

Emotional processes and gang membership: A narrative review

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Word Count: 4678 (main body)

Declarations of interest: none.

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Abstract

With implementation of governmental strategies aimed at reducing gang involvement, academic interest in gang membership has rapidly increased. However, there is a dearth of knowledge relating to emotional processes of gang members (Wood & Alleyne, 2010). This review synthesizes existing literature surrounding possible risk factors for gang membership including, empathy, Antisocial Personality Disorder (ASPD), Psychopathy, Callous-Unemotional (CU) traits, Oppositional Defiant Disorder (ODD), and Emotional Intelligence (EI). Due to the limited evidence-base, additional literature surrounding violent offending and group relations are used to provide a comprehensive account of emotional processes of gang members. It is concluded that high levels of ASPD traits and low levels of empathy and EI are potential risk factors for gang membership. However, contradictory research findings, prevent conclusions regarding the influence of psychopathy, ODD and CU-traits on gang membership. Overall, this review provides support for utilizing emotion-focused strategies in gang intervention programs and recommends that future research focuses on assessing the developmental trajectory of emotional processes throughout the cycle of gang membership (joining, maintaining and exiting).

Keywords: Gang, emotions, emotional intelligence, empathy, psychopathy, callous-unemotional, oppositional defiant disorder

Highlights

- Low emotional intelligence and empathy are risk factors for gang membership.
- High antisocial personality disorder increases risk of joining a gang.
- Inconsistent findings about effect of psychopathy, oppositional defiant disorder and callousness on joining gangs.
- Review supports implementation of emotion-focused components in gang interventions.

Emotional processes and gang membership: A narrative review

A report released by the Children's Commissioner (2017) suggests an estimated 46,053 children, aged 10-18 years, are currently involved in gangs across the United Kingdom (UK). As such, recognition of gangs as a major social problem is increasing (Mayor of London Office for Policing and Crime, 2014). To date, 52 areas throughout the UK have been identified as having issues with gangs (HM Government, 2016); demonstrating the immediate need for gang prevention and intervention programs (HM Government, 2011). Despite this, psychological understanding of gang membership is currently limited (Wood & Alleyne, 2010). In particular, research is scarce surrounding emotional processes involved in gang membership. As such, the aim of this paper is to review the existing literature on emotional processes of gang members.

Borrowing from the general offending literature, a growing body of research indicates the importance of emotional and affective states in influencing offending behavior (Howells, Day, & Wright, 2004; Robertson, Daffern, & Bucks, 2015). Specifically, emotional processes guide moral reasoning (Dhingra, Debowska, Sharratt, Hyland, & Kola-Palmer, 2015), aid decision making (Modecki, Zimmer-Gembeck, & Guerra, 2017) and support behavioral regulation (Coffman, Melde, & Esbensen, 2015); whilst deficits in emotional competence have been causally related to offending behavior (e.g., Day, 2009; Ward & Nee, 2009). Despite increased recognition of the influence of emotional processes on offending behavior, Ward (2017) suggests emotional processes have often been neglected in the offending literature and the literature regarding gang membership is no exception.

Wood and Alleyne (2010) developed a preliminary framework for a unified theory of gang membership. This model aimed to assimilate research from criminological, sociological and psychological fields, to provide a comprehensive account of why individuals may join gangs. The model illustrates how an individual's experiences and characteristics interact to

make them vulnerable to joining a gang. However, in its preliminary stages, Wood and Alleyne's (2010) theory neglects to illustrate the influence of emotional processes (with the exception of psychopathy) which may increase risk of joining a gang. Therefore, this review is necessary to further develop Wood and Alleyne's (2010) unified theory of gang membership. Critically, Ward (2017) emphasised that there has been an increasing recognition of the influence that emotional processes can have on other risk factors of offending behaviour (i.e., social and cognitive factors). Thus, it is necessary to examine the interaction between emotional processes and other risk factors of gang membership.

As such, this will be the first review to: (1) amalgamate and evaluate relevant literature relating to emotional processes involved in gang membership; (2) discuss the relationship between emotional processes and social and cognitive risk factors of gang membership; (3) highlight and suggest recommendations to fill gaps in the literature; and (4) provide recommendations for incorporating emotional processes into gang intervention strategies. Furthermore, this review will consider the relationship between emotional processes and gender on gang membership. Although gangs have been thought to consist primarily of males, the role of female members is increasingly being recognised (Centre for Social Justice, 2014). Yet, as males and females are socialised differently surrounding their emotional processes from a young age (Sánchez-Núñez, Fernández-Berrocal, Montañés, & Latorre, 2008), it is critical to understand whether emotional risk factors for gang membership differ according to gender. Similarly, the relationship between emotional processes and age will be considered throughout this review; individuals tend to join gangs during adolescence, with adult membership tending to 'carryover' from youth membership (Pyrooz, 2014).

