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University College Cork, Ireland

Alexithymia and Trauma in the Prison Population

Study 1: Alexithymia in The Prison Population, A Scoping Review.

Study 2: Locked Away: Exploring Alexithymia and Trauma among Irish Prisoners

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Thesis submitted in partial fulfilment of the requirements for the degree of Doctor of Clinical
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Supervisors: Dr Christian Ryan and Dr Kim Keating

April 2025

Declaration:

This is to certify that the work I am submitting is my own and has not been submitted for another degree, either at University College Cork or elsewhere. All external references and sources are clearly acknowledged and identified within the contents. I have read and understood the regulations of University College Cork concerning plagiarism.

A handwritten signature in black ink, appearing to read "John DeBucá", is written over a light gray rectangular background.

Acknowledgments

I would like to sincerely thank my supervisors, Christian Ryan and Kim Keating for their invaluable support and guidance throughout this project. Your expertise and encouragement were deeply appreciated.

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To my class of 2025, thanks for all the laughs, there's no one else I would rather have shared this journey with.

Finally, I dedicate this to the loving memory of my courageous cousin, Josh

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Outline of Chapters

Chapter One: Introduction

This chapter provides an overview of alexithymia, exploring its associations with traumatic experiences and examining the prevalence and impact of trauma within prison populations.

Chapter Two: Scoping Review

This chapter presents ‘Alexithymia in the Prison Population, A Scoping Review’. The review is written in the format of a journal article for ‘*Psychology, Crime and Law*’.

Chapter Three: Measures of Alexithymia

This chapter examines the various methods used to assess alexithymia, including both subjective self-report tools and more objective, observer-rated measures.

Chapter Four: Major Research Project

In this chapter, the empirical paper explores alexithymia and trauma within an Irish Prison Population sample. The paper is written in the format of a journal article for ‘*Psychology, Crime and Law*’.

Chapter Five: Discussion and Conclusion

The findings of the scoping review and the major research project are summarized in this chapter, as well as the limitations, clinical implications, and original contributions.

Appendices

Appendices pertaining to the scoping review and major research project are presented in this section.

Chapter One: Introduction

Alexithymia

The term alexithymia was first coined by the psychiatrist Peter Emanuel Sifenos (1973) and translated literally means ‘no words for emotions’. Sifenos (1973) coined this term to describe patients experiencing psychosomatic illnesses when he discovered that they had a number of different symptoms in common. Namely, Sifenos found that these patients appeared to have a difficulty in identifying their feelings, difficulty in describing their feelings and struggled to differentiate between emotional states and physical sensations of arousal. Moreover, he found that these patients exhibited limited imaginal capacity, as evidenced by a scarcity of fantasies and a thinking style predominantly focused on external events, along with a notable avoidance of inner experiences (Sifenos, 1973). This seminal work by Sifenos (1973) lay the foundation for the for the development of alexithymia as a psychological construct, shaping subsequent research into its characteristics, underlying mechanisms, and clinical implications.

Five decades on, research on alexithymia has expanded significantly, exploring its associations with mental health disorders and its impact on emotional regulation and overall well-being. Today, alexithymia is recognised as a multidimensional trait with at least three components which are difficulty identifying one’s own feelings, difficulty describing one’s own feelings and an externally orientated thinking style (Preece et al., 2017; Taylor et al., 1999). Alexithymia is said to be normally distributed within the general population with a prevalence rate of about 10% in western general populations (Franz et al., 2008; Salminen et al., 1999). Higher rates of alexithymia have been reported in psychiatric samples when compared to those in the community. Müller et al. (2003) for example reported alexithymia rates of 17.7% among psychiatric samples in comparison to 6.3% among the community sample used. Alexithymia has been implicated in a number of different psychiatric disorders such as somatoform disorders (Karvonen et al., 2005), eating disorders (Bourke et al., 1992;

Carano et al., 2006), depression (Son et al., 2012), anxiety (Frewen et al., 2008), addictive disorders (Coriale et al., 2012) and obsessive-compulsive disorders (Grabe et al., 2006). Higher levels of alexithymia have also been reported among prison samples (Chen et al., 2017; Zimmerman, 2006). These findings carry significant implications for clinical psychology, particularly as the core features of alexithymia – difficulties with emotional awareness and expression – can pose challenges in engaging with traditional talk therapies, which form a central component of many psychological interventions.

Alexithymia is sometimes referred to in the literature as primary and secondary alexithymia. Freyberger (1977) describes ‘primary alexithymia’ as a personality trait which is thought to occur as a result of neurobiological factors such as childhood injury or a genetic predisposition. Recent research for example, has suggested that genetic polymorphisms in the serotonin transporter-linked promoter region (specifically, the presence of L/L alleles) may influence the development of alexithymia (Kano et al., 2012). As primary alexithymia is thought to occur in one’s early years it is thought of as being developmental in nature and seen as more of a stable personality trait. Secondary alexithymia on the other hand, is thought to occur as a result of psychological trauma or a life threatening state (Freyberger, 1977). It is said to be formed not during development but rather as a consequence of events such as the onset of a medical illness or traumatic experiences in childhood or adulthood (Messina et al., 2014). Freyberger (1977) writes that if the onset of a physical illness for example causes a lot of stress, alexithymia is seen as a defence mechanism which occurs in order to cope with such stress in the individual. In other words, alexithymia secondary to a psychologically significant event can be understood as a defence mechanism/form of protection against highly emotionally stressful events. This view converges with research which found higher levels of alexithymia among holocaust survivors (Yehuda et al., 1977) and sexual assault victims (Zeitlin et al., 1993). Messina et al. (2014) argue however that it can be difficult at times to

fully distinguish between the types of alexithymia and as a result it may be more accurate to view them as endpoints on a spectrum rather than distinct categories.

Trauma and alexithymia

From a developmental perspective there are a number of ways in which a person may struggle with their ability to identify their own emotions and emotions in the other. Traumatic experiences in infancy or one's early years may have a lasting impact on how an individual understands their own emotions and how they learn to interpret emotions in the other (Schore & Schore, 2008). Schore and Schore (2008) highlight the importance of the attachment relationship in the development of emotional regulation, reporting that it is in this attachment bond that the dyadic regulation of emotion occurs – the primary caregiver co-regulates their infants developing central (CNS) and autonomic (ANS) nervous systems. Empirical evidence supports the idea that these early attachment relationships can shape later emotional functioning. Berlin & Cassidy (2003) conducted a longitudinal study on 76 mother-infant dyads over the period from infancy to preschool age and found that mothers self-reported control over their preschool aged children's emotional expressiveness was significantly associated with the attachment classifications observed in infancy. Maternal strategies were predictive of children's subsequent emotion regulation behaviours, including reduced emotional sharing and increased suppression during emotionally stressful tasks. This suggests that caregiver's emotional attunement and responsiveness in infancy not only supports attachment formation but also plays a critical role in shaping the child's developing capacity of emotional expression and regulation. It is important to note that this study was constrained by its small sample and the fact that the participants were all from a white, educated, middle class sample, limiting generalisability. A large scale metaanalysis conducted by Fearon et al. (2010) further supports this idea. The authors analysed data from nearly 6,000 children and found a moderate effect size ($d = 0.31$) linking attachment insecurity to externalising

behaviours such as aggression and behavioural dysregulation. Notably, disorganised attachment emerged as the strongest predictor of such outcome ($d=0.34$), underscoring the developmental importance of early caregiver-child emotional attunement and regulatory support. Together, these studies underscore the foundational role of early caregiver attunement in emotional regulation capabilities.

Cassidy and Berlin (1994) further elaborate that attachment patterns shape emotion socialisation strategies. The authors describe how individuals with an avoidant attachment style whose emotional expressions were dismissed by caregivers, may go on to develop tendencies to suppress or minimise their own emotions. On the other hand, those with an anxious attachment style who had inconsistent responses to their emotional needs may develop tendencies to exaggerate or maximise their emotions. Schimmenti and Caretti (2018, p.128) write that both of these insecure attachment strategies are relevant to the understanding of alexithymia as the ability to identify, represent, describe and feel emotions as well as using them to guide behaviour may be limited for opposite reasons in people with avoidant or anxious attachment.

To date a number of studies have looked at the link between adult attachment style and alexithymia. Montebanocci and colleagues (2004) looked at the link between adult attachment behaviour and alexithymia using the Toronto Alexithymia Scale (TAS-20) and the Attachment Style Questionnaire (ASQ) in a sample of 301 university students. The authors found moderate positive correlations between alexithymia scores and attachment issues such as discomfort with closeness, viewing relationships as secondary and a heightened need for external approval, alongside a negative moderate correlation with confidence in relationships. Notably stronger correlations emerged for difficulty identifying feelings and difficulty describing feelings subscales of the TAS 20, whereas externally orientated thinking showed weaker associations. The authors postulate that these differences arise as the first two

dimensions relate closely to negative affect and neuroticism which are typical in insecure attachment. While this study offers a meaningful insight into the relationship between alexithymia and attachment style, it is constrained by its correlational nature. Also the sample (university students) limits its generalisability to the wider population and lack of longitudinal data further weakens the ability to explore how attachment styles and alexithymia evolve over time. As the ASQ is a self-report measure, an interview based assessment such as the Adult Attachment interview may allow for a more nuanced exploration of this topic.

Oskis and colleagues (2012) addressed this methodological limitation in their research which looked at the relationship with attachment and alexithymia using the Attachment Style Interview in a sample of 60 school based female adolescents. The authors found that distinct attachment styles predicted specific aspects of alexithymia. Avoidant attachment (characterised by constraining closeness) predicted difficulties in describing feelings, possibly due to fewer emotional sharing opportunities. Anxious attachment (characterised by fear of separation) predicted difficulty in identifying feelings and was the strongest predictor of overall alexithymia. The authors found that a secure attachment, particularly a strong attachment to the mother, was associated with lower externally orientated thinking style (EOT). Despite these important insights, the homogenous sample used limits generalisability of the findings and the authors also report that general psychological distress or negative affect could potentially confound the relationship between the alexithymia and attachment. Both constructs are closely linked to emotional distress, and without controlling for this variable, it is difficult to ascertain whether the observed relationships are specific to alexithymia and attachment or simply rather just a reflection of broader emotional dysregulation in this sample.

Besharat and Shadhidi (2014) went a step further than the previous studies and looked at the mediating role of emotional dysregulation strategies in the relationship between alexithymia and attachment styles. The sample included 536 male and female undergraduate students who were asked to complete the TAS-20, The Adult Attachment Inventory (AAI) and the Cognitive Emotional Regulation Questionnaire (CERQ). The study yielded interesting results and converged with the findings of the previously aforementioned studies. With regard to the mediating role of emotion dysregulation, the authors reported that the relationship between attachment and alexithymia is not direct but involves the intermediate process of managing emotions – secure attachment fosters good emotional regulation strategies whereas insecure attachment can lead to maladaptive strategies and difficulty with emotional expression. It is important to note however, the generalisability of these findings is limited by the use of an undergraduate sample which may not be reflective of more diverse or clinical populations. Furthermore the cross sectional design precludes any causal inferences about the directionality of the relationship between attachment, alexithymia and emotional regulation. Nonetheless, these findings are consistent with established theories of attachment and emotional regulation emphasising the foundational role of caregiver interactions in emotional development (Bowlby, 1969; Ainsworth et al., 1979). In addition to emotion regulation, other potential mediating factors warrant consideration. For example, trauma exposure, particularly in early life, may disrupt attachment and emotion processing, contributing to alexithymia traits. Similarly, deficits in mentalisation (the ability to reflect on one's own or others' mental states (Fonagy, 2003) or low interpersonal trust may also mediate this relationship, especially in populations with histories of relational adversity. Future studies may benefit from exploring these variables using longitudinal designs or clinical or forensic samples to further clarify the pathways between early attachment experiences and the development of alexithymia.

Trauma can also lead to biological changes in the developing infant's brain, particularly in the development of the stress response system. Gerhardt (2014) emphasizes that early relational experiences shape neural pathways, including those responsible for stress and self-regulation. In early life, the hypothalamic-pituitary-adrenal (HPA) axis is underdeveloped, leaving infants highly sensitive to stress and dependent on caregivers for regulation. When caregiving is neglectful or inconsistent, chronic activation of the HPA axis results in elevated cortisol levels, which can become toxic over time (Gunnar & Quevedo, 2007). Empirical evidence supports this idea, Fisher (2006) for example found that foster children with histories of maltreatment displayed dysregulated cortisol rhythms which were linked to early caregiving adversity.

According to Porges (2011) polyvagal theory, repeated exposure to inescapable threat for a child will generate repeated cycles of dysregulated sympathetic/parasympathetic activation. In this condition, the heightened arousal that often accompanies emotions such as panic or anger will more often than not be followed by parasympathetic activation and a state of freezing. This is referred to as a state of 'immobilization' due to fear which is a response marked by substantial changes in vasovagal tone, blood pressure, heart rate and skin conductance level, to name a few. Porges (2011) likens this to the phylogenetic response observed in animals when they are faced with inescapable threat. This acts as a protective mechanism for children who experience abuse or neglect as it allows them to protect themselves from the stressful situation and conserve energy to maximise survival. On a long term basis, this immobilization response can act as a survival mechanism and result in an individual becoming detached from their emotional experiences. This can then align with the hallmark features of alexithymia – difficulty identifying and describing feelings. Schimetti and Caretti (2018, p.129) discuss how frequent, repeated activation of different physiological states can create dysregulated responses in both the body and brain which can then

compromise one's capacity to understand, tolerate and modulate their emotional experiences. This physiological dysregulation not only impacts emotional processing in the moment but, over time can shape brain development in ways that further inhibit emotional awareness and expression.

Gerhardt (2014) discusses how the development of the social brain (areas around the prefrontal cortex) are impacted by these experiences. The author writes that during the first year of life, initial neural connections are made in the brain. However during the second and third years, we keep and strengthen the connections or synapses which are frequently used and lose those that we don't through a process called 'pruning'. For example, if an infant lives in a chaotic environment with aggressive or angry caregivers, they will keep the pathways that keep them alert to aggression in others as a survival mechanism. From an alexithymia perspective, it could be postulated that the neural pathways related to emotional understanding or emotional connection may be underdeveloped and thus pruned away in environments which do not strengthen them. Traumatic experiences have been theorised to have a direct impact on the neurobiology of the developing brain impacting an individual's ability to understand or express their emotions (Henry et al., 2007).

Aust et al. (2013) examined the relationship between early life stress (focusing on neglect in particular) and alexithymia in a community sample of 90 healthy adults. Using a combination of standardised self-report measures, including the Childhood Trauma Questionnaire and the TAS-20, the authors found strong positive correlations between alexithymia and emotional neglect in the total sample. Emotional neglect was found to predict 13% of the variance in alexithymia levels whereas physical or sexual abuse were not associated with alexithymia scores in this sample. While this suggests that emotional neglect may play a role in the development of alexithymic traits, it is important to acknowledge the limitations of this conclusion. The cross sectional design prevents any causal inference, and

the use of retrospective self-report introduces potential recall bias. Moreover, nearly half of the high alexithymia group did not report significant emotional neglect, raising the possibility of genetic or environmental factors influencing the development of alexithymia. The study's reliance on a non-clinical, healthy adult sample further limits generalisability of its findings, especially to higher risk groups where childhood trauma and emotional dysregulation are more prevalent such as forensic or psychiatric populations. Nevertheless, the findings align with those of Khan and Jaffee's (2022) metaanalysis, which reviewed 88 studies and confirmed a consistent association between childhood maltreatment and alexithymia. Notably, this association was strongest for emotional neglect, suggesting a lack of emotional attunement may be particularly damaging for the development of emotional awareness. However, heterogeneity across the studies included in the metaanalysis, such as variations in methodology, population characteristics and definitions of maltreatment should also be considered when interpreting these findings. Overall, while neglect appears to be a significant contributor to alexithymia, the existing evidence underscores the need to explore a broader range of mediating and moderating factors, ideally use of longitudinal designs and diverse, trauma exposed populations.

O'Malley (2023) discusses how traumatic events such as war or familial abuse can cause individuals to 'mute' their emotional response to their circumstances as a form of psychological protection. Krystal (1988) suggested a similar mechanism in alexithymia, with his research interviewing 2000 holocaust survivors. Many of these individuals had a tendency to refrain from emotional expression but instead suffered with a number of physical symptoms such as headaches and somatic complaints. The author suggested that this resulted in these individuals not seeking psychological support for their difficulties.

Trauma, especially when experienced in one's early years can have a significant impact on both emotional development and regulation which can contribute to the

development of alexithymia (Schimmenti & Caretti, 2018). Early relational trauma characterised by inconsistent, dismissive or neglectful caregiving can interfere with the formation of secure attachment, impairing an individual's ability to identify, articulate and manage their emotions effectively (Aldao et al., 2010). When present, attachment insecurity is closely associated with difficulties in describing and recognising emotions, both of which are core aspects of alexithymia. Furthermore, biological and neurological research suggests that repeated exposure to traumatic events in childhood can alter stress response systems and emotional processing pathways, which can further reinforce alexithymic traits. Overall trauma appears to be a critical factor in shaping the development and severity of alexithymia across the lifespan.

Trauma in the Prison population

A growing body of evidence suggests that incarcerated individuals experience traumatic events and life stressors at a rate significantly higher than the general population (Fazel & Wolf, 2015; Gunter et al., 2012). Facer-Irwin and colleagues (2023) found that this group experience a wide variety of traumatic events earlier and for longer periods in life. One national survey study in the United States found that one in six incarcerated individuals experienced physical or sexual abuse while over half (56%) reported experiencing physical trauma during their childhood (Morrison et al., 2019). These rates are substantially higher when compared to those reported in the general population, 4-16% for physical abuse and 5-10% for childhood sexual abuse (Gilbert et al., 2009). In another study in the UK, in a sample of 220 randomly selected male sentenced prisoners, 7.7% met the diagnostic criteria for post-traumatic stress disorder (PTSD) while 16.7% met the diagnostic criteria for complex post-traumatic stress disorder (Facer-Irwin et al., 2022). This is significantly higher than reported rates of 5% for PTSD and 7.7% for complex PTSD in general population studies (Hyland et al., 2021). Trauma that occurs in childhood can be detrimental to a child's emotional

development as it is during this time that capacities such as self-definition and self-regulation are being developed (Schoore, 2015). Research to date has suggested that alexithymia may in some instances be as a result of complex or multiple traumas which occur in an individual's childhood (Frewen et al., 2008; Eichhorn et al., 2014). Gaining an insight into the types of trauma experienced by this population in childhood is not only useful to better understand offending behaviours but it may also shed light on the aetiology of alexithymia in this cohort.

The Adverse Childhood Experiences (ACE) Study by Felitti et al. (1998) is a seminal investigation into the impact of childhood trauma. Using a community sample of 17,000 adults in the United States of America, the authors illustrated the link between adverse childhood experiences (ACEs) and a variety of lifelong negative health consequences. This study highlighted the direct relationship between adverse childhood experiences and future propensity for risky behaviours such as smoking, drug taking, chronic health conditions, low life potential, poverty and early death. Cicchetti and Toth (2005) reported that maltreated children appeared to be at a higher risk for neurobiological changes, insecure or disorganized attachments, difficulties with peer relationships and academic failure when compared to their non maltreated peers. Furthermore, Fergusson et al. (2008) reported from their study which followed 1200 youth for a period of 25 years, that reported child sexual and/or physical abuse was a significant predictor of the development of future psychopathologies such as anxiety, depression, substance use, antisocial behaviour as well as suicidal ideation.

The Welsh ACE study which was conducted in 2016 found that half of the adults in the general population had suffered at least one ACE in childhood and around 10% had experienced four or more (Carlson et al., 2008). In contrast, a 2018 study investigating the prevalence of ACEs among a Welsh prison population sample revealed significantly higher rates (Ford et al., 2019). In a sample of 486 prisoners (half over the age of thirty years), 45% reported experiencing four or more adverse childhood experiences, more than four times the

rate observed in the general population. Additionally, over 50% of the prison sample reported experiencing verbal abuse during childhood, 40.8% reported physical abuse, 19% reported experiencing neglect while 17.6% disclosed experiencing sexual abuse. These figures far exceed typical community estimates (Carlson et al., 2008), underscoring the extent to which early adversity characterised the prison population. Household ACES refer to experiences such as witnessing domestic violence, parental separation, household substance misuse issues, caregiver mental health difficulties or criminal behaviour in the home. With regard to household ACEs, nearly 58% reported they experienced parental separation and 40% had witnessed domestic abuse. For over half of the sample, it was their third time or higher being incarcerated in their lifetime. 38.5% were classified as prolific offenders and of this group, 61.7% had four or more recorded ACEs (Ford et al., 2019). It is worth noting the limitations of this study also, the authors state that the ACE questionnaire is a self-report and retrospective measure thus may be affected by accuracy of reporting, subjectivity and recall capacity. Furthermore, this sample was obtained from a privately run prison with a large sex offender population meaning the generalisability of these findings to the general prison population may be limited (Ford et al., 2019). The findings do converge however with research conducted on the prevalence of ACEs in a youth offender sample in the United States and on a female offender sample in Norway (Friestad et al., 2012; Narramore et al., 2015).

The effects of childhood trauma are known to impact affective and behavioural functioning in adulthood. The literature to date has highlighted the association between mental illness and childhood trauma. Depression, anxiety disorders, post-traumatic stress disorder, dissociative disorders and psychosis have all been linked with childhood trauma (Chapman et al., 2004; Springer et al., 2007). Research has also shown that high incidences of child abuse are reported among individuals with dissociative disorder (Foote et al., 2006).

According to Dorahy et al. (2014) dissociative disorders are the diagnostic group which are associated with the highest frequencies of childhood trauma reports. Carlson et al. (2008) state that dissociation can develop as a defence mechanism in response to chronic stress involving compartmentalisation and detachment responses (Brown, 2006). When an individual is unable to physically escape from chronic abuse, they can learn to disengage from their external reality and internal world (Van der Kolk et al., 1996). Individuals who have experienced childhood trauma may also use substances to help them cope with their experiences. Dube et al. (2003) reported that substance abuse disorders were found to be present in nearly half of all adults who experienced trauma in childhood.

While experiences of childhood trauma are evident in the prison population, there is also research focused on looking at the trauma that can occur while in prison as an adult. While we know that those who enter prison tend to have experienced significant adversity in their early years, these prior experiences can complicate and be complicated by the distress that a prison sentence imposes on an individual. Liebling and Ludlow (2016) discuss how not only entering but *surviving* the custodial environment can be a deeply traumatic experience. Environmental factors such as crowded living spaces, bright lights, inescapable noise or the isolation of solitary confinement, fear, anxiety, threat of/or actual conflict or violence along with the sometimes rapid withdrawal from substances can all contribute to the retriggering of prior trauma (Vaswani & Paul, 2019). Features of these settings such as intense interpersonal environments can increase the risk of things like physical assault, coercion and victimisation occurring. Direct coercion such as force, threat or removal of support as well as indirect coercion through the experience of living in a threatening environment controlled by fear and intimidation can occur for this group (Colvin, 2000). Daquin et al. (2016) reported that in a survey of 1613 male adult inmates in America, nearly all reported witnessing victimisation while in prison inclusive of property theft, emotional, physical and sexual assaults. In

addition to this we know that both suicide and self-harm are prevalent in prisons globally indicating the high levels of distress among those in custody (Hawton et al., 2014). The prevalence of such also suggests that those in prison may be impacted by the death of a friend while in custody (Hales et al., 2003). Vaswani (2014) remarks that all of this occurs in an emotionally loaded yet often hyper masculine environment where displays of emotion are regarded as weak.

Although not always numerical minorities in the broader population, groups such as older adults and women along with ethnic minorities are often marginalised within the prison system, as their distinct needs and experiences are frequently overlooked. Aday (2003) noted that the stressful conditions of prison confinement are associated with an accelerated aging process and incarcerated individuals aged 50 years and older have health profiles equivalent to 65 years and above in the community. This can be due to the stress caused by living in an environment which is unsuitable for an aging adult's needs. However, it is worth noting that the concept of an "older health profile" is not always clearly defined as it may encompass physical conditions, cognitive decline or broader psychosocial issues. This raises questions about whether these profiles reflect irreversible biological aging or are, at least in part, a result of the prison environment itself and potentially reversible upon release. Mann (2016) argue that the unaccommodating nature of prisons in terms of their layout, facilities and regime can have a negative impact on older adults.

Women, while not a minority group per se, face unique challenges in prison. Hawton et al. (2014) looked at the rates of self-harm among prisoners and found that female prisoners had self-harm rates ten times that of their male counterparts. The authors reported that up to a quarter of all female prisoners self-harm each year and their suicide rate is ten times that of the general population. Corston (2007) notes that often exploitation and violence within relationships strongly feature in women's pathways into crime. The author reports that this

cohort can be coerced into offending by men and oftentimes suffer both emotional and physical abuse. The inherent power dynamic in prison systems between prison officers (oftentimes men) and those incarcerated can be retraumatising for females who have a history of abuse. Furthermore the stress of being separated from one's children on entering prison can compound the stresses of incarceration (Moore & Scraton, 2016).

Ethnic minorities can also face additional stressors in the prison environment. MacGabhann (2011) conducted a study looking at the experiences of Irish travellers in English and Welsh prisons. The author found that this group experience unequal hardship as a result of poor levels of literacy, mental illness, limited access to services and discrimination faced by prison staff and other inmates. MacGabhann (2011) reported that Irish travellers typically enter prison with a low level of educational attainment, with over half reported to have serious literacy difficulties (MacGabhann, 2015). These difficulties can act as a barrier for this cohort when it comes to accessing information, entitlements and education which can negatively impact their self-esteem (Gavin, 2019).

