend that researchers are more precise in what they are measuring when trying to develop a resilience measurement tool.

Interestingly, the textbook of psychiatric measures published by the American Psychiatric Association in 2000 did not include a single resilience measure. Whilst several scales have been developed, they have not gained wide acceptance or been established across populations. Considering this, the Connor-Davidson Resilience Scale (CD-RISC) was developed to help quantify resilience (Connor & Davidson, 2003). The CD-RISC appears to be one of the most cited resilience measurement scales whereby it is frequently used in both practice and research, within both clinical and non-clinical samples. Although the CD-RISC has been critically evaluated as a part of wider reviews (Windle et al., 2011), there has not yet been a specific, critical evaluation of the scale. As such, this chapter will provide a critique of the CD-RISC; discussing its strengths and limitations with reference to the reliability and validity of the measure. The chapter will conclude by commenting on the use of the measure in current practice and research.

Overview

The CD-RISC originated from a post-traumatic stress disorder (PTSD) research programme whereby Connor and Davidson identified areas where a resilience scale might have been usefully applied (2003). They observed that of the individuals who had high-stress experiences, some had used adaptive coping strategies whereas others utilised maladaptive coping strategies with no clarity as to what triggered either. They noticed that when able to identify and nurture these adaptive strategies, an individual became more engaged in helpful activities and their difficulties seemed to diminish. Subsequently, they created the CD-RISC to measure different elements of resilience in individuals with PTSD and used six samples to assess reliability and validity of their newly developed scale.

The CD-RISCs content was derived from a range of sources including Rutter's developmental perspective (Rutter, 1985), Lyons' trauma adjustment work (1991), Kobasa's research into personality and health (1979) and several other theoretical perspectives (Salisu & Hashim, 2017). It is a brief, self-rated instrument that consists of 25 items on a five-point Likert scale which ranges from zero to four with higher scores reflecting greater resilience (Connor & Davidson, 2003). A five-factor scale is used to conceptualise resilience with eight items on personal competence, high standards, and tenacity; seven items on trust in one's instinct, tolerance of negative effects, and strengthening effects of stress; five items on positive acceptance of change and secure relationships; three items on control and two items on spiritual influences (Salisu & Hashim, 2017).

Subsequently, several studies explored the quality of the scale items and some academics suggested there was some instability in the five-factor structure (Fu et al., 2014; Windle et al., 2011). This led to the development of two, shorter CD-RISC scales. Firstly, Campbell-Sills and Stein (2007) extracted a 10-item scale (CD-RISC10) that they found to have high levels of consistency and high factor loadings, which they validated using a large sample of undergraduate students (n= 1,473). Following this, Vaishnavi et al. (2007) developed the CD-RISC2 as they felt it would be beneficial for quicker administration, and they used the scale to assess change in resilience through pharmacological modification. These scales will not be discussed in depth as the focus of this review is the original CD-RISC scale.

The CD-RISC is cited to have sound psychometric properties and appears to be the only resilience measure that has uses in both clinical practice and research (Connor & Davidson, 2003). A review of resilience scales found the CD-RISC to have the highest quality rating amongst 15 tools (Windle et al., 2011), and a critique of resilience scales suggested the CD-RISC to be the most dominant scale in assessing resilience due to having

the best psychometric properties (Salisu & Hashim, 2017). The authors recognise the scale aims to measure global resilience, however the current theoretical stance is that an individual may perform well in one area when facing adversity (such as work) but not in another (such as an interpersonal relationship), posing the question as to whether the individual is considered resilient which is not accounted for in the scale. Finally, the CD-RISC does not take into account directional factors which would establish whether resilience is a cause or effect of exposure to adversity (Salisu & Hashim, 2017).

The CD-RISC is accompanied by a user guide which summarises how the tool was developed, gives instructions to administer the scale and provides guidelines for scoring and interpretation. It includes information on the demographic features of the CD-RISC and provides an extensive list of normative data for the different populations the tool has been validated for. The user guide outlines the evidence base for the validity and reliability of the measure, including the original factor analysis which was done to ensure the most important items (in terms of variability) were included in the scale. The authors also include information on studies that have validated the CD-RISC across cultures and provides information on translations of the scale. One way that the CD-RISC differs from other resilience scales is that the user guide provides information on the predictive validity and use in treatment (Davidson, 2018).

The CD-RISC has been used in a range of contexts, with a range of populations and has been translated into several languages (Davidson, 2018). It has been examined in both the general population and with clinical populations (Hovarth & Massey, 2018). It has been studied in survivors of various traumas, PTSD patients, adolescents, graduate students, elderly, cross-culturally, and across a range of professional occupations, such as nurses, military personnel and athletes (Davidson, 2018).

Characteristics of a Good Psychometric Measure

The necessary components to evaluate the quality of a psychometric measurement tool are reliability, validity, and the appropriateness of the normative data (Kline, 1986). These constructs are discussed in order to examine whether the CD-RISC is a valid, replicable, and useful measure.

Psychometric Properties of the CD-RISC

Level of Measurement

Kline (1986) indicates psychometrics should try to use ratio scales where there is a true zero point. If this is not possible, Kline (1986) reports the minimum acceptable standard to therefore be interval level data. However where psychological measurement scales aim to measure psychological constructs such as resilience, there can be no true zero point, meaning ratio scales are not feasible and so for resilience scales, the aim must be interval data.

The CD-RISC uses a five-point Likert scale. This means that whilst each individual item on the scale is an ordinal level of measurement, the data can be treated as interval when the items are merged to produce a level of resilience (Allen & Seaman, 2007). When considering Kline's (1986) standards for a psychometric measure, this would suggest that the CD-RISC has an acceptable level of data to be deemed a good test.

Additionally, the five-point Likert scale has a mid-point providing an option for people to respond neutrally. Kline (2000) considers this superior to having an 'unsure' category, however suggests that assessors should be aware that this can result in false high ratings.

Reliability

Reliability refers to the stability and consistency of a measurement, specifically how accurate it is at producing consistent results at different time points and under varying circumstances (Howitt & Cramer, 2005). Reliability is fundamental to psychometric measurement. If a test is reliable, then the variation recorded in a participant's scores can be

credited to the changes in them or the concept being measured rather than being considered a random error (Hammond, 2002). Furthermore, Guilford (1956) recommends a minimum sample size of 200 participants for reliability studies.

Overall, the authors conclude the CD-RISC demonstrates acceptable reliability, namely good internal consistency and good test-retest reliability (Connor & Davidson, 2003).

Internal Consistency

Internal consistency ensures all items within a measurement tool that aim to measure the same construct actually measure the same entity (Kline, 1986). If a psychometric measure is seen to achieve internal reliability, it can be presumed that different items on the measurement tool contribute equally to the overall score in a consistent manner (Kline, 1993). A coefficient alpha is deemed the gold-standard measure of internal consistency (Kline, 1993; Nunnally, 1978) with Cronbach's alpha being the most frequently used which ranges from 0-1 (Cronbach, 1951; George & Mallery, 2003). The majority of researchers argue for a scale to be considered internally consistent and reliable, Cronbach's alpha should be at least 0.70 (Nunnally, 1978). However, Cattell (1973) voices concerns regarding "bloating specifics". This term relates to internal consistency being too high, meaning items are too similar and therefore the psychometric is too specific. With this in mind, Kline argues the acceptable alpha is between 0.60-0.70 for a psychometric to be considered good (2000).

The original authors, Connor and Davidson (2003), report the Cronbach's alpha for the full-scale CD-RISC to be 0.89 for their general adult population (*n*=577). This would therefore suggest a good level of internal consistency in line with Nunnally's (1978) criteria, however in line with Kline's (2000) argument, this could leave the scale open to 'bloating specifics' (Cattell, 1973). More recently, research found varying levels of homogeneity for each subscale, with Cronbach's alpha ranging from 0.67-0.85; however this is more in line with suggested criteria and therefore could be considered reliable (McTighe, 2009).

The largest study of the CD-RISC was completed by Bezdjian et al. (2017) using the scale with enlisted trainees in the United States air force (n=53, 692). The author found strong internal consistency, which, alongside such a large sample, provides good evidence for the CD-RISC's reliability especially when considering Guilford's (1956) recommendation for a minimum sample of 200. Furthermore, Kupier et al. (2019) reported very high internal consistency with an alpha of 0.90 when comparing the CD-RISC with the CD-RISC10 and the CD-RISC2, however it is again important to consider Cattell's (1973) argument of bloating specifics. Similarly, Goins et al. (2013) assessed the internal consistency in a sample of elderly native Americans and reported good reliability (α=.93).

Finally, Windle et al. (2011) reported in their quality assessments for a systematic review of resilience tools, that the CD-RISC had a doubtful method in regard to ensuring the items within a scale were intercorrelated. It highlighted that the CD-RISC has an acceptable Cronbach alpha and therefore internal consistency, but this was not reported for the subscales thus suggesting poor methodology.

Overall, findings regarding the CD-RISCs internal consistency are varied. One explanation for this may be due to resilience being a broad term. Additionally, the authors drew on a wide range of research for its development, which whilst making the measure theoretically robust means that it was derived from several different constructs and fields and therefore may lead to relational difficulties.

Test-Retest Reliability

Test-retest reliability states the same test score should be achieved when there has been no intervention, and the test is taken over time by the same participants (Kline, 1986). Kline (2000) suggests a correlation analysis to be the most effective way to explore test-retest reliability with a minimum correlation figure of a good test to be 0.80, whereas Guilford (1956) suggests that a minimum correlation of 0.70 is needed. Additionally, it is important

that the time period used is not too brief as this could result in participants simply remembering the questions/answers. Kline (2000) states a minimum of three months is sufficient, however Streiner and Norman (2008) propose that test-retest correlations are the most robust when there is more than a 12-month interval between tests. Finally, when measuring test-retest reliability, it is important to remember there are other factors that could impact it for example use of substances and emotional state of the participants.

Connor and Davidson (2003) explored test-retest reliability using the generalised anxiety disorder (GAD) and PTSD groups of their original research as these samples had little or no clinical change from time one to time two, therefore the authors felt confident that results would be indicative of reliability. The mean scores demonstrated a high level of agreement with a correlation coefficient of 0.87. In line with both Kline (2000) and Guildford's (1956) criteria, this would suggest the test-retest reliability to be demonstrative of a good measure. Windle et al. (2011) reported in their quality assessments that Connor and Davidson (2003) had doubtful method when analysing test-retest reliability due to their limited sample size ($n=24$) and argue without a significantly larger sample size, test-retest reliability cannot currently be evidenced. However, Baek et al. (2010) studied the test-retest reliability of the Korean version of the CD-RISC in a sample across various professions, ranging from university students to firefighters ($n=576$). They reported the correlation coefficient to be 0.93. Paired with the larger sample size, this demonstrates good test-retest reliability. It is of note that this was within a Korean population so cannot be generalised to the use of the CD-RISC in other (e.g., westernised) cultures.

Validity

Validity refers to whether a test measures what it intends to measure regardless of the respondent and when they respond (Kline, 1998). It is an overarching term for several concepts, which are construct validity (namely, convergent and discriminant validity),

criterion validity (namely, concurrent and predictive validity), content validity, and face validity. For something to be considered valid, the reasons for inaccuracies and potential sources of bias should be established alongside it being accepted by researchers that the items accurately reflect the underlying theory (Streiner & Norman, 2008).

In relation to the CD-RISC, construct validity (including convergent and divergent validity) and criterion validity, specifically predictive validity, are the most relevant aspects of validity to be considered. Overall, there seems to be varied results as to the validity of the CD-RISC with some studies suggesting the CD-RISC10 to be a more valid measurement (Coates et al., 2013; Green et al., 2014).

Construct Validity

Construct validity explores how well items correlate to each other by focusing on the theoretical integrity of the tool (Hammond, 2002). This means considering the degree to which items on the CD-RISC relate to theoretical understanding of resilience and the quality of this relationship. The best way to establish this is through factor analysis, which assists in determining how much each item contributes to the whole scale result (Kline, 2000) and for future studies to confirm construct validity, the most typical method is confirmatory factor analysis (CFA; Kline, 1993).

Using a U.S. sample ($n=577$), the authors applied factor analysis and derived five factors (Connor & Davidson, 2003). The authors demonstrate these factors are theoretically related to resilience and therefore suggest good construct validity, however they acknowledge that factor four and five (control and meaning) are composed of fewer items so may be less robust (Connor & Davidson, 2003). In line with this finding, Windle et al. (2011) report through quality assessment that the CD-RISC achieved the maximum quality score on construct validity, reporting the scale had specified hypothesis and that at least 75% of results were in line with it.

Despite evidence that the CD-RISC has good construct validity, there have been several refinements and revalidations which have found conflicting results and has led to the subsequent development of altered scales (CD-RISC10 and CD-RISC2). Upon completing CFA, some studies found better construct validity relating to a four-factor model (Wu et al., 2017) due to cross-cultural variation using a sample of Chinese men, a two-factor model, (Vaishnavi et al., 2007) due to perceived benefits of a shorter scale for quicker administration in practice and even a one-factor model, again for ease of administration for the same quality of scale (Burns & Anstey, 2010). Construct validity is the most explored psychometric property for the CD-RISC across cultures. The Korean version (K-CD-RISC) showed a five-factor structure that explained 57.2% of the variance, which paired with a large sample size ($n= 576$) is indicative of acceptable validity for measurement of resilience in Korean participants (Baek et al., 2010). CFA of Chinese data failed to verify the original five factor structure of the CD-RISC (Yu & Zhang, 2007) but further exploratory factor analysis found a three-factor structure to be valid within a Chinese population. The authors concluded the construct of resilience and its measurement from Westernised cultures can be helpful in understanding Chinese adaptive behaviours. In Ghana, Asante and Meyer-Weitz (2014) validated the psychometric structure of the CD-RISC using a sample of 227 homeless youths, finding that 62% of the variance was accounted for by a three-factor structure. Although not replicating the original five factor construct, this again shows some validity in another culture. Finally, in a sample of Spanish entrepreneurs ($n=783$), CFA failed to verify the original five factor structure but yielded a three-factor structure of resilience that accounted for 47.48% of the variance (Manzano & Ayala, 2013). It appears from the evidence that both the original CD-RISC alongside adaptations resulting from considering culture, can be considered to have good construct validity.

Convergent Validity. Convergent validity is apparent when items that should be theoretically connected are in fact connected (Kline, 1986). Convergent validity for the CD-RISC appears to be good. The CD-RISC was found to be positively correlated with the Kobasa hardiness measure in psychiatric outpatients (r=0.83, p<.0001; Davidson, 2018). Fernandez et al. (2015) used the CD-RISC with patients with end stage liver disease, a condition which is associated with substantial psychological stress. They found a negative correlation with measures of depression and anxiety and a positive correlation with measures assessing quality of life, social support and cognitive ability, providing evidence to support construct validity. Despite this, Kupier et al. (2019) state from their comparison of the CD-RISC, CD-RISC10 and CD-RISC2 that only the CD-RISC10 had good convergent validity. Kupier et al. (2019) suggests this may have been due to the setting of their study whereby participants completed the measures very early after the onset of spinal cord injury, as opposed to at later or multiple time points.

Finally, convergent validity has been found across cultures. In China, scores on the CD-RISC are positively correlated with measures of self-esteem (r=.49, p<.01), life satisfaction (r=.48, p<.01) and personality traits including neuroticism (r=.47, p<.01), extraversion (r=.43, p<.01), openness (r=.27, p<.01), agreeableness (r=.36, p<.01) and conscientiousness (r=.64, p<.01) (Yu & Zhang, 2007). In Korea, the K-CD-RISC is positively correlated with the Response to Stressful Events Scale (RSES; Baek et al., 2010). In Ghana, the CD-RISC was found to be positively correlated with social support scales (Asante & Meyer-Weitz, 2014). In sum, this suggests that the convergent validity of the CD-RISC is of a good standard both in the original version and cross-culturally.

Divergent Validity. Divergent validity is shown when measures that theoretically should not be connected, are not connected (Campbell & Fiske, 1959). Connor and Davidson (2003) report the CD-RISC was not significantly correlated with the Arizona Sexual

Experiences Measure at baseline or at endpoint of treatment in a study using participants with generalised anxiety disorder, concluding this to be an indicator of good divergent validity. Furthermore, Goins et al. (2013) found adequate divergent validity in a sample of elderly native Americans. The CD-RISC showed a significant negative correlation with the perceived stress scale (r=0.76, p<.001), suggesting that higher levels of resilience corresponded with less perceived stress (Connor & Davidson, 2003). Additionally, there was a significant negative correlation with the Sheehan Disability Scale (r=-.62, p<.00001) in psychiatric patients and Connor and Davidson (2003) suggest this to be indicative of divergent validity for the CD-RISC, as greater resilience is associated with less disability. However, it could be argued that this conclusion is somewhat inaccurate, as it is suggestive that people who are physically disabled are not resilient, which appears unjustified and unsubstantiated in the broader literature.

Cross-culturally, the K-CD-RISC negatively correlated with the Beck Depression Inventory (BDI; r=0.46, p<.01) and the Perceived Stress Scale (PSS; r=-0.26, p<.01) on a sample of Korean hospital nurses, firefighters and university students, showing good divergent validity as individuals who are resilient should have low scores on the BDI and the PSS (Baek et al., 2010). Additionally, Fu et al. (2014) administered the CD-RISC in China following the Sichuan earthquake to 2,132 adolescents one year after the disaster. They found items related to PTSD loaded separately to CD-RISC items, demonstrating divergent validity and highlighting the applicability of the CD-RISC to Chinese trauma survivors. Together, this suggests that the CD-RISC is not theoretically related to concepts that it should not be and therefore has good divergent validity.

Criterion Validity

Criterion validity refers to the sensitivity and utility of the test and it can be either concurrent or predictive in nature (Cronbach & Meehl, 1955). In regard to the CD-RISC, this

means measuring the extent to which the CD-RISC is related to level of resilience in comparison to other measures, alongside its ability to predict future resilience. Although some studies have suggested different factor loadings and therefore alternative versions of the CD-RISC, evidence suggests that the CD-RISC has strong relevance to resilience (Salisu & Hashim, 2017).

Concurrent Validity. Concurrent validity assesses how well the results of an assessment tool correlate with other assessment tools that aim to measure the same construct (Cronbach & Meehl, 1955). To investigate this, the CD-RISC should be compared with well-established measures of resilience, or other associated concepts.

Singh and Yu (2009) investigated this type of validity in a sample of Indian students, by comparing results from the CD-RISC to the Big Five Inventory (measuring extraversion, agreeableness, conscientiousness, neuroticism and openness), the Satisfaction with Life Scale (measuring life satisfaction) and the Positive and Negative Affect Schedule (measuring positive and negative affect). They found a positive correlation between the CD-RISC and life-satisfaction, openness, agreeableness, consciousness and positive affect, and a negative correlation between the CD-RISC and neuroticism and negative affect. Due to these factors being what you may expect to find in a resilient individual, these results show evidence for concurrent validity of the CD-RISC. In addition, Mahnaz et al. (2015) assessed concurrent validity by asking female nursing students in Iran to complete the CD-RISC, an aggression questionnaire, a self-efficacy scale and a life satisfaction scale. They also found positive correlation between the CD-RISC, self-efficacy and life satisfaction. This provides further evidence of concurrent validity as well as providing cross-cultural support.

Although a promising start, more research is required to establish this form of validity of the CD-RISC. However, as highlighted in the introduction and Chapter 1, the construct of resilience is complex to define and therefore to measure, and as a result there is no gold

standard measurement tool to date. Subsequently, this makes concurrent validity difficult to investigate.

Predictive Validity. Predictive validity indicates a tests ability to make a prediction in relation to something about someone in the future (Kline, 2000). In this sense, measures of resilience have mostly been used in health settings to make predictions regarding an individual's future psychological wellbeing, adaptability and ability to cope. Predictive validity is typically assessed using correlation between test scores and outcome measures (Cronbach & Meehl, 1995).

In the original paper, there was a significant association between the CD-RISC and level of improvement on the clinical global improvement scale (CGI) where greater improvement was associated with greater change on the CD-RISC, suggesting the CD-RISC to have good predictive validity (Connor & Davidson, 2003). In the most recent user guide (Davidson, 2018), the authors report on numerous studies that have used the CD-RISC to examine change during treatment with a range of interventions including medication and psychotherapy, concluding the CD-RISC has acceptable predictive validity across a wide range of populations and settings. Conversely, Windle et al.'s (2011) quality assessment for their systematic review scored predictive validity as zero, indicating there was no information relating to this psychometric property found. Most recently however, Bezdjian et al. (2017) used the CD-RISC with enlisted trainees in the U.S. air force (n=53, 692) and found good predictive validity in the field. Namely, low resilience measured at the commencement of military service is a significant predictor of attrition from the service and a good predictor of attaining a mental health diagnosis within six months of entry. Due to having a large sample size, these results appear to be generalisable to the general population.

In summary, it appears there is strong evidence to suggest good predictive validity of the CD-RISC. However, it is also important to consider the file-drawer effect with this field

of research, as it may be the case that research finding no significant change may not have been published leading the available research to suggest only evidence for predictive validity of the CD-RISC.

Cultural Variation

The CD-RISC has been translated into a range of languages and used throughout a variety of cultures. There is a wealth of research investigating its reliability and validity in different countries. The CD-RISC was found to have good reliability and validity in Turkey (Karairmak, 2008), Korea (Baek et al, 2010; Jeong et al., 2015), China (Fu et al., 2014; Yu & Zhang, 2007), Ghana (Asante & Meyer-Weitz, 2014) and Spain (Manzano & Ayala, 2013). This breadth of psychometric research speaks to the scale's robustness whereby findings indicate that questions are relevant to the construct of resilience across cultures.

Normative Data

Normative data is a set of scores from a specific, clearly defined sample of respondents (Kline, 2000). The two most important factors for normative data are the samples representativeness of the target population and the size of the sample being used which should be at least 500 in order to reduce standard errors (Kline, 2000). Normative data is important as it gives the measure psychological meaning and without it, assessors cannot know what a score means for the respondent.

The original CD-RISC paper provides mean scores and standard deviations as normative data for a U.S. general population, primary care patients, psychiatric outpatients, patients with GAD and two different PTSD samples (Connor & Davidson, 2003). This data can be found in Table 4.

Table 4

Normative Data from Original Research by Connor and Davidson (2003)

Study group	N	Mean	SD

General population	577	80.4	12.8
Primary care	139	71.8	18.4
Psychiatric outpatients	43	68.0	10.7
GAD patients	24	62.4	10.7
PTSD patients group 1	22	47.8	19.5
PTSD patients group 2	22	52.8	20.4
Total	827	79.0	12.9

When considering Kline's (2000) criteria that only samples above 500 reduce standard errors, it is of note that only normative data for the general population can be termed good in regard to its psychometric value. When considering the total sample, it is clear that the general population group skew the evidence (Davidson & Lee, 2015).

Since its development, there has been extensive research providing normative data in other populations and contexts. The more recent CD-RISC user guide provides normative data for a variety of cultures and populations (Davidson, 2018). An extract of this data can be found in Table 5.

Table 5

Normative Data from Most Recent User Guide by Davidson (2018)

Author(s)	Sample (location)	*N*	Mean	*SD*
Connor et al. (2003)	General population, (USA)	458	80.4	12.8
Clauss-Ehlers & Wibrowski (2007)	Students and Young Adults (USA)	95	73.1	14.1
Davidson et al. (2007)	PTSD patients and individuals exposed to severe trauma (USA)	100	57.0	16.0

Davidson et al. (2005)	Individuals with depression, suicide attempts or suicidality (USA)	41	57.1	13.3
Simon et al. (2009)	Other psychiatric disorders (USA)	103	48.7	15.6
Connor et al. (2003)	Medical problems (USA)	139	71.8	18.4
McTighe (2009)	Non-treatment seeking trauma survivors (USA)	139	75.7	10.9
Wilks (2006)	'Healthy subjects' (USA)	205	73.4	13.3

In summary, it is clear that the authors have gone to great effort to provide a wide range of normative data across contexts and cultures to ensure as many populations as possible are covered (Connor & Davidson, 2003; Davidson, 2018; Windle et al., 2011). However, one prominent population that is missing from their normative data is a forensic population, for example in individuals in prison settings.

Conclusions

The purpose of this chapter was to critically review the psychometric properties of the CD-RISC in relation to the standards from leading researchers in psychometric measurement (Guilford, 1956; Kline, 2000; Streiner & Norman, 2008).

The introduction of this critique clearly outlines the importance of being able to measure resilience. Primarily, Connor and Davidson developed the scale due to noticing an increase in coping amongst PTSD survivors, highlighting the real life impact a robust measure of resilience can have. It is clear the CD-RISC is one of the most widely validated scales in resilience literature, has a good evidence base suggesting it is reliable and as it has been translated into numerous languages across a broad range of populations, provides a variety of normative data (Davidson, 2018). The extensive research highlighting the CD-RISCs predictive validity suggests the measure is appropriate for clinical use.

Despite this, as referenced throughout, Windle et al.'s (2011) systematic review of resilience measures elicited no gold standard measurement. They indicated the need for better reporting of scale development and validation and suggest it should be a requirement that this information is made available so that a tool can be assessed thoroughly.

Interestingly, it appears the CD-RISC10 has been found in multiple studies to be a more reliable and valid measurement of resilience than the CD-RISC (Campbell-Sills & Stein, 2007; Kupier et al., 2019). This may be due to its shorter and more specific nature, reflecting the literature suggesting that obtaining a score of global resilience is nearly impossible and therefore more specific measurement is needed. A recent study completed a CFA of the CD-RISC and suggested a smaller scale would be more informative (Hodgkinson, 2020). This supports the idea that a more specific measurement of resilience would prove useful in both research and practice and due to the paper's recent publication, it is clear that this is still the case almost ten years after the scale's development. However, the CD-RISC10 also featured in Windle et al.'s (2010) systematic review, yet the CD-RISC was reported as being a better psychometric tool, showing some disparity in the overall conclusions on which version is of better quality.

To summarise, there is clear evidence to suggest that the CD-RISC is a relatively robust measure of resilience when considering its psychometric properties in line with criteria set out by leading academics such as Guildford (1956), Streiner and Norman (2008), and Kline (2000). However, there is a body of research including methodologically robust systematic reviews and meta-analyses indicating that, to date, there is still no 'gold standard' measure of resilience. It appears that current measurement of the concept is perhaps reflective of the lack of a universal and specific definition of resilience. Future research should aim to both conceptualise resilience and to produce a more specific, gold standard measure of this concept.

Chapter 4

Comparing Resilience in Street-Gang-Involved Individuals and Non-Street-Gang

Involved Individuals in a Custodial Environment

Abstract

The media has highlighted the devastating impact of street-gang related crime and this has resulted in growing academic interest into this area. There is a dearth of knowledge regarding the individual characteristics of street-gang members. However, one trait cited as potentially being associated with street-gang membership is resilience. Resilience literature indicates the concept is on a continuum and impacts multiple life domains. This study aimed to explore differences in levels and types of resilience in street-gang involved individuals compared to non-street-gang involved individuals in a custodial environment.

This research employed a quantitative design. It took place in a local remand/category B, male prison establishment where the researcher asked participants to complete a questionnaire encompassing demographic information and the Resilient Systems Scale (Maltby et al., 2017). Two hundred adult, male participants were recruited and identified as street-gang involved or non-street-gang involved based on their engagement with the Gangs Support Service.