Throughout this review, in accordance with the Eurogang classification, a gang will be defined as "*any durable, street-oriented youth group whose identity includes involvement*

in illegal activity” (Weerman et al., 2009, p.20). To be classified as a *full gang member*, the following Eurogang criteria must be satisfied: a group that (1) has three or more people, (2) lasts more than three months, (3) frequents public places without adult supervision, (4) majority of members are aged 12-25 years, (5) accepts, and engages in, illegal activity, and (6) self-nominates as gang member (Matsuda, Esbensen, & Carson, 2012). To further enable distinctions across levels of gang involvement, the following classifications are also used; *peripheral gang*, undertakes gang-related activities, but does not self-identify as a gang member; *non-gang*, does not engage in gang-related behaviors (Alleyne & Wood, 2010).

Method

To review the literature regarding emotional processes involved in gang membership, the following search terms were entered into PsychInfo and Web of Science: “gang” AND “psychopathy OR antisocial personality OR empathy OR conduct disorder OR oppositional defiant disorder OR callous unemotional traits OR emotional intelligence”. Search terms were identified through various sources, including past systematic reviews (Beresford & Wood, 2017; García-Sancho, Salguero, & Fernández-Berrocal, 2014; Raby & Jones, 2016) and the *Diagnostic and Statistical Manual of Mental Disorders* (5th ed.; DSM-5; American Psychiatric Association [APA], 2013), with predictive risk factors being the main focus. Searches were conducted between July 2017 and August 2018. Only articles written in English were included.

Key Findings

1. Antisocial Personality Disorder

The DSM-5 (American Psychological Association, 2013) distinguishes between clusters of personality disorders through emotional processes expressed. Classified as a Cluster B personality disorder, individuals with Antisocial Personality Disorder (ASPD) express erratic and high intensity emotions (APA, 2013). ASPD traits are associated with

poor decision making and reduced ability to learn from punishment cues (De Brito, Viding, Kumari, Blackwood, & Hodgins, 2013) and this could explain why high ASPD traits contributes to violent behavior (Howard, 2015).

With violent behavior central to gang membership (Klein & Maxson, 2006), it is unsurprising that ASPD traits is a predictive factor for gang membership (Raby & Jones, 2016). Although research assessing ASPD traits in gang members is limited, a cross-sectional study of 4,664 men (aged 18-34) across the UK, found ASPD traits to be more prevalent amongst gang members than non-gang individuals (Coid et al., 2013). Specifically, Coid et al. (2013) found levels of ASPD traits to be 57.39 times higher in gang members than non-violent men and 6.49 times higher in gang than non-gang violent men. Expanding upon this, Wood et al. (2017), found ASPD traits to be highest in gang members, followed by gang affiliates, then non-gang violent men. Similarly, Mallion and Wood (2018) found ASPD traits to be higher in street gang than non-gang incarcerated male adults ($M_{\text{age}} = 27.03$ years). Yet, as past research has found older (>18 years) and younger (<18 years) gangs to be distinct in terms of persistence and prevalence (Watkins & Moule, 2014), these findings are limited in their generalisability, as only older gang members were assessed.

Critically, to receive a diagnosis of ASPD, individuals must be at least 18 years of age (APA, 2013) and since gangs tend to form throughout adolescence, diagnosing ASPD happens too late in the developmental trajectory to predict gang membership (Rizzo, 2003). Rather, the precursor to ASPD, conduct disorder (characterized by continuous emotional and behavioral problems throughout childhood and adolescence), may better predict involvement in gangs (Osho, Joseph, Scott, & Adams, 2016). Supporting this, a six-year longitudinal study of 11-15 year old males found baseline conduct disorder traits were associated with increased risk of joining a gang (Lahey, Gordon, Loeber, Stouthamer-Loeber, & Farrington, 1999). Demonstrating this is not gender specific, the Centre for Mental Health (2013) reported that

adolescent females associated with gangs were three times more likely to have early signs of conduct disorder, than non-gang females. Yet, conduct disorder in females is less noticeable than in males as it is concealed by depressive symptomology rather than the more violent outbursts associated with males' symptoms (Inserm Collective Experts, 2005). As such, identifying conduct disorder in female gang members may be more challenging, resulting in difficulty providing them with targeted treatments.