The previous trauma led by inmates is compounded by the trauma they experience once incarcerated and this is referred to as a 'combined model' of distress (Liebling & Ludhow). An inmate's previous experiences will impact how they cope and manage under these circumstances and what coping mechanisms they will revert to. Those who do not have the internal capacity to self-soothe may externalise by displays of heightened aggression or anger, substance abuse or self-harm. Previous experiences in their lives will also impact their ability to trust those in authority and to build meaningful relationships which will impact their ability to engage with and benefit from different services which may buffer against the stress of their incarceration experience and lead to positive rehabilitation.

The theory of cumulative trauma states that the greater the number of traumas experienced by an individual, the more likely they are to experience post-traumatic stress

disorder (PTSD) (Follette et al., 1996). This is particularly salient for the prison population given the high levels of childhood trauma experienced by this cohort. Post-traumatic stress disorder is a condition consisting of mood disturbance, avoidance, hypervigilance and persistent intrusive memories following exposure to actual or threatened death, serious injury or sexual violence according the DSM-5- TR (APA, 2022). Research examining the prevalence of PTSD in the prison population have estimated it to be 48% in comparison to lifetime prevalence rates of 8.7% in the general population in America (American Psychiatric Association, 2013; Briere et al., 2016; Fazel et al., 2016). One potential way in which trauma, PTSD and criminal activity are linked is through greater engagement in externalising behaviours such as displays of heightened aggression or illicit substance use after being exposed to trauma. These externalising behaviours can put individuals at an increased risk for involvement with the criminal justice system, particularly when they occur in communities with a high level of police surveillance (Donley et al., 2012; Jaggi et al., 2016). PTSD has been associated with overall deficits in emotional regulation leading people to struggle in the areas of acceptance of emotions, engagement in goal-directed behaviours, access to emotion regulation strategies, control of impulsive behaviours when distressed and clarity of emotions (Ehring & Quack, 2010; Weiss et al., 2013).

It is worth noting, that the prison culture itself may also compound these difficulties. Expressions of emotion or vulnerability can be perceived as signs of weakness within institutional settings (Crewe et al., 2014; De Viggiani, 2012), which may potentially reinforce emotional suppression or disengagement. In such contexts individuals may struggle not only to regulate their emotions but also to put those emotions into words, which is a core feature of alexithymia. This suggests that both the psychological impact of trauma and the cultural norms of the prison system may jointly contribute to impaired emotional processing among incarcerated individuals.

It Is also Important to highlight that not all Individuals who le traumatic events go on to develop psychopathologies or engage in criminal activity. The diathesis-stress model is a useful way of understanding individual differences in response to traumatic events (Rosenthal, 1963). According to this model, psychopathology arises when an individual has predisposing vulnerabilities which, when, combined with stressful experiences brings those vulnerabilities to the fore. Examples of genetic vulnerabilities are things like temperament or neurobiological reactions to stress (McCrory et al., 2012; Pluess & Belsky, 2010).

The prevalence and Impact of trauma on the prison population Is far reaching. Childhood trauma is a common occurrence for those who are incarcerated, as is the adversity they face while incarcerated. Developing an understanding of the psychological models and theories of trauma illustrates the complex interplay of factors which contribute to the high rates of trauma among this population.

Conclusion

The existing literature highlights the significant relationship between trauma, attachment difficulties and the development of alexithymia. Traumatic experiences especially those occurring in one's early years, can disrupt the establishment of secure attachment bonds and emotional regulation capacities resulting in difficulties identifying and describing emotions which are characteristic of alexithymia. These difficulties may in turn, compound existing emotional regulation or mental health challenges and, when combined with the culture and norms of the prison environment, can present as significant barriers to engaging with psychological interventions. Despite these established links, there remains a need to further explore how these relationships manifest, particularly in vulnerable populations, such as incarcerated individuals who are known to experience both high levels of trauma and high levels of emotional dysregulation.

Overarching thesis aims

The current thesis has two overarching aims. The first is to provide an overview of existing literature on alexithymia within the prison population globally. The second aim of this thesis is to explore the rates of alexithymia and trauma within the prison population in Ireland, while exploring the potential to differentiate between primary and secondary alexithymia. These aims are addressed by a scoping review of current research and an empirical study based on an Irish prison population sample.

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Chapter Two: Scoping Review
Title: Alexithymia in the Prison Population, A Scoping Review

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*I declare that the content of this assignment is all my own work. It has not been
submitted in respect of any other course/module. Where I have used the work of
others it is acknowledged and referenced accordingly.*

Abstract

Alexithymia has been increasingly linked to criminal behaviour, impulsivity and aggression. Numerous studies have indicated higher rates of alexithymia among the prison population when compared to general population samples, potentially influenced by early trauma and emotional dysregulation. This scoping review aims to synthesise existing research in this area, mapping rates of alexithymia and its impact on offending behaviour, aggression and rehabilitation. Using the PRISMA methodology, we performed a scoping review across five databases in total. Articles were included if they matched the following criteria: English language, original studies, any qualitative, quantitative or mixed method research focusing on alexithymia and crime or offending behaviour among prison population, studies that include participants from offending population (currently in prison/forensic psychiatric units/juvenile detention centres/engaged with the criminal justice system). A narrative synthesis was conducted on the 43 included studies to identify key themes. Results demonstrated that alexithymia is pervasive in this cohort. It is associated with aggressive behaviour, trauma and various mental health conditions among this population, which highlights its contribution to shaping emotional and behavioural outcomes for offender populations.

Introduction

Incarcerated individuals encounter distinct psychological and emotional challenges compared to the general population. These include elevated rates of mental disorders, substance use histories, and trauma exposure - all of which contribute to complex emotional and behavioural difficulties (Wolff et al., 2014). With an estimated 11 million individuals incarcerated globally at any given time (World Health Organization, 2023), understanding the psychological factors influencing criminal behaviour is essential.

A recent area of research has focused on the link between alexithymia and criminal behaviour among this population. Alexithymia is a construct first described by Sifenois (1973) and translated literally means 'no words for emotions'. It is characterised by difficulties in identifying feelings (DIF), difficulties describing feelings (DDF) and an externally orientated thinking style (EOT) (Preece et al., 2017). People with alexithymia tend to focus more on the physical sensations associated with emotional arousal rather than identifying or labelling the emotion itself. As a result, they may experience emotions as vague or overwhelming bodily states, which can impair their ability to regulate emotions effectively (Chen et al., 2017). It is estimated that the prevalence of clinically significant alexithymia among the general population is around 10% with higher levels of alexithymia reported among prison populations. Zimmermann (2006) conducted a study which examined the link between alexithymia and delinquency among a group of male adolescent offenders and a control group. The author found that rates of alexithymia were significantly higher in the offending group (42.7%) when compared to the control group (21.7%). Similarly in a study conducted by Chen and colleagues (2017), the authors found rates of alexithymia to be higher among an adult forensic sample of 1705 male and female participants (30%) when compared to general population samples. To date no systematic or scoping review has been conducted

to provide an comprehensive overview of the research in this area mapping rates of alexithymia among this population.

Early traumatic experiences are widely recognized as critical etiological factors in the development of alexithymia (Krystal & Krystal, 1998). Trauma during infancy and early childhood has a profound and lasting impact on emotional development, particularly in shaping how individuals process, understand, and express emotions (Schoore & Schoore, 2008). Adverse experiences during the formative years, such as neglect, abuse, or exposure to violence, disrupt the development of a secure attachment and impair the brain regions responsible for emotional regulation and interpersonal attunement (Teicher & Samson, 2016). As a result, individuals exposed to early trauma may struggle to identify or articulate their emotions and may find it challenging to interpret the emotions of others—a core characteristic of alexithymia. Incarcerated individuals disproportionately experience traumatic events and life stressors compared to the general population and numerous studies highlight the elevated prevalence of trauma histories among this group (Facer-Irwin et al., 2023; Fazel & Wolf, 2015, Gunter et al., 2012). The link between early trauma and alexithymia is particularly relevant in the context of incarcerated populations, as emotional deficits stemming from traumatic experiences may influence behaviour in ways that increase the risk of criminal activity. Impaired emotional processing can hinder the ability to regulate anger, manage interpersonal conflicts, or respond adaptively to stress, all of which are critical for meaningful engagement in society.

Studying alexithymia among prison populations is particularly pertinent as it is reported that a proportion of incarcerated individuals experience difficulty understanding what is occurring emotionally and physically for them (Byrne et al., 2016). Alexithymia has also been linked with increased impulsivity (Shishido, Gaher & Simons, 2013) and heightened physiological arousal (Lumley, Neely & Burger, 2007). Byrne et al. (2016) report

that these feelings of discomfort or unease when not understood, can give rise to dysfunctional and destructive behaviour. Empirical evidence indicates that higher levels of alexithymia are linked to aggression as a result of difficulties in one's ability to communicate and regulate feeling states (Fossati et al., 2009). Alexithymia has also been found to be associated with higher trait aggressiveness and anger expression in substance dependent patients (Payer et al., 2011) and associated with impulsive aggression in a community sample (Fossati et al., 2009).

This is particularly pertinent among forensic populations given the behaviours that lead to their incarceration. Impulsivity coupled with difficulties in regulating emotions creates a potent risk factor for both reactive and proactive forms of aggression. Garofalo et al. (2018) assessed the contribution of alexithymia, impulsivity, and emotion dysregulation facets in explaining individual differences in aggression among a sample of 221 violent offenders. The authors found that alexithymia is associated with increased levels of physical aggression, anger, and hostility. They also found that individuals with alexithymia struggled to regulate their emotions effectively leading to heightened aggressive behaviours such as anger and hostility. This link suggests that alexithymia contributes to aggression by impairing an individual's ability to process and effectively manage heightened emotional states. Velotti et al. (2017) research converged with these findings when they reported that alexithymia was found to play a significant role in the expression of anger in a group of 211 offenders. While alexithymia can partly inform our understanding of the origins of some aggressive behaviours, it is important to note that these studies do not indicate causation. It is likely that alexithymia is part of a complex interplay of factors which influence aggressive and impulsive tendencies in an individual.

Another important contribution of the research on alexithymia in forensic populations is its impact on rehabilitation. Gaining a better insight into alexithymia within the prison

population inform the types of interventions which may better meet the needs of these individuals, potentially leading to more successful rehabilitation and integration into society post-release. There are a number of reasons discussed in the literature to date as to why high rates of alexithymia may impact an individual's engagement with psychotherapeutic approaches among general and clinical populations. Individuals with alexithymia can struggle with the very skills needed to engage meaningfully in traditional psychotherapy such as an ability to differentiate, verbalise and discuss subjective experiences (Stingl et al., 2008). A crucial tenet of psychotherapeutic interventions is the assumption that those engaging have both an access to and awareness of their own emotions (Ogrodniczuk et al., 2011). Alexithymia can therefore compromise an individual's ability to engage meaningfully in therapy, thus adversely affecting treatment outcomes. Within clinical populations of individuals with alexithymia, supportive rather than interpretive treatment approaches with psychoeducation components are found to be effective (Kristjana et al., 2014; Taylor & Bagby, 2013). Within a forensic context, Byrne and colleagues (2016) piloted an alexithymia specific intervention for a group of sex offenders. The authors found that the intervention was an effective way of increasing emotional awareness among the participants. The authors noted that such an intervention, if incorporated into a broader comprehensive treatment package, may be an effective way of acclimatising individuals to psychological interventions which would increase their responsivity and could positively impact rehabilitation efforts.

Gaining a better insight into the rates of alexithymia within the prison population may inform the types of interventions that better meet the needs of these individuals, potentially leading to more successful rehabilitation and integration into society post-release. It may also offer valuable information about psychological and emotional factors that contribute to criminal behaviour.

Despite its relevance, there is currently a lack of synthesised evidence mapping the prevalence of alexithymia in prison populations. This scoping review aims to address this gap by answering the following questions:

1. What are the rates of alexithymia reported among prison populations?
2. What are the key psychological or emotional factors, including alexithymia, that may contribute to criminal behaviour?
3. What implications do these findings have for intervention strategies and rehabilitation efforts?

By reviewing and synthesising the existing literature, the review will identify key themes and highlight areas for future research.

Methodology

Given the relative infancy of this research area, it was felt a scoping review would be a useful way to develop a comprehensive overview of the current state of knowledge on this topic. Scoping reviews differ from systematic reviews as they are more exploratory in nature. They have a less focused research question, include a broad range of study designs and methods, and they attempt to describe the whole body of literature broadly (Arksey & O'Malley, 2005). This scoping review process was guided by Arksey and O'Malley's (2005) methodology, as well as the PRISMA Scoping Review Checklist (Tricco et al., 2018) to enhance the quality of methodology and reporting (See Appendix B). The review was conducted in line with Arksey and O'Malley's (2005) five framework stages which were (1) research question defined and rationale provided, (2) the identification of relevant studies using a three-step search of the literature to ensure comprehensiveness, (3) selection of studies utilising an iterative team approach, (4) the mapping of data extracted, (5) findings were then collected, and summarised.

Protocol Registration

A protocol was registered on the Open Science Framework (OSF) platform (<https://osf.io/s5raq>) presenting the proposed objective and planned procedures.

Eligibility Criteria

Inclusion criteria included the following (1) English language, (2) original studies from peer reviewed journals (3) any qualitative or quantitative research focusing on ALEXITHYMIA and CRIME or OFFENDING behaviour among PRISON population (4) studies must include participants from offending population (currently in prison/forensic psychiatric units/juvenile detention centres/engaged with the criminal justice system). Studies which broadly focused on emotional regulation difficulties and not alexithymia were excluded. Studies focusing solely on general population were also excluded. The only

language for the research team being English and the higher quality of studies offered by peer-reviewed journals provided the rationale for these eligibility criteria. Furthermore, given the lack of existing scoping reviews in this area, no restrictions on publication date were specified.

Search Strategy

The search strategy was developed, and search terms were selected through discussions with all authors, with the first author conducting literature searches relevant to the research question to aid in identifying key terms (See Table 1). The authors defined and refined the search terms as their familiarity with the existing literature increased (Arksey & O'Malley, 2005). A university research librarian was also consulted to inform this process to achieve optimal results.

To ensure a transparent and rigorous process, an iterative approach was used during the study screening and selection process (Levac et al., 2010). A systematic search of the literature was completed across the following databases: Scopus, Web of Science, PubMed, PsychINFO, and Google Scholar. The bibliographies of key papers were also manually searched to identify any other relevant papers not identified previously in addition to websites such as Google Advanced Search.

Synthesis Strategy

The breadth of selection criteria meant that it would likely yield a wide range of study designs (e.g., cross sectional, cohort intervention and observational studies), data types (quantitative and qualitative), outcomes (emotional regulation, criminal behaviour, coping skills, risk of recidivism, ability to engage in interventions) and data collection methods would be identified. As a result, a statistical synthesis of the findings was not appropriate. A narrative synthesis was therefore selected to reflect the range of different study designs, data types, data collection methods and outcomes.

Study Selection

After duplicates were removed, 136 titles and abstracts were screened in line with the inclusion criteria. Studies that did not meet inclusion criteria at this phase of the process were excluded (See Figure 1). The primary reviewer screened 100% of studies and the second reviewer screened 10%. The inter-rater reliability between these raters was calculated using percentage agreement and Cohen's Kappa. Reviewers agreed on 127 out of the 138 records (93.4%), with 9 disagreements resolved through discussion. Cohen's kappa indicated substantial agreement ($k = 0.868$).

Following this stage, 57 studies remained for the next stage of full-text screening. These studies were read in entirety by the reviewers to establish if they reached inclusion criteria. 43 of the 57 studies met criteria for inclusion in this scoping review. See Figure 1 for reason for exclusion at this stage of the selection process.

Data Extraction and Analysis

A data extraction template was developed and all data to be extracted were identified by the primary author from the chosen articles for inclusion. Data extraction included author, year, journal, study aims, country, population(s) studied, sample size, study design, measures specifically of alexithymia, primary outcomes and mean and standard deviation of total alexithymia scores. Regarding population(s) studied, each study was categorised in relation to the type of offender included. Sex offenders included offenders imprisoned for child or adult sexual offences, offender included a general offender population which were imprisoned from a wide variety of different offences such as theft, drug offences etc. Violent offender was specific to those imprisoned for violent offences including those of grievous bodily harm. Homicide perpetrators were those convicted of murder. Juvenile offenders were those detained in juvenile detention centres who were under the age of 18 years, this category included all offences committed by juvenile offenders. Forensic patients were those who were

court ordered to attend psychiatric inpatient units as part of their sentencing. Intimate partner violence offenders (IPVO) were those convicted for intimate partner violence. The included studies were analysed using a narrative synthesis, a qualitative method of summarizing each study to identify patterns, themes, and explanations across the findings. This approach was chosen due to the diversity among the studies, including differences in focus, methods, and participant characteristics. By integrating these varied findings, narrative synthesis provides a cohesive interpretation and a comprehensive understanding of the overall results.

Thematic categories used in narrative synthesis were developed using a combination of inductive and deductive approaches. Some themes were derived inductively from patterns observed across the extracted data, while others were informed deductively by the research questions. This combined approach facilitated a structured yet flexible synthesis of findings across diverse study designs and populations.

Methodological Quality Assessment

While quality appraisal is not a standard requirement for scoping reviews (Arksey & O' Malley 2005; Peters et al., 2015) a methodological quality assessment was independently conducted by the primary reviewer using the Mixed Methods Appraisal Tool (MMAT) 2018 version (Hong et al., 2018). The MMAT assesses studies across five different methodological categories; qualitative, quantitative randomised control, quantitative non-randomised, quantitative descriptive and mixed methods. The MMAT was utilised as it is both a reliable and practical instrument which can be used with a variety of different study designs (Pace et al., 2012). Results were reported as per guidance document from the creators (Reporting the Results of the MMAT, 2020), such that studies which meet all five criteria receive five stars, four of five criteria receive four stars etc.

To enhance the reliability of the data extraction and quality assessment, a second author independently reviewed a sample of the extracted data (13% of included studies).

Discrepancies were discussed and resolved through consensus. Revisions to the coding or scoring were made where appropriate to ensure consistency.

Table 1

Search Terms for Scoping Review

“Alexithymi*”

AND “Crim*” OR “Perpetrator” OR “Offend*” OR “Delinquen*” OR

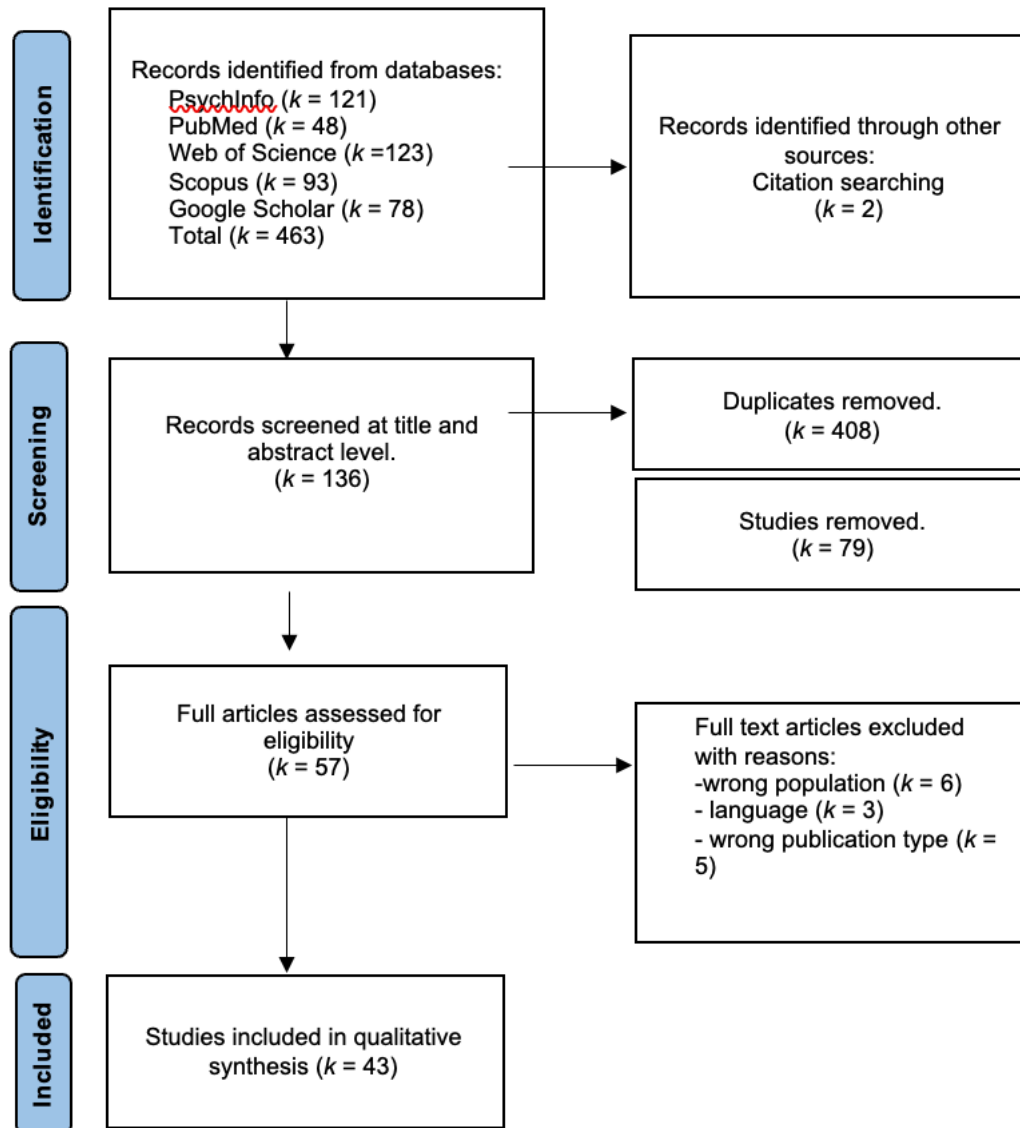
“Recidivism” OR “Forensic” OR “Incarcerat*” OR “Prison*” OR “Correctional” OR

“Felony” OR “Violence”

NOT “Medical” OR “Somatic” OR “Victim”

Figure 1

PRISMA Flow Chart



Results

Studies identified

The database searches initially returned 465 articles, of which 406 were removed due to duplication. The title and abstracts of 136 articles were screened for eligibility, resulting in the exclusion of 79 articles. Full texts of 57 articles were reviewed and 14 did not meet the inclusion criteria. 43 articles were included in this review (See Figure 1).

Study design

Of the 43 articles included in this scoping review, 39 were quantitative, 1 was qualitative and 3 were mixed methods design. In the qualitative study, the authors used semi structured interviews and participatory drawing for data collection (Hemming et al., 2020). In the quantitative studies, the majority were cross-sectional in nature ($k = 32$). There were an equal number of psychometric validation studies ($k = 3$) and quasi experimental studies ($k = 3$). Among the mixed methods studies, one used pre and post measures along with narrative reports and prison behaviour reports on participants (Casarjian, 2005). Another utilised a standardised Reflective Functioning Scale interview along with one devised by the authors of the study and psychometric assessments (Moller et al., 2014). The final study used a semi structured interview and a number of different psychometric assessments (Testoni et al., 2020).

Study characteristics

The total number of participants across the studies ranged from 5 to 1705 people. The studies represented data from a range of countries: Ireland ($n = 59$); Italy ($n = 1014$); United Kingdom ($n = 245$); Switzerland ($n = 82$); Germany ($n = 278$); Netherlands ($n = 660$); Sweden ($n = 42$); Belgium ($n = 39$); Turkey ($n = 132$); Spain ($n = 184$); USA ($n = 1963$); Canada ($n = 645$); Dominican Republic ($n = 187$); China ($n = 2780$); Australia ($n = 751$), as

well as samples from different populations. All studies utilised an offender population which was subclassified into different groups. The majority of studies used a general offender population as their primary sample group, seven studies used forensic patients, three studies used sex offenders, two studies used homicide perpetrators, 6 studies used juvenile offenders, 3 studies used violent offenders and 3 studies used intimate partner violence offenders (IPVO). Thirteen of the studies utilised used a community sample control group while eight studies used a comparison group of other offenders or a clinical sample such as individuals with Bipolar Disorder (Velotti et al., 2020).

Participant characteristics

Thirty seven of the included studies used a fully male population. Two of the studies included a fully female population (Louth et al., 1998; Mannarini et al., 2021). Four studies included a mix of male and female participants with the percentage of male participants ranging from 92.7% to 70% of the overall sample in these studies (DiPierro-Sutton et al., 2021; O'Dell et al., 2023; Velotti et al., 2020; Winstanley et al., 2019).

Measures of the Phenomenon of Interest

The quantitative measures used to assess alexithymia varied slightly across the studies. The majority of studies ($k = 38$) used the Toronto Alexithymia Scales – 20 item Questionnaire (TAS-20) (Bagby et al., 1994). A small number of studies ($k = 4$) used the Toronto Alexithymia Scales 26 item questionnaire (Taylor et al., 1985) and one study used the Bernard Vorst Alexithymia Questionnaire (Bermond et al., 1994).

Quality assessment

The MMAT assessment tool was used to evaluate the quality of each study. Scores ranged from two to five stars. Across all of the included qualitative, quantitative and mixed methods studies, the majority fulfilled the quality criteria ($k = 18$). Thirteen met four of the

criteria, Eleven met three of the criteria and one met two of the criteria. The ratings for each individual study are presented in Table 2.