Data were analysed using a MANOVA. No statistically significant differences were found in the levels of resilience between the two groups. However, upon examining the mean scores, street-gang involved individuals had higher scores on all three resilience sub-scales. Both groups scored highest on Ecological Resilience and lowest on Adaptive Capacity, showing a potential trend for general offenders but not specifically street-gang involved individuals. Subsequently, *t*-tests were carried out to investigate the significance of these differences however no significant differences were found through this subsequent analysis.

Overall, the findings from the current study add to the growing evidence base in the complex field of street-gang membership. It is apparent that further research is needed on the topic of resilience in street-gang affiliated individuals. This research lends support to the notion that resilience is a multi-faceted concept that is affected by multiple life domains. The

findings are discussed with reference to previous research and theory on the topic of

resilience. Limitations of the study are highlighted and suggestions for further research are

made.

Comparing Resilience in Street-Gang-Involved Individuals and Non-Street-Gang Involved Individuals in a Custodial Environment

As discussed throughout this thesis so far, there appears to be clear evidence for the devastating impacts of street-gang membership and there is increasing attention being given to this field in academic research (Gormally, 2015; Wood & Alleyne, 2010). One area that has been suggested to be important to this body of work is the role of psychology (Wood & Alleyne, 2010) and understanding the personality factors associated with street-gang members (Chu et al., 2014). As highlighted in Chapter 2, personality traits that appear to be linked to street-gang involvement include psychopathy (overall psychopathy, lack of empathy, impulsivity and callous-unemotionality), emotional traits (lack of feeling, aggression and anxiety), autonomy (independence and attribution of responsibility), identity (self-esteem, sense of self and hypermasculinity), anti-social personality difficulties and resilience. There appeared to be clear evidence relating to each of these traits, with the exception of resilience, whereby the results relating to the levels of resilience of street-gang members were mixed. As highlighted in Chapter 3, more specific measurement tools may be helpful for academic research and practitioner use. Resilience will be discussed below with reference to definitions and measurement (see also Chapters 1 and 3 respectively). Literature on the topic of resilience in relation to offending in general and to street-gang involvement will then be outlined.

Defining Resilience

As highlighted in Chapters 1 and 3, there is ongoing debate regarding the definition and understanding of resilience. Some academics propose that resilience is one concept (Schoon, 2006) whereas other academics suggest that resilience is a complex construct that is difficult to understand through just one definition (Southwick et al., 2014). Through her review of the concept of resilience, Windle (2010) concludes that resilience will vary across

the life course as it requires exposure to significant threat and therefore provides the definition of resilience as a process of effectively adapting to and managing significant trauma and/or stress in order to focus on it as a response to an event. However, she also highlights that understanding and defining the specific elements to this construct is vital for academic research and for practice amongst children, adolescents and adults.

As a result, research is focusing on the specific make-up of resilience. One recently developed perspective in this field was presented by Maltby et al. (2017) through applying the mechanisms identified in Ecological Systems Theory (Holling, 1973; Walker et al., 2004) and established measures of trait resilience. They suggest that resilience is currently understood by two general frameworks: the buffering approach and trait resilience. The buffering approach suggests that resilience is just the opposite of risk, whereas trait resilience is "how people characteristically respond to and approach negative events", which reflects Windle's (2010) definition following the concept review and is therefore an important element to understand in the field of psychology (Maltby et al., 2015, p. 3). They highlight that both approaches have been criticised for being vague, but also note that trait resilience has over 25 measurement tools and is underpinned by a variety of developmental theories around childhood resilience factors such as biological features and the impacts of early social relationships (Maltby et al., 2017; Rutter, 2013). Maltby et al. (2017) comment that the current literature provides both scholars, and experts in the field, with a valuable range of ways to understand psychological trait resilience but suggest that these do not operationalise well into a clear, pragmatic approach to understanding trait resilience. To address this ambiguity, Maltby et al. (2017) introduced a new assessment tool that was underpinned by Ecological Systems Theory (Walker et al., 2004). They took the five most cited trait resilience scales in the literature (including the Connor-Davidson Resilience Scale [Connor & Davidson, 2003], see Chapter 3) and examined the underlying structure of the 115 items. This

led to the emergence of three core resilience mechanisms: Adaptive Capacity which is the ability to continually vary functional processes in order to be prepared for a disturbance; Ecological Resilience, which is defined as the ability to either absorb or resist disturbance by making changes to an individual's functioning and therefore maintaining a stable state; and Engineering Resilience which is how quickly and easily a system recovers to a stable state following an actual disturbance (Maltby et al., 2017). This measurement tool was cited as useful due to the conceptualisation of resilience which was supported in both clinical and non-clinical health studies (Maltby et al., 2015; Maltby et al., 2016). However, several limitations were noted including the use of items not written in line with Hollings (1973) original description of resilience systems, an overlap with other measures of resilience, the inclusion of items that weren't free to use meaning the assessment tool may be limited in its use (i.e., in schools), and finally due to several items using colloquialisms, the scale was felt to be culturally specific (Maltby et al., 2017). In order to address these limitations, Maltby et al., (2017) therefore created the Resilient Systems Scale which uses equivalent items that map directly onto Hollings description of resilience systems, is free to use, avoids colloquialisms and can be used alongside other measures of resilience.

Due to its new nature, there do not appear to be any current published studies that use this measure to assess resilience. In the original development of the scale however, Maltby et al. (2017) found field evidence to support the theoretical underpinning of the scale, i.e., Engineering Resilience showed the highest association with emotional stability (recovery) and Ecological Resilience showed the highest association with conscientiousness (being prepared).

As highlighted in Chapter 3, there is a need for more specific measures of resilience to better explore this concept in academic research and practice. Overall, the Resilient

Systems Scale appears to be one of the first measures that aims to measure specific types of resilience (Maltby et al., 2017).

Resilience and Offending

Resilience has been linked to better mental health, increased self-esteem and several other positive cognitive, social and emotional psychological traits (Maltby et al., 2017). With this in mind, the conclusion could be drawn that resilience could be something that is important to consider within the field of forensic psychology.

It appears that levels of resilience vary amongst offending populations. Cuomo et al., (2009) compared individuals in prison who had recorded substance misuse to individuals in prison with no history of substance misuse and found that individuals in prison with a history of substance misuse had worse scores on a resilience assessment. Likewise, Born et al. (1997) explored resilience in young offenders in Belgium. They classified resilient individuals as those who had not committed a serious criminal act, despite being exposed to ongoing risk factors for offending such as poverty and unstable family characteristics. Overall, they found low levels of resilience among youth offenders (7% of the overall population) and interestingly, despite the overall sample being composed of only 20% females, females made up 67% of the resilient group. They found that the individuals they did define as resilient were less aggressive, more mature, had fewer mental health diagnoses and were more skilled in developing interpersonal relationships. They also appeared to re-offend less and had fewer offence counts. However, due to the niche sample (i.e., young offenders in Belgium) the results have limited generalisability to the wider offending population. The authors did however provide some support that resilience is an individual factor as opposed to an environmental factor and that it may be linked to reducing future offending.

Conversely, McGauran et al. (2019) reported that when comparing a normative group of adults to an offender group of adults, no significant difference in emotional resilience was

found. They cited this as a surprising result and suggest that the results may have been impacted due to the self-report nature of the measure used as previous research has found that offenders have a tendency to exaggerate personal abilities (Brooks & Khan, 2015). Several other studies have found similar results to this, for example, Arslan (2016) found low levels of resilience correlated with behavioural problems in adolescents and McKnight and Loper (2002) found resilience factors improved prediction of delinquency in adolescent girls. However, both these studies looked at behavioural problems as opposed to criminal convictions. In respect to psychiatric patients, research into resilience is limited which may be due to the difficulty in accessing this population (Viljoen et al., 2011). In the main, it appears that there is a lack of studies which have directly examined resilience in offender populations (Fougere & Daffern, 2011).

Research has cited resilience as a protective factor against offending (Efta-Breitback & Freeman, 2004) which has led to some parts of the Criminal Justice System (CJS) trying to incorporate resilience into their services. Fougere and Daffern (2011) report that resilience items are being included in several risk assessment instruments, such as the SAVRY (Borum et al., 2000) which includes an item called 'Resilient personality traits'. Furthermore, Trauma Informed Care is a gold standard model of care for forensic services (Elliott et al., 2005) and these principles try to foster resilience by empowering individuals, facilitating supportive interpersonal relationships and providing opportunities to increase coping-skills (Scottish Government, 2018). Furthermore, some research exploring reoffending has found links to factors that are evidenced as being associated with resilience such as self-efficacy, intelligence, and determination (Garmezy, 1993; Moffitt et al., 2002).

Resilience and Street-Gang Involvement

An area associated with offending is street-gang violence and street-gang affiliation. A growing field of research is beginning to explore street-gang involvement and trait

resilience. Adams (2004) assessed resiliency in individuals who reported street-gang membership in comparison to high school students. She used the Behavioural Assessment Scale for Children (Reynolds & Kamphaus, 2004) to assess levels of resilience and defined street-gang membership in terms of gang-involved delinquent behaviour using the self-report delinquency scale (Elliott et al., 1985). The study found that street-gang members had higher levels of resilience in comparison to high school students; showing support for the notion that street-gang involved individuals are more resilient than non-street-gang involved individuals. This research is considered robust as it used an established measure and a specific definition of street-gang membership. However, the author reported concerns about the issue of social desirability and highlighted that the resilience scale included several other unrelated behavioural components.

More recent research by Egan and Beadman (2011) explored personality traits in street-gang involved individuals in a custodial setting. They used the established measure NEO-FFI-R (Costa & McCrae, 1942) on a sample of 162 male offenders. Through data analysis the authors concluded two related factors to street-gang membership, which they termed anti-social personality and resilience. They defined the resilience factor through their analysis resulting in high factor loadings for low impulsivity, high self-esteems, high conscientiousness and low neuroticism, openness, and extraversion. Using these factors, the authors then used path analysis to predict street-gang involvement from age and the two identified personality factors (anti-social personality and resilience). They concluded that resilience indirectly influences street-gang embeddedness and reported this to be a stronger association when combined with anti-social personality traits. As a result, the authors suggest that interventions seeking to reduce street-gang involvement focus' on antisocial thoughts and behaviours and emphasise the important of offence-focused interventions.

Conversely, Kennedy (2013) explored whether there is a correlation between street-gang membership and resilience using the Resilience and Youth Development Measure (U.S. department of Education, 2007) and the Gang Membership Inventory (Pillen & Hoewing-Roberson, 1992) on a sample of 53 street-gang involved adolescent males. The study found no statistically significant effect on resilience score and street-gang membership. The authors acknowledged there to be an inconsistency with previous literature and felt this may have been due to the self-report nature of a very broad resilience measurement tool.

A more explorative study involving interviews with former street-gang members however indicated that former street-gang members felt that developing resilience was the central component that enabled them to exit their street-gang (Albert, 2007). This suggests that resilience is not higher in street-gang members, but that when levels increase, the trait enables individuals to lead a more pro-social life. This study showed in-depth and real-life experiences in relation to resilience in street-gang members however due to the small sample size of four participants, the findings cannot be generalised to the wider population.

The Current Study

Despite an increase in studies exploring the psychology of street-gangs, there remains a paucity of research exploring street-gang-affiliation in the U.K. and exploring street-gang affiliated individuals who are currently in custody (as opposed to gangs formed whilst in custody). Whilst there has been some initial exploration of personality traits of street-gang members (Egan & Beadman, 2011; Mallion & Wood, 2018), such research has produced varied results.

More specifically, studies exploring the personality trait of resilience in street-gang involved individuals is currently yielding mixed results. This area requires further attention in order to understand resilience in street-gang nominals which could subsequently inform

guidance as to how and whether resilience should be considered a factor important to street-gang centred interventions.

In order to address the research gap in the area of street-gang-affiliation and resilience, this research project aims to investigate the difference in levels of three types of resilience in street-gang involved compared to non-street-gang involved individuals currently in custody. The definition of resilience from Psychological Systems Theory is used, as it was thought to be advantageous for its conceptualisation of resilience into three specific domains, i.e., Ecological Resilience, Engineering Resilience, and Adaptive Capacity. Therefore, this study investigated the levels of the three aforementioned types of resilience in street-gang-affiliated individuals and non-street-gang affiliated individuals currently in custody to explore the differences between the two groups. Broadly speaking, the research question in the current study is: Is there an association between resilience and street-gang membership? More specifically, this research investigated the following two-tailed hypothesis:

> There will be a difference in sub-scale scores on the Resilient Systems Scale between street-gang involved individuals in custody and non-street-gang involved individuals in custody.

Method

Design

A quantitative approach was used to ascertain whether there was a difference in sub-scale scores on the Resilient Systems Scale between street-gang involved individuals and non-street-gang involved individuals within a custodial environment. Specifically, a questionnaire was distributed to prison residents by the researcher who also works within the prison as a gangs' support worker. Due to the nature of the role and the topic of the research, no conflict of interest was highlighted. The researcher ensured she went on to all accessible

prison wings (i.e., all but the care and separation unit and the healthcare unit) to reduce potential sampling bias.

Participants and Recruitment

Participants were recruited via opportunity and volunteer sampling from a Local remand/Category B private prison establishment in London. The researcher approached residents on their wing and asked if they wished to fill out a research questionnaire. Overall, approximately 600 individuals were approached within the establishment and 200 questionnaires were completed to a standard that enabled them to be used in the data set. This is important to note as street-gang involved individuals are known to be suspicious of professionals and therefore street-gang involved individuals may not have participated as a result of this which may have skewed the sample.

A power analysis calculation using 0.8 power, 0.05 error rate and the Pillai V effect size of 0.06 (Zaiontz, 2021) indicated that 180 participants would be needed to confidently detect an effect if present. A total of 208 participants (street-gang involved $n=82$; non-street-gang involved $n=126$) were recruited, however eight data sets were removed due to missing data leaving 200 participants for analysis. Participants were individuals in custody and due to the establishment being an adult male prison, all participants were therefore male and over the age of 18. Participants needed to be able to read and understand English to take part. There was no further inclusion or exclusion criteria.

Participant demographics are shown in Table 6. This information was collected to assess the accuracy of grouping in relation to the current literature on how to define street-gang membership. The table highlights within the street-gang involved group the most common age group was 22-25 whereas in the non-street-gang involved group, the most common age group was 36+. In regard to ethnicity, the most frequent ethnicities in the street-gang involved group were black/black British: African and black/black British: Caribbean, as

opposed to the non-street-gang involved group, where the most frequent ethnicity was white British. In regard to index offence, the majority of street-gang involved individuals were in for crimes related to violence, drugs and weapons whereas in the non-street-gang involved participants, there was a broad range of offences. In regard to sentence type, the majority of participants in the street-gang involved group were either on determinate sentences or were on remand, whereas again in the non-street-gang involved group there was a broad range of sentence types.

Table 6

Participant Demographics for Street-Gang involved and Non-Street-Gang involved individuals

	Street-Gang-Involved n (%)	Non-Street-Gang Involved n (%)
Total	80 (40%)	120 (60%)
Age		
18-21	21 (26%)	5 (4%)
22-25	33 (41%)	15 (12%)
26-30	16 (20%)	19 (16%)
31-35	3 (4%)	33 (28%)
36+	7 (9%)	48 (40%)
Ethnicity		
White: British	13 (16%)	46 (38%)
White: Irish	1 (1%)	3 (2.5%)
White: Other	0 (0%)	3 (2.5%)
Mixed: White and Black Caribbean	13 (16%)	9 (7%)
Mixed: White and Black African	1 (1%)	3 (2.5%)
Mixed: White and Asian	0 (0%)	1 (0.5%)
Mixed: Other	3 (4%)	7 (6%)
Asian/Asian British: Indian	0 (0%)	1 (0.5%)
Asian/Asian British: Pakistani	2 (3%)	0 (0%)

Asian/Asian British: Bangladeshi	0 (0%)	2 (1%)
Asian/Asian British: Chinese	0 (0%)	0 (0%)
Asian/Asian British: Other	0 (0%)	1 (0.5%)
Black/Black British: African	24 (30%)	20 (18%)
Black/Black British: Caribbean	22 (28%)	20 (18%)
Black/Black British: Other	0 (0%)	1 (0.5%)
Other	1 (1%)	3 (2.5%)
Index Offence		
Violent	15 (19%)	34 (29%)
Drug Related	25 (31%)	34 (29%)
Weapons Related	15 (19%)	4 (4%)
Acquisitive (Violent)	13 (16%)	12 (10%)
Acquisitive (Non-Violent)	7 (9%)	15 (13%)
Loss of Life	3 (4%)	2 (1%)
Sexual	1 (1%)	2 (1%)
Fraud	0 (0%)	7 (6%)
Harassment	0 (0%)	4 (4%)
Threat to Life	1 (1%)	2 (1%)
Immigration	0 (0%)	2 (1%)
Trafficking/Exploitation	0 (0%)	1 (0.5%)
Driving Related	0 (0%)	1 (0.5%)

Sentence

Determinate	45 (56%)	57 (48%)
Extended Sentence	0 (0%)	5 (4%)
Life – Automatic	0 (0%)	1 (0.5%)
Life – IPP	1 (1%)	5 (4%)
Remand	20 (25%)	26 (22.5%)
Immigration	0 (0%)	2 (1%)
Recall	14 (18%)	24 (20%)

Measures

Demographic Information

Firstly, demographic information (i.e., ethnicity and age group) was collected via questionnaire. Upon inputting data into the excel spreadsheet, offence information including crime and sentence type was recorded using file information.

The Resilience Systems Scale (RSS; Maltby et al., 2017)

Secondly, participants completed the RSS. This is a validated instrument which uses the Psychological Systems Theory to conceptualise resilience. This scale comprised three sub-scales: Engineering Resilience; Ecological Resilience; and Adaptive Capacity, each of which had four items. All items were measured using a five-point Likert scale that ranged from 1 (strongly disagree) to 5 (strongly agree). Items include, for example, "I recover from a stressful time quickly" (Engineering sub-scale), "I remain strong-willed no matter what problems occur" (Ecological sub-scale) and "Uncertain situations interest me" (Adaptive Capacity sub-scale). Higher scores on each subscale reflect a higher score of resilience in each domain. An overall score from the scale is not generally calculated as although the concepts are all linked under the umbrella term of resilience, they are underpinned by different theoretical contexts and therefore are not intended to be combined into an overall 'resilience score' (Professor John Maltby, personal communication, June 02, 2021).

Although a relatively recent scale, Maltby et al. (2017) reported the scale to show equivalence to several previously reported assessments of resilience (CD-RISC; Ego Resiliency Scale [ER-89]) by demonstrating the same factor structure and intercorrelation between the two measures of resilience. Furthermore, they report adequate test-retest reliability and suitable comparison to other measures of resilience in mapping to varying degrees onto positive expression of several cognitive, social and emotional traits. Positively, the RSS provides a relatively short assessment (12 items) of three well-established resilience

systems; this is favourable in comparison to other resilience measurements. Maltby et al. (2017) suggest the RSS to be an appropriate scale to assess the three trait resilience systems in order to inform the planning and goals of interventions, both individually and systemically.

Street-Gang Status

Street-gang status was recorded by the researcher to ensure protection of the participants on the wing when completing the questionnaire and to increase accuracy. Individuals were deemed 'street-gang involved' if they were recorded as having engaged with the Gangs Support Service within the establishment (either previously or currently). This meant they had either self-reported to the Gangs Support Service to be from an area that had street-gang involvement, had been involved in street-gang related violence or had any recorded street-gang related conflicts (whereby another individual in the establishment had disclosed a conflict/problem due to street-gang involvement) within the establishment. Conversely, if there was no record of engagement with the Gang Support Service or any recorded street-gang related conflicts, they were recorded as non-street-gang involved. It is acknowledged by the researcher that this mostly relies on self-report and uses a varying definition of street-gang involved to that used in some other studies.

Procedure

Data collection took place over a three-day period. The researcher had access to the prison and was aware of both security procedures and the prison layout due to working within the establishment. During association (a set time in the day where prison residents are out of their cells, but on their wing – they may be cleaning or engaging with staff and other residents), the researcher approached residents on their prison wing and asked if they wanted to complete a questionnaire. Upon an individual showing interest, they were provided with the participant information sheet (see Appendix H) and consent form (see Appendix I). If they completed the consent form, they were given the questionnaire to fill out (see Appendix

J). Following this, they were provided with the participant debrief form (see Appendix K). During lunchtime lockdown, the researcher approached residents by speaking to them through their doors and repeating the above process.

To ensure accuracy and protect residents on their wings, the researcher recorded street-gang status and offence details. Upon entering the data into an Excel spreadsheet, the researcher used the prison system and Gang Support Service files to record index offence, sentence type and street-gang status. To ensure confidentiality of reporting, only the participant number was recorded on the database.

Ethical Considerations

Approval

Ethical approval was granted from the Science, Technology, Engineering and Mathematics Ethical Review Committee at the University of Birmingham on 28th October 2019 (Ethical Review Number: ERN_19_0927). In addition, the Governor of the establishment where the research was carried out granted permission to conduct the research on 5th April 2019. Ethical approval from the establishment research SPoC (single point of contact) and subsequently HMPPS was granted on 17th September 2020. The Standards of Conduct, Performance and Ethics of the Health and Care Professions Council (HCPC, 2016) and Ethical Guidelines for Research from the British Psychological Society (BPS, 2018) were adhered to throughout this research.

Consent

Consent to participate was fully informed. Upon verbally expressing an interest to take part, participants were given a participant information sheet outlining the study and a consent form. Participants had the opportunity to ask questions to the researcher prior to signing the consent form. If an individual declined interest or did not consent, then they were

not provided with the questionnaire and there were no negative consequences. Following data collection, no participant requested for their data to be subsequently withdrawn.

Confidentiality

Each questionnaire was assigned a participant number that only the researcher and the participant had access to. Information was inputted into an excel database under participant numbers and no identifying information was recorded. The paper consent forms had participants' names on them, however following input to the database, the consent form was separated from the questionnaire for storage. Demographic information and street-gang involvement were recorded on the database whereby the researcher used the name on the consent form to acquire this information from prison databases but then entered this onto the database under their participant number. No identifying information such as name, prison number or establishment was recorded. This was done in order to minimise risk to the participants as questionnaires were completed on the wing and therefore this method protected the participants from the potential of other residents seeing their offence type and street-gang status. No other members of staff were informed that the participants were taking part in the research. No participants provided information that indicated potential risk of harm to the participant or other people or to the security of the establishment and therefore confidentiality did not need to be broken at any point.

Data Storage

Research data that was stored were the participants' consent forms, questionnaires and the analysis of data. The hard copies of consent forms and completed questionnaires were separated following data input and kept in a locked cabinet within the prison in line with prison policy whereby no prisoner information can leave the establishment. In line with the University of Birmingham policy this will be kept for 10 years after the study. Electronic data (i.e., input into an excel spreadsheet) was uploaded onto BEAR share drive and deleted from

the establishment's secure computer. It will be kept in the University of Birmingham archives for 10 years after the study. All data will be destroyed after 10 years.

Data Analysis

All data were analysed using SPSS v27. The researcher compared scores on the Resilient Systems Scale between two groups (street-gang involved individuals in custody and non-street-gang involved individuals in custody). Descriptive statistics were used to explore population characteristics.

Statistical analyses were completed using a Multivariate Analysis of Variance (MANOVA) to compare differences between groups on the three resilience sub-scales of the Resilient Systems Scale. This analysis technique was chosen as some literature suggests that resilience is one broad concept (APA, 2014; Schoon, 2006) and therefore if resilience is viewed as one construct, patterns between the three elements measured by the Resilience Systems Scale might be expected to exist. In addition, the MANOVA was considered an appropriate method of analysis as it is helpful in investigating one concept with different levels. More specifically, a MANOVA would detect the relationship between each dependant variable and street-gang status. MANOVA is also helpful for reducing the chance of an inflated type one error (Pallant, 2016).

Following this analysis, the sub-themes of resilience were explored as three distinct concepts which is also supported through some earlier literature (Luthar et al., 2000; Masten et al., 2009; Pietrzak & Southwick, 2011). Therefore three, separate, independent sample *t*-tests were conducted. Across all three statistical analysis procedures, a 0.05 significance level was used.

Results

Descriptive Statistics

Eight participants were excluded due to missing data leaving the total sample as 200 (street-gang involved n=80; non-street-gang involved n=120). Descriptive statistics including the means and standard deviations are shown in Table 7.

It appeared that for the whole sample the subscale with the highest mean score was Ecological Resilience, indicating higher levels of Ecological Resilience in the overall sample in comparison to Engineering Resilience and Adaptive Capacity. Furthermore, Adaptive Capacity had the lowest overall mean score suggesting this to be the least prevalent type of resilience in the overall sample.

When looking at the mean scores between groups (street-gang involved and non-street-gang involved), the scores on all three sub-scales were within one point of each other, with the scores for the street-gang involved individuals being higher on each individual subscale. For Engineering Resilience, street-gang involved individuals' mean score (M=14.76) was higher than non-street-gang involved individuals (M=14.29) and this was the same for Ecological Resilience, with street-gang involved individuals' mean score (M=16.30) being higher than non-street-gang involved individuals (M=15.80). The most prominent difference is seen in mean scores on Adaptive Capacity, again with scores indicating that street-gang involved individuals (M=13.01) have on average higher levels of resilience than non-street-gang involved individuals (M= 12.19).

The Standard Deviations (SD) for all three sub-scales are low suggesting data is clustered closely around the mean and therefore appears reliable. Cronbach alpha reliabilities for the Resilience Systems Scale were calculated as α = .82, demonstrating good reliability.

Table 7

Descriptive Statistics for Scores on the Resilience Systems Scale

Resilience System Scale Score	M	SD
Overall		

	Engineering	14.48	3.54
	Ecological	16.00	2.79
	Adaptive Capacity	12.52	3.72
Street-Gang-Involved			
	Engineering	14.76	2.98
	Ecological	16.30	2.18
	Adaptive Capacity	13.01	3.31
Non-Street-Gang-Involved			
	Engineering	14.29	3.88
	Ecological	15.80	3.14
	Adaptive Capacity	12.19	3.96

MANOVA

A one-way between-groups MANOVA was conducted to investigate the hypothesis that there will be a difference in sub-scale scores on the Resilient Systems Scale between street-gang involved individuals and non-street-gang involved individuals in custody. Prior to conducting the MANOVA, assumption testing was carried out to ensure that the test was appropriate. Assumptions for MANOVA include sample size, normality, outlier testing, linearity, homogeneity of regression, multicollinearity/singularity and homogeneity of variance-covariance matrices.

Assumption Testing

Firstly, to ensure a suitable sample size was used, Tabachnick and Fidell (2013) suggest a sample of 20 or more in each dependant x independent variable combination ensures robustness. Applying this idea to the current sample would suggest a sample size of 60 or more per group would suffice. In addition, a power analysis indicated that a total of 180 participants were needed to ensure detection of an effect if present. In this study, the street-gang involved group had 80 participants and the non-street-gang involved group had 120,

with a total sample of 200 (once individuals with missing data were excluded). Therefore, this assumption was met.