The developmental trajectory from conduct disorder to ASPD could be influenced by engagement in gangs (Taylor, 2013). Specifically, experiencing crime-related victimization and physical trauma is associated with development of ASPD (Gobin, Reddy, Zlotnick, & Johnson, 2015). Due to traumatic experiences, through victimization or perpetration, gang involvement may increase risk of developing ASPD traits (Beresford & Wood, 2017; Wood & Dennard, 2017), with diagnoses of Posttraumatic Stress Disorder common amongst gang members (Kerig, Chaplo, Bennett, & Modrowski, 2016). Therefore, conduct disorder may increase the likelihood of joining a gang, whilst traumatic experiences within the gang may lead to development of ASPD. However, to establish the developmental trajectory of conduct disorder and ASPD across gang involvement, longitudinal research is required.

Often co-diagnosed with conduct disorder, Oppositional Defiant Disorder (ODD) is a known precursor to ASPD (Burke, Waldman, & Lahey, 2010). ODD is recognised as a disorder of emotion regulation (Cavanagh, Quinn, Duncan, Graham, & Balbuena, 2017) and is characterised by irritability, hostile and vindictive behaviour (American Psychological Association, 2013). As ODD can be diagnosed throughout childhood, this can be considered a better predictive factor of gang membership than ASPD. Taylor (2013) interviewed five adult male gang members; a clear developmental trajectory was noted in all gang members, with self-reported, retrospective symptoms progressing from ODD to conduct disorder,

finally to ASPD. As such, ODD and conduct disorder may be better predictive risk factors of gang membership than ASPD.

Supporting this, a retrospective study of youth offenders (82.3% male) found both self-reported gang members and gang affiliates (reported at least one friendship with a gang member) had higher rates of ODD diagnosis than non-members (Harris et al., 2013).

However, a longitudinal study of British children (50.6% male) found ODD traits measured at seven years of age was not predictive of adolescent gang involvement (Smith, Gomez Auyong, & Ferguson, 2018). Furthermore, amongst adolescent females, ODD traits increased risk of engaging in criminal activity, but not gang membership (Gomez Auyong, Smith, & Ferguson, 2018).

2. Psychopathy

An area of contention amongst researchers surrounds the distinction between ASPD and psychopathy (Coid & Ullrich, 2010). Psychopathy is characterized by emotional deficits, including a lack of empathic responding, impulsive and unemotional behaviors (Ogloff, Campbell, & Shepherd, 2016). Supporting the view that psychopathy represents a sub-factor of ASPD (Ogloff, 2006), a number of emotional processing deficits have been related to both ASPD and psychopathy (Rogstad & Rogers, 2008); including deficits in emotion recognition (Dolan & Fullam, 2006) and impaired perspective taking (Newbury-Helps, Feigenbaum, & Fonagy, 2017). Despite this, there is increasing recognition of psychopathy as an independent disorder, distinct from ASPD (Shepherd, Campbell, & Ogloff, 2016). For instance, 50-80% of offenders fulfil criteria for ASPD, whilst only 15% score high enough on the Psychopathy Checklist Revised (PCLR) to be classified as psychopathic (Hare, 2003). Therefore, if psychopathy is associated with gang membership, this may be a risk factor better able to differentiate between gang and non-gang offenders than ASPD.

In addition, assessment instruments have been specifically designed to measure psychopathic traits in adolescents aged 12-18 years (i.e., Psychopathy Checklist: Youth Version; Forth, Kosson, & Hare, 2003), meaning clinicians are able to identify psychopathic traits at the age at which gangs tend to form. Therefore, it can be suggested that psychopathy may be a better risk factor for gang membership than ASPD, due to the age structure of most gangs. Yet, findings tend to contradict a direct relationship between psychopathic traits and gang membership. For instance, a questionnaire-based study of 1,027 Singaporean adolescents (58.2% male), utilizing self-reporting methodology, found psychopathic traits were unrelated to gang membership (Ang, Huan, Chan, Cheong, & Leaw, 2015). Similarly, Chu, Daffern, Thomas, Ang, and Long (2013) found no difference in psychopathic traits when comparing male gang and non-gang affiliated youth offenders. Chu et al. (2013) argue that this is because achieving the common goals of the group (even if criminally-inclined), would be difficult if members are grandiose and show a callous-disregard toward each other.