Table 2*Quality Appraisal for all studies*

Author	Year	Study Design	Country	Offender Type 1	Offender Type 2	Offender Sample Size	Gender (% Male)	MMAT Score
Bianchini et al.	2019	Quantitative (Quasi-experimental)	Italy	Forensic Patients	None	21	100	***
Byrne et al.	2016	Quantitative (Quasi-experimental)	Ireland	Sexual Offender	None	59	100	*****
Casarjian et al.	2005	Mixed methods	USA	Offenders	None	70	100	*****
Chen et al.	2017	Quantitative (Cross-sectional)	China	Offenders	None	1705	100	****
Chen et al.	2023	Quantitative (Cross-sectional)	China	Offenders	None	430	100	*****
Christopher and McMurran	2009	Quantitative (Cross-sectional)	Australia	Offenders	None	79	100	****
Chung et al.	2016	Quantitative (Cross-sectional)	China	Homicide Perpetrator	Non-Violent Offender	306	100	***
Chung et al.	2016	Quantitative (Cross-sectional)	China	Homicide Perpetrator	None	339	100	****
Craparo et al.	2018	Quantitative (Cross-sectional comparative)	Italy	Offenders	None	20	100	**
DiPierro-Sutton et al.	2021	Quantitative (Cross-sectional)	USA	Juvenile Offender	None	111	71.3	*****

Garofalo et al.	2018	Quantitative (Cross-sectional)	Italy	Violent Offender	None	221	100	****
Hemming et al.	2020	Qualitative	UK	Offenders	None	15	100	*****
Hemming et al.	2021	Quantitative (Cross-sectional)	UK	Offenders	None	80	100	***
Hollerbach et al.	2020	Quantitative (Psychometric validation study)	Germany	Offenders	Forensic Patient	118	100	*****
Hornsveld et al.	2012	Quantitative (Cross-sectional)	Netherlands	Forensic Patients	Forensic Patient Adolescent	139	100	****
Jansen	2023	Quantitative	Netherlands	Offenders	None	281	100	****
Kroner & Forth	1995	Quantitative (Cross-sectional)	Canada	Sexual Offender	Violent Offender	508	100	*****
Lichev & Wolfradt	2016	Quantitative (Cross-sectional)	Germany	Sexual Offender	None	40	100	*****
Louth et al.	1998	Quantitative	Canda	Offenders	None	37	0	*****
Mannarini et al.	2021	Quantitative (Cross-sectional)	Italy	Violent Offender	None	41	0	*****
McMurran & Jinks	2012	Quantitative (quasi-experimental)	UK	Forensic Patients	None	5	100	***
Merckelbach et al.	2018	Quantitative (Cross-sectional)	Netherlands	Forensic Patients	None	40	100	****
Moller et al.	2014	Mixed Methods	Sweden	Offenders	None	42	100	*****
O Dell et al.	2023	Quantitative	USA	Juvenile Offender	None	111	70%	***
Parker et al.	2005	Quantitative (Psychometric Validation study)	USA	Offenders	None	102	100	*****
Parry et al.	2021	Quantitative	Australia	Offenders	None	67	100	*****

Pham et al.	2010	Quantitative (Cross-sectional)	Belgium	Forensic Patients	None	20	100	****
Polat et al.	2024	Quantitative (Cross-sectional)	Turkey	Forensic Patients	None	132	100	*****
Preece et al.	2021	Quantitative (Cross-sectional)	Australia	Offenders	None	146	100	*****
Romero Martinez et al.	2019	Quantitative (Cross-sectional)	Spain	IPV Offender	None	118	100	***
Romero Martinez et al.	2020	Quantitative (Cross-sectional)	Spain	IPV Offender	None	47	100	***
Snow et al	2016	Quantitative (Cross-sectional)	Australia	Juvenile Offender	Aboriginal Juvenile Offender	130	100	*****
Stone et al.	2022	Quantitative (Cross-sectional)	USA	Juvenile Offender	None	111	100	***
Strickland et al.	2017	Quantitative (Cross-sectional)	Australia	Violent Offender	IPV Offender	110	100	*****
Testoni et al.	2020	Mixed Methods	Italy	Offenders	None	7	100	*****
Velotti et al.	2017	Quantitative (Cross-sectional)	Italy & Australia	Offenders	None	111	100	***
Velotti et al.	2019	Quantitative (Cross-sectional)	Italy	Offenders	None	403	100	****
Velotti et al.	2020	Quantitative (Cross-sectional)	USA	Forensic Patients	None	83	92.7	****
Verges-Baez et al.	2021	Quantitative (Cross-sectional)	Dominican Republic	IPV Offender	None	187	100	***
Winstanley et al.	2019	Quantitative (Cross-sectional)	UK	Juvenile Offender	None	145	81.5	****

Winter et al.	2017	Quantitative (Cross-sectional)	Germany	Offenders	None	29	100	****
Wogan and McKenzie	2007	Quantitative (Cross-sectional)	USA	Offenders	None	95	100	*****
Zimmermann	2006	Quantitative (Cross-sectional)	Switzerland	Juvenile Offender	None	36	100	***

Note. IPV Offender = Intimate Partner Violence Offender

Narrative synthesis of results

Prevalence

Total mean and standard deviation scores were reported or could be calculated from 31 of the studies included. Of the studies not included, total mean and standard deviations could not be reported as these studies did not include these results. Of these studies, in the offender groups used, 11 did not meet the threshold for alexithymia receiving a total TAS-20 score less than 51 (Bianchini et al., 44.20; Craparo et al., 2018; Garofalo et al., 2018; Jansen 2023; Kroner and Forth 1995; Mannarini et al., 2021; McMurran & Jinks, 2012; Parry et al., 2021; Pham et al., 2010; Testoni et al., Velotti et al., 2019). Fifteen of the studies met the threshold for moderate alexithymia among offender group receiving a total TAS-20 score of between 51 to 61 (Chen et al., 2017; Chen et al., 2023; DiPierro-Sutton et al., 2021; Merkelbach et al., 2018; Moller et al., 2014; O Dell et al., 2023; Parker et al., 2005; Polat et al., 2023; Preece et al., 2019; Snow et al., 2016; Stone et al., 2022; Strickland et al., 2017; Velotti et al., 2017; Winstanley et al., 2019; Zimmerman, 2006). Five studies met the criteria for clinically significant alexithymia (TAS-20 total <61) (Byrne et al., 2016; Casarjian et al., 2005; Hemming et al., 2021; Romero-Martinez et al., 2019; Romero-Martinez et al., 2020).

Four studies reported mean subscale scores for the TAS-20 only, making it difficult to decipher prevalence levels among the offenders used in these studies (Christopher & McMurran, 2009; Chung et al., 2016a; Chung et al., 2016b; Wogan & McKenzie, 2007). Both Velotti et al. (2020) and Verges-Baez (2021) did not report TAS-20 subscale or total scores.

Of those that used the TAS-26 questionnaire, (Hollerbach et al., 2020; Lichev & Wolfradt, 2016; Louth et al., 1998; Winter et al., 2017) Lichev and Wolfradt (2016) reported that total alexithymia scores were found to be higher among a group of child sex offenders who received a mean TAS-26 score of 69.68 when compared to a control group in their study

who received a total TAS-26 score of 66.04. Similarly, Louth et al. (1998) reported a mean TAS-26 score of 69.7 among a group of 37 female offenders. However both Hollerbach and colleagues (2020) and Winter and colleagues (2017) reported that their offender groups received scores below the clinical cut off for alexithymia . Please see Table 3 in Appendix for a summary of total alexithymia scores in each study.

Alexithymia and Aggression

Eleven studies examined the relationship between alexithymia and aggression across various offender groups (e.g., Garofalo et al., 2018; Hollerbach et al., 2020; Jansen, 2023; Louth et al., 1998; Mannarini et al., 2021; O'Dell et al., 2023; Romero-Martinez et al., 2020; Velotti et al., 2017; Velotti et al., 2019; Winter et al., 2017; Zimmerman, 2006). Garofalo et al. (2018) found that violent offenders scored significantly higher on the Difficulty Identifying Feelings (DIF) subscale of the TAS-20 when compared to a community sample. Moreover, DIF scores (independent of Difficulty Describing Feelings (DDF) and the Externally Orientated Thinking style (EOT) subscales of the TAS-20) predicted physical aggression, anger, and hostility on the Aggression Questionnaire (AQ). Strickland et al. (2017) similarly reported elevated total alexithymia scores among violent offenders and intimate partner violence (IPV) offenders compared to community samples. This is consistent with Mannarini et al. (2021), who observed higher DIF scores in IPV offenders relative to IPV victims and community controls. Two studies (Jansen, 2023; O'Dell, 2023) linked total alexithymia scores directly to aggression. Jansen (2023) identified alexithymia as a moderator between aggression and impulsivity, where individuals high in both traits exhibited more aggressive behaviours. O'Dell (2023) found moderate correlations between total alexithymia scores and both reactive and proactive aggression. Additionally, three studies (Hollerbach et al., 2020; Louth et al., 1998; Zimmerman, 2006) revealed weak to moderate correlations between alexithymia and Factor 2 of the Hare Psychopathy Checklist-Revised (PCL-R),

which measures impulsivity, boredom proneness, poor behavioural controls, and criminality. Velotti et al. (2019) demonstrated that alexithymia significantly predicted antisocial personality disorder (ASPD) traits, even when aggression was controlled for. Further, Velotti et al. (2017) found an association between higher alexithymia scores and greater expressions of inward anger, which were linked to more inwardly directed impaired behaviours.

Alexithymia and Trauma

Seven studies looked at the link between trauma and alexithymia (Chen et al., 2017; Chen et al., 2023; Chung et al., 2016a; Chung et al., 2016b; Polat et al., 2024; Verges-Baez et al., 2021; Zimmerman, 2006). Three studies found that the presence of childhood trauma increased the risk of alexithymia in offenders (Chen et al., 2017; Chen et al., 2023; Polat et al., 2024). Compared to offenders without the experience of childhood trauma, those who reported childhood trauma receiving low, moderate and severe scores in the Childhood Trauma Questionnaire were over two times, nearly four times and over four times more likely to report alexithymia (Chen et al., 2017). Polat et al. (2024) reported that offenders who reported experiences of domestic violence during childhood had higher alexithymia scores and Chen et al. (2023) found that alexithymia moderated the effect of childhood trauma on suicidality in offenders. One study found that insecure attachment was a risk factor for alexithymia (Verges-Baez et al., 2021). Zimmerman (2006) found among a sample of juvenile offenders and a community sample that alexithymia was a predictor of juvenile delinquency. When family structure was added to the model however it significantly improved ability to predict group membership suggesting family environment plays a critical role in delinquency, Family environment was measured by recording family structure where those who came from a home where a parent was absent, were grouped against those who lived in a two parent household.

Finally two studies looked at the relationship between alexithymia and Post traumatic stress disorder (PTSD) among offenders. Chung et al. (2016) found that in a sample of homicide perpetrators and non-violent offenders, alexithymia was positively correlated with defence style as measured by the Defence Styles Questionnaire (DSQ-40). Using partial least squares analysis the authors developed a model showing how alexithymia positively correlated with defence style; defence style was then found to positively correlate with emotional suppression as measured by the Courtauld Emotional Control Scale (CECS) which was in turn found to positively correlate with PTSD symptoms. This highlighted the complex interplay of how alexithymia may come to impact PTSD development and severity in offenders. Chung et al. (2016) in their study of homicide perpetrators examined the interrelationship between PTSD following committal of a violent crime, PTSD from past trauma, alexithymia and psychological symptom severity. The authors found that the difficulty identifying feelings (DIF) subscale of the TAS-20 was a consistent predictor for both PTSD (following a violent crime) and psychological symptoms using regression modelling. The DIF subscale had a direct and indirect impact on psychological symptoms (partial mediation). However, it had a direct impact on only PTSD following a violent crime through PTSD from past trauma (complete mediation). This indicates that difficulty identifying feelings helped to maintain PTSD symptoms from past trauma resulting in cumulative stress which then exacerbated PTSD symptoms from the violent crime.

Alexithymia and Co-occurring conditions

Twelve studies looked at co-occurring mental health conditions within offender populations (Chen et al., 2017; Chen et al., 2023; Chung et al., 2016a; Chung et al., 2016b; DiPierro-Sutton et al., 2021, Hemming et al., 2020; Hemming et al., 2021; Lichev & Wolfradt, 2016; O Dell et al., 2023; Snow et al., 2016; Stone et al., 2022; Zimmerman 2006). Five studies utilised a juvenile offender population (DePierro-Sutton et al., 2021; O Dell et al.,

2023; Snow et al., 2016; Stone et al., 2022; Zimmerman 2006). Four of these studies reported a positive association between different mental health conditions and alexithymia. DePierro-Sutton et al. (2021) found medium positive associations to exist between anxiety and depression and alexithymia in their study. This converged with findings reported by Snow et al. (2016) which reported that Depression, Anxiety and Stress scale (DASS) scores were found to be significantly associated with alexithymia. Similarly Stone et al. (2022) found that alexithymia (particularly the DIF subscale) was significantly associated with depression and anxiety, explaining unique variance in internalising symptoms. It should be noted however, that the Difficulty Describing Feelings (DIF) subscale was not associated with internalising symptoms in this study. In the study conducted by O Dell et al. (2023), the authors found alexithymia to be associated with both functions of aggression (reactive and proactive) as well as anxiety and depression symptoms in both correlational and regression models.

Three studies looked at the association between alexithymia and suicide among adult offender populations (Chen et al., 2023; Hemming et al., 2020; Hemming et al., 2021). Hemming et al. (2020) used a qualitative approach to explore male prisoners experience of alexithymia and how it relates to experiences of violence and suicide. Offenders reported how they tend not to talk about their emotions with others due to the external pressures of residing in a prison and also the internal difficulties they experience with recognising and articulating emotions. This was associated with a 'build-up of emotions' resulting in either emotional overload or emotional absence. Both of which are associated with hurting themselves or others. Both Hemming et al. (2021) and Chen et al. (2023) used a quantitative approach. Hemming et al. (2021) found in their study of male prisoners that alexithymia was a univariate predictor of suicide however it was not found to be significant following inclusion of other well-known correlate such as hopelessness, depression and anger in a multivariate model. Alexithymia was found to be one of the multivariate predictors of

suicide behaviour and for every unit increase in total alexithymia score, the odds of having experienced suicidal behaviour in the last 2 weeks increased by eight percent. Chen et al. (2023) found that alexithymia and depression showed significant mediating effects on the association between childhood trauma and suicide risk in a group of 430 male offenders.

Four studies found a positive association between alexithymia and mental health difficulties such as PTSD, anxiety, depression and depersonalisation (Chen et al., 2017, Chung et al., 2016a; Chung et al., 2016b; Lichev and Wolfradt, 2016). Regression analyses showed that anxiety, depression and hopelessness were identified as risk factors for alexithymia in research conducted by Chen et al. (2017). Furthermore the authors reported that those with depression and anxiety were more likely to report alexithymia compared those with no depression and anxiety in their sample. Chung et al. (2016b) reported in their study that PTSD from past trauma and the difficulty identifying feelings (DIF) subscale of the TAS-20 predicted psychological symptom severity. While Lichev and Wolfradt (2016) found that depersonalisation and rumination were positively correlated with overall alexithymia score.

Impact of intervention

Five studies discuss the impact of an intervention on alexithymia scores (Biachinni et al., 2019; Byrne et al., 2016; Casarjian et al., 2005, McMurren & Jinks, 2012; Testoni et al., 2020). One study reported an intervention specifically focused on targeting alexithymia (Byrne et al., 2016). Byrne et al. (2016) completed an alexithymia specific 4 session intervention group for sexual offenders. When compared against a control group, the authors noted a significant reduction in alexithymia scores among those in the intervention group. Another four studies discussed the impact of different interventions focused on broader areas but including pre and post alexithymia measures (Biachinni et al., 2019; Casarjian et al., 2005, McMurren & Jinks, 2012; Testoni et al., 2020). Two of the studies noted no significant difference in alexithymia scores post intervention (Biachini et al., 2019; McMurren & Jinks,

2012). Two studies noted a reduction in alexithymia scores post intervention (Casarjian et al., 2005; Testoni et al., 2020). Casarjian et al. (2005) evaluated a 12 week programme focused on different aspects of emotional literacy among 70 offenders in five different therapeutic groups. It should be noted that only 2 of these groups were administered the TAS-20 pre and post intervention totalling 48 of the 70 participants. Although Testoni et al. (2020) noted a decrease in alexithymia scores, it should be noted that the mean total TAS-20 score for the offenders ($n = 7$) pre intervention indicated that the participants did not reach the criteria for moderate alexithymia, thus although the scores were observed to decrease, it is perhaps more reflective of the participants developing increased overall emotional awareness.

See Table 3 in the Appendix for a summary of study aims and key findings.

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Discussion

This scoping review aimed to identify and map evidence of alexithymia in prison population samples, synthesizing findings from a range of studies to identify rates, key patterns and gaps in literature. This is the first scoping review to date that the authors are aware of, in this research area. The findings indicate that alexithymia is prevalent across various offender groups, with notable associations with aggression, trauma, rehabilitation and co-occurring mental health conditions.

The findings of this review provide a nuanced understanding of the prevalence of alexithymia among offender populations. Just over half of studies ($k = 22$) report a moderate or clinically significant level of alexithymia using both the TAS-20 and TAS-26, underscoring its relevance as a psychological characteristic in this population. Given that six studies did not state overall levels of alexithymia (Christopher & McMurran, 2009; Chung et al., 2016a; Chung et al., 2016b; Velotti et al., 2020; Verges-Baez et al., 2021; Wogan & McKenzie, 2007) it is difficult to fully decipher rates of alexithymia among forensic cohorts. Furthermore, the use of different assessment tools such as the TAS-20, the TAS-26 and the Bernard Vorst Alexithymia Questionnaire complicate comparisons and highlights the need for a more standardised approach to measuring alexithymia in this population. Sample sizes of the studies ranged from 5 to 1705 participants respectively reflecting the diversity of research approaches in this area (Chen et al., 2017; McMurran & Jinks, 2012). For example, Chen and colleagues (2017) provided a robust study of 1705 offenders across a number of different prisons in China, the authors reported that the mean total TAS-20 score was in the moderate range for alexithymia. McMurran and Jinks (2012) however, focused on a much smaller sample of 5 participants with findings that did not meet the clinical threshold for alexithymia. While the sample size of the latter study limits broad applicability, it is important to note that its primary aim was not to produce generalizable results but rather to

contribute to an emerging discussion on the treatment of alexithymia in offender populations. Such exploratory research plays a crucial role in highlighting gaps in the literature and informing future studies with larger more representative samples.

This review highlights a robust link between alexithymia and aggression across different offender populations. Three studies found a direct link between alexithymia scores and aggression (Jansen, 2023; O Dell, 2023, Velotti et al., 2019). Notably another two studies highlighted the association with DIF subscale scores in particular and aggressive tendencies (Garofalo et al., 2018; Mannarini et al., 2021). While three studies found weak positive correlations between alexithymia and Factor 2 of the Hare Psychopathy Checklist (PCL-R) (Hollerback et al., 2020; Louth et al., 1998; Zimmerman, 2006). These findings converge with previous literature indicating that difficulty in monitoring and being aware of one's emotions may correspond to increased anger and aggression (Fossati et al., 2009; Tenen et al., 2008). From a theoretical standpoint, the link between alexithymia and aggression is often understood through frameworks that highlight emotional awareness and expression as protective factors against aggressive behaviour. Fonagy's (2003) mentalisation theory posits that the ability to mentalise (to reflect and understand another's emotions) as a critical buffer against impulsive and aggressive acts. Therefore individuals who experience difficulties with such are more vulnerable to aggression as a maladaptive outlet for emotional distress. Similarly, Levenson's emotional regulation model (1999) emphasizes the importance in recognising and discussing feelings in managing stress, and mitigating aggressive impulses. Collectively, these findings underscore the role of alexithymia, particularly difficulties identifying feelings in facilitating aggressive and maladaptive behaviours across offender groups.

Evidence for the link between trauma and alexithymia was also highlighted in this review (Chen et al., 2017; Chen et al., 2023; Chung et al., 2016a; Chung et al., 2016b; Polat

et al., 2024; Verges-Baez et al., 2021; Zimmerman, 2006). Chen (2017) found that in a sample of 1705 offenders, those with experiences of childhood trauma were shown to be over two to four times more likely to report alexithymia compared to those with no reported trauma. Similarly, Polat et al. (2024) found in a sample of 132 forensic patients, those with experiences of domestic violence during childhood showed higher alexithymia scores. This converges with research conducted on community samples supporting the view that abuse and neglect may increase alexithymia traits in individuals (Lumley et al., 2007; Paivio & McCulloch, 2004). As traumatic experiences are widely recognised as critical etiological factors in the development of alexithymia, these findings are not surprising given the high rates of trauma reported in offender populations (Fazel & Wolf, 2015, Gunter et al., 2012; Krystal & Krystal, 1998). Furthermore, the finding of the link between PTSD and alexithymia in two studies is reflected in other studies conducted on community samples (Chung et al., 2016a; Chung et al., 2016b; Frewen et al., 2008; Becirovic et al., 2017). However, it should be noted that both of these studies utilised a male Chinese offender population raising questions about the generalisability of these findings. This area would benefit from further research addressing these limitations.

Significant associations with alexithymia and various mental health conditions were highlighted across twelve different studies in this review (Chen et al., 2017; Chen et al., 2023; Chung et al., 2016a; Chung et al., 2016b; DiPierro-Sutton et al., 2021; Hemming et al., 2020; Hemming et al., 2021; Lichev & Wolfradt, 2016; O Dell et al., 2023; Snow et al., 2016; Stone et al., 2022; Zimmerman 2006). Notably, findings showed that this relationship was evident in both adult and juvenile offender populations, albeit with some differences as to how these conditions manifest and interact with alexithymia.

Among those that used a juvenile offender population, four reported positive associations with mental health conditions such as anxiety, depression and internalising

symptoms (DePierro-Sutton et al., 2021; O Dell et al., 2023; Snow et al., 2016; Stone et al., 2022). Among the adult population studies, alexithymia was linked to a broader range of mental health challenges including depression, anxiety, PTSD and suicidality (Chen et al., 2017; Chung et al., 2016a, Chung et al., 2016b, Hemming et al., 2020, Hemming et al., 2021). Three studies reported a link between alexithymia and suicide (Chen et al., 2023; Hemming et al., 2020; Hemming et al., 2021). Two of the studies highlighted the Difficulty Identifying Feeling (DIF) subscale in particular, in relation to mental health difficulties. Stone et al. (2022) found that the DIF subscale of the TAS-20 accounted for unique variance in internalising symptoms among juvenile offenders whereas the Difficulty Describing Feeling (DDF) subscale did not. This discrepancy suggests that specific components of alexithymia may influence mental health outcomes differently in juvenile offenders. Stone and colleagues (2022) highlight how this information may be salient for developing targeted interventions for this population, suggesting that those focused on helping this population to identify feelings may be beneficial. While Chung and colleagues (2016b) demonstrated that PTSD and alexithymia (in particular the DIF subscale) were significant predictors of psychological severity. This converges with other research in the area of PTSD and alexithymia in individuals following a traumatic illness (Chung & Allen, 2013; Wang et al., 2011). However some studies found that DIF only predicted psychological severity and not PTSD symptoms (Chung & Hunt, 2014; Chung & Wall, 2013). Chung and colleagues (2016b) findings support the sensitization hypothesis which proposes that trauma initiates a complex interaction between psychological distress, physiological reactivity and neurological processes. This interaction can lead to heightened sensitivity or vulnerability leading to the emergence of general emotional or psychological difficulties (Greenberg & Stone, 1992).

Collectively, the reviewed findings suggest a conceptual model in which early trauma contributes to the development of alexithymia – particularly in the form of difficulty

identifying and describing feelings. This, in turn may impair emotional awareness and regulation which may increase the likelihood of behaviours such as aggression, impulsivity or antisocial acts. These behaviours may then result in the individual being exposed to further trauma (e.g. through institutional violence or reoffending), creating a self-perpetuating cycle. In this manner, alexithymia may serve as a mediating or maintaining factor between trauma and persistent offending behaviour, highlighting it's importance as a target in intervention efforts.

While several studies discussed the impact of intervention on alexithymia scores, drawing definitive conclusions remains challenging due to the differences in sample sizes, populations and intervention types (Biachinni et al., 2019; Byrne et al., 2016; Casarjian et al., 2005, McMurran & Jinks, 2012; Testoni et al., 2020). For example, although McMurran and Jinks (2012) reported no significant difference in alexithymia scores post intervention, their study was based on a small sample of 5 participants making their findings indicative of an exploratory analysis rather than a definitive conclusion. Similarly, Bianchini and colleagues (2019) reported no change in alexithymia scores, however only two participants were recorded as meeting the threshold for alexithymia and the program itself was not designed to target alexithymia specifically but rather focused on Dialectical Behavioural Therapy. Testoni and colleagues (2020) also faced similar limitations with their sample size. Although Byrne and colleagues (2020) and Casrajian and colleagues (2005) utilised a larger sample size, Byrne and colleagues (2020) intervention was focused on a sex offender population while Casarjian et al. (2005) focused on a general offender sample. The study of alexithymia interventions in offender samples is in the very rudimentary stages. Therefore the intended impact of these studies was not to achieve generalisability but rather to contribute valuable insights to this under researched area. Perhaps future research could focus on exploring this relationship in a more systematic manner.