Secondly, the assumption of normality was tested. The Kolmogorov-Smirnov statistics for each subscale were significant; Engineering, p=<.001; Ecological, p=<.001; Adaptive Capacity, p=.003, indicating the distribution of normality was not normal and therefore this violation was breached. In addition, Skewness and Kurtosis scores were also outside the standardised +/- 1.96 range. Finally, sight of histograms also suggested that normality was breached (see Appendix L for normality testing). However, Pallant (2016) reports that violation of normality in larger samples is quite common and that with larger samples, Skewness and Kurtosis would not make a substantial difference. Furthermore, the Multivariate Central Limit Theorem suggests that with a sufficiently large sample and independent sampling from the population, it can be assumed that multivariate normality is acceptable (Bauer, 2001). Additionally, Tabachnick and Fidell (2013) suggest that if there is a sample size of 200 or more, then this would suggest a robust enough sample for a MANOVA to be completed despite normality being breached.

Following this, testing was completed to analyse whether there were any outliers in the data. Regarding univariate outliers, Boxplots indicated three outliers (participants 94, 176 and 231; see Appendix M), however none of these were considered 'extreme' points. Tabachnick and Fidell (2013) suggest that a MANOVA can tolerate a few outliers, particularly if their scores are not extreme, therefore they were kept in the data set. Regarding multivariate outliers, as the highest calculated Mahals distance (15.74) was lower than the critical value (16.27), this indicated no substantial multivariate outliers. Therefore, this assumption was met.

In regard to linearity, sight of the scatterplot matrix suggested no obvious evidence of non-linearity indicating that the relationship between dependant variables was acceptable. Therefore, the assumption of linearity was satisfied (see Appendix N for scatterplot matrix).

Following this, the assumption of multicollinearity and singularity was tested. Pallant (2016) suggests that MANOVA is most effective when the dependant variables are moderately correlated. Pearson's correlation calculations between all dependant variables can be seen in Table 8. Pallant (2016) suggests correlations between 0.2-0.9 are acceptable, therefore this assumption was met as there is a relationship between the dependant variables, however, this is neither too strong nor too weak.

Table 8

Pearson's Correlation Between Dependant Variables

Sub-scale	Engineering Resilience	Ecological Resilience	Adaptive Capacity
Engineering Resilience	1	.752	.563
Ecological Resilience	.752	1	.536
Adaptive Capacity	.563	.536	1

Finally, homogeneity of variance-covariance matrices was calculated using Box's Test of Equality of Covariance Matrices. Pallant (2016) suggests significance levels larger than .001 indicate the assumption to be breached; for this sample, $p=.001$ indicating it was violated. However, Tabachnick and Fidell (2013) report that Box's M is often too strict when you have large sample sizes and Allen and Bennett (2008) report that if group sizes are over 30, then MANOVA is robust enough to manage this violation.

Overall, Tabachnick and Fidell (2013) suggest that if you have a sample size of 200 or more, then MANOVA is appropriate to use as long as there are no extreme outliers. Therefore, although some of the above assumptions were violated in this data set, a

MANOVA was deemed appropriate as the sample size was 200 and no significant outliers were detected.

MANOVA Statistical Analysis

A one-way between-groups multivariate analysis of variance was conducted to investigate differences in three sub-scales of resilience between street-gang involved individuals and non-street-gang involved individuals.

Three dependant variables were used which stemmed from the three sub-scales of the Resilience Systems Scale; Engineering Resilience, Ecological Resilience and Adaptive Capacity. The independent variable was street-gang status (street-gang involved compared to non-street-gang involved).

There were no statistically significant differences between street-gang involved individuals and non-street gang involved individuals on the combined dependant variables, $F_{(3, 196)} = 0.895$, $p= .445$; Pillai's Trace = .014; partial eta squared = .014.

As such, the hypothesis, "there will be a difference in sub-scale scores on the Resilient Systems Scale between street-gang involved individuals in custody and non-street gang involved individuals in custody" was rejected in relation to a significant difference.

Independent Samples *t*-Tests

As highlighted in the descriptive statistics, there appear to be differences in the mean scores across the three sub-scales between street-gang involved individuals in custody and non-street-gang involved individuals in custody. Furthermore, some literature suggests that resilience as a whole is too broad a concept and therefore suggest it is best conceptualised by breaking it down into distinct aspects (Luthar, 2006; Masten et al., 2009). This is further supported by Maltby et al's. (2017) scale looking at separate constructs of resilience which are all underpinned by different theoretical constructs.

The exploration of descriptive statistics appears to potentially support some of the resilience literature that indicates resilience is made up of different constructs, which should be considered as separate entities. Therefore, it was decided that post-hoc testing would be appropriate to under-take in order to either confirm the results of the MANOVA or to evidence that resilience does in fact seem to have varying, distinct elements through showing significant differences on the individual sub-scales as their own entity.

Subsequently, an independent-samples *t*-test was conducted on each individual sub-scale to further explore the first hypothesis that there will be a difference in sub-scale scores on the Resilient Systems Scale between street-gang involved individuals in custody and non-street-gang involved individuals in custody.

Assumption Testing

Prior to conducting the independent sample *t*-tests, assumption testing was carried out to ensure that the tests were appropriate.

Level of measurement of all three of the dependant variables were continuous scale and independence of observations was ensured.

Distribution of data was checked using the Kolmogorov-Smirnov test of normality and through sight of histogram plots, as recommended for sample sizes of 200+ by Tabachnick and Fidell (2013). In relation to Engineering Resilience, data was not normally distributed, with the Kolmogorov-Smirnov statistic at $p<.001$ and through checking a histogram plot (see Appendix O). In relation to Ecological Resilience data was also not normally distributed, with the Kolmogorov-Smirnov statistic at $p<.001$ and through sight of the histogram (see Appendix O). Finally, Adaptive Capacity, data was also not normally distributed with the Kolmogorov-Smirnov test of normality at $p=.003$, although the histogram plot shows some normality through sight (see Appendix O). Pallant (2016) suggests that with large sample sizes (i.e., 30+), the violation of normally distributed data should not cause any

major problems and is usual in social science research, and therefore parametric testing was continued with as this data had a sample size of 200.

Homogeneity of variance was tested using Levene's test for equality of variances. The data set for each sub-scale did also violate the assumption of equal variance as Levene's test was significant for each data set; Engineering Resilience (F= 6.33, p<.05); Adaptive Capacity (F=3.07, p<.05) and Ecological Resilience (F=6.37, p<.05) and therefore equal variances was not assumed. Parametric testing was still conducted due to the sample size (Tabachnick & Fidell, 2013; Pallant, 2016; Stevens, 1996).

Independent Sample t-Test Statistical Analysis

Engineering Resilience. An independent samples t-test was conducted to compare scores on the Engineering Resilience sub-scale for street-gang involved individuals in custody and non-street-gang involved individuals in custody. There was no significant difference in scores for street-gang involved individuals on this sub-scale ($t_{(198)}$= .92, p = .36). The magnitude of the difference in the means (*MD*= .47, 95% *CI*; -.54 to 1.42) was small (*d*=.13).

Adaptive Capacity. An independent samples t-test was conducted to compare scores on the Adaptive Capacity sub-scale for street-gang involved individuals in custody and non-street-gang involved individuals in custody. There was no significant difference in scores for street-gang involved individuals on this sub-scale ($t_{(198)}$= 1.53, p = .13). The magnitude of the difference in the means (*MD*= .82, 95% *CI*; -.24 to 1.88) was small (*d*=.22).

Ecological Resilience. An independent samples t-test was conducted to compare scores on the Ecological Resilience sub-scale for street-gang involved individuals in custody and non-street-gang involved individuals in custody. There was no significant difference in scores for street-gang involved individuals on this sub-scale ($t_{(198)}$= 1.24 p = .22). The magnitude of the difference in the means (*MD*= .50, 95% *CI*; -.30 to 1.30) was small (*d*=.18).

Overall, independent sample t-tests did not show significant differences between the two groups on any sub-scale and therefore the hypothesis "there will be a difference in sub-scale scores on the Resilient Systems Scale between street-gang involved individuals in custody and non-street-gang involved individuals in custody" was rejected.

Discussion

The current study aimed to investigate differences between street-gang involved individuals currently in custody and non-street-gang involved individuals currently in custody on a newly developed measure of resilience, which provides a new conceptualisation by dividing resilience into three constructs. These are Adaptive Capacity (where functioning is maintained to prevent crisis states), Ecological Resilience (which is the ability to absorb/resist disturbance by actually adapting functioning to ensure stability, which requires future goal focus), and Engineering Resilience (which is the system's ability to return to a stable state quickly following a disturbance).

The aim of the study was to investigate if there was a difference in score on any of the three types of resilience present in street-gang-involved individuals currently in custody compared to non-street-gang involved individuals currently in custody. The research employed the use of a questionnaire that had been constructed to include demographic information and the Resilient Systems Scale (Maltby et al., 2017). In addition, the author recorded offence, street-gang status and sentence type of the participants.

The findings of the study suggested no significant differences between street-gang involved and non-street-gang involved individuals in a custodial environment on levels of type of resilience specific to the Resilient Systems Scale through conducting a MANOVA. These findings support those of Kennedy (2013) who also found no differences between street-gang and non-street-gang involved individuals in resilience.

Interestingly however, upon observing the descriptive statistics, namely the mean scores of each group, results suggested street-gang involved individuals to have slightly higher levels of resilience in comparison to non-street-gang involved individuals. This would support the findings of Adams (2004) who reported that resilience was correlated with street-gang membership. Upon completing post-hoc analysis (i.e., independent samples t-tests) to further explore this however, these differences were also not statistically significant.

Despite a lack of significance however, it is interesting to note mean scores on the Resilient Systems Scale were, on the whole, higher in street-gang involved individuals than non-street-gang involved individuals to some degree, with the biggest difference being found in the sub-scale of Adaptive Capacity. One explanation for the lack of significant differences despite differences in mean scores may be similarities between the street-gang and non-street-gang samples. There were clear differences in relation to street-gang related variables (i.e., individuals in the street-gang involved group generally had more violent or weapon related index offences, were mostly younger and were mostly from a BAME background) as noted in participant demographics, however both groups were in custody and were either convicted of, or charged with committing a crime. Therefore, it is evident that the two groups were similar on some aspects. It could therefore be argued that these individuals (both street-gang involved, and non-street-gang involved) had a shared aspect of criminality (i.e., they were all either on remand for or convicted of committing a crime), that may have contributed to the smaller difference between scores, whereby on the whole, they may naturally have lower levels of resilience which contributed to them committing a crime for which they received a prison sentence. The similarity of criminality is especially important when thinking about the literature related to resilience where some academics have found a link between individuals who are involved in crime and lower levels of resilience than the general population (Born et al., 1997) alongside higher levels of resilience and reduced reoffending

(Efta-Breitback & Freeman, 2004; Fougere & Daffern, 2011). However it is acknowledged that the aim of the current study was to explore differences in resilience in relation to street-gang membership and therefore using a similar sample was deemed necessary.

Furthermore, early theories of street-gang membership suggested criminality as being central to street-gang membership which makes evidencing whether resilience is associated with street-gang status or offender status a complex entity to disentangle when this sample consisted of individuals with both features. This could explain the differing evidence to previous research such as Adams (2004), who identified resilience as higher in street-gang nominals when compared to high school students who (it is assumed) did not have criminality as a similar trait. Therefore it could be argued that although the statistical difference was not significant, if the context of sampling is taken into consideration whereby the groups were similar on other factors that have been cited as linked to resilience (i.e., criminality), then had the samples been substantially different to each other, the difference in resilience may have reached a significant level. In sum, as the hypothesis that there would be differences between street-gang and non-street-gang members on the three sub-scales of resilience was rejected, this may indicate that potentially other variables such as criminality may mask/supersede more nuanced/harder to detect differences between street-gang and non-street-gang individuals.

Another explanation for these contrasting results could be the scale used. As a relatively recent scale, there have been limited studies that have used this previously (Maltby et al., 2017). Although for this sample, it had a high Cronbachs alpha suggesting good reliability of the scale, it is not yet considered an established measurement tool in relation to resilience. Furthermore, due to the Resilient Systems Scale being a relatively new measure, normative data for the general population is not yet available, therefore it is not currently

possible to compare the results from the current study in order to investigate whether resilience scores differ to the general population.

This study reflects the findings in Chapter 2, whereby the trait of resilience had differing results across prior studies exploring this trait (Adams, 2004; Albert 2007; Egan & Beadman, 2011; Kennedy, 2013). Subsequently, the results from Chapter 2, in addition to the results from this empirical research, show support for the view of Pietrzak and Southwick (2011) and Southwick et al. (2014) that resilience is present to differing degrees across multiple domains of life, and is therefore not a binary concept. Furthermore, it supports the work of Bonanno (2004) who highlighted that resilience is a complex and varying field.

Concerning type of resilience, there were no significant differences between groups. It is interesting that overall, the two groups had similar presence of each type of resilience. For example, in both samples Ecological Resilience was highlighted as most prevalent followed by Engineering Resilience and finally Adaptive Capacity. As reported, a consistent variable in both groups was that all participants were in custody. Considering the sample as a whole, it could be argued that overall criminality (i.e., being convicted of a crime as opposed to street-gang status) may have specific links to the three distinct types of resilience.

It is of note that Adaptive Capacity resilience has been highlighted as having the lowest scores in this sample. As noted, Adaptive Capacity resilience refers to an individual's ability to maintain functioning in order to maintain order and prevent a crisis state following on from disruption in one's life. Literature on offender populations highlights the prevalence of traumatic events and adverse childhood experiences in these individuals (Baglivio et al., 2014; Paton et al., 2009; Wilson et al., 2013). This type of resilience being lower in individuals currently in custody is therefore logical when considering this context. Additionally, Maltby et al., (2017) reported that during the development of the Resilient Systems Scale, they found that higher levels of Adaptive Capacity was associated with lower

levels of anxiety and depression. Interestingly, this offers support to the findings of Chapter 2, which concluded that anxiety was found to be higher in street-gang related individuals and is also logical when considering the above argument regarding the prevalence of trauma in the offending population.

Engineering resilience was found to be second lowest in the overall sample. It is well established in the literature that offenders have higher levels of substance misuse and have more difficulties regarding mental health in comparison to non-criminal populations (Andrews, 1998; Phillips, 2008). Therefore, when considering Engineering Resilience as maintaining life domains such as health and well-being, this finding appears to be expected. This would also provide some support for Cuomo et al.'s (2009) findings that individuals in prison who had a history of substance misuse had lower levels of resilience than individuals in prison who did not. In addition, Maltby et al. (2017) reported that Engineering Resilience had the highest association with emotional stability in comparison to Ecological Resilience and Adaptive Capacity. This association seems to be expected when considering the evidence that individuals who offend tend to have more difficulties regarding mental health and emotional instability (Garofalo et al., 2018; HMPPS & NHS, 2020), and is supported by the findings of this study that there seems to be lower levels of Engineering Resilience in the overall sample of offenders.

Finally, Ecological Resilience was found to be the highest scoring type of resilience in both street-gang and non-street-gang individuals. Ecological Resilience applies to life domains that require future goal orientation such as employment. Previous research into offending and resilience has found that higher levels of traits associated with resilience, such as intelligence and dedication, are linked to a reduction in re-offending (Moffitt et al., 2002). These traits could also be considered in terms of being helpful for future goal orientation, which provides some support for this finding. In terms of practice, many prison interventions

are aimed at addressing employment and education difficulties providing field evidence that makes this finding logical. Maltby et al. (2017) also reported that Ecological Resilience had the highest association with conscientiousness when measuring the concurrent validity of the scale. Considering this in relation to the results of this study, it is therefore interesting that Ecological Resilience was the highest sub-scale of resilience found in general offenders. It would be interesting to further explore this specific type of resilience in offenders at a more in-depth level.

Overall, it appears that although no significant differences were found and the hypothesis was rejected, the differences in mean scores between street-gang involved and non-street-gang involved individuals could suggest further exploration of this topic may be helpful.

Strengths and Limitations

Individuals who made up the current sample, namely street-gang involved individuals and individuals in custody, are known to be difficult samples to research due to access and ethical considerations and so this research presents some insight into an under-researched sample and presents some new and interesting findings in a growing field of research.

Although this sample size was sufficient for conducting the analysis, caution must be exercised when generalising findings to the wider population of street-gang involved individuals in prison across the U.K. or in other countries. In addition, the findings cannot be generalised to street-gang involved individuals who are not serving a custodial sentence. It is of note that previous research into resilience in street-gang involved individuals has generally had small sample sizes (Albert, 2007; Kennedy, 2013), whereas the sample size for this study was larger and was deemed to have sufficient power (Tabachnick & Fidell, 2013).

This research used a self-report questionnaire. In self-report data, participants choose what to disclose and in this research there was no way to validate what they reported. In addition, self-report studies are inherently biased by how the individual is feeling at the time

they completed the questionnaire. This is especially relevant to this research due to the nature of the topic and the location of the research where often individuals may be more emotionally vulnerable when in custody (Crewe et al., 2014). Furthermore, self-completion questionnaires can pose difficulties to some individuals. For example, those with poor literacy were excluded from the study and this is especially important because often street-gang involved individuals may have missed school or had difficulties within educational systems and therefore their data may have been missed. It is also possible that individuals may have selected answers at random or not fully understood the questions which may have skewed the data. An interview methodology may have been better and future research could look to utilise this.

Findings from the study should be considered in the context of the difficulty in defining an individual as street-gang involved. The researcher defined street-gang involved in this study as individuals who were engaged with the Gangs Support Service within the establishment, individuals who had been involved in street-gang related violence whilst in custody or individuals who had live conflicts suggesting street-gang involvement. The researcher acknowledges this to be a weakness of the study whereby no established measure of street-gang involvement or definition was employed. This decision was made due to the stigma and potential consequences that comes with an individual labelling themselves as a "street-gang member" (Williams, 2018), in addition to the likelihood of individuals not self-reporting their involvement in street-gangs. In regard to the Gangs Support Service, this engagement is often based on self-disclosure which may have led to a potential error in identifying and separating street-gang and non-street-gang members, whereby individuals involved in street-gang membership may have denied involvement or individuals who are not involved in a street-gang may have claimed involvement. It is noted however that the latter is more likely, as if an individual within the establishment denied street-gang involvement this

may have put them in danger/at risk within the custodial setting and therefore was considered unlikely. The researcher tried to account for this by checking live conflicts (another individual within the establishment that has disclosed a problem due to street-gang involvement, i.e., from a rival street-gang) as alternative evidence for street-gang involvement.

Despite the above however, participant demographics indicate some reliability and validity of how the researcher defined street-gang involvement. On the whole the street-gang involved sample were younger, they were predominantly from BAME backgrounds and their reported index offences were mainly related to violence, drugs and weapons. This reflects the literature around street-gang members most likely demographics (Egley, 2002; National Gang Centre, 2012). Therefore, it could be said that the street-gang involved sample accurately reflected street-gang involved individuals as it is reflective of the relevant literature. Additionally, this method of identifying street-gang involved individuals is used in risk assessment and decision making in clinical practice in the custodial setting and is used to keep rival street-gang members separate to prevent risk of serious harm, therefore it is considered accurate and reliable from a field perspective.

Finally, a limitation of this study was the use of only male participants. Although not possible for this research due to the male custodial environment, it may have been helpful to have explored this trait in female participants to see if there were differences between genders. Additionally, participant bias may have been present in this research given that participation was voluntary and results for individuals who did not participate are not known (Costigan & Cox, 2001).

Implications for Practice

This research aimed to inform practice around the potential importance of resilience in street-gang involved individuals in custody. It was hoped that this research could inform

practice regarding whether resilience is a factor which should be more explicitly addressed in street-gang specific interventions. However, due to the absence of significant differences in level of each type of resilience in addition to the various contrasting results of other research, it may be fair to conclude that resilience would not be a central component when practitioners are thinking about street-gang specific interventions. It may, however, be advantageous to include work on resilience in interventions for general offending (i.e., for street-gang and non-street-gang involved individuals) as this research found the three sub-types of resilience to be lacking in both street-gang involved individuals and non-street-gang involved individuals currently in custody. As highlighted, although not possible to compare these results to normative data at this point in time, previous literature assessing resilience in individuals who offend would support this recommendation (Born, 1997; Cuomo et al., 2009).

Directions for Future Research

The findings of the current study have added knowledge to a complex and difficult to investigate field. As noted, the groups used in the current study had notable similarities. Therefore, it would be interesting for future research to explore differences in the trait of resilience between offenders who are street-gang involved, offenders who are non-street-gang involved, and a group of non-offending, non-street-gang involved individuals. It may also be helpful for this research to be completed in a community setting in comparison to a custodial environment to ensure clear differences between sampling groups.

Where this sample focused on male individuals, it would be interesting to explore this trait in female street-gang involved individuals to identify whether there are gender differences in relation to resilience in street-gang involved individuals, especially considering the findings of Born et al. (1997).

As noted, Ecological Resilience was found to be the most prevalent type of resilience in both groups and therefore it would be useful to explore this specific trait in general offenders to investigate its potential importance to intervention. It may also be helpful to explore Engineering Resilience and Adaptive Capacity further due to their apparent lower levels in the overall sample.

Finally, it would be helpful for some qualitative research to be conducted to allow for a more exploratory investigation of the relevance and presence of resilience in street-gang involved individuals. Additionally, this may highlight street-gang involved individuals own opinions regarding resilience, its origins and its importance in their functioning and coping.

Conclusion

The findings from the current study add to the growing field of research into street-gang membership. Although there were no significant results found, descriptive statistics suggested there may be some differences in level of resilience between street-gang and non-street-gang involved individuals. This research was done with two groups who had similar traits that could be said to be linked to lower levels of resilience, namely they were in a custodial environment and had been convicted of, or charged with, committing a crime. Despite this, there were differences in level of resilience highlighted. Interestingly, the types of resilience present were the same for both groups highlighted that, perhaps, generally individuals in prison have lower levels of Adaptive Capacity resilience. Overall, research into resilience in street-gang members has not produced clear results which ultimately supports the research stance that resilience is a complex trait, is not a binary concept, and is likely to exist on a continuum that varies in different life domains (Bonanno, 2004; Pietrzak & Southwick, 2011). It is clear that both resilience and street-gang membership are both complex areas for research; therefore, it is suggested that more in-depth research is needed in order to substantiate the above findings.

Chapter 5

Conclusions of Thesis

Aims of Thesis

This thesis aimed to contribute to the growing body of academic research into street-gang membership. The current position of research in the U.K. suggests that street-gang membership is the result of an interaction between environmental and individual factors, however, less attention has been given in research to these individual factors. Academic experts in the field have highlighted the need for more research in this area. Therefore, this thesis aimed to provide some understanding as to the psychology of street-gang members by exploring personality traits and more specifically, resilience in street-gang involved individuals.

When undertaking research into street-gang membership, a well-cited difficulty throughout the literature is how best to define street-gangs, street-gang members and street-gang membership that allows for consistent, good quality conceptualisation for research and practice. The difficulty regarding the definition and measurement also applies to the construct of resilience. Subsequently, this thesis aimed to explore and provide some understanding of two complex entities: street-gang membership and resilience.

To achieve these aims, three interrelated pieces of work were undertaken; the main findings of which will be summarised below. A systematic review explored the current literature base regarding personality traits of street-gang members, with conclusions citing varied results around several personality traits including resilience. As a result, a critique of the Connor Davidson Resilience Scale (CD-RISC; Connor & Davidson, 2003) was undertaken in order to understand the current field of resilience measurement tools and evaluate a specific measure of resilience in reference to reliability and validity. One conclusion of this critique was the identification of the need for more specific measurement tools in relation to potential sub-types of resilience. Therefore, the final piece of work undertaken to meet the thesis aims was an empirical study comparing three distinct types of

resilience through a newly established measurement tool, between street-gang involved

individuals and non-street-gang individuals in custody.

Main Findings

Chapter 2: Understanding the Personality Traits of Street-Gang Members: A Systematic

Review

Chapter 2 presents the first systematic literature review examining the personality

traits of street-gang members. An extensive search was undertaken using search terms

underpinned by personality literature in six electronic databases alongside manual reference

list screens and contact with experts which elicited over 10,000 initial hits. The lengthy

screening process led to a total of 20 articles to be included in the review with quality scores

indicating a very good quality of research from which to draw conclusions (*M*=78%). The

findings were analysed through narrative synthesis, which led to the themes of psychopathy,

emotional traits, autonomy, identity, anti-social personality difficulties, and resilience.

The theme with the most research was psychopathy, and there was clear evidence for

an association between psychopathy and street-gang members. These results were consistent

cross-culturally and across demographics such as age and ethnicity and were deemed valid

and reliable due to the use of established measures of psychopathy. This was with the

exception of CU traits where studies had varied outcomes. This finding was mirrored under

the theme emotional traits whereby higher levels of aggression and lack of feeling were

found to be more prevalent in street-gang members. These themes met expectations in line

with the discussed literature relating to the current context of street-gang membership,

whereby it could be said that the unprecedented levels of street-gang violence (Dodd, 2019)

appear logical when considering the finding of an association between psychopathy,

emotional traits and street-gang membership.

Autonomy and identity were also themes derived from this review of the literature and both provide support to the current literature which indicates that street-gangs potentially meet the psychological needs of individuals that other caregivers or parents had not met (Craig et al., 2002; McDaniel, 2012). Specifically, the most evidence was found for the sub-theme of independence where there appeared to be a clear association to street-gang membership. This supports the literature reporting that many street-gang members experience poor parental attachment, parental abuse and other childhood difficulties (Raby & Jones, 2016) suggesting these childhood experiences could have led to street-gang members developing higher levels of independence in comparison to their counterparts.

There was also a clear evidence base for the presence of anti-social personality difficulties which as a diagnosis, also links to the theme of psychopathy. This evidence base came from both prison and community samples in the U.K. and in the U.S. and appears to be a logical finding in relation to the current context of street-gang violence.

Finally, resilience was identified as potentially linked to street-gang membership. However, this theme had the most varied results with some research suggesting there to be higher levels of resilience in street-gang members compared to non-street-gang members and other studies reporting the opposite. This finding directly informed Chapters 3 and 4 of this thesis due to the apparent need for further exploration of this personality trait in relation to street-gang membership.

Overall, in order to inform practitioners to use these findings in a meaningful way, an important concept when considering these results is the notion that personality traits can be static or dynamic. This review concludes that by understanding the identified personality traits, practitioners may be able to recognise individuals that are vulnerable to joining a street-gang and therefore provide some form of early intervention. This review also concludes that the findings on factors that are considered dynamic states could be used in

interventions to support individuals to leave a street-gang. These ideas are also discussed in relation to push and pull factors to street-gang membership whereby the early identification of personality traits could be beneficial for practitioners working with at risk youth.

This piece of work concludes by acknowledging that the findings present a negative view of street-gang members and that although this is understandable within the current community context relating to street-gang violence, it may not be helpful in relation to adding additional stigma to an already disadvantaged group of people. Overall, however, there appears to be a good evidence base to suggest that there are some specific personality traits that are more prevalent in street-gang members than in non-street-gang members.

Chapter 3: The Connor-Davidson Resilience Scale (CD-RISC): A Psychometric Critique

One of the prominent findings from the systematic literature review was that there were varied results for the association between street-gang membership and resilience, and one of the explanations for this could be the complex nature of defining and measuring resilience as a construct. Therefore, Chapter 3 presented an overview and critique of the CD-RISC (Connor & Davidson, 2003).