Critically, social factors, which were not controlled for in either Ang et al.'s (2015) or Chu et al.'s (2013) research, may influence the effect of psychopathy on gang involvement. For instance, a subset of adolescents' (both male and female) data from the Canadian National Longitudinal Survey of Children and Youth (NLSCY) was selected to assess the interaction between disadvantaged neighborhoods and psychopathic traits on gang involvement (Dupéré, Lacourse, Willms, Vitaro, & Tremblay, 2007). Findings suggest, adolescents with psychopathic traits were most susceptible to joining a gang if they lived in unstable neighborhoods (high levels of population turnover, renting and single-parent households). However, living in areas of economic deprivation (low household income) did not moderate the relationship between psychopathy and gang membership.

Furthermore, neither Ang et al.'s (2015) or Chu et al.'s (2013) studies took into account gang members' position in the gang. However, a seven-year longitudinal study of

young male offenders, which did consider position in the gang, shows how psychopathic traits increase according to length of gang involvement; with gang leaders expressing the most psychopathic and grandiose-manipulative traits (Dmitrieva, Gibson, Steinberg, Piquero, & Fagan, 2014). Development of psychopathic traits may enable gang members to utilize strategies that facilitate deviant behavior. For example, possessing psychopathic traits has been linked to high levels of moral disengagement (Dhingra et al., 2015); a cognitive process utilized by gang members to justify offending and violent behavior (Alleyne & Wood, 2010; Niebieszczanski, Harkins, Judson, Smith, & Dixon, 2015). However, without further longitudinal research, a causal relationship assessing development of psychopathic traits and moral disengagement in gang members cannot be established.

3. Callous-Unemotional Traits

Although a component of psychopathy, callous-unemotional (CU) traits are increasingly researched as one independent construct (Frick & Ray, 2014). Individuals with high CU traits express less empathy, guilt and remorse (Frick, Ray, Thornton, & Kahn, 2014) and poor emotion recognition and impaired eye contact contribute to such traits (Dadds et al., 2013). High CU traits increase risk of severe antisocial behavior throughout childhood and into adolescence (Frick & White, 2008). Critically, when controlling for established risk factors of offending behavior (i.e., age, ethnicity, offence history, educational level and employment status), individuals with high CU traits are found to commit a greater number of offences, typically more severe in nature, than those with low CU traits (Kahn, Byrd, & Pardini, 2013).

Possessing high CU traits increases engagement with delinquent peers (Ray et al., 2017) and risk of group offending (Goldweber, Dmitrieva, Cauffman, Piquero, & Steinberg, 2011). As such, it is reasonable to expect that high CU traits would be associated with gang membership. Yet, assessing the YPI subscale of CU traits, Chu et al. (2013) found no

difference between male gang and non-gang youth offenders in levels of CU traits, just as they found with levels of psychopathy. Arguably, this may result from the low internal consistency of the YPI subscales (.60-.65); suggesting the YPI requires amendment to include more items (Andershed, Hodgins, & Tengström, 2007). Thus, further research is needed to examine the relationship between CU traits and gang membership using well-established scales (e.g., Inventory of Callous-Unemotional Traits; Frick, 2004; Kimonis et al., 2008). Nonetheless, as noted above, Chu et al. (2013) suggest that high CU traits would reduce individual members' ability to cooperate within the gang and since cooperation and reciprocity between members is necessary for a successful gang (Kissner & Pyrooz, 2009), this might explain why Chu et al. (2013) found no difference in CU traits between gang and non-gang offenders. Supporting this, Mallion and Wood (2018) found no difference in CU-traits between street gang and non-gang incarcerated adult male offenders.

Yet, Thornton et al.'s (2015) examination of CU traits in 1,216 male adolescent offenders (aged 13-17), shows that CU traits positively relate to gang involvement. In particular, high CU traits contribute to becoming a group leader and planning group offences, which is consistent with past research finding high CU traits enable individuals to manipulate and influence others' antisocial behavior (Kerr, Van Zalk, & Stattin, 2012; Salekin, Worley, & Grimes, 2010). Yet, high CU traits are associated with elevated levels of narcissism (Barry, Frick, Adler, & Grafeman, 2007). As such, those with high CU traits are more likely to self-report gang membership and overestimate their role and level of importance within the gang, than those with low CU traits, who may be less likely to respond in a socially desirable manner (Goldweber et al., 2011). Both Chu et al. (2013) and Thornton et al. (2015) utilized self-reporting methodology in their research. However, as self-reported gang membership was confirmed in Chu et al.'s (2013) study using gang intelligence records, and Thornton et al.'s (2015) contradictory findings were not, reporting biases may have influenced the latter's

findings. With research conducted to date being both limited and contradictory, further research is necessary.