Strengths and Limitations

This review is the first scoping review of its kind to examine alexithymia within offender populations. The broad range of studies included provides a comprehensive overview of the prevalence, correlates and potential consequences of alexithymia in both juvenile and adult offender populations. This review explores key domains such as aggression, trauma, mental health conditions and rehabilitation, offering an understanding of how alexithymia interacts with various psychological and behavioural constructs in forensic contexts.

The impact of this review may be limited for a number of reasons. The included studies used a variety of different assessment tools to measure alexithymia leading to difficulties in comparing findings across studies. Furthermore these assessment tools, while widely used and validated are self-report measures. As alexithymia, is itself characterised by difficulties in identifying and describing emotions, those with alexithymia may struggle to recognise and report these deficits accurately. This paradox raises questions about the validity of using self-report measures for a construct that involves limited emotional insight. In offender populations, it is possible that responses may be influenced by social desirability bias also. Another limitation is the predominance of cross-sectional study designs making it impossible to determine causality or the directionality of relationships. Thirdly the studies used a wide range of subsamples such as forensic patients, sexual offenders, offenders, intimate partner violence offenders, forensic patients and juvenile offenders. This leads to difficulty in generalising the findings to general offender populations. Furthermore, sample sizes ranged from 5 – 1705 participants. For studies that utilised a smaller sample, again it is difficult to generalise their findings to the broader offender population.

Conclusion

This scoping review provides a comprehensive overview of research on alexithymia within offender populations. It highlights alexithymia's prevalence within this population and its multifaceted role in aggression, trauma and different mental health conditions. While more than half of the studies reviewed indicated moderate to clinically significant levels of alexithymia, the variability in study quality, measures used and sample characteristics limits its ability to draw firm conclusions about its role in causality or behavioural outcomes.

Although the evidence suggests that alexithymia may be an important factor in offender populations, especially in relation to emotional dysregulation and maladaptive behaviour, most of the studies were cross-sectional in nature. As a result, it is not possible to determine the direction of these relationships or whether alexithymia serves as a cause, consequence or correlate of trauma and offending behaviour. Likewise, findings from interventions studies should be interpreted with caution, as improvements in alexithymia scores may be influenced by non-specific factors such as regression to the mean, expectancy effects or general therapeutic engagement.

Despite these limitations, this review identified meaningful patterns that may inform future research. A conceptual model is proposed in which trauma may contribute to alexithymia, which in turn impairs emotion regulation and increases vulnerability to antisocial or aggressive behaviour, potentially creating a cyclical pattern of further trauma exposure. Future studies using longitudinal or experimental designs are needed to test this model and evaluate whether interventions targeting alexithymia can produce meaningful or behavioural outcomes.

Overall, this review highlights the need for more standardised assessment tools, greater methodological rigour and cautious interpretation of intervention effects in this under-researched but clinically relevant area.

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Appendix

Measurements and Findings from Studies

Table 3: Measurements and Findings of Studies Included in Scoping Review

Author	Alexithymia Measurement Tool	TAS-20 Total Mean (SD)	Study aims	Key Findings in relation to Alexithymia
Bianchini et al. 2019	TAS-20	44.20 (8.44)	To evaluate a DBT group among forensic patients	Two participants met the criteria for alexithymia pre DBT intervention. No reported difference in alexithymia scores post DBT intervention.
Byrne et al. 2016	TAS-20	65.90 (8.90)	To evaluate the efficacy of a brief four session alexithymia specific intervention on emotional awareness and psychological mindedness on adults who sexually offend	Participants experienced positive effects as a result of the intervention and decreased alexithymia characteristics. Specifically, it was found that the alexithymia subscale scores decreased significantly in the intervention group when compared with the control group, with large effect sizes found for all of the three subscales of the TAS-20
Casarjian et al. 2005	TAS-20	61.65(10.79)	To evaluate efficacy of an emotional literacy intervention programme on participants self-esteem, moral maturity, spiritual consciousness, hostility, depression and alexithymia. As well as overall impact on behavioural changes (self-control, impulsive and aggressive behaviours).	Those who took part in the 12 week emotional literacy programme demonstrated a decrease in Alexithymia scores, suggesting that during the programme, participants developed emotional awareness and ability to experience their emotions in more mature, constructive and healthy ways.
Chen et al. 2017	TAS-20	56.47(10.14)	To investigate the prevalence and associated factors of alexithymia among prisoners	The results indicated that high prevalence of alexithymia among prisoners is linked with their level of education, experience of

				childhood trauma and symptoms of negative emotions. Protective effect of education for adult prisoners found to be significant in the experiences of alexithymia. Negative emotions such as anxiety, depression and hopelessness identified as significant risk factors for alexithymia. Experience of childhood trauma also identified as significant risk factor for alexithymia
Chen et al. 2023	TAS-20	54.70(10.14)	To confirm alexithymia and depressive symptoms as risk factors for suicide risk and to clarify interactions among childhood trauma, alexithymia, depressive symptoms and suicide risk	Alexithymia was found to mediate the relationship between childhood trauma and suicide risk by impairing emotional expression and increasing emotional overload. Its interplay with depressive symptoms further compounded the impact of childhood trauma, leaving individuals, particularly prisoners, more vulnerable to suicide due to their inability to use protective emotional strategies.
Christopher and McMurran 2009	TAS-20	Not reported	To explore the influences of alexithymia, empathic concern and goal management on social problem skills in prisoners.	TAS-20 subscales DIF and EOT were strongly associated with negative problem solving and maladaptive problem solving styles (impulsivity/carelessness/avoidance). EOT predicted all maladaptive problem-solving scales. DIF predicted impulsivity.
Chung et al. 2016	TAS-20	Not reported	To investigate the inter relationship between alexithymia, defence style, emotional suppression, PTSD following homicide and psychiatric co-morbidity	Alexithymia was found to significantly correlate with defence style. Individuals with high levels of alexithymia showed a tendency to use defence mechanisms, such as emotional suppression, to avoid dealing with the distressing emotions tied to committing homicide. Alexithymia was associated with the suppression of emotions like anger,

				anxiety, and depression. The study found that the DIF subscale of the TAS-20, was linked to both homicide-related PTSD and psychological co-morbidity.
Chung et al. 2016	TAS-20	Not reported	To investigate the prevalence rates for full and partial PTSD following violent crime; (b) differentiate between levels of psychological symptoms; and (c) explore the interrelationship between PTSD from past trauma, alexithymia, PTSD following violent crime, and psychological symptom severity.	TAS-20 subscale DIF predicted both PTSD following a violent crime and psychological symptom severity. The trait has direct impact on psychological symptoms and indirect impact on PTSD through previous trauma PTSD. Mediation analysis showed that alexithymia through DIF contributed to the cumulative stress from past trauma worsening the effects of PTSD following violent crime.
Craparo et al. 2018	TAS-20	46.50(12.22)	Study 1: investigate the presence of personality disorders, alexithymic traits and specific attachment styles in a sample of members belonging to these two different organized crime groups Cosa Nostra Mafia and the Camorra Mafia. Study 2: To assess the level of personality organization (neurotic, borderline and psychotic) among members of the two different groups	A borderline trait of alexithymia was found among the Camorra group while no alexithymia traits were noted in the Costa Nostra mafia group.
DiPierro-Sutton et al. 2021	TAS-20	52.40(10.80)	To evaluate associations between internalizing symptoms and treatment motivation, including the influence of alexithymia, among detained youth	The study found that higher levels of alexithymia were linked to greater emotion recognition. This suggests that even though individuals with high alexithymia struggle to identify and describe their emotions, they may still be aware that they have problems. Alexithymia was not found to influence treatment readiness. No moderating effect of

				alexithymia between anxiety/depression and treatment readiness.
Garofalo et al. 2018	TAS-20	45.40(12.60)	To assess the independent contribution of alexithymia, impulsivity, and emotion dysregulation facets in explaining individual differences in aggression dimensions (i.e., physical and verbal aggression, anger, and hostility). Further, to explore if alexithymia had an indirect effect on aggression dimensions through the mediating role of emotion dysregulation and impulsivity.	Alexithymia is associated with increased levels of physical aggression, anger, and hostility. TAS-20 DIF subscale found to contribute directly to aggressive tendencies and indirectly through emotional dysregulation and impulsivity. Emotion dysregulation explains the connection between alexithymia and aggression. Violent offenders displayed higher levels of alexithymic traits, particularly difficulty identifying feelings and emotional nonacceptance.
Hemming et al. 2020	TAS-20	Not reported	To qualitatively explore male prisoners experience of alexithymia and how these experiences may relate to suicide and violence.	Thematic analysis showed that external pressures such as the prison environment and not having an opportunity to discuss emotions can impact participants willingness to do so. In addition to these factors, some people may not discuss their emotions due to an internal difficulty with recognising and articulating emotions.
Hemming et al. 2021	TAS-20	65.50(15.30)	To explore the relationship between alexithymia, suicide, violence and dual harm in prisoners.	Alexithymia was a univariate predictor of suicide ideation, though was not a significant predictor when considered in a multivariate model. Alexithymia was a significant multivariate predictor of suicide behaviour. Alexithymia was not a significant multivariate predictor of violence ideation or behaviour.
Hollerbach et al. 2020	TAS-26	N/A	To investigate the validity of the German adaptation of the PCL-R, its factor structure, construct	Weak correlation found between alexithymia with Factor 2 (Lifestyle/Antisocial traits) of the PCL-R, reflecting impulsivity and

			validity, and association with socially desirable responding in a sample of male offenders	antisocial behaviours. A weak negative association was found between alexithymia and the Interpersonal facet, which measures traits like charm and dominance.
Hornsveld et al. 2012	BVAQ	N/A	To evaluate the Dutch Bermond-Vorst Alexithymia Questionnaire (BVAQ) for reliability and validity in low-educated populations, specifically violent forensic psychiatric outpatients and a comparison sample of secondary vocational students.	The five-factor structure of the BVAQ could not be confirmed in both samples, but in the patient sample the test-retest reliability of the total score turned out to be moderate, and meaningful correlations were found with measures of relevant personality domains and problem behaviours. When both samples were compared, patients were found to display significantly higher total scores on the BVAQ than the secondary vocational students, when controlled for age.
Jansen 2023	TAS-20	49.91(10.99)	To assess the mediating effects of alexithymia and impulsivity—measured through questionnaire and performance-based assessment—on the association between TBI and self-reported aggression in a sample of Dutch incarcerated individuals	Alexithymia was found to moderate the relationship between impulsivity and aggression, with individuals high in both impulsivity and alexithymia being more likely to exhibit aggression. An exploratory model suggested alexithymia partially mediated the relationship between aggression and TBI (when considering aggression as a precursor to TBI).
Kroner & Forth 1995	TAS-20	47.50(11.90)	To explore the psychometric properties and construct validity of the TAS-20 in an inmate sample	The TAS-20 demonstrates strong internal consistency and validity in measuring alexithymia, particularly within the affective domain. Its strong correlation with hypochondriasis, but not with psychological denial, supports its association with physical symptoms without denial.

Lichev & Wolfradt 2016	TAS-26	N/A	To examine the constructs of alexithymia and depersonalization in a sample of child sex offenders and a matched control group.	Child sex offenders were significantly less aware of and less able to describe their emotions than controls, despite paying more attention to their feelings. Alexithymia was positively correlated with depersonalization, reflecting shared underlying constructs of maladaptive emotion regulation. While depersonalization was a stronger predictor of group membership than alexithymia, the two constructs appear interrelated and jointly contribute to emotional detachment.
Louth et al. 1998	TAS-26	N/A	To examine the comorbidity of psychopathy and alexithymia in female inmates in a medium security prison	The correlation between PCL-R and the TAS was not significant but the socially deviant impulsive factor of the PCL-R was significantly correlated with the items that reflect inability to discriminate feelings and bodily sensations in the TAS. Alexithymia was found to be negatively related to measures of affective speech content. both alexithymia and psychopathy were associated with a history of violence.
Mannarini et al. 2021	TAS-20	48.66 (10.99)	To investigate the two sides of violence by profiling female interpersonal violence offenders (IVO) and female interpersonal violence victims (IVV).	Intimate Partner Violence offenders showed significant difficulties in identifying and labelling their emotions, with higher levels of alexithymia compared to victim and control group.
McMurran & Jinks 2012	TAS-20	47.30(11.32)	To examine efficacy of a one day group intervention 'Making your emotions work for you' on offenders with personality diagnoses.	After the intervention, participants reported improved understanding of emotions and their link to decision-making, with some starting to recognize emotions more effectively. However, no reliable pre-intervention to post-

				intervention changes were observed on TAS-20 scores.
Merckelbach et al. 2018	TAS-20	56.00(12.70)	To explore if alexithymia relates to symptom over-reporting in a group of forensic patients. Also whether sleep problems may be associated with symptom overreporting.	Forensic outpatients scored significantly higher on alexithymia than non-forensic participants. A positive association was found between alexithymia and sleep problems. The most significant finding was the association between alexithymia and the over-reporting of eccentric symptoms. Participants with higher levels of alexithymia were more likely to endorse unusual or exaggerated symptoms, which suggests that alexithymia might lead to a tendency to over-interpret or amplify emotional experiences.
Moller et al. 2014	TAS-20	52.59(12.92)	To investigate the mentalizing ability in young criminal offenders, both attachment related and specifically regarding their crimes. A second aim was to study the relation between RF ratings and psychopathy and alexithymia, respectively, because the latter concepts have been more commonly used in research concerning delinquent or antisocial behaviour.	No significant correlation found between alexithymia and general mentalizing ability. There was a moderate positive correlation between the subscale of alexithymia measuring difficulty identifying feelings and crime-specific RF scores. This means that offenders who reported greater difficulty identifying their emotions were also more likely to show lower levels of mentalizing when reflecting on their crimes. The study notes that self-reports of alexithymia in this sample were generally low.
O Dell et al. 2023	TAS-20	52.40(10.80)	To examine the associations between both functions of aggression and internalizing symptoms in a sample of detained youth and investigates alexithymia	Alexithymia was associated with both reactive and proactive aggression and internalizing symptoms such as anxiety and depression in detained youth. The DDF subscale (difficulty describing feelings) moderated the link between proactive aggression and anxiety,

as a potential moderator of these associations.

with low DDF levels amplifying the connection, while high DDF levels kept anxiety consistently high regardless of aggression, highlighting the role of emotional expression challenges in anxiety among aggressive youth.

Parker et al. 2005	TAS-20	53.22(12.18)	To assess the generalizability of the alexithymia construct to North American aboriginal culture was examined by assessing the replicability of the factor structure of the 20-item Toronto Alexithymia Scale (TAS-20) in two different adult samples. The study also assessed the reliability of the scale and the influence of gender, age, and education on alexithymia levels.	The study supports the three-factor structure of the TAS-20 across both community-based and forensic samples, showing that the scale effectively measures three distinct aspects of alexithymia: Difficulty identifying feelings, Difficulty describing feelings, Externally oriented thinking. This confirms the generalizability of the TAS-20 across different cultural groups.
Parry et al. 2021	TAS-20	49.95(14.79)	To investigate alexithymia levels among incarcerated nonviolent offenders and compare them with a community comparison group.	Unlike prior research on violent offenders, which has found higher alexithymia scores, the study found no significant difference in alexithymia ratings between nonviolent offenders and community residents.
Pham et al. 2010	TAS-20	50.50(8.35)	To compare a sample of criminal psychopaths vs non-criminal psychopaths	The study found a negative correlation between psychopathy and alexithymia.
Polat et al 2024	TAS-20	54.02(12.29)	To examine levels of alexithymia and forgiveness in forensic psychiatric patients.	The study found that forensic psychiatric patients were more likely to have higher levels of alexithymia compared to other groups, including those with no criminal history. The study indicates that the inability to process emotions might increase aggressive

				behaviours and hinder the ability to seek help or comply with treatment. Participants with a history of domestic violence in childhood had higher levels of alexithymia. Additionally, individuals with a history of alcohol or substance use also exhibited higher levels of alexithymia.
Preece et al. 2021	TAS-20	51.08(15.17)	To establish the psychometrics of the TAS-20 among incarcerated offenders	The factor structure of the TAS-20 was constant across the samples. The intended factor structure composed of DIF, DDF and EOT factors performed well overall, but six EOT items had low factor loadings. The total scale score and DIF and DDF subscales had acceptable reliability, but EOT did not.
Romero Martinez et al. 2019	TAS-20	63.92(16.97)	To assess whether alexithymia was a good predictor of the discontinuation of treatment (dropout) and the risk of recidivism during the initial stages of intervention	The study found that IPVAV perpetrators exhibited significantly higher alexithymia traits compared to controls. Alexithymia was strongly associated with higher self-reported impulsivity in IPVAV perpetrators.
Romero Martinez et al. 2020	TAS-20	69.58(18.08)	To compare the alexithymic and cognitive and empathic traits in a carefully selected sample of IPVAV perpetrators with a control group matched on sociodemographic characteristics.	High alexithymic traits significantly predicted both dropout rates from treatment and risk of reoffending. The association between alexithymia, dropout, and recidivism remained strong even after accounting for confounding factors like impulsivity and drug misuse. The IPVAV perpetrators in the study scored above the cut-off on the TAS-20, indicating a marked presence of alexithymia.
Snow et al 2016	TAS-20	55.00(10.70)	To examine the prevalence of alexithymia in a sample of incarcerated young offenders and to	A significant portion of the youth offender sample (59%) scored within ranges suggesting alexithymia. Alexithymia was strongly

			determine the extent to which expressive and receptive oral language difficulties contribute to the expression of this disorder in young offenders.	associated with mental health issues, particularly depression, anxiety, and stress. While both alexithymia and language impairments were prevalent in the sample, they did not show a direct correlation.
Stone et al. 2022	TAS-20	52.38(10.86)	To examine incremental validity of the dimensions of alexithymia and parental psychological control on internalising symptoms in a sample of juvenile offenders.	Alexithymia, particularly difficulties identifying feelings (DIF), strongly predicts depression and anxiety in detained youth, surpassing the influence of parental psychological control. Emotional regulation challenges play a key role in these symptoms, with DIF being especially relevant.
Strickland et al. 2017	TAS-20	52.04(15.52)	To explore the levels of alexithymia among perpetrators of different types of violence (i.e., general and intimate partner) in Australia to better understand their treatment needs.	General violent offenders and IPV perpetrators both scored significantly higher than men from the general community on total alexithymia score and the subscales that measure difficulty identifying and describing feelings; the violent groups did not differ from the general community on externally oriented thinking style. There was no significant difference between the general violent offenders and IPV perpetrators on the total alexithymia score or any of the three subscales of the TAS-20
Testoni et al. 2020	TAS-20	47.71(7.65)	To evaluate the efficacy of a six month psychodrama intervention for the prison based treatment of people with substance dependence	Alexithymia was a stronger predictor of anxiety than parental psychological control. Youth who had trouble identifying their feelings were more likely to experience heightened anxiety symptoms, such as worry, fear, and uneasiness. The DIF subscale of the TAS-20 accounted for a large proportion of the variance in anxiety symptoms, reinforcing

				the idea that emotional regulation challenges play a significant role in anxiety among youth in detention. The study found that the DIF subscale was especially relevant to both depression and anxiety.
Velotti et al. 2017	TAS-20	54.40(13.64)	This study tests whether specific dimensions of emotion dysregulation predict maladaptive anger expression among offenders from Italy and Australia. In particular, it examines the unique associations among emotion dysregulation dimensions and different aspects of anger expression and control, in both inmates and offenders on parole.	In the study, alexithymia was found to play a significant role in the expression of anger among offenders: Positive Correlation with Inward Anger Expression: Higher levels of alexithymia were associated with greater inward expression of anger (measured by the Expr-IN scale of the STAXI-2).
Velotti et al. 2019	TAS-20	46.87(12.34)	To examine the independent and interactive effects of mentalizing abilities and aggression in predicting Anti-social personality disorder traits in a violent male offender sample	The study found that alexithymia, along with other mentalizing skills like mindfulness and empathy, interacts with aggressive tendencies in predicting ASPD traits. In individuals with high levels of alexithymia, aggression was less related to ASPD traits, suggesting that poor emotional awareness weakens the link between aggression and ASPD.
Velotti et al. 2020	TAS-20	Not reported	To explore levels of dysregulation of positive emotions across community, clinical and forensic samples.	The study found that individuals with Bipolar Disorder (BD), show pronounced difficulties in regulating positive emotional states. The forensic sample showed significant challenges in regulating positive emotional states, particularly in the Non-acceptance dimension. These difficulties might indicate an underlying alexithymic tendency—where individuals

Verges-Baez et al. 2021	TAS-20	Not reported	To explore whether insecure attachment represents a risk factor for alexithymia in men with violent behaviours.	struggle to identify, understand, and accept their emotions, whether positive or negative. The key finding was that insecure attachment (both avoidant and anxious) was associated with a higher risk of alexithymia in this population. Alexithymia refers to difficulties in identifying, understanding, and expressing emotions, which can lead to poor emotional regulation and impulsive behaviours—factors commonly linked to violence. Additionally, the study confirmed that secure attachment is associated with better emotional regulation, suggesting that improving attachment bonds might help mitigate alexithymia and its associated risks.
Winstanley et al. 2019	TAS-20	54.80(11.50)	To examine psycholinguistic and socioemotional profiles of males and females in the youth justice system, with a focus on first-time entrants. In the context of restorative justice (RJ) underpinning youth justice disposals, this allows for informed intervention and identifies those who may be compromised in their ability to effectively engage in certain interventions	This study found that alexithymia is significantly over-represented among young offenders in the UK youth justice system, with 60% scoring within the alexithymic range compared to about 10% in the general population. While alexithymia often co-occurred with Developmental Language Disorder (DLD), the conditions were identified as distinct yet interrelated factors influencing youth offenders.
Winter et al. 2017	TAS-26	N/A	To investigate affective (empathy) and cognitive (Theory of Mind) routes to understanding other people in aggressive individuals.	Men with a history of aggressive behaviour exhibited decreased empathy and compassion, especially after viewing emotionally negative videos. This empathy deficit was mediated by increased alexithymia, suggesting that the

				difficulty in identifying and expressing emotions may contribute to reduced empathic responses. Alexithymia is associated with impaired emotional processing—individuals with high levels of alexithymia often struggle to identify their own emotions, which in turn affects their ability to share and understand others' emotional states.
Wogan and McKenzie 2007	TAS-20	Not reported	The present study outlines a four-quadrant system for classifying inmates, using the two factor scores from the PCL:SV as the major axes.	The study found no significant correlation between overall alexithymia scores and psychopathy (PCL) scores, challenging previous research suggesting a link between emotional deficits and psychopathy. While a moderate correlation between Factor 1 (interpersonal and affective traits) and denial of externally oriented thinking was observed, the lack of association with Factor 2 (antisocial behaviour) indicates that alexithymia does not directly mediate psychopathic traits in this sample.
Zimmermann 2006	TAS-20	59.25(11.56)	To examine the linkages between alexithymia and delinquency in male adolescents (age ranging from 14 to 18 years), and to investigate whether alexithymia was a good discriminatory factor for juvenile delinquency.	The study found that 47.2% of juvenile offenders exhibited alexithymic traits compared to 21.7% in a control group, suggesting a higher prevalence among delinquent adolescents. Alexithymia, particularly difficulties in identifying emotions, emerged as a significant predictor of delinquency, alongside disrupted family structure.

Chapter Three: Measures of Alexithymia

Alexithymia is a multidimensional trait comprised of having difficulty identifying one's own emotions (DIF), having difficulty describing one's own emotions (DDF) and having an externally orientated thinking style (EOT) (Preece et al., 2017). While some models of alexithymia include a fourth component which is constricted imaginal processes (IMP), factor analytic studies have not shown support for this (Preece et al., 2017; Preece et al., 2020a). As a result, authors of alexithymia questionnaires have either eliminated IMP items entirely from their scales (e.g. Bagby et al., 1994; Sekely et al., 2018a) or chosen to exclude them from the calculated total alexithymia score (Vorst & Bermond, 2001). High levels of alexithymia have been associated with a number of different psychiatric disorders (Bourke et al., 1992; Carano et al., 2006; Coriale et al., 2012, Frewen et al., 2008; Grabe et al., 2006) and more recent research has found high levels of alexithymia in forensic populations which may account for individual differences in criminal behaviour (Chen et al., 2017; Gillespie et al., 2018; Zimmerman, 2006). Given its relevance in both clinical and forensic populations, the accurate measurement of alexithymia is important for both clinical assessment and treatment planning as well as understanding its broader implications within the field of psychology.

One of the most widely used measures of alexithymia to date is the Toronto Alexithymia Scales (TAS-20). This is a 20 item self-report questionnaire which assesses alexithymia according to the three domains of difficulty identifying feelings (DIF), difficulty describing feelings (DDF) and an externally orientated thinking style (EOT) (Taylor and Bagby, 2004; Taylor et al., 2016). Since its development, the TAS-20 has been translated into a number of different Asian and European languages highlighting its worldwide use (Bach et al., 1996; Bressi et al., 1996; Fukunishi et al., 1997; Pandey et al., 1996). The TAS-20 was developed in an attempt to address the limitations of the earlier TAS-26-item version of the

scale, which was constructed nearly a decade after Nemiah, Freyberger and Sifeneos outlined the key components of the alexithymia construct (Nemimah et al., 1976).