This psychometric was chosen due to its prominent use in practice cross-culturally and due to the author's initial aim of reviewing an established measurement tool which tries to quantify resilience. Although reviewed as part of wider reviews of measuring resilience, this was the first review focusing on the CD-RISC and it provided an up-to-date critique of the scale.

This piece of work notes that the CD-RISC was developed from a real PTSD treatment program, suggesting real practical application. The critique highlighted clear evidence for reliability and validity which was across both the general population and clinical samples. In addition, there was a good evidence base for reliability and validity cross-culturally. Therefore, the scale appears to have a strong and varied evidence base, resulting in

a good range of normative data. It also concluded that the CD-RISC has been found to be more reliable and valid than its subsequent alternative measures such as the CD-RISC10 and the CD-RISC2.

There still appears to be no 'gold standard' assessment tool to measure resilience. This critique provides clear evidence to suggest that the CD-RISC is a robust measure of resilience in relation to quality criteria highlighted by leading academic experts, however the conclusions for the need for more specific tools of measurement lend support to earlier research that resilience is best conceptualised and understood as a broad concept, on a continuum, that is made up of separate but related elements (Luthar et al., 2000; Maltby et al., 2017).

Chapter 4: Comparing Resilience in Street-Gang-Involved Individuals and Non-Street-Gang Involved Individuals in a Custodial Environment

Considering the varied findings around resilience in Chapter 2, and the conclusions and support for the need for a more specific measurement tool of resilience highlighted in Chapter 3, Chapter 4 presented an empirical study which aimed to provide some clarity around prevalence of resilience in street-gang members using a newly developed measure of resilience which divides the construct into sub-types.

Using a quantitative design in a remand/Category B male prison, 200 participants completed the Resilient Systems Scale (Maltby et al., 2017). They were subsequently grouped into street-gang involved and non-street-gang involved and their scores on the three sub-scales of resilience (Engineering Resilience, Ecological Resilience and Adaptive Capacity) were compared. No statistically significant differences were found in the levels of resilience between the two groups through both a MANOVA and subsequent post-hoc testing using individual samples t-tests.

These findings add research to the current understanding of resilience and street-gang membership which has varied results. For example, this study shared the same finding as Kennedy (2013) of no significant differences between groups of street-gang and non-street-gang involved individuals, however findings differed from the study by Adams (2004) who found significant differences in level of resilience between street-gang and non-street-gang involved individuals.

Despite the lack of significant differences found in scores between street-gang and non-street-gang individuals, there were some differences when looking at mean scores. It was interesting that although not to a significant level, street-gang members scored higher than non-street-gang members on all three resilience sub-scales. The author's primary suggestion regarding an explanation for this small difference is due to the similar comparison sample whereby all individuals in both groups were in custody. Additionally, this links to some research that suggests criminality to be central to defining street-gang membership. However, the key aim of the current study was to look at differences between street-gang and non-street-gang individuals in custody in order to ascertain whether any differences in resilience were specific to whether they were a street-gang member or not. Therefore, when considering this, these findings could suggest that when looking at the specific difference between street-gang offenders and non-street-gang offenders, there is potentially no difference in level or type of resilience and that resilience is not a prominent feature in need of further exploration. Due to the current and varied evidence base, this would require further exploration.

Another interesting observation is that the sample as a whole had the same pattern of responses; the highest sub-scale scores were on the Ecological Resilience sub-scale, followed by the Engineering Resilience sub-scale and then the Adaptive Capacity sub-scale. This observation provides some support that the two samples may have been too similar to allow for significant differences to be found and it may be helpful for future research to further

explore the entanglement between criminality and street-gang membership, prior to exploring other personality traits.

Furthermore, this finding is understandable when considering the reported evidence on street-gang violence in the community (i.e., that it is to a high level, suggesting that street-gang members do struggle to cope) and when considering that all participants in this study were incarcerated. Considering the former, there is still some question as to how these individuals function despite the high levels of violence they are exposed to on a frequent basis which requires further exploration. Additional research is needed to confirm whether the comparison sample or any other confounding factors impacted upon the results of the study, in order to more fully understand the extent to which resilience levels may differ in street-gang members, if at all.

Strengths and Limitations

This thesis has added to a complex area of forensic psychology by providing insight and understanding into a hard-to-reach group of individuals. The researcher was privileged to have the opportunity to work with these individuals and provide some new and interesting findings in this emerging field. Additionally, this research has taken direction from recommendations of academic experts in the topic and begun to contribute to filling this gap.

A particular strength of this thesis was the size of the samples used in relation to the specificity of the topic. In Chapter 2, an extensive search was undertaken which retrieved a high level of results and in Chapter 4 the sample size of 200 is notably higher than what has previously been used in empirical research with street-gang members. Nonetheless, the research includes a very specific sample and therefore it is difficult to generalise to both the general population and the wider topic of gang research (such as general gangs, prison gangs etc…). Furthermore, this thesis focused solely on male street-gang membership and therefore

the results do not account for female street-gang membership, which is acknowledged to be an area which requires more research.

An ongoing limitation within street-gang research which was also present in this thesis, is the correct way to define the two key constructs: a street-gang/street-gang member and resilience. Positively, in Chapter 2, several studies utilised the Eurogang definition which is cited in literature as a well-established definition. Furthermore, studies that did not use this specific definition were only included if their definition of street-gang was supported by the wider literature. In Chapter 3, resilience was defined in relation to the measurement tool being critiqued and the review supported literature that resilience is a complex entity that requires specificity. Subsequently, in Chapter 4, a newly established measurement of resilience was used which involves sub-types of resilience. In relation to defining street-gang membership, participant demographics matched that of the wider literature's findings in relation to the qualities of street-gang members and the definition of street-gang members that is used for day-to-day risk management within the prison was utilised, and so could be considered practically meaningful. Conversely there is an aspect to this that is self-report, which is similar to several studies in Chapter 2, and this limitation should be considered when understanding the results from this thesis.

A further limitation is that causality could not be established. Specifically, Chapter 2 highlighted personality traits found within street-gang members, however it is not possible to conclude whether these are a result of, or antecedent of street-gang involvement.

Finally, this thesis ensured the use of cross-cultural studies in both Chapter 2 and 3 therefore providing a diverse evidence base from which conclusions have been drawn.

Implications for Practice

As highlighted, street-gang related violence has devastating impacts for the individuals involved and the wider community, which ranges from placing strain on services

to loss of life. Therefore, understanding this field is crucial in order to support change and help individuals disengage from street-gangs.

It is hoped that this thesis has added to the growing knowledge base on the individual factors of street-gang members, with the hope that practitioners and interventions can utilise these findings.

More specifically, in light of the findings of Chapters 2, 3 and 4 of the current thesis, the following suggestions/comments are made:

- That the conclusions from this thesis be disseminated to individuals working with street-gang(s)/members. This thesis has added knowledge to a complex and difficult to reach population and despite the growing field of research, street-gang violence is still prominent within communities, which suggests some barriers to academic research reaching practitioners.

- That the findings of the systematic literature review regarding personality traits that are more prevalent in street-gang members be considered during individual street-gang related assessments within one-to-one work/youth services/prison-based services.

- That personality traits found to be prevalent in street-gang members should be considered (in addition to, for example, environmental factors) when attempting to identify vulnerable young people who may be at risk of joining street-gangs.

- Despite the evidence regarding a high prevalence for certain traits in street-gang members, practitioners should not assume that all street-gang involved individuals possess these traits. However, knowledge regarding the prevalent traits may be beneficial for practitioners when considering whether it would be

useful for an individual to be assessed for a specific trait and/or receive support/interventions.

- Given the findings from the systematic literature review, it is suggested that rehabilitative programmes/interventions address personality traits which have been found to be particularly prevalent in street-gang members. There is ongoing debate as to whether personality traits are changeable (Caspi & Roberts, 2009) but if they can be adapted then psychological programmes should aim to address issues within street-gang members such as a lack of empathy, impulsivity, emotional numbness, aggressive tendencies, high levels of anxiety, and hypermasculine views.

- More specifically in one-to-one work with individuals who are street-gang involved, understanding the prevalence of certain personality traits found to be related to street-gang members (and, by extension, what traits could be targeted through interventions) may benefit practitioners when working in a supportive role with street-gang involved individuals and prove useful in regard to wider intervention. With reference to specific traits:

  o Psychopathy: Literature around psychopathy suggests this trait to be un-changeable but encourages interventions to focus on shaping this trait into pro-social avenues, for example giving opportunities in leadership roles. Due to the evidence from the systematic literature review suggesting this trait to be prominent in street-gang involved individuals, it would be helpful for practitioners to have an understanding of this trait.

  o Anti-social personality difficulties: Practitioners should recognise the prevalence of these traits specific to street-gang members and ensure

interventions are in line with this. Suggestions include encouraging

enlightened self-interest by identifying shared goals to work towards,

prioritising external controls and limit rule-setting to those that are

necessary, being firm and persistent with clear boundaries, monitoring

the practitioners own emotional responses and limiting excessive

expectations of imminent improvement (HMPPS & NHS, 2020).

- o Sense of self: Practitioners should support the development of a stable

  and positive self-image through interventions such as identity work

  (i.e., the Identity Matters programme or using the Good Lives

  framework)

- The conclusions of the systematic literature review should be considered in

  relation to push and pull factors to street-gang membership in order to provide

  ways to support at risk individuals from not joining street-gangs and

  individuals wanting to leave a street-gang. For example, this systematic

  literature review found lower levels of self-esteem in older individuals to be

  related to street-gang membership. Considering this in relation to Owen and

  Greef's (2015) theory that one of the push factors towards street-gang

  membership is opportunities to increase self-esteem, it may be beneficial for

  practitioners to find and provide alternative opportunities to increase self-

  esteem with the aim of subsequently preventing individuals seeking this from

  a street-gang and therefore supporting desistance.

- The conclusions of the systematic literature review should inform community

  support by ensuring availability of pro-social activities, support hubs and pro-

  social role models. Practitioners should try to recognise that street-gang

  members may have certain personality traits, such as higher levels of

independence and an unstable sense of self, which may lead them to seek alternative ways to meet their psychological needs by joining a street-gang.

- Practitioners working with both street-gang and non-street-gang offenders should address the topic of resilience within interventions. Given the findings of the empirical study – that the three sub-types of resilience were similar in both groups – it would be helpful to explore this further and address this through interventions such as one to one work (such as promoting empowerment) and group work (such as using the Good Lives framework [Mallion & Wood, 2020]). As highlighted, although not possible to compare results to normative data for the general population, previous literature assessing resilience in individuals who offend would support this recommendation (Born, 1997; Cuomo et al., 2009).

- Provide earlier intervention and support services to individuals at risk of joining street-gangs. Results from both Chapter 2 and 4 of this thesis highlight several traits related to street-gang involvement including independence, anxiety, emotional numbness, aggression, and resilience. Several academics have suggested these traits are the result of poor parental attachment/abuse (Raby & Jones, 2016), greater traumatic experiences (Kerig et al., 2015) and "worse" lives including witnessing higher levels of violence (Craig et al., 2002). With this in mind, it may suggest that if support (such as well-being mentors or role models) and/or early intervention, such as specialist trauma therapy, could be provided then it may support those who have experienced this to seek alternatives to street-gang involvement.

- In line with this, practitioners should work with a compassionate and non-punitive approach. Understanding that street-gang members have trauma

histories (that may have resulted in particular personality traits such as emotional numbness) and understanding that beneath the surface these individuals have lower levels of self-esteem, an unstable self-image/sense of self, higher levels of anxiety and anti-social traits (evidenced to often result from trauma; HMPPS & NHS, 2020), should evoke compassion from practitioners whilst working towards supporting these individuals and not taking punitive approaches, such as suspension from school (Raby & Jones, 2016).

- Practitioners wanting to measure resilience (i.e., psychometric measurement at baseline or after treatment) could utilise the information presented in Chapter 3 to direct them on the most appropriate measurement tool to use, i.e., a tool that divides resilience into more specific constructs such as the Resilient Systems Scale (Maltby et al., 2017).

- Staff should be trained in understanding personality traits associated with street-gang involved individuals (i.e., psychopathy, low self-esteem in older individuals, hypermasculine views). In addition, they should receive training regarding how to create and facilitate interventions with these traits in mind in a compassionate manner. If training can be delivered to practitioners across all prisons in the U.K., this might result in greater consistency.

- Training should also focus on providing a holistic understanding of street-gang members to try and combat negative stigma and enhance a compassion focused approach to working with these individuals.

- Finally, the overall conclusions of this thesis should be used to inform wider systemic practice in relation to street-gang involvement. The conclusions could be disseminated to management (such as prison governors, heads of

community services) and to individual practitioners within forensic psychology. In addition, conclusions could also be disseminated to non-forensic services, such as schools, youth clubs etc... in order to support early identification and intervention.

Future Research

The conclusions drawn throughout this thesis provide some suggestions for the direction of future research. Chapter 2 provides a clear association between some personality traits and street-gang membership, however the directionality of this cannot be concluded and this area would benefit from some longitudinal research to fully examine the direction of this relationship. It would also be beneficial to investigate whether there are personality traits related specifically to joining a street-gang or desisting from street-gangs. Furthermore, there appears to be a lack of research into what may be considered positive personality traits and street-gang membership (such as loyalty or assertiveness) and so future research could look to explore these traits.

As highlighted, this thesis provides some understanding regarding male street-gang members. As a result, this thesis has not explored other types of gangs, such as motorcycle gangs or prison gangs, nor has it explored female gang membership. Therefore, future research should explore personality traits within these populations, to ascertain whether there are any similarities or differences. Additionally, it may be helpful for future research to utilise more distinct comparison groups (i.e., non-offender populations), as the common feature of criminality may have impacted Chapter 4's findings. It is notable however, that the aim of this study was to investigate whether there was a difference in resilience specifically in relation to street-gang membership, and therefore using a sample that was similar on other aspects (i.e., offending) was necessary.

Chapter 2 concluded that currently, the evidence base for street-gang membership and self-esteem, CU traits and resilience is varied. Chapter 4 attempted to address the latter variation through a quantitative research study however qualitative research could be conducted allowing for exploration of how street-gang members themselves view resilience and whether it is important.

There also appeared to be some patterns in relation to the Resilient System Scales different components and general offending, therefore this newly established measure could be used to assess resilience type in individuals in custody against other comparison groups, such as a normative population or a psychiatric population.

Finally, despite a growing field of research there is still ongoing street-gang related violence in the community and therefore there appears to be some barriers into applying academic research to practice. Future research should explore what these barriers may be and how the barriers can be removed.

Conclusion

The media, academic experts and practitioners have all expressed concern as to the apparent increase in street-gang membership and street-gang related violence (Coid et al., 2013; Hughes, 2019; MET 2021; Williams 2018). It is without doubt that there are potentially devastating impacts on the individual and the wider community; as such, research into this field is of paramount importance. There is a growing body of research aiming to support practitioners in their work alongside these street-gang involved individuals and to inform government policy around assessment and interventions. However, despite this growing body of research the issue of street-gang membership still poses a risk to society (Dodd, 2019). This suggests that there may be some barriers when attempting to apply the findings of academic research to practice. The aims of this thesis were to add to the academic

understanding of street-gang membership with the hope that the findings can be applied to practice in relation to assessment, treatment and staff training.

This thesis has contributed to the evidence base regarding understanding street-gang membership by undertaking an extensive systematic literature review into street-gang membership and personality traits, reviewing an established psychometric measure of resilience and investigating potential differences in resilience in street-gang involved individuals and non-street-gang involved individuals currently in custody. It has highlighted several personality traits that appear to be prevalent in street-gang members. It has suggested that there is yet to be a gold standard measure of resilience but that the task of measuring resilience could be improved through conceptualising resilience in a more distinct way. It has also provided findings suggesting that resilience levels are not significantly higher in street-gang members than in non-street-gang members.

The findings support that further exploration into the personality traits of self-esteem, resilience and CU traits in relation to street-gang membership may be beneficial. It also highlights the need for more distinct measures of resilience to be used, alongside offering some clinical data for the Resilient Systems Scale (Maltby et al., 2017) which is a newly established, specific, measurement of resilience.

To conclude, it is hoped that this thesis and, more specifically, the recommendations for practice suggested will be considered by practitioners working with street-gang involved individuals, individuals at risk from joining street-gangs, and individuals wanting to dis-engage from their street-gang in order to ultimately reduce street-gang membership and the negative consequences of street-gang violence.

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Search Terms and Results from Each Electronic Database

<u>1. PsychINFO:</u>

Conducted on 15th and 16th February 2020

Date range: 1967-present

English language only ticked

+ = [mp=title, abstract, heading word, table of contents, key concepts, original title, tests &

measures, mesh]

1- Exp Gangs/
2- Gang – keyword+
3- Gangs – keyword+
4- "Gang Member*" - keyword
5- Gangster* - keyword+
6- "Street Gang*" – keyword+
7- 1 OR 2 OR 3 OR 4 OR 5 OR 6
8- Personality – keyword+
9- "Personality type*" - keyword +
10- Exp Personality trait/
11- "Personality trait*" – keyword +
12- "Personality factor*" - keyword +
13- Disposition - keyword +
14- Temperament – keyword+
15- Character - keyword +
16- Openness* - keyword+
17- Conscientious* - keyword+
18- Extrover* - keyword+
19- Agreeable* - keyword+
20- Neurotic* - keyword+

21- Antisocial- keyword+

22- Paranoid – keyword+

23- Narcissis* - keyword+

24- Histrionic – keyword+

25- Avoidant – keyword+

26- Dependant – keyword+

27- Psychopath* - keyword+

28- Aggressive – keyword+

29- Cold – keyword+

30- Egocentric – keyword+

31- Unempathetic – keyword+

32- Impersonal – keyword+

33- Creative – keyword+

34- Impulsiv* - keyword+

35- "Tough-minded" – keyword+

36- Sociable – keyword+

37- Lively – keyword+

38- Carefree – keyword+

39- Active – keyword+

40- Dominant- keyword+

41- Assertive – keyword+

42- Surgent – keyword+

43- "Sensation seeking" – keyword+

44- Venturesome – keyword+

45- Anxious – keyword+

46- Depressed- keyword+

47- "Guilt feeling" – keyword+

48- "Low self-esteem" – keyword+

49- Tense- keyword+

50- Irrational – keyword+

51- Shy – keyword+

52- Moody – keyword+

53- Emotional – keyword+

54- Adventurous – keyword+

55- "Pleasure Seeking" – keyword+

56- Irritable – keyword+

57- Independent – keyword+

58- Careless – keyword+

59- Sentimental – keyword+

60- "Attention seeking" – keyword+

61- Unconcerned – keyword+

62- Impractical – keyword+

63- Unsophisticated – keyword+

64- Intelligen* - keyword+

65- Suspicious – keyword+

66- "Self-sufficient" – keyword+

67- "Thick skinned" – keyword+

68- "Socially bold" – keyword+

69- "Tender-minded"- keyword+

70- Sensitive – keyword+

71- "Self-Reliant" – keyword+

72- Mistrusting – keyword+

73- Doubtful – keyword+

74- Vigilant – keyword+

75- "Socially aware" – keyword+

76- "Emotional* stab*" – keyword+

77- Careful – keyword+

78- Relaxed – keyword+

79- Restrained – keyword+

80- Warm – keyword+

81- Reasoning – keyword+

82- "Rule conscious*" – keyword+

83- Abstract – keyword+

84- Private – keyword+

85- Apprehensive – keyword+

86- Perfectionism – keyword+

87- "Self-controlled" – keyword+

88- Reactive – keyword+

89- Adaptive – keyword+

90- Matur* - keyword+

91- Forceful – keyword+

92- Spontaneous – keyword+

93- Nonconforming – keyword+

94- "Group-oriented" – keyword+

95- Affiliative- keyword+

96- Sceptical – keyword+

97- "Callous-unemotion*"- keyword+

98- Empathetic – keyword+

99- "Emotional* Intelligen*" - keyword +

100-   Resilien* – keyword +

101-   Responsible – keyword+

102-   Hyperactive – keyword+

103-   Moral*- keyword+

104-   8 OR 9 OR 10 OR 11 OR 12 OR 13 OR 14 OR 15 OR 16 OR 17 OR 18 OR
19 OR 20 OR21 OR 22 OR 23 OR 24 OR 25 OR 26 OR 27 OR 28 OR 29 OR 30 OR
31 OR 32 OR 33 OR 34 OR 35 OR 36 OR 37 OR 38 OR 39 OR 40 OR 41 OR 42 OR
43 OR 44 OR 45 OR 46 OR 47 OR 48 OR 49 OR 50 OR 51 OR 52 OR 53 OR 54 OR
55 OR 56 OR 57 OR 58 OR 59 OR 60 OR 61 OR 62 OR 63 OR 66 OR 65 OR 66 OR
67 OR 68 OR 69 OR 70 OR 71 OR 72 OR 73 OR 74 OR 75 OR 76 OR 77 OR 78 OR
79 OR 80 OR 81 OR 82 OR 83 OR 84 OR 85 OR 86 OR 87 OR 88 OR 89 OR 90 OR
91 OR 92 OR 93 OR 94 OR 95 OR 96 OR 97 OR 98 OR 99 OR 100 OR 101 OR 102
OR 103

105-   7 AND 104   **= 1, 240**

Conducted on 15th and 16th May 2021

Date range: 2020 – present

English language only ticked

Search terms as above

=74

PsychINFO Total = 1,314

Conducted on 15th and 16th February 2020

Date range: 1860-present

English language only

1- Gang – [mp=title, abstract, full text, caption text]

2- Gangs - [mp=title, abstract, full text, caption text]

3- "Gang Member*" - [mp=title, abstract, full text, caption text]

4- Gangster* - [mp=title, abstract, full text, caption text]

5- "Street Gang*" – [mp=title, abstract, full text, caption text]

6- 1 OR 2 OR 3 OR 4 OR 5

7- Personality - [mp=title, abstract, full text, caption text]

8- "Personality type*" - [mp=title, abstract, full text, caption text]

9- "Personality trait*" – [mp=title, abstract, full text, caption text]

10- "Personality factor*" - [mp=title, abstract, full text, caption text]

11- Disposition -[mp=title, abstract, full text, caption text]

12- Temperament - [mp=title, abstract, full text, caption text]

13- Character - [mp=title, abstract, full text, caption text]

14- Openness* - [mp=title, abstract, full text, caption text]

15- Conscientious* - [mp=title, abstract, full text, caption text]

16- Extrover* -[mp=title, abstract, full text, caption text]

17- Agreeable* - [mp=title, abstract, full text, caption text]

18- Neurotic* - [mp=title, abstract, full text, caption text]

19- Antisocial- [mp=title, abstract, full text, caption text]

20- Paranoid - [mp=title, abstract, full text, caption text]

21- Narcissis* - [mp=title, abstract, full text, caption text]

22- Histrionic - [mp=title, abstract, full text, caption text]

23- Avoidant - [mp=title, abstract, full text, caption text]

24- Dependant - [mp=title, abstract, full text, caption text]

25- Psychopath* - [mp=title, abstract, full text, caption text]

26- Aggressive - [mp=title, abstract, full text, caption text]

27- Cold - [mp=title, abstract, full text, caption text]

28- Egocentric - [mp=title, abstract, full text, caption text]

29- Unempathetic - [mp=title, abstract, full text, caption text]

30- Impersonal - [mp=title, abstract, full text, caption text]

31- Creative - [mp=title, abstract, full text, caption text]

32- Impulsiv* - [mp=title, abstract, full text, caption text]

33- "Tough-minded" - [mp=title, abstract, full text, caption text]

34- Sociable - [mp=title, abstract, full text, caption text]

35- Lively - [mp=title, abstract, full text, caption text]

36- Carefree -[mp=title, abstract, full text, caption text]

37- Active - [mp=title, abstract, full text, caption text]

38- Dominant-[mp=title, abstract, full text, caption text]

39- Assertive -[mp=title, abstract, full text, caption text]

40- Surgent - [mp=title, abstract, full text, caption text]

41- "Sensation seeking" - [mp=title, abstract, full text, caption text]

42- Venturesome - [mp=title, abstract, full text, caption text]

43- Anxious -[mp=title, abstract, full text, caption text]

44- Depressed- [mp=title, abstract, full text, caption text]

45- "Guilt feeling" - [mp=title, abstract, full text, caption text]

46- "Low self-esteem" - [mp=title, abstract, full text, caption text]

47- Tense- [mp=title, abstract, full text, caption text]

48- Irrational - [mp=title, abstract, full text, caption text]

49- Shy - [mp=title, abstract, full text, caption text]

50- Moody - [mp=title, abstract, full text, caption text]

51- Emotional - [mp=title, abstract, full text, caption text]

52- Adventurous - [mp=title, abstract, full text, caption text]

53- "Pleasure Seeking" - [mp=title, abstract, full text, caption text]

54- Irritable - [mp=title, abstract, full text, caption text]

55- Independent - [mp=title, abstract, full text, caption text]

56- Careless - [mp=title, abstract, full text, caption text]

57- Sentimental - [mp=title, abstract, full text, caption text]

58- "Attention seeking" - [mp=title, abstract, full text, caption text]

59- Unconcerned - [mp=title, abstract, full text, caption text]

60- Impractical - [mp=title, abstract, full text, caption text]

61- Unsophisticated -[mp=title, abstract, full text, caption text]

62- Intelligen* -[mp=title, abstract, full text, caption text]

63- Suspicious -[mp=title, abstract, full text, caption text]

64- "Self-sufficient" - [mp=title, abstract, full text, caption text]

65- "Thick skinned" - [mp=title, abstract, full text, caption text]

66- "Socially bold" -[mp=title, abstract, full text, caption text]

67- "Tender-minded"- [mp=title, abstract, full text, caption text]

68- Sensitive - [mp=title, abstract, full text, caption text]

69- "Self-Reliant" - [mp=title, abstract, full text, caption text]

70- Mistrusting - [mp=title, abstract, full text, caption text]

71- Doubtful - [mp=title, abstract, full text, caption text]

72- Vigilant - [mp=title, abstract, full text, caption text]

73- "Socially aware" - [mp=title, abstract, full text, caption text]

74- "Emotional* stab*" - [mp=title, abstract, full text, caption text]

75- Careful - [mp=title, abstract, full text, caption text]

76- Relaxed - [mp=title, abstract, full text, caption text]

77- Restrained - [mp=title, abstract, full text, caption text]

78- Warm - [mp=title, abstract, full text, caption text]

79- Reasoning - [mp=title, abstract, full text, caption text]

80- "Rule conscious*" - [mp=title, abstract, full text, caption text]

81- Abstract - [mp=title, abstract, full text, caption text]

82- Private - [mp=title, abstract, full text, caption text]

83- Apprehensive - [mp=title, abstract, full text, caption text]

84- Perfectionism - [mp=title, abstract, full text, caption text]

85- "Self-controlled" - [mp=title, abstract, full text, caption text]

86- Reactive -[mp=title, abstract, full text, caption text]

87- Adaptive - [mp=title, abstract, full text, caption text]

88- Matur* - [mp=title, abstract, full text, caption text]

89- Forceful - [mp=title, abstract, full text, caption text]

90- Spontaneous -[mp=title, abstract, full text, caption text]

91- Nonconforming - [mp=title, abstract, full text, caption text]