To the best of the researcher's knowledge, no research to date has distinguished between primary and secondary CU traits in relation to gang membership. Primary and secondary CU traits result from distinct etiological pathways; primary CU traits result from a genetic deficit in emotion processing, whilst secondary CU traits (associated with emotional detachment) occur due to social/environmental influences (e.g., trauma, parental maltreatment; Dadds, Kimonis, Schollar-Root, Moul, & Hawes, 2018). As gang members are more likely to be exposed to traumatic events and report higher symptoms of emotional numbing than non-gang youths (Kerig et al., 2016), it can be suggested that they would be particularly vulnerable to developing secondary CU traits as a result of their membership. Alternatively, a genetic deficit in emotion processing (associated with primary CU traits), may result in difficulty empathizing with others (Sethi, O'Nions, McCrory, Bird, & Viding, 2018); increasing risk of joining a gang. However, without further longitudinal research, it is not possible to establish whether primary CU traits may predispose an individual to joining a gang, or whether an individual will express secondary CU traits as a result of experiences within the gang.

4. Empathy

Defined as the ability to identify with another's emotional state (Dadds et al., 2009), empathy is often considered to be at the opposite end of the spectrum to CU traits (Zych, Ttofi, & Farrington, 2016). However, the ability to take the perspective of others, which is necessary to empathize, mediates the negative correlation relationship between empathy and CU traits (Lui, Barry, & Sacco, 2016). A lack of empathy is often exhibited by individuals high in psychopathic traits (Valdez, Kaplan, & Codina, 2000) and is also typical of gang members (Olate, Salas-Wright, & Vaughn, 2012; Salas-Wright, Olate, & Vaughn, 2012). In

particular, because of their low empathy, gang members are more likely to behave violently, because a lack of empathy reduces their inhibition (Feshbach, 1975).

Longitudinal research supports a causal relationship between gang membership and low empathy. Specifically, Wu and Pyrooz (2015) assessed gang membership and empathy in 2,353 students (< 16 years, 44.5% male) at three time points throughout one year. As gang membership tends to be brief in nature (Pyrooz, 2014), this study was able to assess empathy in gang members, before, during and post-membership. Findings show that those low in empathy were at risk of joining a gang and that their empathy declined further during gang membership, but it was not clear if empathy levels increased following gang membership. Arguably, violent behavior, typically exhibited by gang members, may negatively impact upon level of empathy (Jolliffe & Farrington, 2004). Despite this, Lenzi et al. (2014), found initial high levels of empathy reduces likelihood of joining a gang, amongst adolescents (46.6% male) with deviant peers. Thus, empathy both influences, and is influenced by, engagement with gangs.

Contradicting this, using longitudinal data gained from the national evaluation of the Gang Resistance Education and Training (G.R.E.A.T) program, levels of empathy were not found to change when adolescents move from a delinquent group to a gang (Carson, Wiley, & Esbensen, 2017). However, to be classified as a delinquent group, Carson et al. (2017) required participants to undertake illegal activities together, but not self-identify as a gang member; which is consistent with the Eurogang definition of peripheral gang youth (Weerman et al., 2009). As such, the lack of difference in empathy may simply show a lack of distinction between peripheral gang youth and full gang members' empathy. Yet, in James' (2015) qualitative analysis of interviews with 20 male incarcerated gang members, which also used Eurogang criteria to classify youth, gang members reported lower levels of empathy than their peripheral gang counterparts. Critically, research to date is limited to an

assessment of global empathy in relation to gang membership and this may explain the differences in findings. As such, future research should consider the relationship between gang membership and distinct components of empathy; i.e., affective (experiencing others' emotions) and cognitive (understanding others' emotions) empathy (Winter, Spengler, Bermpohl, Singer, & Kanske, 2017).