The Toronto group (Taylor et al., 1999) developed a model which built on earlier psychoanalytic theories proposed by pioneers in the area (Marty & M'Uzan, 1963; Nemiah 1977; Nemiah & Sifenois, 1970; Sifenos, 1973) who used psychoanalytic concepts to explain their observations. These early theorists proposed that alexithymia stemmed from disturbances in early mother-child interactions, which impaired the development of emotional awareness and the capacity to use fantasy as a way of managing instinctual drives. As a result, those with high alexithymia were thought to experience somatic symptoms due to their limited ability to regulate internal emotional energy through psychological means. Building on these foundations, the Toronto group incorporated cognitive theories of emotion processing such as Bucci's (1997) multiple code theory and Lane and Schwartz's (1987) levels of emotional awareness into their conceptualisation. This resulted in a multidimensional model of alexithymia consisting of four interrelated components, DIF, DDF, EOT and constricted imaginal processes (DFAN). These were further organised into two higher order dimensions of affect awareness (DIF and DDF) and operative thinking (EOT and DFAN) (Bagby et al., 2006; Taylor et al., 1999). All four of these components were included in the TAS-26 (the original version) however the DFAN was removed when developing the TAS-20 due to limited psychometric support (Taylor, Bagby & Parker, 1992).

Since the development of the TAS-20 however, some authors have raised concern about the discriminant validity of this measure, suggesting that it may in fact reflect psychological distress or symptoms of psychopathology, rather than capturing stable, underlying levels of alexithymia (Bandura, 2003; Helmes et al., 2008; Marchesi et al., 2014). This is an important distinction as numerous theorists contend that alexithymia is, theoretically, a distinct construct from psychological distress that people may transiently

experience (Gross et al., 2014; Preece et al., 2017; Taylor et al., 1999). Taylor et al. (1999) state that while alexithymia and distress are expected to be positively correlated, they are separate and distinct constructs. High levels of alexithymia may impair an individual's ability to effectively identify and regulate negative emotional states, thereby increasing vulnerability to psychological distress. On the other hand, individuals experiencing high levels of distress may be more likely to engage in maladaptive coping strategies such as experiential avoidance which may resemble alexithymic features (Taylor et al., 1999; Preece et al., 2017). It is therefore important that measures of alexithymia and measures of distress assess these constructs separately.

A number of studies to date have looked at the TAS-20 using factor analysis. Marchesi et al. (2000) conducted a factor analysis using items from the TAS-20 and the Hospital and Anxiety Depression Scale (HADS) in a sample comprised of 226 people from general population and psychiatric patients. The authors found that the items predominantly loaded onto distinct first-order factors (depression, anxiety, DIF, DDF, EOT). However one of the seven DIF items showed a notable cross loading (0.40) on the HADS anxiety factor and three other DIF items demonstrated shared variance between the DIF factor and the HADS anxiety factor. Similarly Müller et al. (2003) conducted a factor analysis of the TAS-20 and the Self-Rating Depression scale (SDS) in clinical and non-clinical samples. Their analysis extracted four factors and found that items from the TAS-20 and SDS generally loaded on separate factors which supporting the notion that alexithymia and depression are related but distinguishable constructs. However, a key limitation of these two studies is that they only focus on first order factor structure (item level analysis) without examining second-order factor structures. This is notable as research has demonstrated that general psychological distress often emerges as a higher order factor (Lovibond & Lovibond, 1995). In light of this, it remains unclear as to whether the TAS-20 subscales (DIF, DDF and EOT) might similarly

load on to the same higher order factor as measures of general distress, such as the HADS or the SDS.

Leisling et al. (2009) addressed this methodological limitation in their research, when they did a second-order factor analysis of subscale scores from the TAS-20, the Symptom Checklist-90-Revised (SCL-90-R) and the Inventory of Interpersonal Problems (IIP-64). In a sample of clinical and non-clinical participants, the authors found that only one factor was extracted accounting for 60.5% of the variance in the TAS-20, SCL-90-R and the IIP-64 scores. The authors concluded that as the TAS-20 score appeared to predominantly reflect psychological distress, rather than measuring alexithymia as a distinct construct and perhaps alternative approaches to the measurement of alexithymia may offer more accurate assessments of this construct. Preece et al. (2020) further examined this in their study which looked at three different types of self-report alexithymia questionnaires (TAS-20, Perth Alexithymia Questionnaire (PAQ), Bernard-Vorst-Alexithymia-Questionnaire BVAQ) against the Depression Anxiety Stress Scales-21 (DASS-21) in five different samples. For each sample, the authors used second-order exploratory factor analysis to test if the alexithymia subscales loaded separate to the distress subscales. While the authors found that the PAQ and the BVAQ demonstrated good discriminant validity against the distress factor, they found DIF subscale of the TAS-20 to consistently cross-load onto the distress factor. Similar to the previous study, indicating that much of its variance reflected current levels of distress and not alexithymia.

The Perth Alexithymia Questionnaire (PAQ) was developed by Preece et al. (2018) to address the psychometric limitations of the TAS-20. This is a 24 item self-report measure of alexithymia designed to assess the DIF, DDF and EOT components of alexithymia. Unlike the TAS-20 which was developed to measure deficits in the cognitive processing of emotions, the PAQ is grounded in a theoretical attention-appraisal framework. According to this model,

the EOT facet is conceptualised as reflecting difficulties in directing attention toward emotional stimuli while the DIF and DDF facets represent impairments in the accurate appraisal of emotional responses. Preece et al. (2018) included valence specific subscales to this measure in contrast to the TAS-20 which does not distinguish between positive and negative emotions in the DIF and DDF subscales. The authors also note the use of a 7 point likert scale when answering questions in comparison to the TAS-20 which utilises a 5 point likert scale. This decision was based on the evidence that 7 point likert scales perform better when compared to 5 point likert scales when measuring continuous construct like alexithymia (Preston & Coleman, 2000). Zahid et al. (2024) examined the incremental validity of the PAQ over the TAS-20. Using a community sample of 759 participants, the authors used hierarchical regression analyses to assess an array of measures closely associated with alexithymia. These measures were the Need for Cognition Subscale (NCS, Cacioppo et al., 1984), The Multidimensional Assessment of Interoceptive Awareness 2 (MAIA-2, Mehling et al., 2018) and Psychological Mindedness Scale (PMS, Conte et al., 1990, 1996). The authors found that overall the TAS-20 demonstrated strong associations with these various constructs to which the PAQ was unable to add any meaningful increase in prediction relevant to the TAS-20.

Preece et al. (2018a) investigated the discriminant validity of the PAQ by administering it with the Emotion Regulation Questionnaire (ERQ) and the Depression Anxiety Stress Scale (DASS-21) to a sample of 748 adults from the general population. The PAQ subscale scores were found to load on a different higher-order factor to the DASS-21 subscales when factor analysed, thereby demonstrating a form of discriminant validity. It should be noted however, that this study used a general population sample in comparison to the previously aforementioned studies for the TAS-20 which incorporated clinical populations. Flynn et al. (2022) addressed this limitation when he investigated the

discriminant validity of the PAQ by administering it with the DASS-21 to a sample of individuals with an acquired brain injury (ABI) ($N=350$) and to a general population sample ($N=1012$). The authors reported that the measure demonstrated good discriminant validity across both clinical and non-clinical samples. However, the authors acknowledge that this study may have been limited by its online-survey form meaning respondents were unable to discuss any queries they had relating to the questions. This may have been particularly pertinent for those with ABI, as individuals with brain injury often experience cognitive impairments, including language difficulties and reduced emotional insight. As such, it is important to consider whether some of the reported difficulties in emotion recognition or articulation could be attributed to the neurological impact of ABI itself, rather than accurately reflecting underlying levels of alexithymia. This raises questions about the specificity of self-report tools like the PAQ in populations with cognitive impairments, and highlights the potential value of incorporating structured interviews or clinician rated tools to more accurately capture emotional processing difficulties in this group.

Preece et al. (2024) again assessed the discriminant validity of the PAQ in a community sample ($N=508$) also administering the TAS-20 and the DASS-21. Similar to previous studies, the authors found that PAQ loaded cleanly onto the alexithymia factor with no cross loadings on the distress factor. Again a notable limitation of the study was the use of a non-clinical population. In summary, the PAQ was initially developed as a theoretically grounded alternative to the TAS-20, aimed at addressing its psychometric limitations, namely, issues related to its discriminant validity and the lack of valence specific subscales. While a number of studies have demonstrated that the PAQ shows stronger discriminant validity when compared to the TAS-20 from psychological distress, findings on its incremental predictive value over the TAS-20 remain mixed.

The Bermond Vorst Alexithymia Questionnaire (BVAQ, Vorst & Bermond, 2001) was developed to address some of the limitations perceived in the TAS-20. The BVAQ addresses the emotional dimensions of alexithymia more explicitly when compared to other measures. It is a 40 item self-report measure consisting of two parallel versions (A and B) of 20 items each, which can be used independently or together. It adopts a broader conceptualisation of the construct by assessing five core components of alexithymia: the capacity for imagination and fantasy (fantasising), the ability to recognise one's own emotions (identifying), the tendency to seek explanations for emotional responses (analysing), the ability to articulate and express emotional experiences (verbalising) and the degree to which a person experiences emotional arousal (emotionalising) which is in line with the 'Amsterdam Model' of alexithymia proposed by Vorst and Bermond, (2001). The inclusion of emotionalising as a distinct factor sets the BVAQ apart from other tools such as the TAS-20 (Vroege et al., 2018). Emotionalising can be defined as the degree of emotional arousal by emotion inducing events (Vorst & Bermond, 2001). The authors conceptualisation of this however remains controversial, as the definition suggests differences in the rate of psychological arousal rather than differences in awareness of feelings, which is the cornerstone of the alexithymia construct (Bagby et al., 2009; Nemiah et al., 1976). Emotionalising and Fantasizing represent the affective dimension in this questionnaire, while identifying, analysing and verbalising correspond to the cognitive dimension (Vorst & Bermond, 2001). The BVAQ has also been translated into a number of different languages (Bermond et al., 2007; Kashimura et al., 2011; Morera et al., 2005).

A number of different studies have investigated the factorial structure and the psychometric quality of the BVAQ (Bagby et al., 2009; Bekker et al., 2007; Bermond et al., 2007). These studies however highlight a number of methodological concerns including uncertainty regarding the factor structure of the BVAQ, reliance on samples such as

university students, small sample size, potential for invalid responses due to participant disengagement or low motivation, insufficient comparison across groups expected to differ in alexithymia levels and finally issues related to the interpretation of both indicative and counter-indicative items in factor analysis (Vroege et al., 2018). A number of studies have successfully replicated the BVAQ's five factor first order structure, which includes the dimensions of identifying, verbalising, analysing, fantasising and emotionalising (Bagby et al., 2009; Bekker et al., 2007; Bermond et al., 2007). However, it is worth noting that the results obtained by Hornsveld and Kraaimaat (2012) did not support this and reported a poor model of fit. In an effort to address this, Bermond et al. (2007) reduced the five factors to two second-order factors, representing a cognitive and an affective domain using principal component analysis (PCA). Despite this however, subsequent studies have failed to consistently replicate either the second order factor structure (Bagby et al., 2009) or the affective dimension specifically (Deborde et al., 2007). In summary, further research is warranted to evaluate the internal validity of the BVAQ, particularly examining first and second order factor structures through exploratory factor analysis.

While these three self-report measures have contributed to better understanding and assessing alexithymia in clinical and non-clinical populations, their reliance on introspective self-awareness poses inherent limitations. A number of different authors have raised concerns that the use of self-report when assessing alexithymia may not be valid as people with alexithymia, by definition, should not be able to report their psychological state (Bagby et al., 2021; Lane et al., 1998; Marchesi et al., 2014). This sentiment was also echoed by Bagby et al. in 1997 when they stated "a self-report measure alone may not adequately assess affective and cognitive capacities that individuals with severe alexithymia may not know they lack" (p.64). This paradox raises concerns about the validity of self-assessment in this population. As such a number of different authors have argued for the use of a multi-model approach to

measuring alexithymia, incorporating self-report along with objective or performance based measures (Bagby et al., 1997; Parker et al., 2003; Taylor et al., 2016). These limitations have prompted researchers to explore alternative, objective measures of assessment such as structured interviews and observer rated tools.

The Beth Israel Hospital Psychosomatic Questionnaire (BIPQ) is the first objective alexithymia scale that was developed (Apel & Sifenois, 1979). It is a 17-item clinical interview, with eight of the items scored as indicators for alexithymia. This measure however, is lacking in normative data and has been criticised by researchers for its unacceptably low inter-rater reliability (Lolas et al., 1980, Sriram et al., 1988; Taylor et al., 1981). A modified version of this measure was developed by Haviland et al. (2002) consisting of 12 items, some of which have been retained from the original version and some new ones which have been added. Instead of using a dichotomous format, this version however relies on trained clinicians who rate each item using a 7-point Likert scale. While it has demonstrated relatively strong internal consistency across items, data regarding inter-rater reliability has not been reported (Haviland et al., 2002).

The Toronto Structured Interview for Alexithymia (TSIA) was developed by Bagby et al. (2006) in accordance with the model developed by the Toronto group to address the limitations of the TAS-20. The TSIA is an observer rated measure with items designed to measure DIF, DDF, EOT and DFAN. It is composed of 24 interview questions, six for each one of the four salient facets of the alexithymia construct. For each question, standardised prompts are designed to elicit responses which are scored according to the manual (Bagby et al., 2005). Factor analysis of the TSIA among clinical and non-clinical samples identified a hierarchical model with four lower order factors which were grouped under the two higher order domains of Affective Awareness and Operative Thinking. This aligns with the theoretical framework of the construct (Bagby et al., 2006). The TSIA was also found to have

satisfactory levels of inter-rater reliability, internal consistency and test-retest reliability along with strong concurrent validity when compared to the TAS-20. Grabe et al. (2009) evaluated the psychometric properties of the TSIA among a clinical and non-clinical sample when translating the original English version into German. Their findings converged with previous research supporting the hierarchical, four factor structure previously obtained, also finding acceptable levels of internal and inter-rater reliability. Caretti et al. (2011) found similar findings in their study which looked at its reliability and validity among an Italian clinical and non-clinical sample. Caretti et al. (2011) report that while the TSIA addresses the limitations in the TAS-20, the TAS-20 has the advantage of being quicker to administer, inexpensive and straight forward to score (the TSIA is reported to take up to 60 minutes to administer). The authors recognise that while a multimodal approach may be optimum, it also may not be feasible in every clinical setting due to time constraints.

Sekely et al. (2018) recognised this limitation and created a short form of the TSIA using Item Response Theory methods (IRT) with the aim of improving efficiency without sacrificing measurement precision. This led to the development of a 12 item version which retained approximately 65% of the psychometric information from the original scale, significantly reducing administration time. However, the short version excluded items from the imaginal processing facet due to their limited contribution to the overall measurement precision (DFAN). While this shortened version offers practical advantages, the authors noted that it only provides a total score, lacking any subscale information, rendering the original version of the TSIA more meaningful in contexts where a comprehensive assessment is required.

Another observer-rated tool that has gained traction in the assessment of alexithymia is the Levels of Emotional Awareness Scale developed by Lane and Schwartz (LEAS, 1987). Emotional awareness is a construct which is closely related to alexithymia. Lumley et al.

(2011) write that both constructs involve potential difficulties in recognising one's own and other's emotional experiences and they both incorporate challenges in verbalising one's own emotional experiences. However, while emotional awareness can be considered to be a component of alexithymia, it is narrower in scope as it does not include elements such as reduced imaginal capacity or an externally orientated thinking style. The LEAS test consists of 20 vignettes that describe emotion provoking interactions between two people. Scores from 0-5 are assigned for the categories 'self', 'other' and 'total' with lower scores reflecting lower levels of emotional awareness. Inter rater reliability levels for this instrument have been found to be high, with a number of different studies reporting a Cronbach's alpha of 0.90 or over (Lane et al., 1990; Bydlowski et al., 2002; Igarashi et al., 2011). Lane et al. (1995,1996) found that the instrument can predict emotion related criteria, such as the ability to identify emotions and physiological brain activation in response to emotional stimuli. Maroti et al. (2018) write that research to date using both the LEAS and the TAS-20 is still not that common.

Maroti et al. (2018) conducted a meta-analysis looking at the correlations between the LEAS and the TAS-20. The authors included 21 studies, reporting the correlation in 28 different samples and found a significant negative correlation, however reported that this relationship was weak ($r = -0.122$). This finding remained across all samples regardless of age, gender or if a medical condition or mental condition was present. The authors concluded from this finding that the two measurement tools are likely measuring different parts of emotional functioning and thus should not be used interchangeably but rather to complement one another when assessing alexithymia. One reason stated for the negligible overlap between the two measures (despite them being related conceptually) may be due to their methodological differences. The TAS-20 is a self-report measure, while the LEAS is an observer rated task which may reflect differing neural and cognitive processes (Lane et al.,

2015b) . Van der Velde et al. (2013) for example, using neuroimaging studies found decreased activation of the dorsomedial prefrontal cortex when emotional stimuli were being processed for subjects reporting high alexithymia in the TAS-20. On the other hand, increased activation of the dorsal anterior cingulate cortex has been associated with processing emotions in subjects with high emotional awareness (Lane et al., 1998a; McRae et al., 2008). Another plausible reason for this finding between the two scales is that it may be more difficult to infer one's own emotional capacity using a self-report measure such as the TAS-20, otherwise a stronger correlation may be observed (Burmester et al., 2016). Some limitations of the LEAS include it's time consuming nature to both administer and score. Maroti et al. (2017) report that administration of the 10 vignettes of this measure can take up to 1.5 hours with an additional 20 minutes needed to score the measure once completed. Similar to the TSIA this may prove problematic in busy clinical services that are time constrained if used In conjunction with the TAS-20.

The Alexithymia Provoked Response Questionnaire (APRQ, Krystal et al., 1986) is another measure of alexithymic traits, which assesses responses to a variety of emotionally evocative scenarios. This measure takes a novel angle by focusing not only on what individuals report about their emotions, but how they respond to these scenarios when emotionally challenged in the moment. As a result, the APRQ may offer a richer insight into real-world emotional processing (Ryan et al., 2021). The APRQ is comprised of 17 statements about imaginary scenarios where participants are encouraged to report how they may feel in response to each scenario. Responses are assessed for emotional content, and scored on a binary scale. Summation of these scores gives an overall level of alexithymia with lower scores being indicative of higher rates of alexithymia (Krystal, 1986). Krystal et al. (1986) recommended scoring responses as alexithymic when they do not mention affect. It

has been reported to have good test-retest reliability and excellent inter-rater reliability for the total score (Kosten et al., 1992; Krystal et al., 1986).

As previously discussed, the BVAQ in adherence with the Amsterdam model differentiates between the cognitive and affective dimensions of alexithymia. It is reported that the TAS-20 is clinically comparable to the cognitive dimension of alexithymia in the BVAQ while it is suggested that the APRQ may be more affiliated to the affective dimension of alexithymia (Ryan et al., 2021). To date research on the APRQ and other measures have yielded mixed results. Both Ryan et al. (2021) and Wheeler et al. (2005) have found no significant relationship between the APRQ and the TAS-20 while Lumley et al. (1997) found that high levels of alexithymia as measured by both tools show strong correlations. McEnaney and Ryan (2023) found the APRQ to correlate significantly with most subscales of the BVAQ and although the APRQ is thought to be more affiliated with the affective dimension of alexithymia, the authors of this study found it to correlate with the cognitive score on the BVAQ. The finding highlights the considerable overlap between subjective and objective measures of alexithymia.

Like the LEAS and the TSIA, the APRQ requires administrator scoring, which may limit its practicality due to the time and resources required for accurate assessment. McEnaney and Ryan (2023) attempted to address this limitation in their research which looked at examining the feasibility of administering the APRQ to a large online sample and implementing a computerised scoring protocol for the open-ended verbal responses using a lexicon of affective states. Each author examined and scored the responses of the 366 participants and scored them in line with the Kosten et al. (1992) rubric. In addition to this, the authors utilised a computer scoring programme which detected the presence or absence of words according to the Ortony, Clore and Collins lexicon of affective states (citation). The authors found high levels of interrater reliability (95.1%) between the human and computer

scoring of the APRQ. This finding demonstrates the feasibility of administering the APRQ as online questionnaire and demonstrates that this computer scoring method is as reliable as human scoring. Given that the multi-modal measurement of alexithymia is recommended by researchers in this area, the APRQ may be identified as a promising tool for use with larger samples.

The assessment of alexithymia remains a challenging task, given the construct's multidimensional nature and inherent difficulty of relying on self-report measures to capture a trait marked by limited emotional insight. While the TAS-20 has advanced research in this area, concerns around its discriminant validity and overlap with psychological distress have prompted the development of alternative tools such as the PAQ and the BVAQ. While these tools attempt to address some of these limitations, more research is needed to evaluate their psychometric properties across diverse populations. While observer related tools such as the TSIA and the LEAS provide valuable alternatives to self-report, they are often limited by their time consuming nature making them impractical for use in busy clinical settings. Recent research on the efficacy of computer scoring for the APRQ however, makes this a promising alternative. Given the limitations of self-report measures when used in isolation a multimodal approach which incorporates observed-rated tools is thought to allow for the most comprehensive assessment of alexithymia.

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Chapter Four:
Locked Away: Exploring Alexithymia and Trauma among Irish Prisoners.

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Word Count: 7900

This article is in the process of being formatted for the journal 'Psychology, Crime and Law'. There is no specified word limit for reviews in this journal.
Publication guidelines for this journal can be found in Appendix A.

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Abstract

Alexithymia is defined as difficulty identifying and describing emotions, alongside an externally orientated thinking style and is known to impact emotion regulation and social interactions. This study aimed to explore the prevalence and characteristics of alexithymia within an Irish prison population, paying particular attention to trauma history and the differentiation between primary and secondary alexithymia. A total of 35 male prisoners from four different prisons in Ireland participated, completing measures on trauma (Adverse Childhood Experiences questionnaire and Trauma History Questionnaire) and alexithymia (TAS-20 and APRQ). Results indicated elevated levels of alexithymia and high incidences of trauma, with 74% of the sample reporting four or more Adverse Childhood Experiences. A moderate negative correlation was observed between the observer rated APRQ and the ACE questionnaire indicating that a higher number of ACEs was linked with a higher alexithymia score. Hierarchical cluster analysis identified three distinct subgroups based on trauma profiles from the THQ. This provided preliminary support for distinguishing between primary (low trauma, high alexithymia) and secondary (high trauma, high alexithymia) alexithymia. These findings highlight the importance of trauma informed assessment and tailored interventions within forensic settings, which may serve to enhance emotion regulation, interpersonal functioning and rehabilitation outcomes.

Introduction

The ability to understand and perceive emotions accurately is crucial for meaningful engagement in the social world. Emotions help people to act, to make decisions and to form social bonds with others (Shariff & Tracy, 2011). Alexithymia is a construct first described by Sifenois (1973) and translated literally means ‘no words for emotions’. It is characterised by difficulties in identifying feelings (DIF), difficulties describing feelings (DDF) and an externally orientated thinking style (EOT) (Preece et al., 2017). Alexithymics have a tendency to focus on the physiological component of emotional arousal and less so on the labelling or identification of the emotion itself. This focus can mean the emotions are experienced as vague or overwhelming bodily states which can lead to difficulties with emotional self-regulation (Chen et al., 2017). Both primary and secondary alexithymia have been identified in the literature to date (Freyberger, 1977).

Primary alexithymia is defined as a personality trait which is thought to occur as a result of neurobiological factors such as childhood injury or a genetic predisposition; secondary alexithymia on the other hand, is thought to occur as a result of psychological trauma or a life-threatening state (Freyberger, 1977). As primary alexithymia is thought to occur during early childhood, it is thought of as more of a stable personality trait which is moulded in an individual’s early years. It is therefore thought of as being developmental in nature (Messina et al., 2014). Messina et al. (2014) argue on the other hand however, that secondary alexithymia is formed not during development but rather as a consequence of events which occur later in life such as traumatic experiences in childhood or adulthood or the onset of a medical illness. In the current study, we operationalised primary alexithymia as elevated scores on the Toronto Alexithymia Scales (TAS-20) and the Alexithymia Provoked Response Questionnaire (APRQ) in the absence of reported trauma exposure, and secondary alexithymia as elevated TAS-20 and APRQ scores and high levels of reported trauma in line

with definitions outlined by Messina et al. (2014). While it does not represent a definitive diagnostic distinction, it allows for a working framework to explore possible origins or alexithymia in this sample.

To date a limited number of studies have examined the relative contributions of genetic and environmental factors to the aetiology of alexithymia. Heiberg and Heiberg (1977) conducted a study looking at alexithymia rates in 33 twin pairs, the authors found (using a brief non-validated interview procedure) that there may be a genetic component to its origins. However, the methodological limitations of this study, namely the lack of standardised measurement make it difficult to interpret these findings with confidence. Valera and Berenbaum (2001) addressed these limitations and went on to conduct another a twin study, this time consisting of 77 twin pairs. The authors used the Toronto Alexithymia Scales (TAS-20) to measure alexithymia scores among the participants. The authors found that different facets of alexithymia as measured by the TAS-20 were differentially influenced by genetic and environmental factors. More specifically, the authors found that externally orientated thinking (EOT) was significantly influenced by genetic factors. In the most recent and largest twin study, Jørgensen et al. (2007) conducted a population-based study of 8785 Danish twin pairs. Using the TAS-20 to measure alexithymia scores, the authors concluded based on their results that genetic factors and to lesser degree, shared environmental factors have a noticeable and similar impact on all aspects of alexithymia. This broader genetic influence across the TAS-20 subscales contrasts with the more nuanced findings of Valera and Berenbaum (2001), suggesting a need for further exploration of these topics.