92- "Group-oriented" - [mp=title, abstract, full text, caption text]

93- Affiliative- [mp=title, abstract, full text, caption text]

94- Sceptical - [mp=title, abstract, full text, caption text]

95- "Callous-unemotion*"- [mp=title, abstract, full text, caption text]

96- Empathetic -[mp=title, abstract, full text, caption text]

97- "Emotional* Intelligen*" - [mp=title, abstract, full text, caption text]

98- Resilient - [mp=title, abstract, full text, caption text]

99- Responsible - [mp=title, abstract, full text, caption text]

100-   Hyperactive - [mp=title, abstract, full text, caption text]

101-   Moral*- [mp=title, abstract, full text, caption text]

102-   8 OR 9 OR 10 OR 11 OR 12 OR 13 OR 14 OR 15 OR 16 OR 17 OR 18 OR 19 OR 20 OR21 OR 22 OR 23 OR 24 OR 25 OR 26 OR 27 OR 28 OR 29 OR 30 OR 31 OR 32 OR 33 OR 34 OR 35 OR 36 OR 37 OR 38 OR 39 OR 40 OR 41 OR 42 OR 43 OR 44 OR 45 OR 46 OR 47 OR 48 OR 49 OR 50 OR 51 OR 52 OR 53 OR 54 OR 55 OR 56 OR 57 OR 58 OR 59 OR 60 OR 61 OR 62 OR 63 OR 66 OR 65 OR 66 OR 67 OR 68 OR 69 OR 70 OR 71 OR 72 OR 73 OR 74 OR 75 OR 76 OR 77 OR 78 OR 79 OR 80 OR 81 OR 82 OR 83 OR 84 OR 85 OR 86 OR 87 OR 88 OR 89 OR 90 OR 91 OR 92 OR 93 OR 94 OR 95 OR 96 OR 97 OR 98 OR 99 OR 100 OR 101

103-   7 AND 102   **=1,220**

Conducted on 15th and 16th May 2021

Date range: 2020 – present

English language only

Search terms as above

=86

PsycArticles Total = 1,306

3. Sociological abstracts

Conducted on 15th and 16th February 2020

Date range: 1952-present

English language only

Select all – source time

[noft] Gang OR Gangs OR "Gang Member*" OR Gangster* OR "Street Gang*"

AND [noft] Personality OR "Personality type*" OR "Personality trait*" OR "Personality

factor*" OR Disposition OR Temperament OR Character OR Openness* OR Conscientious*

OR Extrover* OR Agreeable* OR Neurotic* OR Antisocial OR Paranoid OR Narcissis* OR Histrionic OR Avoidant OR Dependant OR Psychopath* OR Aggressive OR Cold OR Egocentric OR Unempathetic OR Impersonal OR Creative OR Impulsiv* OR "Tough-minded" OR Sociable OR Lively OR Carefree OR Active OR Dominant OR Assertive OR Surgent OR "Sensation seeking" OR Venturesome OR Anxious OR Depressed OR "Guilt feeling" OR "Low self-esteem" OR Tense OR Irrational OR Shy OR Moody OR Emotional OR Adventurous OR "Pleasure Seeking" OR Irritable OR Independent OR Careless OR Sentimental OR "Attention seeking" OR Unconcerned OR Impractical OR Unsophisticated OR Intelligen* OR Suspicious OR "Self-sufficient" OR "Thick skinned" OR "Socially bold" OR "Tender-minded" OR Sensitive OR "Self-Reliant" OR Mistrusting OR Doubtful OR Vigilant OR "Socially aware" OR "Emotional* stab*" OR Careful OR Relaxed OR Restrained OR Warm OR Reasoning OR "Rule conscious*" OR Abstract OR Private OR Apprehensive OR Perfectionism OR "Self-controlled" OR Reactive OR Adaptive OR Matur* OR Forceful OR Spontaneous OR Nonconforming OR "Group-oriented" OR Affiliative OR Sceptical OR "Callous-unemotion*" OR Empathetic OR "Emotional* Intelligen*" OR Resilient OR Responsible OR Hyperactive OR Moral*

= 3,599

Conducted on 15th and 16th May 2021

Date range: 2020 – present

English language only

Search terms as above

=46

Sociological Abstracts Total = 3,645

4. Social Science database

Conducted on 15th and 16th February 2020

Date range: 1911-present

English language only

Source – all selected

[noft] Gang OR Gangs OR "Gang Member*" OR Gangster* OR "Street Gang*"

AND

[noft] Personality OR "Personality type*" OR "Personality trait*" OR "Personality factor*" OR Disposition OR Temperament OR Character OR Openness* OR Conscientious* OR Extrover* OR Agreeable* OR Neurotic* OR Antisocial OR Paranoid OR Narcissis* OR Histrionic OR Avoidant OR Dependant OR Psychopath* OR Aggressive OR Cold OR Egocentric OR Unempathetic OR Impersonal OR Creative OR Impulsiv* OR "Tough-minded" OR Sociable OR Lively OR Carefree OR Active OR Dominant OR Assertive OR Surgent OR "Sensation seeking" OR Venturesome OR Anxious OR Depressed OR "Guilt feeling" OR "Low self-esteem" OR Tense OR Irrational OR Shy OR Moody OR Emotional OR Adventurous OR "Pleasure Seeking" OR Irritable OR Independent OR Careless OR Sentimental OR "Attention seeking" OR Unconcerned OR Impractical OR Unsophisticated OR Intelligen* OR Suspicious OR "Self-sufficient" OR "Thick skinned" OR "Socially bold" OR "Tender-minded" OR Sensitive OR "Self-Reliant" OR Mistrusting OR Doubtful OR Vigilant OR "Socially aware" OR "Emotional* stab*" OR Careful OR Relaxed OR Restrained OR Warm OR Reasoning OR "Rule conscious*" OR Abstract OR Private OR Apprehensive OR Perfectionism OR "Self-controlled" OR Reactive OR Adaptive OR Matur* OR Forceful OR Spontaneous OR Nonconforming OR "Group-oriented" OR Affiliative OR Sceptical OR "Callous-unemotion*" OR Empathetic OR "Emotional* Intelligen*" OR Resilient OR Responsible OR Hyperactive OR Moral*

= 1,075

Conducted on 15th and 16th May 2021

Date range: 2020 – present

219

English language only

Search terms as above

<div align="right">

=54

Social Science Database Total = 1,129
</div>

5. Web of Science

Conducted 15th and 16th February 2020

Date range:1900-present

Core Collection (including the Social Science Citation Index)

'Topic' - title, abstract, author keywords, and Keywords Plus.

Gang OR Gangs OR "Gang Member*" OR Gangster* OR "Street Gang*"

AND

Personality OR "Personality type*" OR "Personality trait*" OR "Personality factor*" OR

Disposition OR Temperament OR Character OR Openness* OR Conscientious* OR

Extrover* OR Agreeable* OR Neurotic* OR Antisocial OR Paranoid OR Narcissis* OR

Histrionic OR Avoidant OR Dependant OR Psychopath* OR Aggressive OR Cold OR

Egocentric OR Unempathetic OR Impersonal OR Creative OR Impulsiv* OR "Tough-

minded" OR Sociable OR Lively OR Carefree OR Active OR Dominant OR Assertive OR

Surgent OR "Sensation seeking" OR Venturesome OR Anxious OR Depressed OR "Guilt

feeling" OR "Low self-esteem" OR Tense OR Irrational OR Shy OR Moody OR Emotional

OR Adventurous OR "Pleasure Seeking" OR Irritable OR Independent OR Careless OR

Sentimental OR "Attention seeking" OR Unconcerned OR Impractical OR Unsophisticated

OR Intelligen* OR Suspicious OR "Self-sufficient" OR "Thick skinned" OR "Socially bold"

OR "Tender-minded" OR Sensitive OR "Self-Reliant" OR Mistrusting OR Doubtful OR

Vigilant OR "Socially aware" OR "Emotional* stab*" OR Careful OR Relaxed OR

Restrained OR Warm OR Reasoning OR "Rule conscious*" OR Abstract OR Private OR

Apprehensive OR Perfectionism OR "Self-controlled" OR Reactive OR Adaptive OR Matur*

OR Forceful OR Spontaneous OR Nonconforming OR "Group-oriented" OR Affiliative OR

Sceptical OR "Callous-unemotion*" OR Empathetic OR "Emotional* Intelligen*" OR

Resilient OR Responsible OR Hyperactive OR Moral*

=1,627

Conducted on 15th and 16th May 2021

Date range: 2020 – present

Core Collection (including the Social Science Citation Index)

Search terms as above

=190

Web of Science = 1,817

<u>6. Scopus</u>

Date range: 1960-present

English language only

TITLE-ABS-KEY (Gang OR Gangs OR "Gang Member*" OR Gangster* OR "Street

Gang*")

AND

TITLE-ABS-KEY (Personality OR "Personality type*" OR "Personality trait*" OR

"Personality factor*" OR Disposition OR Temperament OR Character OR Openness* OR

Conscientious* OR Extrover* OR Agreeable* OR Neurotic* OR Antisocial OR Paranoid OR

Narcissis* OR Histrionic OR Avoidant OR Dependant OR Psychopath* OR Aggressive OR

Cold OR Egocentric OR Unempathetic OR Impersonal OR Creative OR Impulsiv* OR

"Tough-minded" OR Sociable OR Lively OR Carefree OR Active OR Dominant OR

Assertive OR Surgent OR "Sensation seeking" OR Venturesome OR Anxious OR Depressed

OR "Guilt feeling" OR "Low self-esteem" OR Tense OR Irrational OR Shy OR Moody OR

Emotional OR Adventurous OR "Pleasure Seeking" OR Irritable OR Independent OR

Careless OR Sentimental OR "Attention seeking" OR Unconcerned OR Impractical OR

Unsophisticated OR Intelligen* OR Suspicious OR "Self-sufficient" OR "Thick skinned" OR

"Socially bold" OR "Tender-minded" OR Sensitive OR "Self-Reliant" OR Mistrusting OR

Doubtful OR Vigilant OR "Socially aware" OR "Emotional* stab*" OR Careful OR Relaxed

OR Restrained OR Warm OR Reasoning OR "Rule conscious*" OR Abstract OR Private OR

Apprehensive OR Perfectionism OR "Self-controlled" OR Reactive OR Adaptive OR Matur*

OR Forceful OR Spontaneous OR Nonconforming OR "Group-oriented" OR Affiliative OR

Sceptical OR "Callous-unemotion*" OR Empathetic OR "Emotional* Intelligen*" OR

Resilient OR Responsible OR Hyperactive OR Moral*)

=1,850

Conducted on 15th and 16th May 2021

Date range: 2020 – present

English language only

Search terms as above

=60

Web of Science = 1,910

Email to Experts in the Field

Dear ███████,

I hope this e-mail finds you well.

My name is Katie Minnett and I am a trainee forensic psychologist. I am currently in the process of conducting a systematic literature review for my doctoral thesis at the University of Birmingham, U.K. This is exploring street gang involvement and personality traits.

From searching the literature, I note that you are well published in the area of gang research. I was wondering whether you would be able to direct me to any studies that you know of that are exploring male gang affiliates and their personality traits?

Thank you for taking the time to consider my request.

Kind regards,

Katie Minnett

Appendix C

Table of Excluded References at Full-Text Screen Stage and Reason for Exclusion

Note: These are not included in reference list due to extensive list and lack of need for repetition.

Table C1

Excluded References and Reasons for Exclusion

	Reference	Source	Reason for Exclusion
1	[Unknown]. (1998). The economics of gang life: A special task force report of the national gang crime research center. *Journal of Gang Research, 6*(1), 1-34. https://search-proquest-com.ezproxyd.bham.ac.uk/docview/61469562?accountid=8630	Electronic	Not personality (PI)
2	[Unknown]. (2002). Gangs in the post-world war II north american city: A forum. *Journal of Urban History, 28*(5), 658-663. https://search-proquest-com.ezproxyd.bham.ac.uk/docview/60454256?accountid=8630	Electronic	Forum, not empirical paper (R)
3	Acosta, S. J. (2009). Factors associated with rural mexican american gang activity. *Dissertation Abstracts International: Section B: The Sciences and Engineering, 69*(10-B), 6470. https://search.proquest.com/docview/304623455?accountid=8630	Electronic	Mixed sample (S)
4	Adams, J. J., & Pizarro, J. M. (2009). Ms-13: A gang profile. *Journal of Gang Research, 16*(4), 1-14. https://search-proquest-com.ezproxyd.bham.ac.uk/docview/59974523?accountid=8630	Electronic	Not personality Not empirical research (PI) (E)
5	Agnew, R., Brezina, T., Wight, K.P. & Cullen, F.T. (2002) Strain, personality traits and delinquency: Extending general strain theory. *Criminology, 40*(1), 43-71. 10.1111/j.1745-9125.2002.tb00949.x	Manual	Mixed sample, not street gang (S)
6	Aizon, A. (2013). *Gang prevention program.* Available from Sociological Abstracts. (1520343255; 201418755). https://search-proquest-com.ezproxyd.bham.ac.uk/docview/1520343255?accountid=8630	Electronic	Not personality, mixed sample (PI)(S)
7	Albert, D. F. (2007). Embraced by hope: The resilience of former Latino gang members (Publication No. 3276690) [Doctoral thesis, Gonzaga University]. ProQuest Dissertations and Theses Global.	Electronic	Sample is former gang members (S)
8	Alexander, C. (2004). Imagining the asian gang: Ethnicity, masculinity and youth after 'the riots'. Critical Social Policy, 24(4), 526-549. http://dx.doi.org.ezproxyd.bham.ac.uk/10.1177/0261018304046675	Electronic	Not street gang, not personality (S) (PI)

9	Alexander, T.L. (2019). Masculine identity and the motivation for joining violent groups (Publication No. 13808536) [Doctoral thesis]. ProQuest Dissertations and Theses Global.	Electronic	Sample is former gang members (S)
10	Alleyne, E., & Wood, J. L. (2010). Gang involvement: Psychological and behavioral characteristics of gang members, peripheral youth, and nongang youth. *Aggressive Behavior, 36*(6), 423-436. 10.1002/ab.20360	Electronic	Mixed sample (S)
11	Alleyne, E., & Wood, J. L. (2012). In Esbensen F. M.,CL (Ed.), *Gang membership: The psychological evidence* doi:10.1007/978-1-4614-1659-3_9	Electronic	Book chapter, Not personality (R) (PI)
12	Alleyne, E., & Wood, J. L. (2014). Gang involvement social and environmental factors. *Crime & Delinquency, 60*(4), 547-568. doi:10.1177/0011128711398029	Electronic	Mixed Sample, not personality (S) (PI)
13	Alvarado, K. M. (2016). Discounted: Stories of formerly gang involved and incarcerated latino males in los angeles county. *Dissertation Abstracts International Section A: Humanities and Social Sciences, 76(9)*	Electronic	Sample is former gang members (S)
14	Anderson, B. (2009). "I'm not so into gangs anymore. I've started going to church now": Coloured boys resisting gangster masculinity. *Agenda, 23*(80), 55-67. doi:http://dx.doi.org.ezproxyd.bham.ac.uk/10.1080/10130950.2009.9676241	Electronic	Not personality (PI)
15	Ang, R. P., Huan, V. S., Chan, W. T., Cheong, S. A., & Leaw, J. N. (2015). The role of delinquency, proactive aggression, psychopathy and behavioral school engagement in reported youth gang membership. *Journal of Adolescence, 41*, 148-156. doi:10.1016/j.adolescence.2015.03.010	Electronic	Mixed sample (S)
16	Ashton, S., Ioannou, M., & Hammond, L. (2018). The relationship between psychopathy and gang membership. *Journal of Gang Research, 25*(3), 32. Retrieved from https://search-proquest-com.ezproxyd.bham.ac.uk/docview/2081755540?accountid=8630	Electronic	Not empirical, presentation at conference (R)
17	Ayling, J. (2009). Criminal organizations and resilience. *International Journal of Law Crime and Justice, 37*(4), 182-196. doi:10.1016/j.ijlcj.2009.10.003	Electronic	Not empirical research, not personality, not gangs (R) (PI) (S)
18	Baird, A. (2012). The violent gang and the construction of masculinity amongst socially excluded young men. *Safer Communities, 11*(4), 179-190. doi:http://dx.doi.org.ezproxye.bham.ac.uk/10.1108/17578041211271445	Electronic	Not on personality (PI)
19	Baird, A. (2018). Becoming the "baddest": Masculine trajectories of gang violence in medellin. *Journal of Latin American Studies, 50*(1), 183-210. doi:10.1017/S0022216X17000761	Electronic	Not empirical paper (R)
20	Bacak, V., DeWitt, S.E., & Reid, S.E. (2021). Gang membership and mental health during the transition to adulthood. *Journal of Quantitative Criminology, 37*(2). https://doi.org/10.1007/s10940-021-09502-z	Electronic	Mixed sample (S)
21	Banjoko, O. T. (2008). A rorschach study of african-american teen gang members who have committed murder. *Dissertation Abstracts International: Section B: The Sciences and Engineering, 69*(3-B), 1998.	Electronic	Can't access: doctoral theses not available through inter-

			library loan due to Covid-19 restrictions
22	Barbieri, N., Clipper, S. J., & Vasquez, A. G. (2016). Adolescent gang membership and differences in ethnic identity, esteem, and efficacy. *Deviant Behavior, 37*(12), 1429-1442. doi:10.1080/01639625.2016.1185870	Electronic	Mixed sample, not personality (S) (PI)
23	Barnes, J. C., Boutwell, B. B., & Fox, K. A. (2012). The effect of gang membership on victimization: A behavioral genetic explanation. *Youth Violence and Juvenile Justice, 10*(3), 227. doi:http://dx.doi.org.ezproxyd.bham.ac.uk/10.1177/1541204011429948	Electronic	Not personality (PI)
24	Beresford, H., & Wood, J. L. (2016). Patients or perpetrators? the effects of trauma exposure on gang members' mental health: A review of the literature. *Journal of Criminological Research Policy and Practice, 2*(2), 148-159. doi:10.1108/JCRPP-05-2015-0015	Electronic	Not empirical research (D)
25	Bishop, A. S., Hill, K. G., Gilman, A. B., Howell, J. C., Catalano, R. F., & Hawkins, J. D. (2017). Developmental pathways of youth gang membership: A structural test of the social development model. *Journal of Crime & Justice, 40*(3), 275-296. doi:10.1080/0735648X.2017.1329781	Electronic	Mixed sample Not personality (S) (PI)
26	Blakemore, J. L., & Blakemore, G. M. (1998). African american street gangs: A quest for identity. *Journal of Human Behavior in the Social Environment, 1*(2-3), 203-223. https://doi.org/10.1300/J137v01n02_12	Electronic	Not empirical, mixed sample, not personality (D) (S) (PI)
27	Bolden, C. (2013). Tales from the hood: An emic perspective on gang joining and gang desistance. *Criminal Justice Review, 38*(4), 473-490. doi:http://dx.doi.org.ezproxyd.bham.ac.uk/10.1177/0734016813509267	Electronic	Mixed sample, not personality (S) (PI)
28	Brown, B. B., Hippensteele, I. M., & Lawrence, S. M. (2014). Commentary: Developmental perspectives on adolescents and gangs. *Journal of Research on Adolescence, 24*(2), 284-292. doi:http://dx.doi.org.ezproxyd.bham.ac.uk/10.1111/jora.12127	Electronic	Not empirical and not personality (D) (PI)
29	Brownfield, D. (2006). A defiance theory of sanctions and gang membership. *Ethnicities, 6*(2), 31-43. https://search-proquest-com.ezproxyd.bham.ac.uk/docview/61625910?accountid=8630	Electronic	Mixed sample, not empirical, not personality (S) (D) (PI)
30	Brownfield, D. (2010). "Social control, self-control, and gang membership". *Journal of Gang Research, 17*(4), 1-12. https://search-proquest-com.ezproxyd.bham.ac.uk/docview/758124213?accountid=8630	Electronic	Mixed sample (S)
31	Cabrera, O. A. (2002). Psychological and behavioral correlates of adolescent gang involvement. *Dissertation Abstracts International: Section B: The Sciences and Engineering, 62*(11-B), 5405. https://ovidsp.ovid.com/ovidweb.cgi?T=JS&CSC=Y&NEWS=N&PAGE=fulltext&D=psyc4&AN=2002-95010-307	Electronic	Mixed sample (S)

32	Cahill, M. A. (1996). A comparison of gang member and non-gang member male juvenile delinquents. *Dissertation Abstracts International: Section B: The Sciences and Engineering, 57*(6-B), 4023.	Electronic	Can't access: doctoral theses not available through inter-library loan due to Covid-19 restrictions
33	Carson, D. C., & Ray, J. V. (2019). Do psychopathic traits distinguish trajectories of gang membership? *Criminal Justice and Behavior, 46*(9), 1337-1355. doi:10.1177/0093854819867388	Electronic	Mixed sample (S)
34	Castillo, S. A. (1993). A psychosocial profile of latino male juvenile gang members: An exploration of similarities between gang and nongang members. *Dissertation Abstracts International, 53*(7-B), 3765.	Electronic	Can't access: doctoral theses not available through inter-library loan due to Covid-19 restrictions
35	Coid, J., Gonzalez, R.A., Kallis, C., Zhang, Y., Liu, Y., Wood, J., Quigg, Z., & Ullrich, S. (2020). Gang membership and sexual violence: Associations with childhood maltreatment and psychiatric morbidity. *British Journal of Psychiatry, 217*(4), 583-590. https://doi.org/10.1192/bjp.2020.69	Electronic	Not personality (PI)
36	Connolly, E. J., & Jackson, D. B. (2019). Adolescent gang membership and adverse behavioral, mental health, and physical health outcomes in young adulthood: A within-family analysis. *Criminal Justice and Behavior, 46*(11), 1566-1586. doi:10.1177/0093854819871076	Electronic	Mixed sample (S)
37	Conway-Turner, J., Visconti, K., & Winsler, A. (2019). The role of gang involvement as a protective factor in the association between peer victimization and negative emotionality. *Youth & Society, ,* UNSP 0044118X19869803. doi:10.1177/0044118X19869803	Electronic	Mixed sample, not personality (S) (PI)
38	Copeland, A. D. (1974). Violent black gangs: Psycho- and sociodynamics. *Adolescent Psychiatry, 3*, 340-353.	Electronic	Can't access
39	Corcoran, K., Washington, A., & Meyers, N. (2005). The impact of gang membership on mental health symptoms, behavior problems and antisocial criminality of incarcerated young men. *Journal of Gang Research, 12*(4), 25-36.	Electronic	Can't access
40	Cureton, S. R. (1999). Gang membership: Gang formations and gang joining. *Journal of Gang Research, 7*(1), 13-21. Retrieved from https://search-proquest-com.ezproxyd.bham.ac.uk/docview/61459193?accountid=8630	Electronic	Not empirical research (R)
41	Curry, G. D., & Spergel, I. A. (1991). *Youth gang involvement and delinquency* Retrieved from https://search-proquest-com.ezproxyd.bham.ac.uk/docview/61714761?accountid=8630	Electronic	Not empirical research, conference proceedings (R)
42	Davis, J. (1993). Psychological versus sociological explanations for delinquent conduct and gang formation. *Journal of Contemporary Criminal Justice, 9*(2), 81-93. doi:10.1177/104398629300900202	Electronic	Not empirical research, lit review (R)
43	Decker, S. H., Melde, C., & Pyrooz, D. C. (2013). What do we know about gangs and gang members and where do we go from here? *Justice Quarterly, 30*(3), 369-402. doi:10.1080/07418825.2012.732101	Electronic	Not empirical, lit review (R)

44	Dhingra, K., Debowska, A., Sharratt, K., Hyland, P., & Kola-Palmer, S. (2015). Psychopathy, gang membership, and moral disengagement among juvenile offenders. *Journal of Criminal Psychology, 5*(1), 13-24. doi:10.1108/JCP-11-2014-0016	Electronic	Mixed sample, not personality (S) (PI)
45	Dil, N., & Dil, N. (1994). Delinquent gangs: A psychological perspective. *International Journal of Contemporary Sociology, 31*(2), 327-329. Retrieved from https://search-proquest-com.ezproxyd.bham.ac.uk/docview/61397101?accountid=8630	Electronic	Not empirical research, book review (R)
46	Dukes, R. L., Martinez, R. O., & Stein, J. A. (1997). Precursors and consequences of membership in youth gangs. *Youth and Society, 29*(2), 139-165. Retrieved from https://search-proquest-com.ezproxyd.bham.ac.uk/docview/61585921?accountid=8630	Electronic	Mixed sample (S)
47	*Durairaja, S., Saat, G.A.M., Kamaluddin, M.R. (2019). Psychological and criminogenic factors underlying gangsterism among Indians in Malaysia from the perspective of ex-gangsters and police personnel. *Psychological Thought,12*(1), 74–92. https://doi.org/10.5964/psyct.v12i1.316	Electronic	Sample was former gang members only (S)
48	Dupere, V., Lacourse, E., Willms, J. D., Vitaro, F., & Tremblay, R. E. (2007). Affiliation to youth gangs during adolescence: The interaction between childhood psychopathic tendencies and neighborhood disadvantage. *Journal of Abnormal Child Psychology, 35*(6), 1035-1045. doi:10.1007/s10802-007-9153-0	Electronic	Mixed sample (S)
49	Esbensen, F., & Weerman, F. M. (2005). Youth gangs and troublesome youth groups in the united states and the netherlands: A cross-national comparison. *European Journal of Criminology, 2*(1), 5-37. doi:http://dx.doi.org.ezproxyd.bham.ac.uk/10.1177/1477370805048626	Electronic	Mixed sample (S)
50	Ebensen, F.A., Huizinga, D. & Weiher, A.W. (1993) Gang and non gang youth: Differences in explanatory factors. *Journal of Contemporary Criminal Justice, 9*(2), 94-116. doi: 10.1177/104398629300900203	Manual	Mixed sample (S)
51	Espinoza, R. L., & Ehrlich, A. (1989). Personality, family relationships, and moral development in chicano and black adolescent gang members. *Adolescent Psychiatry, 16*, 216-227.	Electronic	Can't access.
52	Farmer, A. Y., & Hairston, T.,Jr. (2013). Predictors of gang membership: Variations across grade levels. *Journal of Social Service Research, 39*(4), 530-544. doi:10.1080/01488376.2013.799112	Electronic	Mixed sample (S)
53	Farris, H. (2014). Differences in executive functioning between current and former gang members. *Dissertation Abstracts International: Section B: The Sciences and Engineering, 74(8)*. https://search.proquest.com/docview/1346223443?accountid=8630	Electronic	Not personality (PI)
54	Ferris, S. M. (2016). Ex-gang members: The search for moral identity: A literature review study of positive narrative identity transformation in ex-gang members in relation to expected, temporal, and social selves. *Dissertation Abstracts International: Section B: The Sciences and Engineering, 77(4) B*(E). https://search.proquest.com/docview/1738629520?accountid=8630	Electronic	Not empirical and not personality (R)(PI)