5. Emotional Intelligence

Emotional intelligence relates to the idea that individuals are able to think about emotions and use emotions to aid reasoning (Mayer, Roberts, & Barsade, 2008). Mayer and Salovey (1997) propose that emotional intelligence (EI) is a combination of four abilities: (1) emotion perception, (2) emotional understanding/recognition, (3) using emotions to influence behavior, and (4) emotion management/regulation. EI is an incrementally valid predictor of psychological adjustment, more so than established predictors, such as self-esteem, personality disorders and intellectual ability (Resurrección, Salguero, & Ruiz-Aranda, 2014). Since poor psychological adjustment increases adolescents' risk of entering gangs (Hitchcock, 2001), it seems plausible that those with low EI will be more likely to join gangs.

Furthermore, EI has been related to all the emotional processes discussed above; it has negative associations with psychopathy, CU-traits and ASPD (e.g., Ciucci, Baroncelli, Golmaryami, & Frick, 2015; Kahn, Ermer, Salovey, & Kiehl, 2016; Petrides, Vernon, Schermer, & Veselka, 2011) and positive associations with empathy (Petrides & Furnham, 2001). This suggests that low levels of EI may predict gang membership. Supporting this concept, findings show that low levels of EI robustly link to a number of social, behavioral and cognitive risk factors of gang membership (e.g., sensation seeking, bullying and peer pressure; Bacon, Burak, & Rann, 2014; Kokkinos & Kipritsi, 2012).

Petrides (2011) differentiates between two distinct constructs of EI, trait and ability. Trait emotional intelligence (TEI) is a personality construct characterized by emotional self-

perceptions, and measured through self-reports (Petrides, Pita, & Kokkinaki, 2007). Comparatively, ability emotional intelligence (AEI) is an individual's ability to process, identify, express and utilize emotional information, gained from perceiving one's own and others' emotions (Mayer, Caruso, & Salovey, 1999), and is measured using maximum performance tasks. Although research surrounding EI and gang membership is sparse, drawing on the general offending literature it seems feasible that low levels of EI may predict gang membership.

5.1 Ability Emotional Intelligence. Curci, Cabras, Lanciano, Soleti and Raccis (2016) assessed level of AEI and psychopathy in relation to adult male offending behavior. In their research, Curci et al. (2016) used the Italian version of the Mayer–Salovey–Caruso Emotional Intelligence Test (MSCEIT v2.0; Curci & D'Amico, 2011), allowing measurement of two branches of the EI model. Findings suggest high scores on the experiential subscale of AEI (representing ability to perceive and utilize emotional information to influence behavior) predict offending behavior. Comparatively, scores on the strategic subscale (representing ability to understand and regulate self and others' emotions) were not associated with offending behavior. This contradicts research supporting a deficit in offenders' general emotion recognition ability (Hubble, Bowen, Moore, & van Goozen, 2015). Furthermore, using a matched pairs design, Sharma, Prakesh, Sengar, Chaudhury, and Singh (2015) found male adult offenders possess lower levels of AEI than non-offending controls; particularly regarding their management of emotions. As such, Curci et al.'s (2016) findings may have been limited by their small sample size (29 male prisoners). Yet, of note, Curci et al. (2016) did find that overall level of AEI was as important a predictor of offending behavior as psychopathy.

Arguably, this suggests that all offenders, and not gang members in particular, have low levels of AEI. Supporting this, Hayes and O'Reilly (2013) found that although Irish male

adolescent offenders' had lower levels of AEI than non-offenders; their levels of AEI were similar to those of non-offending psychiatric patients. This suggests that low levels of AEI link to mental health problems as well as to offending behavior. With research consistently identifying that gang members are at increased risk of mental health issues (Coid et al., 2013; Wood & Dennard 2017; Wood, Kallis, & Coid, 2017), this may suggest that they are also likely to have lower levels of AEI than non-gang offenders.

Typically, gang members exhibit more aggressive behavior compared to non-gang offenders (Vasquez, Lickel, & Hennigan, 2010). As aggression has been robustly associated with low levels of AEI (García-Sancho et al., 2014), this supports the proposition that levels of AEI will differentiate between gang and non-gang offenders. In particular, an 18-month longitudinal study of 151 adolescents (50.3% male) shows how low levels of AEI predict physical, but not verbal, aggression (García-Sancho, Salguero, & Fernández-Berrocal, 2017) and this is consistent with gang members' heightened engagement in physical aggression (Barker, Tremblay, Nagin, Vitaro, & Lacourse, 2006). Remarkably, low levels of AEI have been found to be an incrementally valid predictor of aggression, beyond even established personality traits (e.g., low agreeableness and high neuroticism; García-Sancho, Dhont, Salguero, & Fernández-Berrocal, 2017).