The variation across these studies may be attributed to the differences in samples size, measurement tools and sample demographics. One plausible hypothesis is that certain facets of alexithymia, such as externally orientated thinking (EOT) may reflect more biologically rooted, trait-like features while others, such as difficulty identifying feelings (DIF) may be

more susceptible to environmental influences such as early trauma or caregiving quality. It is also possible that gene-environment interactions are at play, where genetic predispositions become expressed in response to specific developmental experiences. There is a current gap in the literature looking at the incidences of both primary and secondary alexithymia. While much of the research conducted to date on alexithymia does not differentiate between the two types, Messina and colleagues (2014) argue that in clinical settings, this distinction may be important when thinking about treatment or rehabilitation programmes for alexithymic individuals.

While the TAS-20 is one of the most common self-report measures used to assess alexithymia, authors in the literature to date have expressed concern that respondents are reporting their own belief about their emotional awareness capacity and that this may not be reflective of their true ability in reality (Lundh et al., 2002). A number of researchers have highlighted the potential benefits of moving away from self-report measures in alexithymia research to incorporate the rating of others and the analysis of alternative data sources (Kooiman et al., 2002; Leising et al., 2009; Ricciardi et al., 2015). One way of measuring alexithymia without the use of self-report is the Alexithymia Provoked Response Questionnaire (APRQ). Participants are asked how they might feel in response to 17 hypothetical scenarios. Responses are then scored based on their emotional content. Krystal (1986) recommends that responses which do not mention affect are scored as 'alexithymic'. The most common alexithymic responses have a focus on actions, detailed descriptions of the imagined scenario, or detailed descriptions of physical sensations. The APRQ has been found to highly correlate with the Beth Israel Psychosomatic Questionnaire (BIPQ; Krystal et al., 1986). It has been found to have high test-retest reliability and similarly good inter-rater reliability (Kosten et al., 1992; Krystal et al., 1986).

A well-established link in the literature has been found supporting the view that abuse and neglect may increase alexithymia traits in individuals. Lumley et al. (2007) for example investigated the impact of child abuse history on scores of alexithymia using the TAS-20 in a sample of 44 females and 12 males in an outpatient psychotherapy clinic. The author found that those who reported childhood experiences of abuse also showed high scores on the TAS-20, specifically relating to the factor 'difficulty identifying feelings' (DIF) than other patients in his sample. Paivio and McCulloch (2004) found in a sample of 100 female undergraduate students, positive associations between childhood trauma and TAS-20 scores. Another study looked at the associations between childhood abuse and neglect with alexithymia scores using the TAS-20 (Matti et al., 2008). The authors used a sample consisting of patients from primary care centres (N = 1033) and psychiatric outpatient units (N = 243). While the authors found no link between reported experiences of child abuse and/or neglect with alexithymia among the patients attending psychiatric outpatient units, a positive correlation was found between reports of child abuse/neglect and alexithymia in the sample of primary care patients. Specifically, the authors found evidence of associations between child abuse/neglect with the difficulty identifying feelings (DIF) and difficulty describing feelings (DDF) factors of the TAS-20 .

Research in this area has demonstrated that those who score high on alexithymia, report poorer emotion-regulation abilities and have a tendency to use both avoidant or unhelpful regulation strategies (Swart et al., 2009). Shipko et al. (1983) postulate that alexithymia may be a coping mechanism to deal with severe trauma endured by the individual. The authors argue that the development of alexithymia may be to protect the individual from enduring intense or painful affect. Evidence for this theory has been illustrated in a number of studies which have found that victims of traumatic events have been found to engage in defensive processes that reduce the experience or expression of their

emotions (Ditzer et al., 2023). Panayiotou et al. (2015) propose that the very act of avoiding or suppressing the unwanted affect (consciously or unconsciously) predicts the development of psychopathology symptoms. The consequences of these deficits regardless of the mechanism in which they occur, do not just exist on a personal level for the individual. Alexithymia has been reported to have a significant negative impact on interpersonal relationships as a result of the difficulties they experience understanding and relating to the emotions of others (Panayiotou et al., 2015). These deficits in socioaffective skills can make interacting with their social environment challenging leading to increased isolation and a reduction in prosocial or altruistic behaviour (Ditzer et al., 2023).

While the link between alexithymia and psychopathology symptoms is relevant to those working in a clinical context, it is also relevant to those working within a forensic context. The link between trauma and alexithymia, is particularly pertinent when examining incarcerated populations, who are known to experience traumatic events and life stressors at rates substantially higher than the general population (Fazel & Wolf, 2016; Gunter et al., 2012). Morrison et al. (2019) reported that results of a national survey study in the United States of America demonstrated that one in six incarcerated individuals experienced physical or sexual abuse while just over half reported experiencing physical trauma during their childhood. These results converge with research conducted by Ford et al. (2019) who reported that among a Welsh prison sample of 468 respondents, 45% reported experiencing four or more adverse childhood experiences. This is in comparison to general population studies which report, 10% experience four or more ACEs (Hughes et al., 2017). Such trauma, when particularly chronic or severe, may exacerbate deficits in emotional processing, potentially contributing to alexithymic traits in this population. Trauma experienced within the prison itself can further compound an individual's emotional and psychological distress

potentially leading to or exacerbating existing alexithymia symptoms (Liebling & Ludlow, 2016; Vaswani & Paul, 2019).

Despite the established link between trauma, emotional processing deficits and alexithymia in clinical and community samples, relatively little research has explored these relationships within forensic populations, particularly in Ireland. Understanding the role of trauma in both the development and maintenance of alexithymia among this population is critical, given its potential negative impact on rehabilitation and successful reintegration into society post release. Byrne et al. (2016) report that a proportion of the forensic population experience difficulty understanding what is occurring emotionally and physically for them. These feelings of discomfort or unease when not understood, can give rise to dysfunctional and destructive behaviour. A number of studies have looked at the link between alexithymia and offending behaviour. Zimmermann (2006) conducted a study which looked at the link between alexithymia and delinquency among a group of male adolescent offenders and a control group. The author found that rates of alexithymia were significantly higher in the offending group (42.7%) when compared to the control group. Another study found in a high risk population of 80 adolescent offenders, over 66% scored above the clinical cut-off for alexithymia as measured by the TAS-20 (Pihet et al., 2012). Although research in this area is still limited, emerging evidence suggests that alexithymia may be particularly high among adult prison populations. For instance, Yang et al. (2009) found that 43% of individuals serving longer sentences met the criteria for alexithymia. However, relatively few studies have examined the prevalence or clinical implications of alexithymia in incarcerated adults, highlighting a need for future investigation.

There are a number of reasons discussed in the literature to date as to why high rates of alexithymia may impact an individual's engagement with psychotherapeutic approaches. Alexithymic individuals can struggle with the very skills needed to engage meaningfully in

traditional psychotherapy such as an ability to differentiate, verbalise and discuss subjective experiences (Stingl et al., 2008). One mechanism which is consistently implicated in the literature as to how high alexithymia scores negatively impact psychotherapy is through the development of a poor working relationship between the client and therapist. Krystal (1979) reported that clients with high levels of alexithymia can present as aloof and indifferent to their psychotherapist. The author states that this presentation stems from the client's inability to emotionally interact with the therapist and not out of contempt or rejection. Taylor and colleagues (1999) add that a client high in alexithymia may have a tendency to focus on external events in minute detail and their inability to link physical sensations to inner feelings and life events can generate frustration and boredom in the therapist, negatively impacting the therapeutic relationship. This was echoed in research conducted by Ogrodniczuk and colleagues (2008) which found that in a sample of 107 individuals attending a psychiatric outpatient group, those with high levels of alexithymia were perceived by the therapists as possessing less positive qualities. Compared to their non-alexithymic counterparts, they were viewed as being less compatible with the therapist and making less of a meaningful contribution to the overall group. This research sheds interesting light on how those with scores high in alexithymia can be perceived by those working within services. It is therefore plausible that individuals incarcerated in the prison service may face the same biases from staff and peers who may be unaware that they have alexithymia.

There has been limited research conducted on the efficacy of alexithymia specific interventions on offender populations. One study conducted by Byrne et al. (2016) looked at the efficacy of an alexithymia specific intervention on a sample of individuals incarcerated for sexual offences in Ireland. While the group intervention was found to increase self-awareness through the use of mindfulness techniques to help individuals attend to their own emotions and bodily sensations, the study was constrained by a number of methodological

limitations such as sample size and lack of a control group. As such, while these findings are promising further research using larger, more diverse samples and rigorous methodological controls is necessary to establish the effectiveness and replicability of alexithymia-specific interventions in forensic settings.

Despite emerging evidence linking trauma, alexithymia and offending behaviour, no research to date has specifically examined the presence of primary and secondary alexithymia within incarcerated populations. This is a critical gap, given that distinguishing between developmentally-rooted (primary) and trauma related, secondary alexithymia could have important implications for psychological assessment, treatment planning and rehabilitation. While most studies treat alexithymia as a unitary construct, this paper advances the research literature by applying a dual-pathway framework (primary versus secondary) to a forensic sample, offering a more nuanced understanding of the potential origins of alexithymia.

To date no research has specifically looked at the incidences of primary or secondary alexithymia within the offending population. This would be warranted given that the prison population report high rates of exposure to traumatic experiences (Pettus-Davis, 2014). Examining incidences of primary and secondary alexithymia may shed light on the origins of alexithymia for this population be it developmental or as a result of traumatic experiences endured in one's life. Establishing this information would prove valuable as it would aim to inform the type of intervention that an individual receives which may lead to more effective rehabilitation of individuals during their time incarcerated. Thus, moving away from a one size fits all approach to a more tailored approach, cognisant of individual need.

Study Aims

The current study had a number of aims

1. Firstly, this study aimed to explore the levels of alexithymia and trauma within this sample of the Irish prison population.
2. Secondly, this study aimed to investigate the potential relationship between trauma exposure and alexithymia.
3. Thirdly, the study aimed to explore if it was possible to differentiate between primary and secondary forms of alexithymia within this population.

Methodology

Ethics

This study received ethical approval through the appropriate institutional ethical review panel at the local university, as well as the relevant prison authority (see Appendix C).

Sampling

Information posters and consent forms detailing the purpose and information about the study were disseminated to Senior Psychologists working in different prisons across Ireland (See Appendix D). Senior Psychologists then disseminated this information to potential participants. The only exclusion criteria was that participants could not have previously attended the alexithymia specific intervention groups being run across Irish prisons. Participation was voluntary and participants interested in taking part self-selected by returning consent forms to the psychology department within the prison. Most data was collected via a group psychometric session, where 6-8 participants would attend and complete the psychometrics in a group with the lead researcher and an assistant psychologist present. However, in two prisons where this was not possible the lead researcher completed the psychometrics individually with these participants in a one hour session. Potential literacy difficulties were identified by psychologists in the prison prior to each session, sessions were either offered individually to these participants or additional support was provided within the group session.

Demographics

35 male prisoners took part in this research from four different prisons around Ireland. The mean age of participants was reported to be 38 years ($SD = 12$) with ages ranging from 21 years to 70 years of age.

Measures

Toronto Alexithymia Scales (TAS-20)

The Toronto Alexithymia Scale-20 (Bagby et al., 1994) is a twenty item self-report questionnaire which assesses alexithymia. The scale looks at three facets of alexithymia: Difficulty Identifying Feelings (DIF) e.g. “I am often confused about what emotion I am feeling”; Difficulty Describing Feelings (DDF) e.g. “It’s difficult for me to find the right words for my feelings”; Externally Orientated Thinking (EOT) e.g. “I prefer to analyse problems than just describe them”. All items are rated of a 5 point Likert scale of strongly agree to strongly disagree. Five items are reverse scored to reduce response bias. Higher total scores indicate higher levels of alexithymia. Taylor et al. (1992) identified three cut off points for the presence and severity of alexithymia which are ≤ 51 = no alexithymia, 50-60 = possible alexithymia and ≥ 61 = clinically significant alexithymia. In our sample, the overall Cronbach’s α estimate was 0.87 for the total score, and alpha coefficients of 0.85, 0.58, 0.64 for the DIF, DDF and EOT.

Alexithymia Provoked Response Questionnaire (APRQ)

The APRQ is a 17-item structured interview in which participants are presented with various hypothetical situations and asked to describe how each situation would make them feel. For example “How would you feel if someone pulled a gun on you?”. The responses to the APRQ are scored by the interviewer (primary researcher). Kosten et al. (1992) guidelines for scoring were utilised in this study to evaluate participants ability to identify and describe emotions and emotional experiences. A score of one is given to a non-alexithymic response while a score of zero is given to an alexithymic response. Responses that contained no reference to affective content and only referred to actions, detailed descriptions of the

situation or physical sensations were rated as zero and classified as alexithymic responses (Kosten et al., 1992). When responding to a question in this measure such as ‘How would you feel if someone cut you off in heavy traffic?’ , an example of a non-alexithymia response would be “I would feel annoyed or aggravated’ whereas an alexithymia response might say ‘I would want to get out and punch them’. In addition to interviewer scoring, a novel method of computerised scoring was also used. This method has been used successfully in previous research (Ryan et al., 2021; McEnaney & Ryan, 2024). In this scoring approach, responses were counted as alexithymic if they contained no words from the Ortony, Clore and Collins lexicon of affective states (known as the OCC; Clore et al., 1987). The OCC lexicon consists of 307 words, encompassing both affective states (e.g., "happy") and affective-cognitive states (e.g., "amused"). Utilizing the OCC in this manner was deemed a suitable approximation for measuring self-referential affect labelling rather than general emotional language. On viewing the data obtained, two colloquial words to describe emotions were added to the lexicon which were, ‘freaked’ and ‘chuffed’. Responses are totalled to give an overall score, this measure does not have subscales. Higher scores are indicative of lower levels of alexithymia. The overall Cronbach’s α estimate for the APRQ was 0.76 indicating acceptable internal consistency. Interrater reliability was assessed between the two methods and a Cohen’s kappa score of 0.88 was obtained. According to Landis and Koch’s (1977) guidelines, a kappa value between 0.81 and 1.00 indicates ‘almost perfect’ agreement, supporting the reliability of the tools across different raters or rating systems.

The Adverse Childhood Experiences questionnaire (ACE)

The Adverse Childhood Experiences questionnaire (Dube et al., 2003; Felitti et al., 1998) was used in this study to retrospectively assess forms of abuse, neglect and household dysfunction. Childhood traumatic experiences are evaluated and grouped together in 10

categories: Physical abuse (2 items) Emotional abuse (2 items), Sexual abuse (4 items), Physical neglect (3 items), Emotional neglect (2 items), Witnessing domestic violence (4 items), Parental separation or divorce (1 item), Mental illness in the household (2 items) and Incarcerated household member (1 item) (Felitti et al., 1998). A discrete binary method of scoring (yes/no) was utilised for this measure. A score of 1 is applied if the participant responded 'yes' and a score of zero if they respond 'no' indicating that participant did not experience the traumatic event(s) stated. The total score therefore ranges from 0-10 with scores ≥ 3 considered as indicative as a risk factor (Felitti et al., 1998). The measure has demonstrated good to excellent test-retest reliability (Dube et al., 2003). Murphy et al. (2014) also demonstrated that this measure has good internal consistency (Cronbach's $\alpha = 0.88$ for the 10 items). A Cronbach's α of .83 was found for this study indicating acceptable internal consistency.

The Trauma History Questionnaire (THQ)

The THQ is designed to evaluate a broad spectrum of traumatic experiences across the lifespan and is based on the "high magnitude stressor" questionnaire used in the DSM-IV field trials for Posttraumatic Stress Disorder (Green, 1996). It is a 24 item self-report questionnaire which assesses traumatic experiences in three areas (a) crime related events (i.e. robbery/mugging), (b) general disaster and trauma (e.g., injury, disaster, witnessing death) and (c) unwanted physical/sexual experiences. An additional scale referred to as 'interpersonal victimisation' has been calculated by some authors inclusive of items 1,2,3,4,18,19,20,21 and 23 (Bistricky et al., 2017; Cole et al., 2024). This subscale was also included in this study. For each item the respondent records whether they experienced the event stated and how many times it occurred. Scoring of the THQ is 0 for the absence of experience and 1 if it occurred. The THQ is a trauma history data collection instrument, not a

standardised measure so there is no standard scoring method and it has therefore been adapted and modified to meet the needs of the projects in which it has been employed (Hooper et al., 2011). The 24 item THQ can generate a total score representing the number and types of events endorsed. It also has subscale scores, where each of the three subscales can be totalled. For example, crime related events (4 items), general disaster and traumatic experiences (13 items) and unwanted physical/sexual experiences (6 items). Hooper et al. (2011) report that the most common convention is to count the number of types of events endorsed giving a total score of 0 to 24 and/or subscale scores. For the purpose of this, an overall total score along with four subscales scores were calculated.

See Appendix E for a copy of each psychometric used.

Data Analyses

Statistical analysis were completed using IBM SPSS Statistics 26.0. Descriptive statistics were performed across all variables including means and standard deviations. Pearson's correlation analyses were then performed to examine the relationships between alexithymia (TAS-20, APRQ) and trauma (ACE, THQ). A cluster analysis was using R programming language. Cluster analysis is a valuable technique for identifying hidden patterns in participant responses, and potentially identifying sub-groups within a sample, who may differ in other important ways.

Results

Descriptive statistics

The TAS-20 is a self-report questionnaire used to measure alexithymia. The mean TAS-20 total score, 60.4 ($SD=14.8$) was also reported to be higher than found in community samples indicating higher levels of alexithymic traits in this sample. Considering that this score may be influenced by a small number of very high or very low TAS-20 total scores, it is also important to note that 19 (54%) participants scored 61 or higher, which is a commonly applied clinical threshold. Parker et al. (2003) found a total mean score of 45.57 ($SD = 11.35$) in a community sample of 1933 participants. The three subscales DIF 22.5 ($SD = 7.14$), DDF 16.3 ($SD = 4.29$) and EOT 21.6 ($SD = 5.71$) were also found to be higher than those found in community samples (Franz et al., 2007; Parker et al., 2003).

The mean APRQ score in the current sample was 8.94 ($SD = 3.83$), which is notably lower than scores reported in general population samples, suggesting higher levels of alexithymia in this group. For comparison, a recent study by McEnaney and Ryan (2024) found a mean APRQ score of 12.01 ($SD = 3.03$) in a sample of 396 adults from the general population.

For the ACE questionnaire, the mean result was 5.37 ($SD = 3.06$). This is higher than ACE scores reported within general adult population studies which range from reported mean scores of 1.03 to 1.56 (Witt et al., 2019; Giano et al., 2020). Hughes et al. (2017) report that among the general adult population, around half of adults report at least one ACE while 10% report four or more. This in comparison to 74% of the current sample who reported four or more ACEs indicating higher trauma levels within this sample.

The mean THQ total score was 9 indicating that a high proportion of participants were exposed to at least 9 types of traumatic events in their life so far. A study conducted by Zuckerman et al. (2019) examined total trauma history scores among three different groups.

The authors reported the mean THQ score among a group of trauma exposed college students with ‘probable PTSD’ to be 5. They found a mean score among trauma exposed college students ‘without PTSD’ to be 4 and the mean among the control group (no PTSD or trauma) to be 0. The findings from the current study are notably higher than those observed by Zuckerman et al. (2019).

Correlational Analysis

Examination of qq-plots and density distributions indicated that scores on the TAS-20, APRQ, ACE, and THQ were all relatively normal. Kurtosis and skewness scores also indicated an acceptable distribution supporting the use of parametric analyses. See Appendix F.

Pearson’s correlational analysis was conducted to examine the relationships between alexithymia and trauma related variables. A number of significant associations were found, see Table 4 and table 5.

Table 4

TAS-20 Total and Subscale Scores with the ACE Scores

Variable	1	2	3	4	5
1. TAS	-				
2. DIF	.93**	-			
3. DDF	.80**	.69**	-		
4. EOT	.84**	.65**	.48**	-	
5. ACE	.12	.11	.22	-.01	-

Note. TAS = Toronto Alexithymia Scale (total score); DIF = Difficulty Identifying Feelings; DDF = Difficulty Describing Feelings; EOT = Externally Oriented Thinking, ACE = Adverse Childhood Experiences.

N = 35.

$p < .01^{**}$, $p < .05^{*}$.

As demonstrated in Table 4, no significant correlations were observed between total ACE score and any of the TAS-20 subscales indicating levels of childhood adversity were not directly associated with alexithymic traits as measured by the TAS-20 in this sample. Specifically, ACEs were not significantly correlated with TAS total score ($r = .12, p = .504$), DIF ($r = .11, p = .521$), DDF ($r = .22, p = .197$), or EOT ($r = -.01, p = .979$). However, as expected strong positive correlations were found among the TAS-20 subscales. DIF and DDF were significantly correlated ($r = .69, p < .001$), as were DIF and EOT ($r = .65, p < .001$). The TAS total score also showed strong correlations with DIF ($r = .93, p < .001$), DDF ($r = .80, p < .001$), and EOT ($r = .84, p < .001$).

Table 5.*TAS-20 Total and Subscale Scores with THQ Total and Subscale Scores*

Variable	1	2	3	4	5	6	7	8	9
1. TAS	-								
2. DIF	.93**	-							
3. DDF	.80**	.69**	-						
4. EOT	.84**	.65**	.48**	-					
5. THQ	.21	.26	.03	.21	-				
6. Crime	.02	.04	-.18	.13	.68**	-			
7. Disaster	.18	.21	-.03	.23	.91**	.51**	-		
8. Physical/ sexual violence	.27	.32	.21	.15	.85**	.36*	.65**	-	
9. Interpersonal Victimisation	.21	.25	.11	.15	.92**	.72**	.70**	.85**	-

Note. TAS = Toronto Alexithymia Scale; DIF = Difficulty Identifying Feelings; DDF = Difficulty Describing Feelings; EOT = Externally Oriented Thinking; THQ = Trauma History Questionnaire.

N = 35.

$p < .01^{**}$, $p < .05^{*}$.

As demonstrated in Table 5, no significant correlations were associated with TAS-20 total scores or its subscales and the THQ score or its subscales. TAS total score was not significantly correlated with overall trauma history ($r = .21$, $p = .219$), crime-related trauma ($r = .02$, $p = .924$), disaster exposure ($r = .18$, $p = .298$), physical/sexual violence ($r = .27$, $p = .111$) or interpersonal victimisation ($r = .21$, $p = .22$). Similarly, the DIF, DDF, and EOT subscales did not show significant associations with any of the trauma variables. However, as expected, strong positive correlations were found among the THQ total score and subscale scores. Trauma history (THQ) was significantly positively correlated with crime-related trauma ($r = .68$, $p < .001$), disaster exposure ($r = .91$, $p < .001$), physical/sexual violence ($r =$

.85, $p < .001$) and interpersonal violence ($r = .92, p < .001$). Additionally, crime-related trauma was significantly associated with disaster exposure ($r = .51, p = .002$), physical/sexual violence ($r = .36, p = .034$) and interpersonal victimisation ($r = .72, p = .001$).

Table 6

APRQ Score and Trauma Variable Scores

Variable	1	2	3	4	5	6	7
1. APRQ	-						
2. THQ	-.20	-					
3. Crime	-.13	.68**	-				
4. Disaster	-.13	.91**	.51**	-			
5. Physical/sexual violence	-.23	.85**	.36**	.65**	-		
6. Interpersonal Victimization	-.24	.91**	.72**	.70**	.88**	-	
7. ACE	-.46**	.65**	.31	.51**	.71**	.69**	-

Note. APRQ = Alexithymia Provoked Response Questionnaire; THQ = Trauma History Questionnaire; ACE = Adverse Childhood Experiences.
 $p < .05^*$, $p < .01^{**}$

Correlation co-efficients were calculated to examine the relationships between the APRQ and trauma variables (THQ and subscales and ACE questionnaire). ACE scores were found to be significantly positively correlated with the THQ total ($r = .65, p < .001$), disaster subscale ($r = .51, p < .001$), physical/sexual trauma subscale of the THQ ($r = .71, p < .001$) and the interpersonal victimisation subscale ($r = .69, p < .001$). These results suggest that more adverse childhood experiences are associated with increased incidents of general disaster experiences, physical and/or sexual traumatic experiences, interpersonal victimisation and higher overall trauma scores. A significant negative correlation was found

between APRQ scores and ACE ($r = -.46$, $p = .005$), suggesting that individuals with higher ACE scores have higher alexithymia scores, as measured objectively by the APRQ.

Cluster Analysis

Cluster analysis is a valuable technique for identifying hidden patterns in participant responses, and potentially identifying sub-groups within a sample, who may differ in other important ways. One of the aims of the current study was to investigate if sub-groups of offenders could be identified by their trauma profile and to test whether such groups respond differently to either self-report or behavioural measured alexithymia. We used hierarchical cluster analysis conducted with complete linkage.

Hierarchical cluster analysis was performed on the THQ sub-scale scores using the `hclust()` function in R, with the complete linkage method, which has the benefit of producing compact and well-separated clusters (Boehmke & Greenwell, 2020). The optimal number of clusters was determined using the `NbClust` package (Charrad et al., 2014), which identified three clusters as achieving the highest values on a range of clustering quality indices.

We hypothesised that three groups would emerge – those with a trauma pattern that leads to alexithymia, those who have a trauma history without alexithymia and a group for whom the alexithymia is an independent (neurodevelopmental) condition who would have little trauma history. We focused the cluster analysis on the THQ as a trauma measure in this study as it has subscale scores that are continuous variables. The ACE was not included in this step as the clustering of binary data is a less well-developed methodology.