55	Flores, E. O. (2016). "Grow your hair out": Chicano gang masculinity and embodiment in recovery. *Social Problems, 63*(4), 590-604. doi:10.1093/socpro/spw017	Electronic	Not measuring personality (PI)
56	Florian-Lacy, D.J., Jefferson, J.L. & Fleming, J. (2002) The relationship of gang membership to self-esteem, family relations and learning disabilities. *TCA Journal, 30*(1), 4-16. doi: 10.1080/15564223.2002.12034599	Manual	Mixed sample (S)
57	Ford, B. J. (2014). *Transmission of generational trauma in african american gang members* Available from Sociological Abstracts. (1622297015; 201440138). Retrieved from https://search-proquest-com.ezproxyd.bham.ac.uk/docview/1622297015?accountid=8630	Electronic	Mixed sample (S)
58	Fortune, S. (2004). Prison gang leadership: Traits identified by prison gangsters. *Journal of Gang Research, 11*(4), 25-46. Retrieved from https://search-proquest-com.ezproxyd.bham.ac.uk/docview/60490567?accountid=8630	Electronic	Not street gang, inmates and inmate gangs (S)
59	Fox, K. A., & Lane, J. (2010). Perceptions of gangs among prosecutors in an emerging gang city. *Journal of Criminal Justice, 38*(4), 595-603. doi:10.1016/j.jcrimjus.2010.04.031	Electronic	Not street gangs (S)
60	Fox, K. A., Lane, J., & Akers, R. L. (2013). Understanding gang membership and crime victimization among jail inmates: Testing the effects of self-control. *Crime & Delinquency, 59*(5), 764-787. doi:http://dx.doi.org.ezproxyd.bham.ac.uk/10.1177/0011128710392003	Electronic	Mixed sample, not measuring personality (S) (PI)
61	Fox, K. A., Ward, J. T., & Lane, J. (2013). Selection for some, facilitation for others? self-control theory and the gang-violence relationship. *Deviant Behavior, 34*(12), 996-1019. doi:http://dx.doi.org.ezproxyd.bham.ac.uk/10.1080/01639625.2013.800433	Electronic	Mixed sample (S)
62	Franco-Vasquez, J. F. (2001). *Exploring the psychosocial differences between hispanic gang and nongang youths in a selected inner city* Available from Sociological Abstracts. (60412695; 200203441). Retrieved from https://search-proquest-com.ezproxyd.bham.ac.uk/docview/60412695?accountid=8630	Electronic	Not personality (PI)
63	Frick, R. M. (1967). Ego-structure peculiarities in a group of 21 "juvenile gang members.". *Psychologie V Ekonomicke Praxi, 51*, 74-79.	Electronic	Not English journal
64	Frisby-Osman, S., & Wood, J. L. (2020). Rethinking how we view gang members: An examination into affective, behavioral, and mental health predictors of UK gang-involved youth. *Youth Justice-an International Journal,* , UNSP 1473225419893779. doi:10.1177/1473225419893779	Electronic	Mixed sample (S)
65	Frisby-Osman, S., & Wood, J. L. (2020). Rethinking how we view gang members: An examination into affective, behavioral, and mental health predictors of UK gang-involved youth. *Youth Justice-an International Journal,* , UNSP 1473225419893779. doi:10.1177/1473225419893779	Electronic	Mixed sample (S), duplicate realised at full text stage following updated search
66	Garduno, L. S., & Brancale, J. M. (2017). Examining the risk and protective factors of gang involvement among hispanic youth in maryland. *Journal of Community Psychology, 45*(6), 765-782. doi:10.1002/jcop.21891	Electronic	Mixed sample (S)

67	Gerrard, N. L. (1964). The core member of the gang. *British Journal of Criminology, 4*(4), 361-371. Retrieved from https://search-proquest-com.ezproxyd.bham.ac.uk/docview/60086699?accountid=8630	Electronic	Not empirical research (D)
68	Glaser, C. (1998). Swines, hazels and the dirty dozen: Masculinity, territoriality and the youth gangs of soweto, 1960-1976. *Journal of Southern African Studies, 24*(4), 719-736. Retrieved from https://search-proquest-com.ezproxyd.bham.ac.uk/docview/60078215?accountid=8630	Electronic	Not empirical research (D)
69	Gonis, A. E. (2016). An examination of emotional intelligence, decision-making styles, and exposure to criminal gang activity. *Dissertation Abstracts International: Section B: The Sciences and Engineering, 77(1)*	Electronic	Not personality (PI)
70	Goodwill, A., & Giannone, Z. (2018). Self determination among indigenous men who left gangs: Escaping the urban trapline. *Journal of Gang Research, 25*(3), 1. Retrieved from https://search-proquest-com.ezproxyd.bham.ac.uk/docview/2081756264?accountid=8630	Electronic	Not personality (PI)
71	Hagedorn, J. M. (1998). Frat boys, bossmen, studs, and gentlemen: A typology of gang masculinities. *Masculinities and violence* (pp. 152-167) Sage. Retrieved from https://search-proquest-com.ezproxyd.bham.ac.uk/docview/60056122?accountid=8630	Electronic	Not empirical research – book chapter (R)
72	Hagedorn, J. M., & Hagedorn, J. M. (1999). Gangs and youth subcultures: International explorations. *Contemporary Sociology, 28*(5), 609-611. Retrieved from https://search-proquest-com.ezproxyd.bham.ac.uk/docview/60074542?accountid=8630	Electronic	Not empirical research (R)
73	Haggerty, K. D., & Haggerty, K. D. (2003). The asian gang: Ethnicity, identity, masculinity. *Current Sociology/La Sociologie Contemporaine, 51*(2), 153-162. Retrieved from https://search-proquest-com.ezproxyd.bham.ac.uk/docview/60458984?accountid=8630	Electronic	Not empirical research (R)
74	Hailer, J. A., & Hart, C. B. (1999). A new breed of warrior: The emergence of american indian youth gangs. *Journal of Gang Research, 7*(1), 23-33. Retrieved from https://search-proquest-com.ezproxyd.bham.ac.uk/docview/61459207?accountid=8630	Electronic	Not personality Sample (PI) (S)
75	Hardwick, L. T. (1995). *The relationship of youth gang membership to academic achievement: A comparative analysis* Available from Sociological Abstracts. (61418587; 9604840). Retrieved from https://search-proquest-com.ezproxyd.bham.ac.uk/docview/61418587?accountid=8630	Electronic	Mixed sample (S)
76	Harris, T. B., Elkins, S., Butler, A., Shelton, M., Robles, B., Kwok, S., Simpson, S., Young, D.W., Mayhew, A, Brown, A. & Sargent, A.J. (2013) Youth gang members: Psychiatric disorder and substance use. *Laws, 23*(4), 392-400. doi: 10.3390/laws2040392	Manual	Mixed sample (S)
77	Helanko Rafael. (1956). The hang-outs of boys' gangs. *Transactions of the Westermarck Society, 3*, 77-87. Retrieved from https://search-proquest-com.ezproxyd.bham.ac.uk/docview/60504388?accountid=8630	Electronic	Not personality (PI)

78	Hill, K. G., Howell, J. C., Hawkins, J. D., & Battin-Pearson, S. R. (1999). Childhood risk factors for adolescent gang membership: Results from the seattle social development project. *Journal of Research in Crime and Delinquency, 36*(3), 300-322. doi:10.1177/0022427899036003003	Electronic	Mixed sample, not personality (S) (PI)
79	Holmes, S. R., & Brandenburg-Ayres, S. J. (1998). Bullying behavior in school: A predictor of later gang involvement. *Journal of Gang Research, 5*(2), 1-6. Retrieved from https://search-proquest-com.ezproxyd.bham.ac.uk/docview/61459231?accountid=8630	Electronic	Mixed sample (S)
80	Hope, T. L. (1998). *Crime, criminality, and gangs* Available from Sociological Abstracts. (61546841; 9810496). Retrieved from https://search-proquest-com.ezproxyd.bham.ac.uk/docview/61546841?accountid=8630	Electronic	Mixed sample (S)
81	Huicochea, G. (2008). *The long-term impact of gang involvement: A qualitative study* Available from Sociological Abstracts. (60356013; 201023468). Retrieved from https://search-proquest-com.ezproxyd.bham.ac.uk/docview/60356013?accountid=8630	Electronic	Masters thesis (R)
81	Isales, C. J. (2005). The relationship between intergenerational paternal patterns and individual behavior of gang members: An application of bowen family systems theory. *Dissertation Abstracts International: Section B: The Sciences and Engineering, 65*(10-B), 5431. Retrieved from https://ovidsp.ovid.com/ovidweb.cgi?T=JS&CSC=Y&NEWS=N&PAGE=fulltext&D=psyc4&AN=2005-99008-059	Electronic	Not personality (PI)
83	Iwasaki, S., Okusawa, Y., & Saisho, A. (1980). Characteristics of violent gangster prisoners. *Bulletin of the Criminological Research Department, VOL. 1980*, 14-17. Retrieved from https://www.scopus.com/inward/record.uri?eid=2-s2.0-0019294744&partnerID=40&md5=eed7c5ae10d91944ec9af7734f6ca255	Electronic	Not personality (PI)
84	Jackson, A. (2016). Gang risk factors among urban jamaican youth: A qualitative analysis. *International Journal of Criminal Justice Sciences, 11*(2), 132-147.	Electronic	Sample not clear and no response from author (S)
85	Jacobs, S. A. (2010). *From affiliation to disaffiliation: A phenomenological inquiry exploring the experiences of social identity transformation in former gang members* Available from Sociological Abstracts. (835113767; 201102362). Retrieved from https://search-proquest-com.ezproxyd.bham.ac.uk/docview/835113767?accountid=8630	Electronic	Not personality (PI)
86	Jacobson, A. S. (1996). The nature of empathy in socially delinquent adolescents. *Dissertation Abstracts International: Section B: The Sciences and Engineering, 57*(3-B), 2176.	Electronic	Can't access: doctoral theses not available through inter-library loan due to Covid-19 restrictions
87	Jankowski, M. S. (1991). *Islands in the street: Gangs and american urban society* U of California Press. Retrieved from https://search-proquest-com.ezproxyd.bham.ac.uk/docview/60030609?accountid=8630	Electronic	Not empirical (R)
88	Jensen, G. F. (1996). Defiance and gang identity: Quantitative tests of qualitative hypotheses. *Journal of Gang Research, 3*(4), 13-29. Retrieved from https://search-proquest-com.ezproxyd.bham.ac.uk/docview/61469728?accountid=8630	Electronic	Not specific to street-gangs (S)

89	Jenson, J. M., & Howard, M. O. (1998). Correlates of gang involvement among juvenile probationers. *Journal of Gang Research, 5*(2), 7-15. Retrieved from https://ovidsp.ovid.com/ovidweb.cgi?T=JS&CSC=Y&NEWS=N&PAGE=fulltext&D=psyc3&AN=1999-15518-002	Electronic	Not personality (PI)
90	Jesus Martin, M., Manuel Martinez, J., & Rosa, A. (2009). Violent youth gangs in madrid: Socialization and culturalization. *Revista Panamericana De Salud Publica-Pan American Journal of Public Health, 26*(2), 128-136. doi:10.1590/S1020-49892009000800005	Electronic	Not English (Spanish)
91	Jones, D. G. (1999). A comparison study of rural and urban gangs in america. (juvenille deliquency, african-americans). *Dissertation Abstracts International: Section B: The Sciences and Engineering, 60*(6-B), 2947. Retrieved from https://ovidsp.ovid.com/ovidweb.cgi?T=JS&CSC=Y&NEWS=N&PAGE=fulltext&D=psyc3&AN=1999-95024-407	Electronic	Mixed sample (S)
92	Joseph, J. (2008). Gangs and gang violence in school. *Journal of Gang Research, 16*(1), 33-50. Retrieved from https://search-proquest-com.ezproxyd.bham.ac.uk/docview/61719581?accountid=8630	Electronic	Mixed sample Not personality (S) (PI)
93	Julian, R. H. (2004). *Psychopathy and violence among security threat group members and non-security threat group members within a maximum security setting: A comparative study* Available from Sociological Abstracts. (60508888; 200423566). Retrieved from https://search-proquest-com.ezproxyd.bham.ac.uk/docview/60508888?accountid=8630	Electronic	Nor street gangs (S)
94	Katz, C. M., & Fox, A. M. (2010). Risk and protective factors associated with gang-involved youth in trinidad and tobago. *Revista Panamericana De Salud Publica-Pan American Journal of Public Health, 27*(3), 187-202. doi:10.1590/S1020-49892010000300006	Electronic	Mixed sample (S)
95	Katz, C. M., Maguire, E. R., & Choate, D. (2011). A cross-national comparison of gangs in the united states and trinidad and tobago. *International Criminal Justice Review, 21*(3), 243-262. doi:http://dx.doi.org.ezproxyd.bham.ac.uk/10.1177/1057567711417179	Electronic	Mixed sample (S)
96	Kee, C., Sim, K., Teoh, J., Tian, C. S., & Ng, K. H. (2003). Individual and familial characteristics of youths involved in street corner gangs in singapore. *Journal of Adolescence, 26*(4), 401-412. doi:10.1016/S0140-1971(03)00027-7	Electronic	Mixed sample (S)
97	Kimonis, E., Frick, P.J. & Barry, C.T. (2004) Callous-unemotional traits and delinquent peer affiliation. *Journal of Consulting and Clinical Psychology, 72*(6), 956-966. doi: 10.1037/0022-006x.72.6.956	Manual	Mixed sample, not gang (S)
98	Kissner, J., & Pyrooz, D. C. (2009). Self-control, differential association, and gang membership: A theoretical and empirical extension of the literature. *Journal of Criminal Justice, 37*(5), 478-487. doi:10.1016/j.jcrimjus.2009.07.008	Electronic	Mixed sample (S)
99	Klein, M. W. (1966). Factors related to juvenile gang membership patterns. *Sociology and Social Research, 51*(1), 49-62.	Electronic	Can't access.

100	Lemus, E. L., & Johnson, F. A. (2008). Relationship of latino gang membership to anger expression, bullying, ethnic identity, and self-esteem. *Journal of Gang Research, 16*(1), 13-32.	Electronic	Can't access.
101	Lenzi, M., Sharkey, J. D., Wroblewski, A., Furlong, M. J., & Santinello, M. (2019). Protecting youth from gang membership: Individual and school-level emotional competence. *Journal of Community Psychology, 47*(3), 563-578. doi:10.1002/jcop.22138	Electronic	Mixed sample (S)
102	Lenzi, M., Sharkey, J., Vieno, A., Mayworm, A., Dougherty, D., & Nylund-Gibson, K. (2015). Adolescent gang involvement: The role of individual, family, peer, and school factors in a multilevel perspective. *Aggressive Behavior, 41*(4), 386-397. doi:10.1002/ab.21562	Electronic	Mixed sample (S)
103	Lewis, J. R. (2013). *An examination of psychological, social, and economic motivations for gang membership among hispanic american youth* Available from Sociological Abstracts. (1322727454; 201316077). Retrieved from https://search-proquest-com.ezproxyd.bham.ac.uk/docview/1322727454?accountid=8630	Electronic	Not personality (PI)
104	Li, X., Stanton, B., Pack, R., Harris, C., Cottrell, L., & Burns, J. (2002). Risk and protective factors associated with gang involvement among urban african american adolescents. *Youth and Society, 34*(2), 172-194. doi:http://dx.doi.org.ezproxyd.bham.ac.uk/10.1177/004411802237862	Electronic	Mixed sample (S)
105	Luyt, R., & Foster, D. (2001). Hegemonic masculine conceptualisation in gang culture. *South African Journal of Psychology, 31*(3), 1-11. doi:10.1177/008124630103100301	Electronic	Not gang, looks at people in areas that have gangs (S)
106	Macfarlane, A. (2019). Gangs and adolescent mental health: A narrative review. *Journal of Child and Adolescent Trauma, 12*(3), 411-420. doi:10.1007/s40653-018-0231-y	Electronic	Not empirical research (R)
107	Madan, A., Mrug, S., & Windle, M. (2011). Do delinquency and community violence exposure explain internalizing problems in early adolescent gang members? *Journal of Adolescence, 34*(5), 1093-1096. doi:http://dx.doi.org.ezproxyd.bham.ac.uk/10.1016/j.adolescence.2010.06.003	Electronic	Mixed sample (S)
108	Mallion, J. S., & Wood, J. L. (2018). Emotional processes and gang membership: A narrative review. Aggression and Violent Behavior, 43, 56-63. doi:10.1016/j.avb.2018.10.001	Electronic	Not empirical research (R)
109	Mallion, J.S., & Wood, J.L. (2021). Comparison of emotional dispositions between street gang and non-gang prisoners. *Journal of Interpersonal Violence, 36*(9-10), 4018-4038. https://doi.org/10.1177/0886260518789147.	Electronic	Duplicate realised at full-text stage (included in review)
110	Matz, A. K., Martin, K. D. S., & DeMichele, M. T. (2014). Barriers to effective gang-member reentry: An examination of street gang-affiliated probationer revocation in a southwestern state. *Journal of Gang Research, 21*(2), 33-51. Retrieved from https://search-proquest-com.ezproxyd.bham.ac.uk/docview/1622297088?accountid=8630	Electronic	Not just street gang (S)
111	Maxson, C., Whitlock, M.L. & Klein, M.W. (1998) Vulnerability to street gang membership implications for practice. *Social Service Review, 72*(1), 70-91. doi: 10.1086/515756	Manual	Not personality (PI)

112	McDaniel, D. D. (2012). Risk and protective factors associated with gang affiliation among high-risk youth: A public health approach. *Injury Prevention, 18*(4), 253-258. doi:10.1136/injuryprev-2011-040083	Electronic	Mixed sample (S)
113	Mckay, M. A. (1998). An investigation of the decision-making process and self-esteem in adolescent gang membership. *Dissertation Abstracts International: Section B: The Sciences and Engineering, 59*(2-B), 0604.	Electronic	Can't access: doctoral theses not available through inter-library loan due to Covid-19 restrictions
114	Melde, C., & Esbensen, F. -. (2012). The onset of (euro)gang membership as a turning point in the life course. *Youth gangs in international perspective: Results from the Eurogang program of research* (pp. 169-187) doi:10.1007/978-1-4614-1659-3_10 Retrieved from https://www.scopus.com/inward/record.uri?eid=2-s2.0-84949178949&doi=10.1007%2f978-1-4614-1659-3_10&partnerID=40&md5=b97d944bec2dd43bb85b8e67734ef2c0	Electronic	Not empirical research (R)
115	Mendez, L., Mozley, M. M., & Kerig, P. K. (2020). Associations among trauma exposure, callous-unemotionality, race or ethnicity, and gang involvement in justice-involved youth. *Criminal Justice and Behavior, ,* 0093854819897940. doi:10.1177/0093854819897940	Electronic	Mixed sample (S)
116	Mendez, L., Mozley, M.M., & Kerig, P.K. (2020). Associations among trauma exposure, callous-unemotionality, race or ethnicity and gang involvement in justice-involved youth. *Criminal Justice and Behaviour, 47*(4), 457-469. https://doi.org/10.1177/0093854819897940	Electronic	Mixed sample (S), duplicate realised at full text stage following updated search
117	Merrin, G.J., Davis, J.P., Ingram, K.M., & Espelage, D.L. (2020). Examining social-ecological correlates of youth gang entry among serious juvenile offenders: A survival analysis. *American Journal of Orthopsychiatry, 90*(5), 623-632. https://doi.org/10.1037/ort0000491	Electronic	Mixed sample (S)
118	Miller, W. B., Geertz, H., & CUTTER, H. S. G. (1961). Aggression in a boys' street-corner group. *Psychiatry, 24*(4), 283-298. Retrieved from https://search-proquest-com.ezproxyd.bham.ac.uk/docview/60505820?accountid=8630	Electronic	Mixed sample (S)
119	Moore, J. W., & Vigil, J. D. (1987). Chicano gangs: Group norms and individual factors related to adult criminality. *Aztlan, 18*(2), 27-44. Retrieved from https://search-proquest-com.ezproxyd.bham.ac.uk/docview/60956597?accountid=8630	Electronic	Not personality (PI)
120	Moran, K. (2015). Social structure and bonhomie: Emotions in the youth street gang. *British Journal of Criminology, 55*(3), 556-577. doi:10.1093/bjc/azu085	Electronic	Not empirical research and not empirical design (D) (R)
121	Mugishima, F., & Tsumuri, A. (1972). Pattern analysis of the member of the organized crime: II. patterns based on (1) the social background and career and (2) the process of affiliating with the gang. *Reports of the National Research Institute of Police Science, 13*(2), 101-111.	Electronic	Full text not in English

122	Munoz, A. R. (2015). *Getting out and staying out: Exploring factors that helped mexican american ex-gang members successfully stay out of gangs* Available from Sociological Abstracts. (1650145212; 201502056). Retrieved from https://search-proquest-com.ezproxyd.bham.ac.uk/docview/1650145212?accountid=8630	Electronic	Not personality (PI)
123	Munroe, M. (2006). An intrapsychic conceptualization through fairbairnian theory of african american gang aggression with socio-cultural implications. *Dissertation Abstracts International: Section B: The Sciences and Engineering, 67*(4-B), 2235. Retrieved from https://ovidsp.ovid.com/ovidweb.cgi?T=JS&CSC=Y&NEWS=N&PAGE=fulltext&D=psyc5&AN=2006-99020-295	Electronic	Not empirical paper, not empirical design, not personality (R)(D) (PI)
124	Munster, A. (1993). Current publications abstracts -- delinquent gangs: A psychological perspective by arnold P. goldstein. *Journal of Criminal Justice, 21*(5), 525. Retrieved from https://search-proquest-com.ezproxyd.bham.ac.uk/docview/237265580?accountid=8630	Electronic	Not empirical paper (R)
125	National Gang Crime Research Center. (1999). A comparison of gang members and non-gang members from project GANGFACT: A special report of the NGCRC. *Journal of Gang Research, 6*(2), 53-76. Retrieved from https://search-proquest-com.ezproxyd.bham.ac.uk/docview/61504413?accountid=8630	Electronic	Mixed sample (S)
126	Negola, T. D., PsyD. (2018). The criminal mind and the gangster. *Journal of Gang Research, 25*(3), 22. Retrieved from https://search-proquest-com.ezproxyd.bham.ac.uk/docview/2081755348?accountid=8630	Electronic	Not empirical paper (conference proceedings) (R)
127	O'Brien, K., Daffern, M., Chu, C. M., & Thomas, S. D. M. (2013). Youth gang affiliation, violence, and criminal activities: A review of motivational, risk, and protective factors. *Aggression and Violent Behavior, 18*(4), 417-425. doi:10.1016/j.avb.2013.05.001	Electronic	Not empirical paper, lit review (R)
128	O'Hangan, F. J. (1976). Gang characteristics: An empirical survey. *Journal of Child Psychology and Psychiatry, 17*(4), 305-314. doi:10.1111/j.1469-7610.1976.tb00405.x	Electronic	Not personality (PI) (PI)
129	Ojo, D. (2008). *A phenomenological investigation into the lived experiences of adolescent male gang members in los angeles* Available from Sociological Abstracts. (61733081; 200922871). Retrieved from https://search-proquest-com.ezproxyd.bham.ac.uk/docview/61733081?accountid=8630	Electronic	Not personality (PI)
130	Oner, O., Erguder, T., Cakir, B., Ergun, U., Ersahin, Y., Erol, I. N., & Ozcebe, H. (2013). Mental problems and impulsivity reported by adolescents: An epidemiological study. *Turk Psikiyatri Dergisi, 24*(1), 35-43.	Electronic	Mixed sample, not gangs (S)
131	Osho, G., Joseph, J. Scott, J. & Adams, M. (2016) An investigation of juvenile gang membership and psychopathic behaviour: Evidence from multilinear analysis. *International Journal of Social Work, 3*(2), 29-48. doi: 10.5296/10.5296/ijsw.v3i2.9312	Manual	Mixed sample (S)
132	Osman, S., & Wood, J. (2018). Gang membership, mental illness, and negative emotionality: A systematic review of the literature. *International Journal of Forensic Mental Health, 17*(3), 223-246. doi:10.1080/14999013.2018.1468366	Electronic	Not empirical research – systematic lit review (R)

133	Owen, M., & Greeff, A. P. (2015). Factors attracting and discouraging adolescent boys in high-prevalence communities from becoming involved in gangs. *Journal of Forensic Psychology Practice, 15*(1), 1-32. doi:10.1080/15228932.2015.977137	Electronic	Doesn't measure personality (PI)
134	Parker, M. M., & Coleman, S. (2013). Personality matters: The effect of defiant individualism on both deviant associations and normative behaviors among juveniles in rural north carolina. *American Journal of Criminal Justice, 38*(1), 85-98. doi:http://dx.doi.org.ezproxyd.bham.ac.uk/10.1007/s12103-011-9150-2	Electronic	Mixed sample (S)
135	Parker, M. M., McRant, J. J., & Coleman, S. L. (2012). Gangs in the village: Re-conceptualizing gangs as a social work phenomenon. *Journal of Gang Research, 19*(4), 21-36. Retrieved from https://search-proquest-com.ezproxyd.bham.ac.uk/docview/1283642006?accountid=8630	Electronic	Mixed sample (S)
136	Pauwels, L. J. R., Vettenburg, N., Gavray, C., & Brondeel, R. (2011). Societal vulnerability and troublesome youth group involvement: The mediating role of violent values and low self-control. *International Criminal Justice Review, 21*(3), 283-296. doi:http://dx.doi.org.ezproxyd.bham.ac.uk/10.1177/1057567711419899	Electronic	Mixed sample, not personality (S) (PI)
137	Petroff, M. E. (1996). *The dimensions of leadership skills present in adolescent gang leaders* Available from Sociological Abstracts. (61480962; 9615669). Retrieved from https://search-proquest-com.ezproxyd.bham.ac.uk/docview/61480962?accountid=8630	Electronic	Mixed sample (S)
138	Ponce, D. E. (1997). Chapter: Adolescent psychopathology., 206-222. Retrieved from Brunner/Mazel US. https://ovidsp.ovid.com/ovidweb.cgi?T=JS&CSC=Y&NEWS=N&PAGE=fulltext&D=psyc3&AN=1997-08455-011 https://birmingham-primo.hosted.exlibrisgroup.com/openurl/44BIR/44BIR_Services?sid=OVID:psycdb&id=pmid:&id=doi:&issn=&isbn=0-87630-839-6&volume=&issue=&spage=206&pages=206-222&date=1997&title=Culture+and+psychopathology%3A+A+guide+to+clinical+assessment.&atitle=Adolescent+psychopathology.&aulast=Ponce&pid=%3Cauthor%3EPonce%2C+Danilo+E%3C%2Fauthor%3E%3CAN%3E1997-08455-011%3C%2FAN%3E%3CDT%3EChapter%3C%2FDT%3E	Electronic	Not empirical article (R)
139	Projective processes: Gangs, bullying, and racism. (2018). *The learning relationship: Psychoanalytic thinking in education* (pp. 118-129) doi:10.4324/9780429482281 Retrieved from https://www.scopus.com/inward/record.uri?eid=2-s2.0-85051771314&doi=10.4324%2f9780429482281&partnerID=40&md5=faf7b3eaefda3cac1724ff04b133ce01	Electronic	Book chapter – not empirical (R)
140	Pyrooz, D. C. (2008). *Risk factors of gang membership: Results from an analysis of self-reported gang members in the fresno county, california jail* Available from Sociological Abstracts. (60362004; 201024731). Retrieved from https://search-proquest-com.ezproxyd.bham.ac.uk/docview/60362004?accountid=8630	Electronic	Masters thesis (R)
141	Pyrooz, D.C., Melde, C., Coffman, D.L., & Meldrum, R.C. (2021). Selection, stability and spuriousness: Testing Gottfredson and Hirschi's propositions to reinterpret street gangs in self-control perspective. *Criminology.* Retrieved from https://onlinelibrary.wiley.com/doi/10.1111/1745-9125.12268	Electronic	Mixed sample (S)