Despite this, a number of issues have been highlighted regarding the conceptualization of AEI. First, research has failed to adequately distinguish between the construct of AEI, personality traits and general intelligence (Schulte, Ree, & Carretta, 2004). Furthermore, the use of consensus or expert scoring for AEI measures is controversial (e.g., Ortony, Revelle, & Zinbarg, 2007); in comparison to standardized measures of intelligence, AEI measures do not have defined correct responses (Austin, 2010). Such scoring methods lead to skewed distribution in test scores; meaning AEI measures fail to differentiate amongst individuals scoring average-high AEI (Fiori et al., 2014). As such, application of these

measures to assess the predictive validity of AEI on gang membership, without development to overcome these issues, remains questionable.

5.2 Trait Emotional Intelligence. Although open to the effects of social desirability, the self-report methodology used to assess TEI overcomes the issues with AEI; enabling differentiation in TEI across the spectrum of individuals (Petrides, 2011). Using this, Megreya (2015) found levels of TEI to be lower in adult male Egyptian offenders, than their non-offending counterparts. Notably, level of TEI differed according to the severity of the crime. That is, offenders with murder convictions had lowest levels of TEI, whilst those with theft convictions had the highest levels of TEI.

This appears to be consistent with the developmental theory of aggression (Björkqvist, Österman, & Kaukiainen, 2000), where direct aggression (i.e., violence against others) requires less social/emotional intelligence than indirect aggression (i.e., non-physical/verbal aggression). Björkqvist et al. (2000) suggest that indirect aggression requires higher levels of social/emotional intelligence to psychologically manipulate others. As gang members typically engage in direct aggression (Vasquez, Osman, & Wood, 2012), this supports the proposition that they will also have lower levels of TEI. Despite this, Megreya (2015) used the Bar-On Emotional Quotient Inventory (EQ-i) to assess TEI; this measure lacks evidence of discriminant validity, showing considerable overlap with measures of trait anxiety and Big Five personality dimensions (Conte, 2005). As such, it is questionable whether TEI contributes to offending behavior, beyond these established predictors.

Yet, even when an alternative and valid measure (Trait Emotional Intelligence Questionnaire Adolescent Form; TEIQue-AF) has been used to assess levels of TEI in relation to juvenile offending, Megreya's (2015) findings have been supported. For example, male juvenile offenders had lower levels of TEI than non-offending individuals (Milojević, Dimitrijević, Marjanović, & Dimitrijević, 2016) as well as lower scores on the emotionality,

well-being and self-control subscales of the TEIQue-AF. This suggests that male juvenile offenders have difficulty understanding and expressing emotions, hold negative perceptions about their self and future, and have difficulty managing emotions, impulses and stresses. Critically, male juvenile offenders did not differ from non-offenders on the sociability subscale; demonstrating ability to interact with, and influence others' emotions. This would be a necessity for an effective gang to form and exist, and the above findings suggest that even if they are low in TEI, gang members may still successfully interact with peers; albeit in a maladaptive manner.

Furthering this, Megreya's (2013) assessment of criminal thinking styles in relation to TEI shows that general and reactive criminal thinking styles (i.e., impulsive and volatile) negatively correlate with TEI. As being impulsive and volatile is associated with gang membership (e.g., Dmitrieva et al., 2014), it can be suggested that low TEI may underlie these risk factors for joining a gang. Similarly, five of Walters' (2002) criminal thinking styles are also linked to low levels of TEI: (1) *mollification* (utilizing external justification strategies), (2) *power orientation* (need to aggressively control others), (3) *cut-off* (using offending behavior to reduce negative emotions, including fear and anxiety), (4) *cognitive indolence* (acceptance of plans without critical assessment), and (5) *discontinuity* (inability to fulfil good intentions). Although Walters' (2002) criminal thinking styles have not been directly assessed in relation to gang membership, they are similar to other cognitive factors that have been measured. For instance, mollification is consistent with the conceptualization of moral disengagement (Walters & Magaletta, 2015), which, as noted above, is a strategy used by gang members to justify offending and violent behavior (Alleyne & Wood, 2010). As such, these findings intuitively suggest that low levels of TEI may underlie criminal thinking styles of gang members.