Table 7.*THQ Results of Clustering on Subscale Scores*

Group	Crime	Disaster	Physical and sexual	THQ total	APRQ	TAS-20	<i>n</i>
Group 1 – Moderate trauma / little physical and sexual	2.67 (0.65)	5.58 (0.99)	1.67 (1.44)	9.92 (2.02)	11.20 (2.80)	57.4 (17.00)	12
Group 2 - Low trauma	0.87 (0.92)	2.87 (1.41)	1.13 (0.99)	4.87 (2.29)	8.20 (3.67)	58.4 (14.24)	15
Group 3 - High Trauma with physical and sexual	2.75 (1.39)	7.38 (1.60)	5.50 (1.07)	15.60 (2.00)	6.88 (4.12)	68.5 (10.57)	8

Note. THQ = Trauma History Questionnaire; APRQ = Alexithymia Provoked Response Questionnaire, TAS-20 = Toronto Alexithymia Scale.

As demonstrated in Table 7, Groups 2 and 3 both appear to show evidence of alexithymia on the APRQ, but not clearly on the TAS-20. Differences between clusters were assessed using the Kruskal-Wallis test given the small sample sizes. A Kruskal-Wallis test indicated that there was a significant difference in APRQ scores across the three clusters, $\chi^2(2) = 7.27, p = .026$, but no significant difference on the TAS-20 scores $\chi^2(2) = 3.89, p = .14$.

Discussion

This study aimed to firstly, explore the levels of alexithymia and trauma within this sample of the Irish prison population, secondly to investigate the potential relationship between alexithymia and trauma and third, to explore if it is possible to differentiate between primary and secondary alexithymia within this sample. The findings of this study suggest elevated levels of alexithymia as evidenced by the mean scores obtained on both the TAS-20 and APRQ measures in this sample. Similarly, trauma levels and ACE total scores within this sample were found to be substantial, with participants reporting high scores on both the ACE and THQ measures. When examining the relationship between trauma and alexithymia, no significant relationship was found between the TAS-20 and both the ACE questionnaire and the THQ. A significant negative relationship ($r = -.46$, $p = .005$) was identified between the APRQ and the ACE questionnaire which suggests a relationship between having a higher number of ACEs and a higher alexithymia score. No relationship was reported between the APRQ and the THQ. With regard to primary and secondary alexithymia, results of our cluster analysis identified three subgroups from our sample, suggesting distinct trauma/alexithymia profiles. This preliminary finding highlights the variation in trauma exposure and its relationship to alexithymia, offering preliminary support for the presence of 2 types of alexithymia, primary and secondary. However, given the small sample sizes, these results should be interpreted with caution and would benefit from replication in larger, more diverse samples to confirm the observed patterns.

The elevated levels of alexithymia found in this sample converge with previous research conducted to date highlighting the heightened prevalence of alexithymia within forensic populations. Compared to community samples, participants in this study scored higher on both the TAS-20 and the APRQ (Franz et al., 2007; McEnaney & Ryan, 2024 & Parker et al., 2023). This finding is consistent with the work of Yang et al. (2009), Pihet et al.

(2012), Byrne et al. (2016) and Hemming et al. (2021), who all found elevated rates of alexithymia in offender populations. The convergence of results across both the APRQ (an observer rated tool) and the TAS-20 (self-report), strengthens the validity of this finding which may be reflective of the level of emotional processing difficulties present within this population. Interestingly, although the TAS-20 and the APRQ showed high levels of alexithymia in this sample, the measures themselves were not found to correlate with one another. This finding converges with research conducted by Ryan et al. (2021) and Wheeler et al. (2005) who both found no significant relationship between the TAS-20 and the APRQ. Ryan et al. (2021) suggests that perhaps the APRQ is measuring the difficulty emotionalising component of alexithymia resulting in the lack of correlation between these measures. This points to the possibility that perhaps these measures are tapping into different aspects of alexithymia. One which is based on self-perception and the other on how emotional content is communicated, whether or not the respondent is aware of it.

In addition to the elevated levels of alexithymia, this study also found high levels of trauma within this population. The finding that 74% of participants reported experiencing four or more ACEs highlights the extent of trauma present in this population when compared to community samples where only 10% are reported to experience four or more ACEs (Hughes et al., 2017). This finding converges with research conducted by Friedstad et al. (2012), Ford et al. (2019) and Narramore et al. (2015) all of whom report finding high levels of ACEs in different offender populations. Taken together, these findings highlight just how widespread early trauma is within the prison population. In addition to early trauma, the THQ results also pointed to significant trauma exposure across participant's lifetime. While the ACE questionnaire focuses on early life, the THQ captures a broader range of traumatic events, including those that occur in adolescence and adulthood. The finding that participants in this study were exposed to on average 9 types of trauma in their life to date, is higher than

what has been reported among community samples (Zuckerman et al., 2019). This finding converges with research conducted on a female forensic population which reported similarly elevated THQ scores (McKenna et al., 2019).

The preliminary finding of a moderate negative correlation between the ACE questionnaire and APRQ suggests that individuals who experience more adverse events in childhood tended to have higher alexithymia scores as measured by the APRQ. While no study to date has been conducted using the APRQ and the ACE questionnaire specifically, this finding converges with research which more generally has found an association between childhood trauma (using measures such as the Childhood Trauma Questionnaire CTQ) and alexithymia (using TAS-20) in forensic populations (Chen et al., 2017; Chen et al., 2023,). These studies have shown that adverse early experiences can disrupt emotional development and lead to long term difficulties in identifying, processing and expressing emotions – all of which are core components of alexithymia.

Interestingly in contrast however, this study did not find any association between the TAS-20 and trauma scales. There are two possible reasons as to why this did not occur in our study. Firstly, this discrepancy may lie in the nature of the alexithymia measures themselves. The TAS-20 is a self-report tool which relies on an individual's ability to reflect on and accurately report their own emotional difficulties. However, as previously stated, individuals with high levels of alexithymia may lack the self-awareness required to complete this measure in a meaningful manner. It is also important to note, that the prison setting may have contributed to participant's willingness to disclose their own perceived emotional difficulties in the TAS-20. A wealth of prior knowledge has demonstrated that discussing emotions is not the norm in prison environments (Crewe et al., 2014; De Viggiani, 2012). These environmental norms may further reduce emotional self-awareness or limit open reflection, making it more difficult for prisoners to recognise or report deficits in their own emotional

functioning. In contrast, the APRQ is an observer related tool meaning that it may capture deficits in emotional awareness independent of an individual's self-insight (McEnaney & Ryan, 2024). Therefore the APRQ may be more sensitive to picking up the types of emotional processing deficits associated with childhood trauma, while the TAS-20 might miss them, especially in populations with limited emotional insight. Secondly, this study may have been constrained by its small sample size. Chen et al. (2017, 2023) used a notably larger sample size in both of their studies which likely provided greater statistical power to detect associations present.

Another interesting finding was that the APRQ was found to have a moderate negative relationship with the ACE questionnaire but not the THQ. This may be explained by differing nature and timing of trauma assessed by each measure. The ACE questionnaire focuses exclusively on adverse experiences that occur in one's childhood. This is a critical period for emotional, cognitive and relational development and therefore traumas experienced during this time are likely to disrupt the development of core emotional processing abilities, leading to difficulties in emotional expression and awareness (Cassidy, 1994; Schimmenti & Caretti, 2018 and Schore & Schore, 2008). The THQ on the other hand, captures trauma exposure across the lifespan including traumatic events that occur in one's adulthood. While these events are still psychologically impactful, they may not exert the same deep developmental influence on emotion processing systems. As such their effects may be more situational or trauma specific, rather than reflected in broad, trait like deficits in emotional functioning.

The presence of three subgroups following hierarchical cluster analysis between the TAS-20, APRQ and the THQ provided preliminary evidence for the existence of subtypes of alexithymia in offender populations. While the THQ did not show a significant relationship with alexithymia in the correlational analysis, it was utilised for the cluster analysis due to

continuous subscale structure, which allowed for the identification of distinct trauma profiles. Three distinct groups were identified. Group 1 reported moderate levels of trauma with lower levels of physical and sexual trauma; Group 2 showed the lowest levels of trauma overall and Group 3 reported high trauma exposure, particularly in the physical and sexual domains. Interestingly despite different trauma profiles, both Groups 2 and 3 displayed elevated alexithymia scores on the APRQ, with Group 3 reporting the highest levels. Although the TAS-20 scores differed across groups, with the highest trauma group showing elevated mean scores, these differences did not reach statistical significance. This likely reflects limited statistical power due to small group sizes, rather than an absence of meaningful variation. These findings once again underscore the potential difficulties associated with relying on self-report measures when assessing alexithymia. The significant difference in APRQ scores between the clusters supports the idea that trauma exposure, particularly of an interpersonal nature may influence emotional processing as measured by an observer rated tool. This finding aligns with research which has shown that childhood trauma, particularly attachment disrupting trauma such as abuse is linked to difficulty identifying and expressing emotions, a hallmark of alexithymia (Schimmenti & Caretti 2018; Fonagy et al., 2002). This finding also corresponds with conceptualisations of secondary alexithymia, which is understood as emerging in response to significant psychological distress or trauma. On the other hand, Group 2 reported low trauma scores but elevated alexithymia scores which may be consistent with the conceptualisation of primary alexithymia which aligns with neurodevelopmental theories. Distinguishing between primary and secondary alexithymia has important clinical implications. Primary alexithymia may require longer term strategies such as psychoeducation and emotional literacy work, while secondary alexithymia (trauma related) may respond better to trauma-informed interventions. This aligns with Freyberger's (1977) recommendation for tailored approaches.

These findings offer tentative support for the existence of alexithymia subtypes; however the mixed findings, lack of consistent associations in the correlational data, and reliance on self-report measures point to the need for further research using larger, clinically diverse samples and multiple assessment methods.

Limitations

While this study offers valuable insights into the relationship between alexithymia and trauma within an Irish prison population, a number of limitations should be acknowledged. Firstly, this study was constrained by its small sample size (N= 35). This is particularly relevant when considering our cluster analysis findings. Although, three distinct trauma-based subgroups were identified, the small group sizes may reduce the robustness and generalisability of these cluster derived patterns. A larger sample size would allow for more robust conclusions in future research.

The second limitation of this study is the homogeneity of the sample. Although this research was conducted over four different prisons in Ireland, the sample was all male adults. This may limit the generalisability of these findings to other forensic populations such as female or juvenile offenders.

Thirdly, this study relied partly on the use of self-report measures such as the TAS-20, ACE questionnaire and the THQ which may be subject to a number of different biases. Social desirability bias for example, may have led participants to underreport emotional difficulties or traumatic events in order to present themselves in a more favourable light. Additionally, limited emotional insight, a core feature of alexithymia may compromise the accuracy of responses on measures such as the TAS-20. This may have resulted in scores which underrepresent the true prevalence or severity of alexithymia among this cohort.

Fourthly, the cross sectional design of this study means that causality cannot be inferred. While the observed relationships between trauma and alexithymia are consistent

with theoretical explanations, it is not possible to fully determine directionality. That is whether trauma contributes to alexithymia or vice versa. Longitudinal designs would be needed to explore developmental trajectories.

Fifth, this study did not control for potential confounding variables such as age, level of formal education or literacy skills. These factors may influence both the experience of trauma and the reporting of alexithymic traits, and should be considered in future research.

Future Implications

Future research could further explore the high prevalence of alexithymia in prison populations using both self-report and observer-rated tools. The lack of correlation between the TAS-20 and APRQ in this study suggests these instruments may capture distinct facets of alexithymia, warranting more investigation into their complementary use. Longitudinal studies examining developmental pathways, including trauma exposure may also provide insight into potential subtypes of alexithymia and inform more tailored interventions. While the current findings are preliminary, they highlight the need for cautious, multimodal assessment strategies and support continued exploration of how trauma and emotional regulation difficulties intersect in forensic settings.

Conclusion

This study represents the first known exploration into primary and secondary alexithymia within a prison population sample, addressing a significant gap in the literature to date. These findings underscore the substantial prevalence of alexithymic traits among prisoners, associated with extensive trauma histories, particularly those involving childhood trauma. Crucially, differentiating between primary and secondary alexithymia provides valuable insight into how traumatic experiences may contribute to or shape emotional processing deficits in this population. The identification of these distinct types of alexithymia emphasises the need for tailored, trauma informed interventions among the prison population. Such targeted interventions could potentially serve to improve rehabilitation outcomes, reduce recidivism and facilitate more successful reintegration into society post release. Further research is needed to assess this across larger and a more diverse range of prison samples such as women and juvenile offenders. Through this we can continue to refine our understanding of alexithymia's developmental pathways within prison populations.

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Chapter Five : Discussion and Conclusion

Summary of Findings

The aim of this research was to deepen the understanding of alexithymia among offender populations through two complementary studies. The first was a scoping review which synthesized literature in this area and the second was an empirical study which focused on an Irish prison population sample. Findings across both studies demonstrate the high levels of alexithymia among this cohort and its critical association with trauma. The empirical research revealed significant trauma exposure, with 74% of the prison population reporting four or more ACES. Crucially, this research also provided preliminary support for differentiating between primary and secondary alexithymia using the APRQ, which is an observer rated measure alongside the THQ. This findings converge with global research synthesized in the scoping review, reinforcing the relevance of alexithymia in forensic contexts while highlighting the complex interplay between alexithymia, early trauma and offending behaviour. Taken together, these insights highlight critical pathways for targeted clinical interventions and underscore the necessity for trauma informed assessment and rehabilitation programmes within forensic settings.

In chapter two, the scoping review aimed to synthesize existing research in the area of alexithymia and offending behaviour, mapping rates of alexithymia and its impact of offending behaviour, aggression and rehabilitation. This involved systematically searching and reviewing qualitative and quantitative research in this area. Forty three studies were synthesized using narrative synthesis. Results demonstrated that alexithymia is pervasive in this cohort and was found to be associated with aggressive behaviour, trauma and mental health disorders.

Just over half of the studies in the scoping review ($n=22$) reported a moderate or clinically significant level of alexithymia using both the TAS-20 and the TAS-26 which underscores its relevance as a psychological characteristic in this population. A robust link was found between alexithymia and aggression across different offender populations and TAS-20 scores were found to be associated with increased aggression, impulsivity and traits associated with anti-social behaviour. These findings align with psychological theories suggesting that limited emotional awareness can reduce one's ability to regulate their emotions, thereby increasing the risk of aggression or aggressive responses (Cohn et al., 2010; Sullivan et al., 2010).

The link between trauma and alexithymia was also highlighted in this scoping review with multiple studies finding individuals with childhood trauma were significantly more likely to experience alexithymia. Again, these findings align with broader community research which demonstrates that early abuse and neglect can contribute to emotional processing difficulties (Widom, 2000). Significant associations with alexithymia and various mental health disorders were also observed, which also aligns with research conducted among community samples.

It was evident from this scoping review that research into interventions targeting alexithymia in prison populations remains in its early stages, with current evidence limited by small sample size, varied prison populations and different intervention approaches. This finding underscores the need for more systematic and larger scale studies to evaluate the effectiveness of tailored interventions among this cohort.

There were a number of gaps and limitations identified from this scoping review which was the first of its kind in this research area. Namely the overreliance of self-report measures of alexithymia such as the TAS-20, which may prove problematic as alexithymia's core feature is emotional awareness. Furthermore, most studies were of a cross-sectional

nature, limiting causal conclusions and sample sizes varied widely which impact generalisability.

In chapter four, the empirical study had three aims. Firstly, this study aimed to explore the levels of alexithymia and trauma within this sample of the Irish prison population. Secondly, this study aimed to investigate the potential relationship between trauma exposure and alexithymia. Thirdly, the study aimed to explore if it was possible to differentiate between primary and secondary forms of alexithymia within this population. Thirty five participants from four different prisons in Ireland were administered two alexithymia measures, the TAS-20 and the APRQ and two trauma measures, the ACE questionnaire and the THQ. Findings of this study indicated elevated levels of alexithymia and high incidences of trauma, with 74% of the sample reporting four or more ACEs. Using correlational analysis, a moderate negative correlation was observed between the APRQ and the ACE questionnaire suggesting that having a higher number of ACEs is linked with increased levels of alexithymia. This relationship was not observed between the TAS-20 and ACE questionnaire. With regard to primary and secondary alexithymia, hierarchical cluster analysis identified three distinct groups which provided preliminary support for distinguishing between primary (high alexithymia and low trauma) and secondary (high trauma, high alexithymia) alexithymia types. It should be noted that this finding was in relation to the observer rated APRQ, the TAS-20 was not observed to significantly differ across these groups.

The findings of the empirical study align closely with those of the scoping review, particularly in demonstrating a high prevalence of trauma and its association with alexithymia in offender populations. Both studies point to a high level of trauma and high levels of alexithymia among this population. The moderate negative correlation observed between the ACE scores and the APRQ in the empirical study, converges with the literature from the scoping review that links early trauma to increased emotional dysregulation and alexithymia

in offender populations. Importantly, the empirical study provided further evidence for one of the key limitations identified in the scoping review which was the over reliance on self-report measures such as the TAS-20 to assess a construct ultimately characterised by impaired emotional insight. While the TAS-20 scores in the empirical study suggested high levels of alexithymia, they did not meaningfully differentiate between participants with high versus low trauma exposure. In contrast, the APRQ not only showed a moderate correlation with the ACE questionnaire, it also revealed significant group difference in the cluster analysis. These differences, supporting the differentiation between primary and secondary alexithymia were only observed in the APRQ and not the TAS-20. This divergence highlights the importance of observer based tools who assessing alexithymia in clinical or forensic settings, where individuals, may lack emotional insight or respond in socially desirable ways.

The ability of the empirical study to preliminary distinguish between primary and secondary alexithymia, based on trauma history as well as self-report and observer rated alexithymia measures, extends the existing literature by offering a nuanced perspective that has not yet been widely explored in forensic settings. This differentiation has important implications for assessment and intervention, as it suggests that based on its underpinnings, be they neurodevelopmental or as a result of trauma, primary and secondary alexithymia may require different therapeutic approaches.

Strengths and Limitations

This research brings a number of notable strengths, alongside a number of limitations that should be acknowledged to contextualise the findings and inform future research designs.

This research offers meaningful contributions to the study of alexithymia among forensic populations. Given the paucity of research from an Irish perspective on this topic and the broader lack of integration between trauma research and alexithymia in forensic literature, this research fills a crucial gap.

In the empirical study, the use of multi-modal approach when assessing alexithymia is a notable strength. One of the most significant findings was the discrepancy between TAS-20 and APRQ findings, particularly in relation to trauma and cluster groupings. This helped to empirically validate critiques raised in the scoping review regarding the limitations of relying solely on self-report measures when assessing this construct. Another notable strength is the preliminary attempt to differentiate between primary and secondary alexithymia. This study is the first of its kind within a forensic context which paves the way towards a better understanding of the aetiology of alexithymia within this population.

It should be noted that the empirical study was constrained by its small sample size ($n=35$) which limits the statistical power of the findings and the generalisability of the results. A larger sample would have enhanced reliability of the findings. It is also important to note that participants were drawn from a convenience sample within four prisons. Additionally this sample was limited to males preventing any gender based comparisons or generalisation to female offender populations. Given existing evidence that alexithymia can manifest differently across genders (Levant et al., 2009), the inclusion of female offenders in future research would provide a more comprehensive understanding of how alexithymia presents and interacts with trauma across different offender populations. This study was also constrained by the fact that it did not control for potential confounding variables such as age, level of formal education or literacy skills. These factors may influence both the experience of trauma and the reporting of alexithymic traits, and should be considered in future research.

Recruitment within the prisons also proved challenging. Due to the constricted nature of prison environments, access to participants was mediated by institutional gatekeepers, including senior and assistant psychologists, who were responsible for disseminating information sheets and consent forms. This indirect recruitment process may have limited the reach and visibility of the study, particularly for individuals less engaged with psychological

services within the prison or who are distrustful of prison staff/formal authorities. This may have impacted representativeness of the sample. Furthermore, participation was voluntary and it is possible that those who agreed to participate were more open to discussing their emotional experiences or with engaging with psychological research which may have resulted in a sampling bias.

The cross sectional nature of the empirical study means that causality cannot be inferred. While the observed relationships between trauma and alexithymia are consistent with theoretical expectations, it is not possible to determine directionality, that trauma contributes to alexithymia or vice versa. Longitudinal research would be needed to explore developmental trajectories. This limitation was echoed in a number of studies in the scoping review conducted.

While I have previously discussed the limitations of using a self-report measure such as the TAS-20 when assessing alexithymia, a construct underpinned by limited emotional awareness, the self-report nature of the trauma measures used in the empirical study is also a limitation. Measures such as the ACE questionnaire and the THQ rely on participant recall, insight and willingness to disclose sensitive information. Within a prison setting, social desirability bias may be heightened with participants potentially minimising or withholding traumatic experiences due to stigma, mistrust or discomfort within the group setting.

The majority of this data was collected in groups of six to eight participants. This approach was chosen to minimise the operational load on prison staff, who were required to both escort prisoners from their cells and remain outside the room while the data was being collected for security purposes. A small number of individual sessions were conducted when collecting data. These sessions were typically an hour duration, and questions from each measure were administered verbally to the participant. It was notable, particularly in relation to the THQ, that when administering this assessment responses were more detailed, reflective

and emotionally nuanced. This difference may reflect varying literacy levels among participants, a factor which is prevalent in prison populations (Svensson, 2011). Despite guidance from senior psychologists in advance of group sessions regarding potential literacy concerns, it is likely that some difficulties remained unacknowledged. Perhaps participants may have felt reluctant to disclose such difficulties in the group setting, out of fear of judgement or stigma. These observations suggest that one to one verbally administered approaches may be more appropriate when exploring sensitive topics such as trauma in offender populations. Not only might they facilitate deeper engagement but they may also help to mitigate the impact of literacy challenges, supporting more authentic data collection.

It is important to note that another limitation of the empirical study is that it was conducted in an Irish prison system, which may have unique sociocultural, policy or rehabilitative characteristics that limit comparability with international settings. Cross cultural difference to emotional regulation and expression may influence how alexithymia presents.

Finally, although this study offered a valuable insight into the prevalence and characteristics of alexithymia within a prison population, it did not explore potential differences in alexithymia across different types of offences. Some of the studies synthesized in the scoping review highlighted how alexithymia may be particularly relevant in certain categories of offences such as violent crime, homicide or sexual offences. Investigating whether specific crimes are associated with higher levels or distinct profiles of alexithymia could offer a more nuanced understanding of its role in criminal behaviour. Such insights could have important implications for risk assessment and rehabilitation planning.

Clinical Implications

This research contributes to the clinical understanding of alexithymia within offender populations, both through a synthesis of the existing literature and through the findings of the

empirical study, conducted on an Irish prison population. Across both of these studies, alexithymia emerged as a pervasive characteristic, often co-occurring with significant trauma histories and associated with difficulties in emotional regulation. These findings underscore a number of key clinical implications relating to assessment, formulation and intervention in forensic settings.

One of the most pressing clinical implications highlighted by the research is the challenge of accurately assessing alexithymia in prison populations. Both the findings of the scoping review and the empirical study call the sufficiency of self-report tools such as the TAS-20 into question; particularly when used as the sole alexithymia measure. As alexithymia is characterised by limited emotional insight, individuals may lack the metacognitive awareness to accurately report on their own emotional functioning. The empirical study reinforced this concern as while the TAS-20 scores suggested elevated levels of alexithymia, it was not able to differentiate between participants with high and low trauma exposure. In contrast, the APRQ which is observer rated, not only correlated with ACE scores but revealed distinct clusters that aligned with theoretical distinctions between primary and secondary alexithymia.

These findings suggest that clinicians working in forensic settings should consider a multi-modal approach to the assessment of alexithymia, inclusive of both observer rated and self-report tools. This recommendation converges with findings by Ryan et al. (2021) when they investigated a multi modal approach to assessing alexithymia in a large online sample. The use of measures such as the APRQ may enable more accurate detection of emotional processing deficits, especially in a prison environment where prisoners may under-report difficulties due to desirability bias, shame, stigma or limited insight. The use of a multi-modal approach is also particularly pertinent in prison settings, which are often not psychologically safe spaces for emotional disclosure (Crewe et al., 2014; De Viggiani, 2012).

Cultural norms within prison settings can promote hypermasculinity and emotional suppression, meaning individuals may be reluctant to identify and articulate their emotional experiences. Furthermore, using observer rated tools with self-report may be important when working with individuals who many have experienced developmental trauma, as emotional numbing and disconnection from internal states can be long-standing and deeply embedded (van der Kolk, 2005).

Accurately identifying alexithymia is essential for developing meaningful, individualised formulations in forensic contexts. Integrating multiple sources of information including how an individual describes themselves (as per the TAS-20), how they present and how they are perceived by professionals (APRQ) allows for a more comprehensive understanding of their emotional functioning. This in turn can directly inform treatment planning and risk assessment. For instance, a discrepancy between self-report and observer rated measures may suggest a lack of emotional insight or alternatively potential defensiveness. Recognising such patterns helps clinicians to formulate more nuanced hypotheses about underlying psychological processes and tailor interventions accordingly. Furthermore, as reported in the scoping review, alexithymia was found to be associated with aggression, impulsivity and poor emotional regulation, all of which are relevant to risk assessment and management in forensic settings. Incorporating alexithymia into risk formulations could provide a more accurate picture of the psychological mechanisms underpinning such behaviour.