142	Raby, C., & Jones, F. (2016). Identifying risks for male street gang affiliation: A systematic review and narrative synthesis. *Journal of Forensic Psychiatry & Psychology, 27*(5), 601-644. doi:10.1080/14789949.2016.1195005	Electronic	Not empirical research (R)
143	Rapposelli, T. M. (1997). Family characteristics of hispanic male adolescents involved in youth gangs. *Dissertation Abstracts International: Section B: The Sciences and Engineering, 58*(5-B), 2696. Retrieved from https://ovidsp.ovid.com/ovidweb.cgi?T=JS&CSC=Y&NEWS=N&PAGE=fulltext&D=psyc3&AN=1997-95022-327	Electronic	Not personality (PI)
144	Redner-Vera, E. N. (2012). *An examination of the relationship between gang membership and hopelessness* Available from Sociological Abstracts. (1018343651; 201221303). Retrieved from https://search-proquest-com.ezproxyd.bham.ac.uk/docview/1018343651?accountid=8630	Electronic	Masters theses (R)
145	Rudoff, A. (1971). The incarcerated mexican-american delinquent. *Journal of Criminal Law, Criminology and Police Science, 62*(2), 224-238. Retrieved from https://search-proquest-com.ezproxyd.bham.ac.uk/docview/60908693?accountid=8630	Electronic	Not gangs, intervention study (PI) (E)
146	Salas-Wright, C. P., Olate, R., & Vaughn, M. G. (2013). Assessing empathy in salvadoran high-risk and gang-involved adolescents and young adults: A spanish validation of the basic empathy scale. *International Journal of Offender Therapy and Comparative Criminology, 57*(11), 1393. doi:http://dx.doi.org.ezproxyd.bham.ac.uk/10.1177/0306624X12455170	Electronic	Mixed sample and not English (S)
147	Sandberg, S. (2009). Gangster, victim or both? the interdiscursive construction of sameness and difference in self-presentations. *British Journal of Sociology, 60*(3), 523-542. doi:http://dx.doi.org.ezproxyd.bham.ac.uk/10.1111/j.1468-4446.2009.01254.x	Electronic	Not street gangs (Drug dealers), mixed sample (S)
148	Santman, J., Myner, J., Cappelletty, G. G., & Perlmutter, B. F. (1997). California juvenile gang members: An analysis of case records. *Journal of Gang Research, 5*(1), 45-53. Retrieved from https://search-proquest-com.ezproxyd.bham.ac.uk/docview/61459533?accountid=8630	Electronic	Not personality (PI)
149	Seals, R. A.,Jr, & Stern, L. V. (2013). Cognitive ability and the division of labor in urban ghettos: Evidence from gang activity in U.S. data. *The Journal of Socio-Economics, 44*, 140-149. doi:http://dx.doi.org.ezproxyd.bham.ac.uk/10.1016/j.socec.2012.11.003	Electronic	Mixed sample (S)
150	Shelden, R. G., Snodgrass, T., & Snodgrass, P. (1992). Comparing gang and non-gang offenders: Some tentative findings. *Gang Journal, 1*(1), 73-85. Retrieved from https://search-proquest-com.ezproxyd.bham.ac.uk/docview/61459914?accountid=8630	Electronic	Not personality (criminal records, demographics etc) (PI)
151	Sirpal, S. K. (1997). Causes of gang participation and strategies for prevention in gang members' own words. *Journal of Gang Research, 4*(2), 13-22. Retrieved from https://search-proquest-com.ezproxyd.bham.ac.uk/docview/61469978?accountid=8630	Electronic	Not personality, intervention (PI) (E)
152	Smith, S., Auyong, Z. E. G., & Ferguson, C. (2019). Social learning, social disorganization, and psychological risk factors for criminal gangs in a british youth context. *Deviant Behavior, 40*(6), 722-731. doi:10.1080/01639625.2018.1438059	Electronic	Mixed sample (S)

153	Strodtbeck, F. L., Short, J. F., & KOLEGAR, E. (1962). The analysis of self-descriptions by members of delinquent gangs. *The Sociological Quarterly, 3*(4), 331-356. Retrieved from https://search-proquest-com.ezproxyd.bham.ac.uk/docview/60070452?accountid=8630	Electronic	Not personality Not empirical research (PI) (R)
154	Sutton, J. E., & Sutton, J. E. (2014). A comparison of gang and non-gang involved adult probationers in california's agricultural heartland. *Journal of Gang Research, 22*(1), 25-42. Retrieved from https://search-proquest-com.ezproxyd.bham.ac.uk/docview/1708502584?accountid=8630	Electronic	Mixed sample, not personality (S) (PI)
155	Tamura, M. (1984). A pattern analysis of delinquent gangs: I. on the traits of members' personality. *Reports of the National Research Institute of Police Science, 25*(1), 34-41. Retrieved from https://ovidsp.ovid.com/ovidweb.cgi?T=JS&CSC=Y&NEWS=N&PAGE=fulltext&D=psyc2&AN=1985-25684-001	Electronic	Mixed sample, not street gangs (motorcycle gangs) (S)
156	Taylor, C. S., Lerner, R. M., von Eye, A., Bobek, D. L., Balsano, A. B., Dowling, E. M., & Anderson, P. M. (2004). Internal and external developmental assets among african american male gang members. *Journal of Adolescent Research, 19*(3), 303-322. doi:10.1177/0743558403258842	Electronic	Doesn't measure personality (PI)
157	Taylor, S. S. (2009). How street gangs recruit and socialize members. *Journal of Gang Research, 17*(1), 1-27. Retrieved from https://search-proquest-com.ezproxyd.bham.ac.uk/docview/60324408?accountid=8630	Electronic	Not empirical research – lit review (R)
158	Tiet, Q. Q., & Huizinga, D. (2002). Dimensions of the construct of resilience and adaptation among inner-city youth. *Journal of Adolescent Research, 17*(3), 260-276. doi:10.1177/0743558402173003	Electronic	Mixed sample (S)
159	Tsunokai, G. T. (2005). Beyond the lenses of the "model" minority myth: A descriptive portrait of asian gang members. *Journal of Gang Research, 12*(4), 37-58. Retrieved from https://search-proquest-com.ezproxyd.bham.ac.uk/docview/60542798?accountid=8630	Electronic	Not personality, mixed sample (PI)(S)
160	The Gangs Working Group. (2009). *A policy report by the Gangs Working Group: Dying to Belong: An In-depth Review of Street Gangs in Britain.* The Centre for Social Justice. https://www.centreforsocialjustice.org.uk/wp-content/uploads/2009/02/DyingtoBelongFullReport.pdf	Manual	Not empirical research, not personality (R) (PI)
161	Ureno, S. R. (2003). The constructions of masculinity as expressed through gang involvement in african-american and puerto rican inner-city youth. *Dissertation Abstracts International: Section B: The Sciences and Engineering, 64*(5-B), 2409. Retrieved from https://ovidsp.ovid.com/ovidweb.cgi?T=JS&CSC=Y&NEWS=N&PAGE=fulltext&D=psyc4&AN=2003-95022-077	Electronic	Not personality measured (PI)
162	Van der Westhuizen, M., & Gawulayo, S. (2020). Youth in gangs on the Cape flats: If not in gangs, then what? *Social Work, 57*(8), 118-132. https://dx.doi.org/10.15270/52-2-810	Electronic	Sample not clear , Not measuring personality (S) (PI)
163	Vuk, M. (2017). Parenting styles and gang membership: Mediating factors. *Deviant Behavior, 38*(4), 406-425. doi:10.1080/01639625.2016.1197011	Electronic	Mixed sample, not personality (S)(PI)

164	Wang, Z. (1996). Is the pattern of asian gang affiliation different? A multiple regression analysis. *Journal of Crime and Justice, 19*(1), 113-128. doi:10.1080/0735648X.1996.9721532	Electronic	Mixed sample (S)
165	Watkins, A. M., & Melde, C. (2016). BAD MEDICINE the relationship between gang membership, depression, self-esteem, and suicidal behavior. *Criminal Justice and Behavior, 43*(8), 1107-1126. doi:10.1177/0093854816631797	Electronic	Mixed sample (S)
166	Wilson, K. L. (2008). A comprehensive literature review of rural youth gangs. *Journal of Gang Research, 15*(2), 19-32. Retrieved from https://search-proquest-com.ezproxyd.bham.ac.uk/docview/61662248?accountid=8630	Electronic	Not empirical research (R)
167	Wilson, M. R. F. (1996). *An integrated theoretical framework of juvenile and gang delinquency causation: A structural equation model* Available from Sociological Abstracts. (61521732; 9615676). Retrieved from https://search-proquest-com.ezproxyd.bham.ac.uk/docview/61521732?accountid=8630	Electronic	Not measuring personality (PI)
168	Wood, J. L. (2014). Understanding gang membership: The significance of group processes. *Group Processes & Intergroup Relations, 17*(6), 710-729. doi:10.1177/1368430214550344	Electronic	Not empirical design, paper linking theories (E)
169	Wood, M., Furlong, M. J., Rosenblatt, J. A., Robertson, L. M., Scozzari, F., & Sosna, T. (1997). Understanding the psychosocial characteristics of gang-involved youths in a system of care: Individual, family, and system correlates. *Education and Treatment of Children, 20*(3), 281-294. Retrieved from https://ovidsp.ovid.com/ovidweb.cgi?T=JS&CSC=Y&NEWS=N&PAGE=fulltext&D=psyc3&AN=1997-42678-005	Electronic	Mixed sample (S)
170	Wolff, K., Baglivio, M.T., Klein, H.J., Piquero, A.R., DeLisi, M., & Howell., J.C.B. (2020). Adverse Childhood Experiences (ACEs) and gang involvement among juvenile offenders: Assessing the mediation effects of substance use and temperament deficits. *Youth Violence and Juvenile Justice, 18*(1), 24-53. https://doi.org/10.1177/1541204019854799	Electronic	Mixed sample (S)
171	Wolff, K.T., Baglivio, M.T., Limoncelli, K.E., & Delisi, M. (2020). Do behaviour disorders explain the ng-recidivism relationship during reentry? *Criminal Justice and Behaviour, 47*(7), 867-885. https://doi.org/10.1177/0093854820915631	Electronic	Mixed sample (S)
172	Yoder, K. A., Whitbeck, L. B., & Hoyt, D. R. (2003). Gang involvement and membership among homeless and runaway youth. *Youth & Society, 34*(4), 441-467. doi:10.1177/0044118X03034004003	Electronic	Mixed sample (S)
173	Young, H. T. P. (1933). Character in young delinquents - an approach from the criminal gang aspect. *British Medical Journal, 1933*(2), 390-392. doi:10.1136/bmj.2.3790.390	Electronic	Not empirical research (R)
174	Zhang, L. (2013). Youth gangs in contemporary china. *Journal of Gang Research, 20*(3), 1-18. Retrieved from https://search-proquest-com.ezproxyd.bham.ac.uk/docview/1438549431?accountid=8630	Electronic	Not personality (PI

Quantitative Quality Assessment Checklist

Paper for appraisal		
Type:		
Rating	Yes (2) Partial (1) No (0) Unknown (0) Q* (reverse score)	

	Question	**Rating**		**Comment**
General				
1	Did the study address a clearly focused issue?	Yes		
		Partial		
		No		
		Unknown		
2	Were the aim(s)/objective(s)/research question(s) clear?	Yes		
		Partial		
		No		
		Unknown		
Methods				
3	Did the author use an appropriate method to answer their question?	Yes		
		Partial		
		No		
		Unknown		
4	Was the sample size justified?	Yes		
		Partial		
		No		
		Unknown		
5	Was the target population clearly defined?	Yes		
		Partial		
		No		
		Unknown		
6	Were the participants recruited in an acceptable way?	Yes		
		Partial		
		No		
		Unknown		
7	Were measures undertaken to address and categorise non-responders? (if appropriate)	Yes		
		Partial		
		No		
		Unknown		
8	Was the exposure accurately measured to minimise bias?	Yes		
		Partial		
		No		
		Unknown		
9	Was the outcome accurately measured to minimise bias?	Yes		
		Partial		
		No		
		Unknown		
10		Yes		

	Have the authors identified all important confounding factors?	Partial		
		No		
		Unknown		
11	Have the authors taken into account the confounding factors in the design/analysis?	Yes		
		Partial		
		No		
		Unknown		
12	Is it clear what was used to determine the statistical significance and/or precision estimates? (e.g., p-values, confidence intervals?	Yes		
		Partial		
		No		
		Unknown		
13	Were the methods (including statistical methods) sufficiently described to enable them to be repeated?	Yes		
		Partial		
		No		
		Unknown		

Methods – For case control studies only:

14	Were controls selected in an appropriate way?	Yes		
		Partial		
		No		
		Unknown		
15	Were groups treated equally?	Yes		
		Partial		
		No		
		Unknown		

Methods – For cohort studies only:

16	Was the follow up complete enough?	Yes		
		Partial		
		No		
		Unknown		
17	Was the follow up long enough?	Yes		
		Partial		
		No		
		Unknown		

Results

18	Was the basic data adequately described?	Yes		
		Partial		
		No		
		Unknown		
19	Are the results precise?	Yes		
		Partial		
		No		
		Unknown		
20	Were the resulted presented for all the analyses described in the methods section?	Yes		
		Partial		
		No		
		Unknown		
21	Do you believe the results?	Yes		
		Partial		

		No		
		Unknown		
22	Can the results be applied to the local population?	Yes		
		Partial		
		No		
		Unknown		
23	Do the results of this study fit with other available evidence?	Yes		
		Partial		
		No		
		Unknown		
Discussion				
24	Were the authors discussion/conclusions justified by the results?	Yes		
		Partial		
		No		
		Unknown		
25	Were the limitations discussed?	Yes		
		Partial		
		No		
		Unknown		
26	Were the implications of this research for practice discussed?	Yes		
		Partial		
		No		
		Unknown		
Other				
27	Were there any funding sources of conflicts of interest that may impact the authors interpretation of the results?*	Yes		
		Partial		
		No		
		Unknown		
28	Was ethical approval obtained for the study?	Yes		
		Partial		
		No		
		Unknown		
29	If the research is a doctoral thesis, was it peer reviewed or published, or has it undergone another type of review?	Yes		
		Partial		
		No		
		Unknown		
Total score: (General= /46), (Case control =/50), (Cohort =/50), (Doctoral Thesis = /48) (+2 if question 7 answered)				

Appendix E

Quality Assessment Scores for Quantitative Papers

Table E1

Quality assessment scores: Quantitative papers

Article author	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27*	28	29	Total	Quality
Adams (2004)	Y	Y	Y	P	P	Y	-	Y	Y	Y	P	Y	Y	Y	Y	-	-	Y	Y	Y	P	N	Y	P	Y	Y	N	U	U	41/52	79%
Alleyne, Wood, Mozova & James (2015)	Y	Y	Y	Y	Y	Y	-	Y	Y	P	P	Y	Y	-	-	-	-	Y	Y	Y	Y	N	Y	P	P	P	U	Y	-	37/46	80%
Burch (2013)	Y	Y	Y	Y	Y	P	-	P	Y	Y	N	Y	Y	-	-	-	-	Y	Y	Y	Y	N	Y	Y	Y	Y	U	Y	N	38/48	79%
Cartwright et al. (1980)	Y	Y	Y	P	Y	U	-	P	Y	Y	Y	P	P	P	Y	-	-	P	Y	Y	Y	N	P	Y	N	N	N	U	-	33/50	66%
Chu et al. (2014)	Y	Y	Y	P	Y	P	-	P	Y	Y	Y	N	Y	-	-	-	-	Y	Y	Y	Y	N	Y	Y	Y	Y	N	Y	-	39/46	85%
Coid et al. (2013)	Y	Y	Y	Y	Y	P	-	P	Y	Y	Y	Y	Y	-	-	-	-	Y	Y	Y	Y	Y	Y	Y	Y	Y	N	Y	-	44/46	96%
Craig et al. (2002)	Y	Y	Y	Y	Y	Y	-	Y	Y	N	N	N	Y	-	-	N	N	Y	Y	P	Y	N	P	P	Y	Y	P	U	-	32/50	64%
Densley et al. (2014)	Y	Y	Y	Y	Y	Y	Y	Y	P	Y	Y	Y	Y	-	-	-	-	P	Y	P	Y	N	P	Y	P	P	N	Y	-	40/48	83%
Dmietrieva et al. (2014)	Y	Y	Y	P	Y	Y	U	P	P	Y	Y	P	P	-	-	Y	Y	P	P	Y	Y	P	Y	Y	Y	Y	N	Y	-	41/52	78%
Egan & Beadman (2011)	Y	Y	Y	P	Y	Y	Y	P	Y	Y	Y	Y	P	-	-	-	-	P	Y	P	Y	N	Y	P	Y	Y	U	Y	-	38/48	79%
Friedman et al. (1975)	Y	Y	Y	Y	Y	Y	N	P	P	Y	Y	Y	Y	-	-	-	-	Y	Y	P	P	Y	P	Y	Y	Y	P	U	-	39/48	81%
Kennedy (2013)	Y	Y	Y	Y	Y	Y	Y	P	Y	Y	N	N	Y	-	-	-	-	P	Y	P	Y	N	N	Y	Y	N	N	Y	-	35/50	70%
King (1963)	Y	Y	Y	Y	Y	Y	-	Y	Y	P	P	Y	Y	-	-	-	-	Y	Y	Y	Y	N	Y	Y	Y	Y	U	Y	N	42/48	88%
Mallion & Wood (2018)	Y	Y	Y	P	Y	Y	-	Y	Y	Y	Y	Y	Y	-	-	-	-	Y	Y	Y	Y	N	P	Y	Y	Y	N	Y	-	42/46	91%

Study	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	Score	%
Niebieszczanski et al. (2015)	Y	P	Y	P	Y	Y	Y	Y	Y	Y	Y	P	P	-	-	-	-	Y	Y	Y	Y	N	N	Y	Y	Y	U	Y	-	38/48	79%
Tapia et al. (2009)	Y	Y	Y	P	Y	Y	-	P	Y	Y	P	Y	P	-	-	-	-	Y	P	Y	Y	N	Y	Y	Y	Y	U	U	-	35/46	76%
Thornton et al. (2015)	Y	P	Y	P	Y	Y	-	P	Y	Y	Y	P	Y	-	-	-	-	Y	Y	Y	Y	N	P	Y	Y	N	U	Y	-	35/46	76%
Valdez et al. (2000)	Y	Y	Y	P	Y	P	Y	P	Y	Y	Y	P	P	Y	Y	-	-	Y	Y	Y	Y	N	Y	Y	N	P	Y	U	-	38/52	73%
Wang (1994)	Y	Y	Y	P	Y	P	-	P	Y	Y	P	Y	P	-	-	-	-	P	P	Y	Y	N	Y	Y	N	N	U	U	-	29/46	63%
Wood & Dennard (2017)	Y	Y	Y	P	Y	Y	-	Y	Y	P	P	Y	Y	-	-	-	-	Y	Y	Y	Y	N	Y	Y	Y	Y	U	Y	-	39/46	85%

Note: 1: Did the study address a clearly focused issue? 2: Were the aim(s)/objective(s)/research question(s) clear? 3: Did the author use an appropriate method to answer their question? 4: Was the sample size justified? 5: Was the target population clearly defined? 6: Were the participants recruited in an acceptable way? 7: Were measures undertaken to address and categorise non-responders? (if appropriate) 8: Was the exposure accurately measured to minimise bias? 9: Was the outcome accurately measured to minimise bias? 10: Have the authors identified all important confounding factors? 11: Have the authors taken into account the confounding factors in the design/analysis? 12: Is it clear what was used to determine the statistical significance and/or precision estimates? (e.g., p-values, confidence intervals? 13: Were the methods (including statistical methods) sufficiently described to enable them to be repeated? 14: If case control study, were controls selected in an appropriate way? 15: If case control study, were groups treated equally? 16: If cohort study, was the follow up complete enough? 17: If cohort study, was the follow up long enough? 18: Was the basic data adequately described? 19: Are the results precise? 20: Were the resulted presented for all the analyses described in the methods section? 21: Do you believe the results? 22: Can the results be applied to the local population? 23: Do the results of this study fit with other available evidence? 24: Were the authors discussion/conclusions justified by the results? 25: Were the limitations discussed? 26: Were the implications of this research for practice discussed? 27: Were there any funding sources of conflicts of interest that may impact the authors interpretation of the results?* 28: Was ethical approval obtained for the study? 29: If the research is a doctoral thesis, was it peer reviewed or published, or has it undergone another type of review?

Y= Yes (2), P= Partial (1), N= No (0), U = Unknown (0), '-'= not applicable (not included in total)
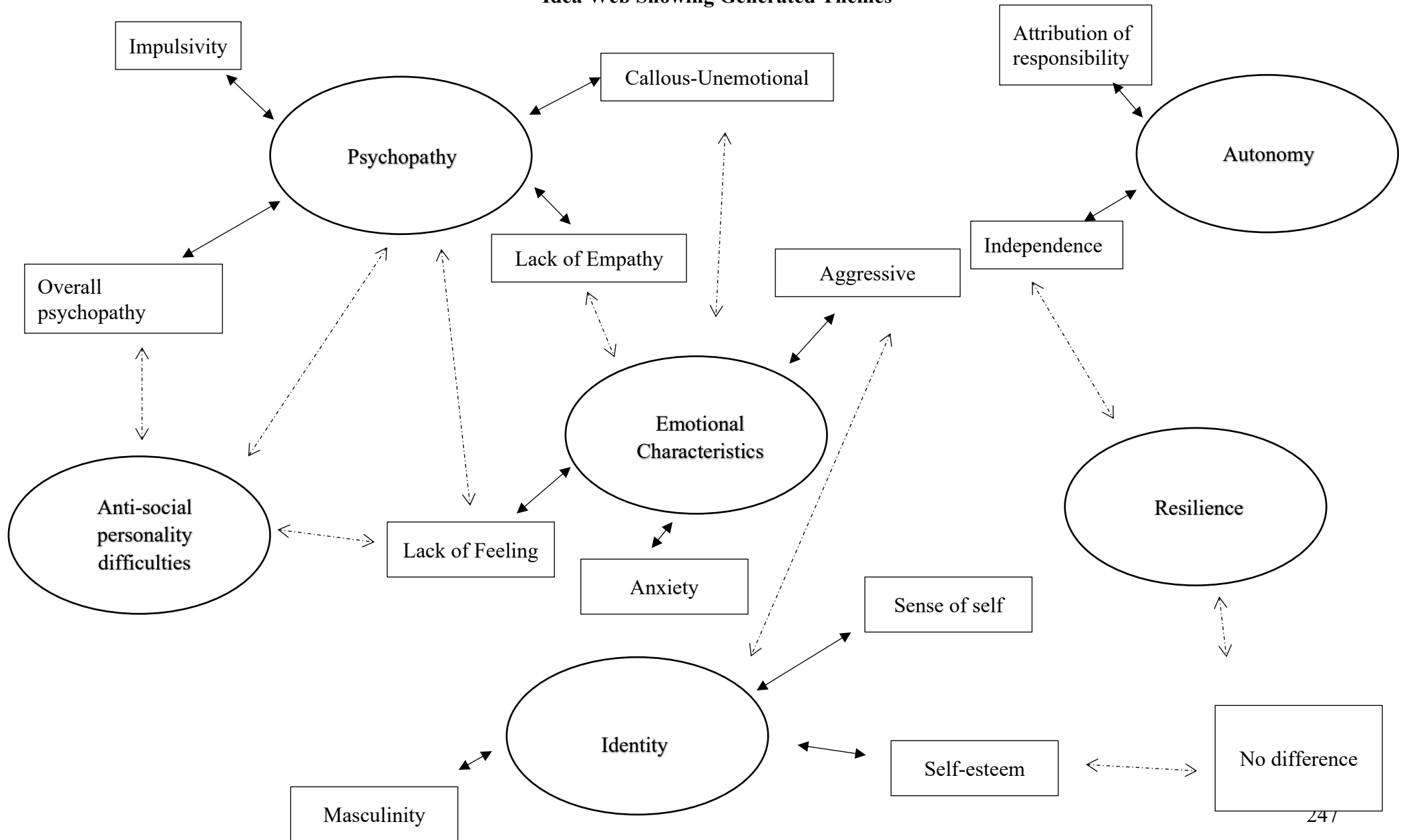
*Reverse scored
Maximum score: General = 46, Case Control = 50, Cohort = 50, Doctoral thesis = 48 (if question 7 answered +2)

Appendix F

Data Extraction Form

Data extraction		
1) Study Information:		
Paper title:		
Author(s)		
Year published		
Article type (e.g., journal, doctoral thesis etc.)		
Country research completed		
2) Study Characteristics:		
Quantitative ☐		Qualitative ☐
Study design (e.g., cross sectional etc)		
Study aims		
Study factors	How was personality defined and measured?	Defined:
		Measures used:
		Reliability and Validity:
	How was gang status defined and measured?	Defined:
		Measures used:
		Reliability and Validity:
Location/setting:		
3) Participant characteristics:		
Gang status (e.g., current, former etc)		
Age information		
Ethnicity breakdown		
Sample size		

Recruitment method	
Comparison group information	

4) Study results (only those relevant to the review question noted):		
Analysis used		
Findings	Quantitative studies - Findings and significance: (Personality factors identified? Differences between groups? Any other factors?)	
	Qualitative studies – Themes and key concepts: (Personality factors identified? Differences between groups? Any other factors?)	
5) Conclusion/Summary:		
6) Strengths and Limitations		
7) Quality assessment score:		
Quantitative	/?	
Qualitative	/?	
8) Any other important/relevant information:		

Appendix G
Idea Web Showing Generated Themes

Impulsivity

Callous-Unemotional

Attribution of responsibility

Psychopathy

Autonomy

Lack of Empathy

Independence

Overall psychopathy

Aggressive

Emotional Characteristics

Anti-social personality difficulties

Lack of Feeling

Resilience

Anxiety

Sense of self

Identity

Self-esteem

No difference

Masculinity

<u>Research Participant Information Sheet</u>

Comparing resilience in gang- involved individuals and non-involved individuals in a custodial environment

You are being invited to take part in a research study. The information below will explain the aim of the research and what taking part in this study would involve. We would be grateful if you could take a few minutes to read this information sheet to help you decide whether you would like to take part in this project. If you would find it helpful to have this information read to you by the researcher then please feel free to ask them. If you have any more questions about this research feel free to ask the researcher. If you think of these at a later date, then please ask to speak to Katie Minnett (gangs project team).

What is the purpose of the study?

This project is looking at the link between resilience (the ability to bounce back after tough times) and gang-involvement in people currently in prison. Therefore, it is going to measure resilience in people currently in custody, and then compare individuals who are engaging with the Gang Support Service to those who are not.

What will I do if I take part?