Although research examining TEI in gang members is rare, Mallion and Wood (2018) found, when controlling for ASPD, angry rumination, aggression, CU-traits and social desirability, low levels of TEI was a good predictors of adult male prisoners' involvement in street gangs prior to incarceration. Critically, levels of TEI remained an important predictor of street gang membership even when angry rumination was controlled for, this is despite past research suggesting anger rumination mediates the relationship between levels of EI and aggression (García-Sancho, Salguero, & Fernández-Berrocal, 2016). This supports the proposal that low levels of TEI is a risk factor for gang membership. However, this is one study undertaken in one UK prison and so the generalizability of its findings is limited. Therefore, further research is necessary to fully understand the relationship between TEI and gang membership.

6. Clinical Implications

With implementation of the Government's 'Ending Gang and Youth Violence' strategy, increasing emphasis is being placed on early prevention and intervention strategies to reduce gang involvement (HM Government, 2011). This has coincided with increased attention on the "what works" movement in offender rehabilitation (McGuire, 2013). As such, the number of UK gang intervention programs has grown rapidly, with 33 evaluated programs implemented in 2015 (O'Connor & Waddell, 2015). A synthesis study of 11 London-based interventions indicates such programs can be *cautiously* concluded as effective in reducing gang involvement (McMahon, 2013). However, McMahon (2013) highlights sparsity in the evidence-base reduces the ability to understand cause and effect relationships between interventions and the outcome of decreased involvement in gangs.

This review adds to the limited evidence-base, supporting the need to focus on emotional processes in gang intervention programs. For instance, EI interventions aim to improve five key emotional competencies; identifying, understanding, expressing, managing

and using emotions, through a mixture of group discussions and interactive activities (Nelis, Quoidbach, Mikolajczak, & Hansenne, 2009). Such interventions are known to increase academic and career attainment, well-being and interpersonal relationships in young adults (Nelis et al., 2011). In relation to violence, adolescents randomly assigned to a two-year EI intervention, showed reduced anger and aggression, and increased empathy, compared to the control group (Castillo, Salguero, Fernández-Berrocal, & Balluerka, 2013). As such, future research should assess the applicability and effectiveness of an EI intervention for gang members.

However, benefits of such programs are more noticeable in males than females (Castillo et al., 2013). This can be explained by differences in males' and females' existing levels of EI, prior to intervention (Garaigordobil & Peña-Sarrionandia, 2015). That is, socialization processes encourage females to express and understand their own and others' emotions, which makes them more adept at recognizing emotional indicators than males who are socialized to avoid and suppress emotions (Sánchez-Núñez et al., 2008). Despite, recognition of the number of females engaged in gangs increasing (Centre for Social Justice, 2014), research examining the emotional processes of female gang members is even more limited than that of males, meaning more research is needed. Specifically, future research should assess the differences in emotional processes between male and female gang members to enable interventions to be developed and appropriately targeted.

Despite the sparsity in evidence-base, both gang prevention and early intervention programs frequently target the development of socio-emotional skills (O'Connor & Waddell, 2015). For instance, the revised version of the US schools-based Gang Resistance, Education and Training (G.R.E.A.T; Esbensen et al., 2011) program includes emotion-focused components; aiming to improve empathy and emotion recognition. A multi-site analysis of the G.R.E.A.T program noted how at one-year follow up there was a 39% reduction in the

chances of program attendees joining a gang, compared to controls (Esbensen, Peterson, Taylor, & Osgood, 2012). In the UK, social and emotion-based programs, aiming to help the development of skills such as empathy, emotional wellbeing, self-control and social conduct, are typically implemented in schools (Public Health England, 2015). However, evaluations of these programs, particularly longitudinal studies such as those conducted in the US, are limited and this leaves us knowing little about the effectiveness of social and emotion-based gang prevention programs in UK schools.

7. Conclusion

This review highlights the relationship between gang membership and emotional processes; a previously neglected area of research. The research that is available seems to suggest that emotions characterize many of the factors that link strongly to gang membership (e.g. ASPD, low empathy and low EI). However, contradictory research findings regarding the role of psychopathy, ODD and CU traits in gang membership, prevent conclusions from being drawn and more research is vital.

To inform the development of effective intervention programs, the evidence-base requires further development, particularly regarding the emotional processes of female gang members. Longitudinal research is also vital to identify the developmental trajectory of emotional processes throughout the course of joining, maintaining and exiting gang membership, so that we can target preventative and intervention strategies where and when needed. Until these steps are taken we cannot understand whether emotional processes discussed above, cause or result from gang involvement, but from this review, it seems clear that emotions play a pivotal role in gang membership.

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