If you are happy to take part in this study, you will be asked to consent to take part in the research. After this you will be asked to complete a questionnaire with two parts. The first part is about you (including questions such as your age and ethnicity), and the second part is a measure of resilience. This will take approximately 5 minutes.

Do I have to take part?

Participation in this study is completely voluntary. If you do not wish to complete the questionnaire, there will be no negative consequences for you. If after reading this information you do not wish to take part, then please inform the researcher.

What if I want to withdraw?

You can stop participating at any point whilst filling out the questionnaire by informing the researcher. As data will be anonymised, there is a participant number on this form. If you fill out the questionnaire but later decide you don't want your data to be included in the study then you can withdraw your data any time before 01/01/2020 (as this is when data analysis will begin). To do this, let the researcher know by asking them to remove your data and telling them your participant number. There won't be any negative consequences and you don't have to give a reason.

What are the benefits of taking part?

There will be no direct benefits to you for taking part. However, the data has the potential to help tailor support for individuals in custody, and will help to increase understanding of the concept of resilience.

What are the possible disadvantages and risks of taking part?

If you find any of the questions upsetting and wish to talk to someone then please tell a member of staff. Your responses will be kept confidential at all times. The only time something you say will not be treated as confidential would be if you were to say something that indicated that you or other people are at risk of harm or something that threatens the security of the prison.

Will all the information I give be anonymous?

All data will be anonymised. Your name, the establishment and any other identifiers will not be revealed in reporting on the project. Only the researcher will have access to your participant number. All data (consent forms and questionnaires) will be kept in a locked cabinet within the prison, and all data will be analysed on a secure computer. No other individuals (members of staff or prisoners) will be informed that you have taken part in the research. This is in line with the Data Protection Act 2018.

What will happen to the results of the study?

The data will be analysed and written up in a report which will be seen by the University of Birmingham. The write-up might also be reported in a further publication. As mentioned, no personal information (name, establishment etc…) will be put in the report.

Who is organising the research?

The research is being organised by Dr Zoe Stephenson, and Katie Minnett.

What if I have questions?

If you have any questions regarding the research then please ask the researcher. If you think of these at a later date, then please contact your Offender Supervisor in the OMU who can forward these to the researcher, or contact Katie Minnett in the Gang Support Service.

Participant Number - _____

Participant Consent Form

Study title – 'Comparing resilience in gang- involved individuals and non-involved individuals in a custodial environment'

Please **initial** each box if you agree with the following statements:

☐	I have read the information sheet, and have understood the information I have been given. I have been given the opportunity to ask further questions regarding my participation in this study.
☐	I understand that I can withdraw from the study up until 01/01/2020 without having to explain my reasons. I have taken note of my participant number.
☐	I understand that the decision to withdraw from the study will have no negative consequences for me, will not affect my sentence plan, or have an impact on my participation in programmes.
☐	I understand that my name, prison number, prison or any information by which I could be identified will not be reported in this study or any publications.
☐	I understand and agree that information on my demographics will be taken for data analysis, but these details will remain anonymous when being recorded.
☐	I wish to participate in this study under the conditions explained in the information sheet.

Signed _____

Initials _____

Date _____

<u>Questionnaire</u>

Comparing resilience in gang- involved individuals and non-involved individuals in a custodial environment

Participant Number:

<u>Part 1 – Demographic Information</u>

What age group are you in?

18-21 ☐

22-25 ☐

26-30 ☐

31-35 ☐

36+

What is your ethnicity?

White:

English/ Welsh/ Scottish/ Northern Irish/ ☐ British ☐ Irish ☐ Other

Mixed:

White and Black Caribbean ☐ White and Black African ☐ White and Asian ☐ Other

Asian/ Asian British:

Indian ☐ Pakistani ☐ Bangladeshi ☐ Chinese ☐ Other

Black/ Black British:

African ☐ Caribbean ☐ Any other ☐

Other:

<u>Part 2 – Resilience Systems Scale</u>

Please rate the following items from strongly disagree (1) to strongly agree (5) by ticking one box per statement:

Statement	Strongly Disagree (1)	Disagree (2)	Neither (3)	Agree (4)	Strongly Agree (5)
I recover from difficult situations with ease					
I always give all I can, regardless of what may happen					
I like it when life changes					
I recover from a stressful time quickly					
I remain strong-willed, no matter what problems occur					
I like coping with unpredictable situations					
I quickly get back to my normal self following problems in my life					
Even when there are problems, I am able to function to achieve my goals					
Uncertain situations interest me					
I easily get back to my normal self after tough experiences					
No matter what happens, I find ways to get things done					

I enjoy it when there are changes to my routine					

Participant Debrief Form

Thank you for taking part in the study. Your involvement in the study has been very helpful.

The aim of this study is to examine the relationship between difference types of resilience and gang involvement in individuals currently in custody.

If you feel that you need any support as a result of this study then you have the following services available to you:

- Gangs Project Team
- Samaritans: 116 123

If you have any questions or concerns about the study, please contact your Offender Supervisor in the OMU who can forward these to the researcher, or contact Katie Minnett in the Gang Support Service.

Again, thank you for your time and co-operation.

Appendix L

Normality Testing; Skewness and Kurtosis Scores Converted to Z-Scores and Histograms

Table L1

Skewness and Kurtosis Scores for the Sub-Scales on the Resilient Systems Scale

Sub-scale of Resilience	Skewness (Z-score)	Kurtosis (Z-score)
Engineering	-2.40	-0.34
Ecological	-4.67	-3.34
Adaptive Capacity	0.57	-4.14

Figure L1

Histogram showing distribution of data for Engineering Resilience sub-scale score on the Resilient Systems Scale
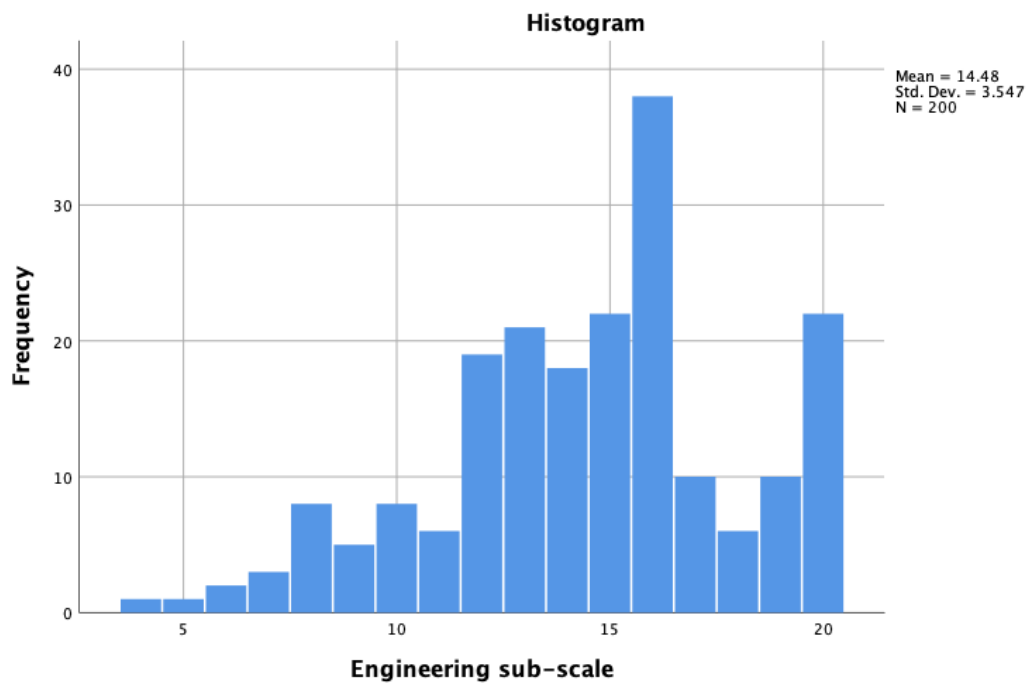
Figure L2

Histogram showing distribution of data for Ecological Resilience sub-scale score on the Resilient Systems Scale
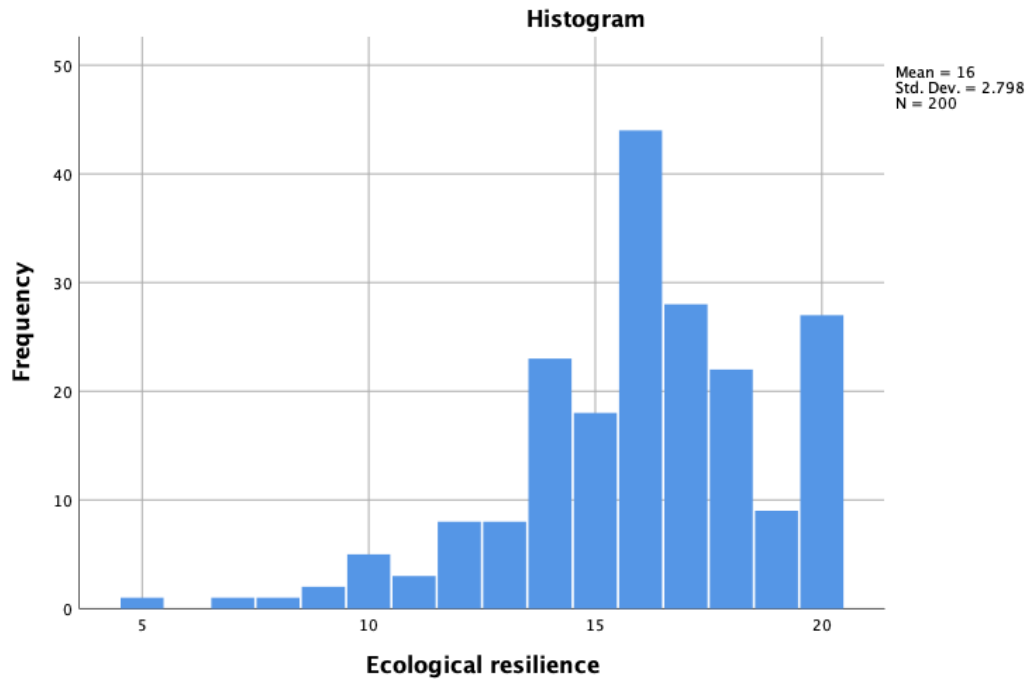
Figure L3

Histogram showing distribution of data for Adaptive Capacity sub-scale score on the

Resilient Systems Scale
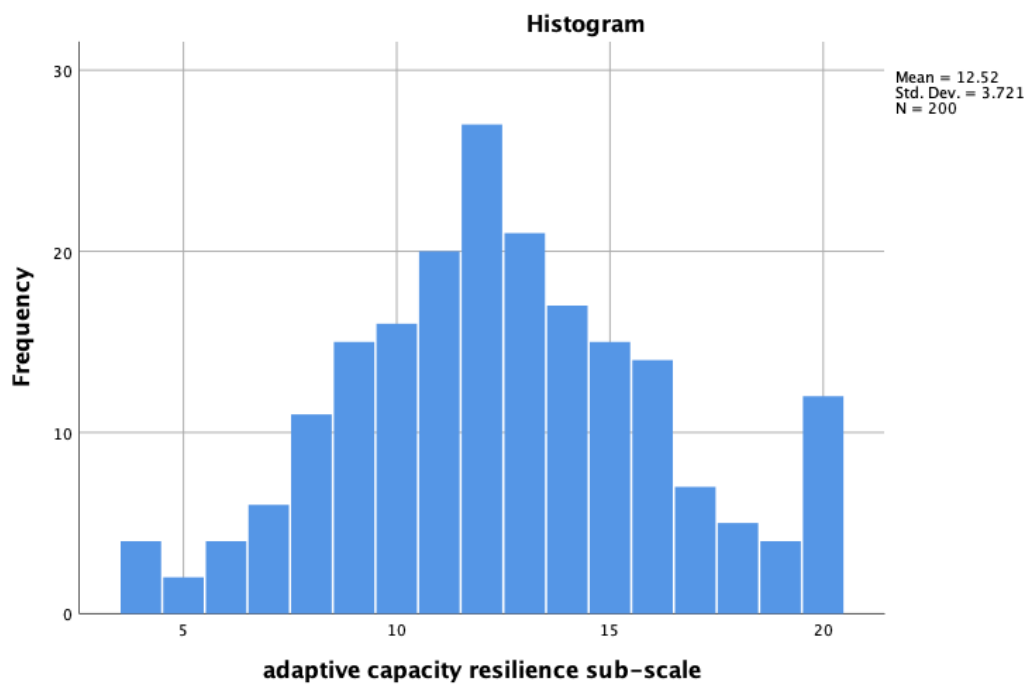
Appendix M

Univariate Outlier Testing: Boxplots

Figure M1

Boxplot for Engineering Resilience Sub-Scale
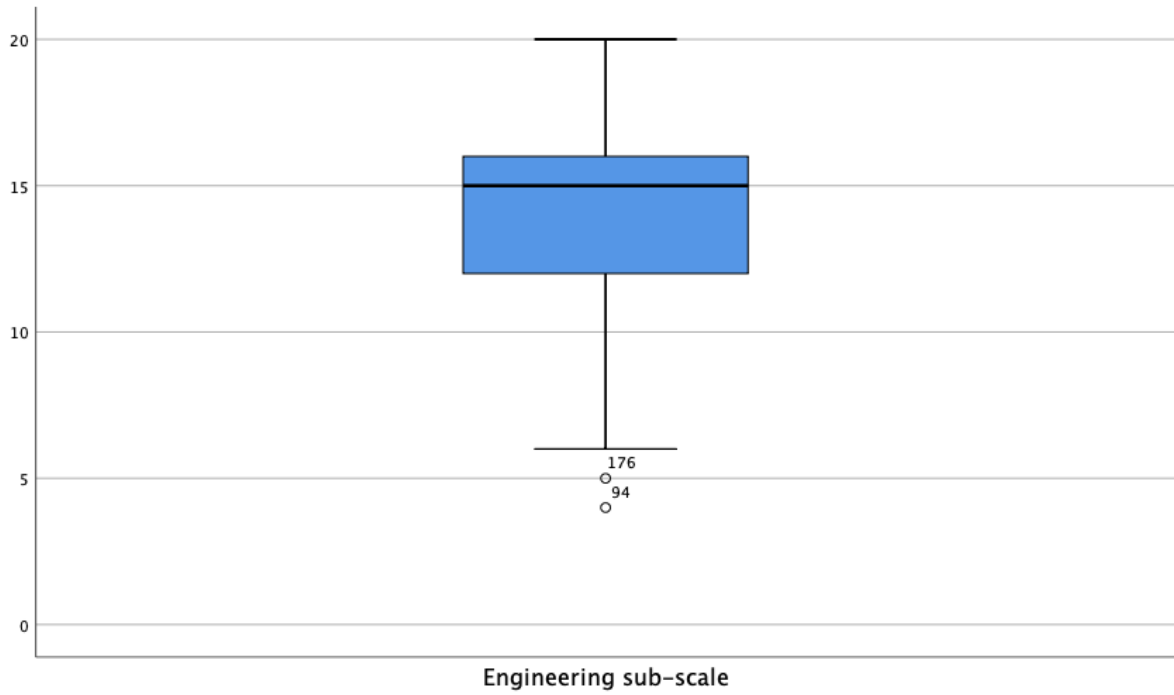
Figure M2

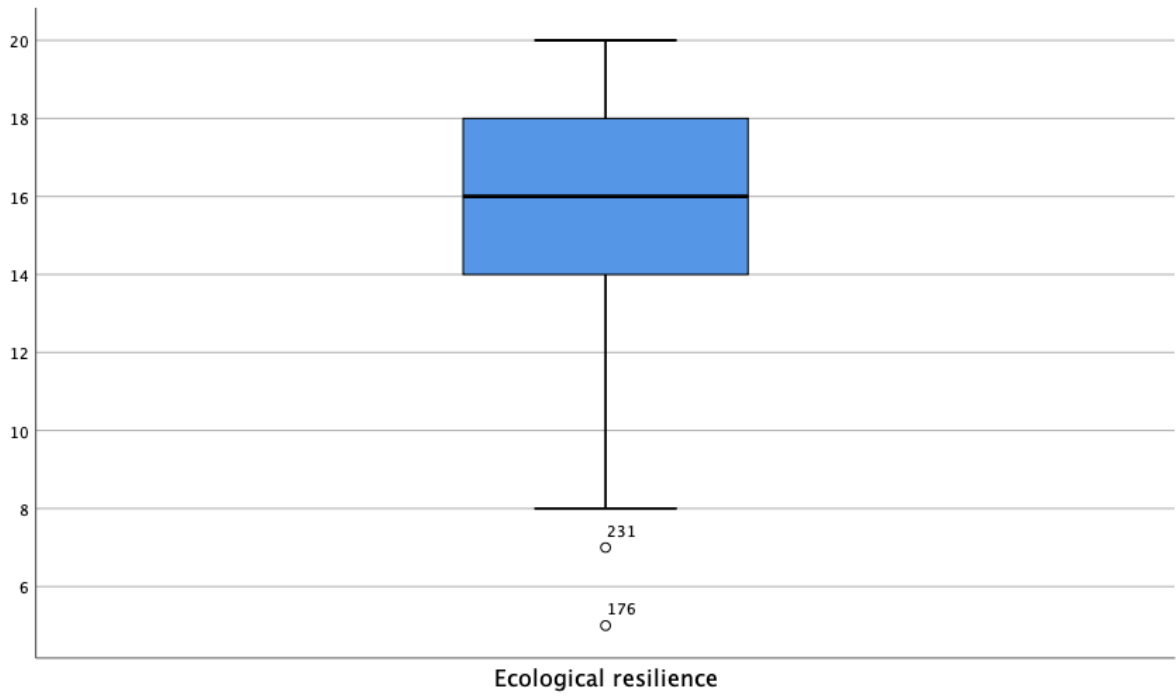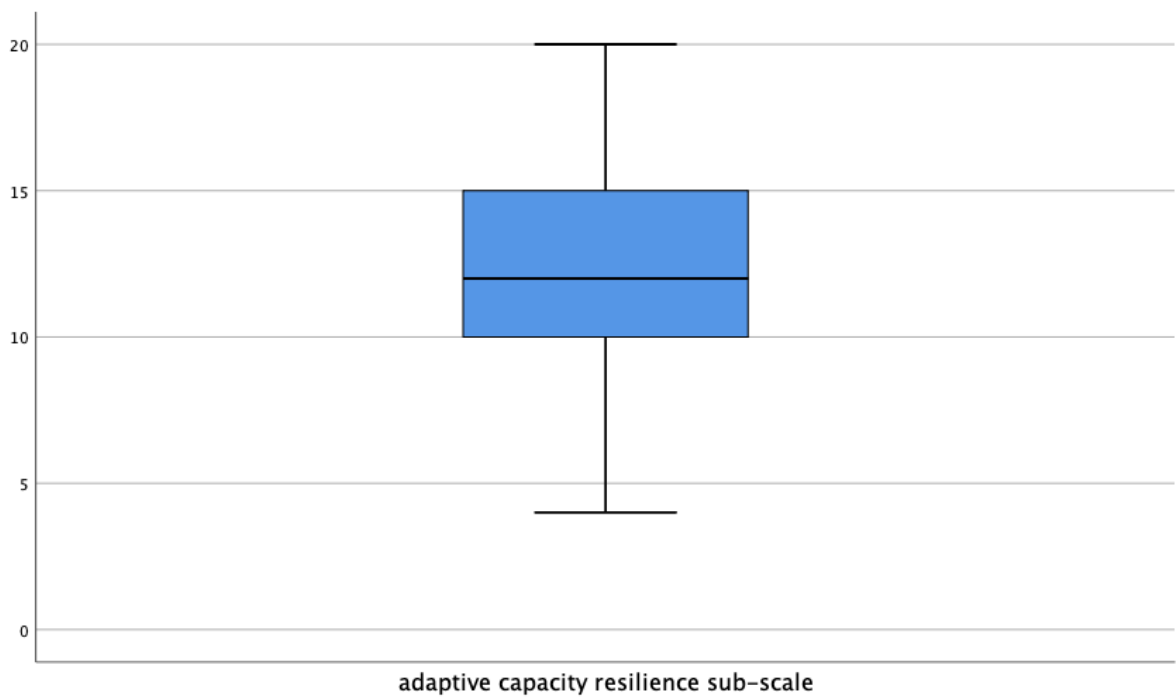*Boxplot for Ecological Resilience Sub-Scale*

Figure M3

Boxplot for Adaptive Capacity Sub-Scale

Appendix N

Linearity Testing: Scatterplot Matrix

Figure N1

Scatterplot Matrix for the Sub-Scales of the Resilience System Scale

Scatterplot Matrix Engineering sub-scale, Ecological resilience, adaptive capacity resilience sub-scale
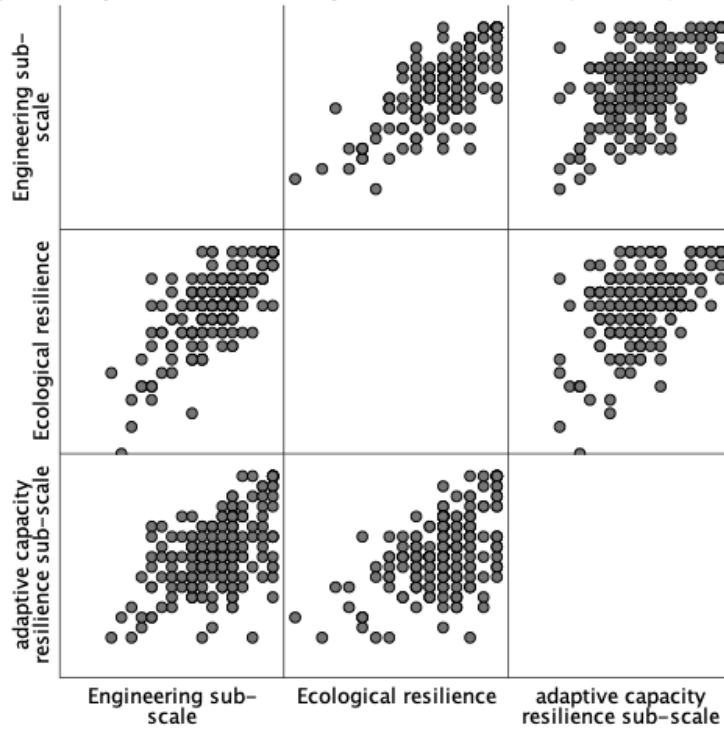
Appendix O

Histograms Showing Distribution of Data for the Three Sub-Scales on the Resilient

Systems Scale

Figure O1

Histogram showing distribution of data for Engineering Resilience sub-scale score on the
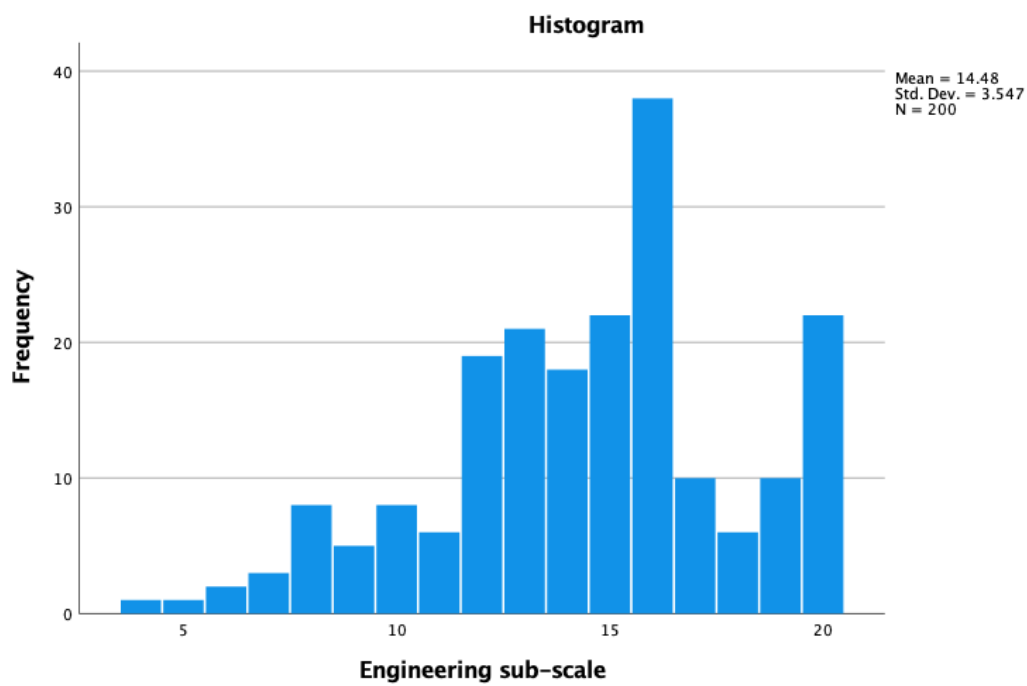
Resilient Systems Scale

Figure O2

Histogram showing distribution of data for Ecological Resilience sub-scale score on the
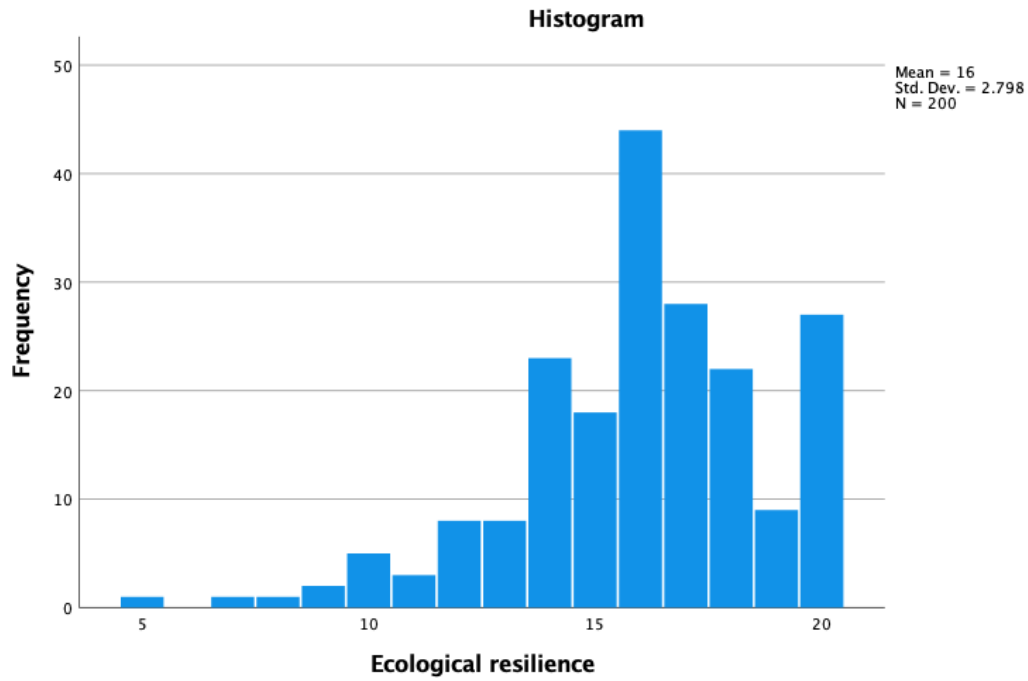
Resilient Systems Scale

Figure O3

Histogram showing distribution of data for Adaptive Capacity sub-scale score on the

Resilient Systems Scale