We know from previous research, that alexithymia can have significant implications for therapeutic engagement, particularly on interventions that rely heavily on emotional insight, as alexithymic individuals can struggle to differentiate, verbalise and discuss subjective experiences (Stingl et al., 2008). Furthermore, alexithymic individuals have been reported to struggle with the development of a therapeutic alliance due to their inability to

emotionally interact with the therapist (Krystal, 1979). This may make it difficult for this cohort to engage with more traditional types of therapy such as CBT, DBT or trauma informed therapies. In response to this, it is important that interventions targeted at alexithymic individuals are adapted to better meet their emotional capacities. A number of studies have highlighted how supportive rather than interpretive treatment is effective when working with alexithymic individuals and how approaches inclusive of psychoeducational components are the most effective treatment types among this population (Grabe et al., 2008; Ogrodniczuk et al., 2013). This is particularly pertinent in forensic populations where rehabilitation is a key component of psychological intervention. Recent research has highlighted recidivism rates in Ireland; where in a sample of 13,156 prisoners released, 38% were reconvicted in a court of criminal law within a two year period (Barry, 2017). These statistics underpin the need for effective and tailored interventions. Given the potential difficulty alexithymic individuals face, emotion focused psychoeducation may act as a necessary precursor to more intensive therapeutic work. Currently in the Irish prison system psychology service, Alexithymia specific groups are offered as a precursor to more intensive tailored interventions such as Mentalisation Based Therapy groups which are currently being implemented in different prisons across Ireland which is a positive step in the right direction.

So where does primary and secondary alexithymia come into this? Primary alexithymia is reported to be neurodevelopmental in nature, in comparison to secondary alexithymia which is thought to occur in response to traumatic events in one's life. Understanding the aetiology of each type may lead to more successful intervention and rehabilitation. If alexithymia is understood as being primary, it may be more enduring and require long term compensatory strategies such as psychoeducation, communication skills or structured emotional literacy work. Conversely, if alexithymia is thought of as being secondary and rooted in trauma, clinical efforts may focus more on trauma informed

interventions. This converges with recommendations made by Freyberger (1977) that both primary and secondary alexithymia require distinct interventions.

This research may also have implications for the delivery of psychology services within prison environments. While group based interventions are efficient from a resource standpoint, they may not always be effective for individuals with alexithymia, particularly those with high trauma exposure and limited emotional awareness. For individuals with levels of high alexithymia, such group exercises may prove to be too overwhelming or emotionally inaccessible limiting their effectiveness in promoting rehabilitation. One to one therapeutic formats may be more suitable for these individuals, allowing for a safer and more individualised space where emotional exploration can be facilitated at a client led pace. The qualitative observations from the empirical study which noted that during one to one data collection, participants were observed to be more reflective and open further supporting this argument.

In summary, the findings of this research highlight the benefits of recognising alexithymia as a key clinical feature which should be addresses across assessment, formulation and intervention. Clinicians working in forensic settings should consider the use of multi-modal approach when assessing for this construct among the prison population and consider the use of trauma measures to better understand the aetiology of alexithymia. Furthermore, interventions should be tailored accordingly to reflect the developmental or trauma related origins of the construct. By embedding these practices into both individual work and broader systemic frameworks, services can better support emotional growth, therapeutic engagement and long term desistance in offender populations.

Personal reflections of the author

A number of different authors have argued that the researcher is a central figure in research who influences the collection, selection and interpretation of data (Braun & Clarke, 2013; Finlay 2002a, 2002b). The researchers status as an ‘insider’ or ‘outsider’ has received considerable attention, particularly regarding its influence on the researcher, participants and the knowledge produced (Le Gallais, 2008). As such, I feel it is important to reflect on my positionality within the context of this thesis.

Throughout this study I have been aware of my role as a researcher and how my identity may have shaped the process. As a young, white, female, educated woman working with an exclusively male prison population, I was acutely aware of my outsider status. While some participants appeared to open up more during this outside positioning there were also moments where this brought challenges. The content of the Trauma History Questionnaire (THQ) often elicited highly emotional disclosures. During one instance on recounting the number of traumatic experiences a participant had encountered, he remarked to me ‘ I guess your life has looked an awful lot different to mine’. In this moment, my outsider status was highlighted. This comment not only underscored the social and experiential distance between myself and the participants, but also drew attention to the deeply personal nature of the data being shared. This interaction forced me to reflect on the power dynamics which were at play in this interview space and the degree of vulnerability being shown in contrast the protected position I occupied. While I tried to convey a non-judgemental stance and empathic atmosphere, I remained conscious of my ability to leave the prison at the end of each session, a privilege not shared by the men I interviewed.

Another challenge came from holding the traumatic experiences recalled by the participants. While I did not request the reason as to why they had been imprisoned, this information occasionally surfaced during the interviews. In response to a question on the

THQ which asks if the participant has ever handled a dead body, two men responded by telling me they handled the body of the person they murdered. These moments, despite occurring within the structure of quantitative data collection, were stark reminders of the complex, and at times morally unsettling nature of conducting research within forensic settings. Hearing such a disclosure was emotionally arresting. I was acutely aware of the gravity of what had been shared, and felt a visceral internal reaction, despite trying to maintain a composed and respectful presence in the room. These moments prompted a deep reflection of my own values, assumptions and boundaries as a researcher. Despite the objectivity that quantitative methods typically demand, I found myself needing to balance the ethical responsibility of holding such disclosures with the composure required to complete data collection.

Although quantitative research often strives for a neutral stance, the lived process of engaging with vulnerable populations in restrictive and emotionally charged environments such as prisons, cannot be separated from the personal responses it elicits. These experiences challenged me to reflect on my own values, assumptions and emotional boundaries as a researcher.

Conclusion

In conclusion, this research offers important insights into the intersection of trauma and alexithymia within forensic settings. By advancing assessment practices and advocating for tailored intervention approaches, this thesis contributes to the development of more effective and evidence-informed rehabilitation strategies for offender populations.

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Appendix A:

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Appendix B: PRISMA-ScR Checklist

SECTION	ITEM	PRISMA-ScR CHECKLIST ITEM	REPORTED ON PAGE #
TITLE			
Title	1	Identify the report as a scoping review.	38
ABSTRACT			
Structured summary	2	Provide a structured summary that includes (as applicable): background, objectives, eligibility criteria, sources of evidence, charting methods, results, and conclusions that relate to the review questions and objectives.	39
INTRODUCTION			
Rationale	3	Describe the rationale for the review in the context of what is already known. Explain why the review questions/objectives lend themselves to a scoping review approach.	40
Objectives	4	Provide an explicit statement of the questions and objectives being addressed with reference to their key elements (e.g., population or participants, concepts, and context) or other relevant key elements used to conceptualize the review questions and/or objectives.	44
METHODS			
Protocol and registration	5	Indicate whether a review protocol exists; state if and where it can be accessed (e.g., a Web	45

SECTION	ITEM	PRISMA-ScR CHECKLIST ITEM	REPORTED ON PAGE #
		address); and if available, provide registration information, including the registration number.	
Eligibility criteria	6	Specify characteristics of the sources of evidence used as eligibility criteria (e.g., years considered, language, and publication status), and provide a rationale.	45
Information sources*	7	Describe all information sources in the search (e.g., databases with dates of coverage and contact with authors to identify additional sources), as well as the date the most recent search was executed.	46
Search	8	Present the full electronic search strategy for at least 1 database, including any limits used, such that it could be repeated.	49
Selection of sources of evidence†	9	State the process for selecting sources of evidence (i.e., screening and eligibility) included in the scoping review.	47
Data charting process‡	10	Describe the methods of charting data from the included sources of evidence (e.g., calibrated forms or forms that have been tested by the team before their use, and whether data charting was done independently or in duplicate) and any processes for obtaining and confirming data from investigators.	47

SECTION	ITEM	PRISMA-ScR CHECKLIST ITEM	REPORTED ON PAGE #
Data items	11	List and define all variables for which data were sought and any assumptions and simplifications made.	47
Critical appraisal of individual sources of evidence§	12	If done, provide a rationale for conducting a critical appraisal of included sources of evidence; describe the methods used and how this information was used in any data synthesis (if appropriate).	48
Synthesis of results	13	Describe the methods of handling and summarizing the data that were charted.	46
RESULTS			
Selection of sources of evidence	14	Give numbers of sources of evidence screened, assessed for eligibility, and included in the review, with reasons for exclusions at each stage, ideally using a flow diagram.	50
Characteristics of sources of evidence	15	For each source of evidence, present characteristics for which data were charted and provide the citations.	82
Critical appraisal within sources of evidence	16	If done, present data on critical appraisal of included sources of evidence (see item 12).	54
Results of individual sources of evidence	17	For each included source of evidence, present the relevant data that were charted that relate to the review questions and objectives.	82

SECTION	ITEM	PRISMA-ScR CHECKLIST ITEM	REPORTED ON PAGE #
Synthesis of results	18	Summarize and/or present the charting results as they relate to the review questions and objectives.	56
DISCUSSION			
Summary of evidence	19	Summarize the main results (including an overview of concepts, themes, and types of evidence available), link to the review questions and objectives, and consider the relevance to key groups.	63
Limitations	20	Discuss the limitations of the scoping review process.	68
Conclusions	21	Provide a general interpretation of the results with respect to the review questions and objectives, as well as potential implications and/or next steps.	69
FUNDING			
Funding	22	Describe sources of funding for the included sources of evidence, as well as sources of funding for the scoping review. Describe the role of the funders of the scoping review.	38

JBİ = Joanna Briggs Institute; PRISMA-ScR = Preferred Reporting Items for Systematic reviews and Meta-Analyses extension for Scoping Reviews.

* Where *sources of evidence* (see second footnote) are compiled from, such as bibliographic databases, social media platforms, and Web sites.

† A more inclusive/heterogeneous term used to account for the different types of evidence or data sources (e.g., quantitative and/or qualitative research, expert opinion, and policy documents) that may be eligible in a scoping review as opposed to only studies. This is not to be confused with *information sources* (see first footnote).

‡ The frameworks by Arksey and O'Malley (6) and Levac and colleagues (7) and the JBI guidance (4, 5) refer to the process of data extraction in a scoping review as data charting.

§ The process of systematically examining research evidence to assess its validity, results, and relevance before using it to inform a decision. This term is used for items 12 and 19 instead of "risk of bias" (which is more applicable to systematic reviews of interventions) to include and acknowledge the various sources of evidence that may be used in a scoping review (e.g., quantitative and/or qualitative research, expert opinion, and policy document).

Appendix C: Ethical approval

20/04/2025, 22:47

University College Cork Mail - Ethics and Research Proposal



Isobel Deburca <113349291@umail.ucc.ie>

Ethics and Research Proposal

Nora Hennessy <nhennessy@ucc.ie>
To: Isobel Deburca <113349291@umail.ucc.ie>

Wed, Feb 21, 2024 at 11:17 AM

Hi Isobel,

Many thanks for this, it is now fully approved.

All the best,

Nora

20/04/2025, 22:49

University College Cork Mail - Research ethics application



Isobel Deburca <113349291@umail.ucc.ie>

Research ethics application

Sarah X Hume <sxhume@irishprisons.ie>
To: Seamus M Beirne <SMBeirne@irishprisons.ie>
Cc: Isobel Deburca <113349291@umail.ucc.ie>

Wed, Mar 6, 2024 at 9:07 AM

Dear Seamus

Please see attached research ethics application from Isobel De Burca, trainee Clinical Psychologist in UCC.
I have reviewed the application and am happy with the submission.
We will support the implementation of the research.

Kind regards

Sarah Hume
Acting Head of Psychological Services

Irish Prison Service | Psychology Service HQ
Arbour Hill Prison, Arbour Hill, Dublin

Seirbhís Phríosúin na hÉireann | Seirbhíis Siceolaíochta
Proisún Cnoc Arbor, Cnoc Arbor, Baile Átha Cliath

T: +353 (0)1 – 4724093 214093 **R:** 45360

E: sxhume@irishprisons.ie **W:** www.irishprisons.ie

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**Appendix D:
Information Sheet and Consent Form**

Participation Form



Participation Form

My name is Isobel de Búrca and I am completing my doctorate in Clinical Psychology. As part of my studies, I am carrying out a research project which aims to better understand how people in prison recognise and understand their emotions. You are invited to take part in this research as you are currently in prison in Ireland.

First, please carefully read the attached information letter and consent forms.

Please let me know by _____ whether you would like to participate. You can ask your Class Officer to contact me at _____ or you can complete this Participation Form and return using the envelope provided.

Name: _____

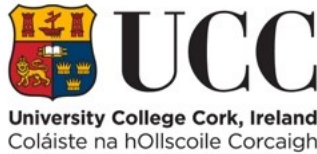
Circle either YES or NO below

I would like to participate in an interview for this research	YES	NO
--	------------	-----------

Information Sheet



**Seirbhís Phríosúin
na hÉireann
Irish Prison Service**



How People Name and Understand their feelings **Research Study Information Sheet for Participants**

This research study has been approved by the IPS Research Ethics Panel and the Research Ethics Committee of University College Cork

Getting to know the Research Team

My name is Isobel de Búrca and I am currently studying to become a clinical psychologist in University College Cork.

I am doing this research project with Sarah Hume (Acting Head of IPS Psychology Service) and some other members of the IPS psychology team, Dr Christian Ryan and Dr Kim Keating (University College Cork).

This information sheet will tell you about the research we are doing to help you decide if you would like to take part.

The Aim of the research project

We want to better understand how people differ in how they recognise and understand their emotions.

What is the research about and why are we doing it?

We all have lots of different emotions, different situations can make us feel different ways. Everyone is different in how they name and understand their own emotions. For some people, it's easy to name their emotions and they can tell people exactly how they feel. For other people however, it can be more difficult – it's not that they don't feel emotions but rather they find it difficult to express them.

There are different reasons as to why people differ in how they name and understand their own emotions. Sometimes it can be down to the way in which the person's brain is wired. Other times it can be because of difficult experiences that a person may have had in their childhood or adult years.

By doing this research, we hope to learn more about the different ways in which people understand and express their emotions.

What will be involved if you decide to take part?

You will be asked to complete a few short questionnaires and one small task which should take no longer than one hour. The questionnaires will ask you questions about your emotions and your life. They will be completed with you by a member of the research team who can help you complete them and answer any questions you may have.

Why have you been invited to take part?

You are currently in prison in Ireland.

How will your privacy be protected?

Once you complete the questionnaires, they will be anonymised. This means that your name and any private information which would link your answers to you will be removed. This is to ensure your privacy. Only people in the research team (listed above) will have access to your data. The consent forms that you sign will be stored in a safe and secure locked cabinet in the Irish Prison Service. Once you have completed the questionnaires and your personal data has been removed from your answers, these will be shredded. This will mean that we will have no way of linking your answers to you. The anonymised data will then be stored in a secure file on the School of Applied psychology service IT Drive. This data will be stored for a period of 10 years.

Please know that according to law, if you indicate to the researcher (a) that you may cause harm to yourself or others, (b) that you were the perpetrator or victim of an undocumented crime, (c) that you were the victim of serious harm from someone else and/or (d) that a child is being harmed in the community, then the researcher will be required to report this information to the relevant authority (e.g. prison management, healthcare, TUSLA, Gardai).

Who has access to the data?

The research team will have access to your data.

How will your data be used?

Your data will be combined with that of other people also taking part in this research. The researcher may publish this research in an academic journal or present the research at a conference. This information will also be written up as part of the psychology student's college work.

What are the risks of taking part in this research study?

The questionnaires may ask you questions about some sensitive issues such as difficult experiences that you might have had in your life. You might find this upsetting.

Please know that you are free to skip any questions you do not want to answer.

The debriefing sheet provided to you after the meeting will have information about how you can seek further support if you wish. Such as talking to a psychologist, Class Officer, Chapin GP or nurse.

Can you change your mind at any stage and withdraw from the study?

Your participation in this research study is voluntary. If you do agree to participate now, you can change your mind before or during your meeting with the researcher and this will not affect you in any way.

If while meeting the researcher you no longer want to take part in the research, please let the researcher know and they will finish the meeting early. Any data collected from you prior to this will be destroyed and not kept on record.

After the interview has taken place, it will no longer be possible to withdraw from the research as your data will not be identifiable. Once your data has been anonymised (your name and details removed from it), it will not be possible to remove your data as we will not be able to find it in the data set.

How will you find out what happens with this project?

If you would like to receive an update on the research, please let a member of staff know and they will contact the researcher on your behalf. The researcher will provide a staff member with a written research update for you based on the stage the research is at.

Care of Participants of Research Study

Should you feel distressed at any point while completing the research, please let the researcher know and you will be able to stop and leave. You can choose to complete the rest another day or you can withdraw yourself from the study with no consequences.

The researcher will directly link you with a relevant member of staff such as a member of the IPS psychology team or chaplaincy service if you are distressed during or after completing this research. This person will be able to support you in managing this.

If you are not in custody, we would recommend you contact your General Practitioner (GP) if you have concerns relating to your mental health following taking part in this study.

What are the benefits of taking part in this research study?

You will not receive anything for agreeing to take part in this research. However you will help to further research in this area which might help to develop different ways of working with people who have different ways of recognising and understanding their emotions.

How to receive more information

You may have questions before deciding if you would like to take part in this research. If you would like to find out more about this study before agreeing to take part, please let a staff member know. They will ask the researcher to answer your questions for you.

If you would like to write a letter to the researcher with your question, please give this to the member of staff and they will pass it on. We would be very happy to answer any questions you have.

You can also meet with the researcher more informally to discuss your questions. If you would like to do the, please ask the staff member to inform the researcher of your request.



**Seirbhís Phríosúin
na hÉireann
Irish Prison Service**



Consent Form

Please read the following information carefully before agreeing to take part in this research study. If you would rather that this be explained to you by a member of the research team instead of reading it, please ask the researcher present.

	Please tick if you agree
I understand why this research is being done	
I understand why I have been asked to take part in this research	
I understand what will happen if I agree to take part in this research	
I understand that taking part in this research is voluntary	
I understand that if I agree to take part in this research, I will be required to fill out a number of questionnaires	
I understand that the research will access some demographic and offending information from my official prison record, for the purposes of this research only.	
I understand that if I tell the researcher (a) that I may cause harm to myself or others (b) that I am the perpetrator or victim of an undocumented crime (c) that I am at risk of serious harm from someone else (d) that a child is being harmed in the community then the researcher will be required to report this information to the relevant authority (e.g. prison management, healthcare, TUSLA, Gardai).	
I understand that during the meeting with the researcher, at any point I can stop and say that I no longer wish to take part in this research. If I decide to no longer take part there will be no consequences for this decision.	
I understand how I can find out more information about this research.	
I understand that no incentives or rewards have been offered to take part in this research.	
I understand that taking part in this research may involve answering questions sensitive topics.	
I understand that a staff member will provide me with a de-briefing sheet after the interviews with details of how to get further support where required	
I understand that all data collected will be anonymous and no identifiable information will be used in this research.	

If you have read and understood the above statement and wish to take part in this research, please sign below:

Signature of Participant

Witness signature

Print name here

Print name here

Date _____

Date _____

Appendix E: Psychometric Questionnaires

Toronto Alexithymia Scale-20

Sex: M / F

Age:

Date:

ID #:

T A S – 20

Using the scale provided as a guide, indicate how much you agree or disagree with each of the following statements by circling the corresponding number. Give only one answer for each statement.

Circle 1 if you STRONGLY DISAGREE

Circle 2 if you MODERATELY DISAGREE

Circle 3 if you NEITHER DISAGREE NOR AGREE

Circle 4 if you MODERATELY AGREE

Circle 5 if you STRONGLY AGREE

	Strongly Disagree	Moderately Disagree	Neither Disagree Nor Agree	Moderately Agree	Strongly Agree
1. I am often confused about what emotion I am feeling.	1	2	3	4	5
2. It is difficult for me to find the right words for my feelings.	1	2	3	4	5
3. I have physical sensations that even doctors don't understand.	1	2	3	4	5
4. I am able to describe my feelings easily.	1	2	3	4	5
5. I prefer to analyze problems rather than just describe them.	1	2	3	4	5
6. When I am upset, I don't know if I am sad, frightened, or angry.	1	2	3	4	5
7. I am often puzzled by sensations in my body.	1	2	3	4	5
8. I prefer to just let things happen rather than to understand why they turned out that way.	1	2	3	4	5
9. I have feelings that I can't quite identify.	1	2	3	4	5
10. Being in touch with emotions is essential.	1	2	3	4	5

Date:

ID #:

T A S – 20

	Strongly Disagree	Moderately Disagree	Neither Disagree Nor Agree	Moderately Agree	Strongly Agree
11. I find it hard to describe how I feel about people.	1	2	3	4	5
12. People tell me to describe my feelings more.	1	2	3	4	5
13. I don't know what's going on inside me.	1	2	3	4	5
14. I often don't know why I am angry.	1	2	3	4	5
15. I prefer talking to people about their daily activities rather than their feelings.	1	2	3	4	5
16. I prefer to watch "light" entertainment shows rather than psychological dramas	1	2	3	4	5
17. It is difficult for me to reveal my innermost feelings, even to close friends.	1	2	3	4	5
18. I can feel close to someone, even in moments of silence.	1	2	3	4	5
19. I find examination of my feelings useful in solving personal problems.	1	2	3	4	5
20. Looking for hidden meanings in movies or plays distracts from their enjoyment.	1	2	3	4	5

T A S – 20

Scoring Instructions

1. The scoring for items 4, 5, 10, 18, and 19 should be reversed (i.e., a rating of 1 becomes scored 5; 2 = 4; 3 = 3; 4 = 2; and 5 = 1).
2. Once the scoring for these items is reversed, total all 20 items.
3. There should be no more than two or three missing values in the total scale and no more than one missing value in any of the three factor scales. A missing value can be replaced by the mean score of the remaining items on the same factor scale. Be careful to score correctly for the negatively keyed items.
4. Although alexithymia is a dimensional construct, and TAS-20 scores best analyzed as a continuous variable, the following empirically derived cutoff scores may be used for identifying individuals with high or low alexithymia.

≥ 61 = high alexithymia (“alexithymia”)

≤ 51 = low alexithymia (“nonalexithymia”)

APPENDIX

The Alexithymia Provoked Response Questionnaire

INSTRUCTIONS: Please record (either by hand or tape recorder) the subject's response to the following questions. Please record the entire response. If you feel a response is ambiguous in regard to its affect content, use further questioning to decrease this ambiguity. Avoid introducing affect-words into the interview. You may repeat questions if necessary. The scale may be introduced as a measure of how people feel or act in a variety of situations. (as used in J. Krystal et al., 1986).

- _____ 1. When you are upset, do you like to take action or do you prefer to think or daydream?
 - _____ 2. How would you feel if a policeman arrested you for a crime you did not commit?
 - _____ 3. How would you feel if someone insulted you?
 - _____ 4. How would you feel if you heard a suspicious noise while you were all alone in your house at night?
 - _____ 5. How would you feel if you had an emergency and tried to make a telephone call but the line was continually busy?
 - _____ 6. How would you feel if someone cut you off in heavy traffic?
 - _____ 7. How would you feel if someone laughed at you?
 - _____ 8. How would you feel if you saw a truck coming at you at 90 mph?
 - _____ 9. How would you feel if someone called you a coward?
 - _____ 10. How would you feel if someone called you a thief?
 - _____ 11. How would you feel if someone complimented you?
 - _____ 12. How would you feel if someone said that you are the best?
 - _____ 13. How would you feel if someone you loved died suddenly?
 - _____ 14. How would you feel if someone tried to attack you with a knife?
 - _____ 15. How would you feel if someone pulled a gun on you?
 - _____ 16. How do you feel when you are hungry?
 - _____ 17. How do you feel when you are sick?
-

Adverse Childhood Experiences Questionnaire

Adverse Childhood Experience Questionnaire for Adults California Surgeon General's Clinical Advisory Committee



Our relationships and experiences—even those in childhood—can affect our health and well-being. Difficult childhood experiences are very common. Please tell us whether you have had any of the experiences listed below, as they may be affecting your health today or may affect your health in the future. This information will help you and your provider better understand how to work together to support your health and well-being.

Instructions: Below is a list of 10 categories of Adverse Childhood Experiences (ACEs). From the list below, please place a checkmark next to each ACE category that you experienced prior to your 18 th birthday. Then, please add up the number of categories of ACEs you experienced and put the <i>total number</i> at the bottom.	
1. Did you feel that you didn't have enough to eat, had to wear dirty clothes, or had no one to protect or take care of you?	☐
2. Did you lose a parent through divorce, abandonment, death, or other reason?	☐
3. Did you live with anyone who was depressed, mentally ill, or attempted suicide?	☐
4. Did you live with anyone who had a problem with drinking or using drugs, including prescription drugs?	☐
5. Did your parents or adults in your home ever hit, punch, beat, or threaten to harm each other?	☐
6. Did you live with anyone who went to jail or prison?	☐
7. Did a parent or adult in your home ever swear at you, insult you, or put you down?	☐
8. Did a parent or adult in your home ever hit, beat, kick, or physically hurt you in any way?	☐
9. Did you feel that no one in your family loved you or thought you were special?	☐
10. Did you experience unwanted sexual contact (such as fondling or oral/anal/vaginal intercourse/penetration)?	☐
Your ACE score is the total number of checked responses	

Do you believe that these experiences have affected your health?

☐ Not Much ☐ Some ☐ A Lot

Experiences in childhood are just one part of a person's life story.
There are many ways to heal throughout one's life.

Please let us know if you have questions about privacy or confidentiality.

5/5/20

Trauma History Questionnaire

TRAUMA HISTORY QUESTIONNAIRE

The following is a series of questions about serious or traumatic life events. These types of events actually occur with some regularity, although we would like to believe they are rare, and they affect how people feel about, react to, and/or think about things subsequently. Knowing about the occurrence of such events, and reactions to them, will help us to develop programs for prevention, education, and other services. The questionnaire is divided into questions covering crime experiences, general disaster and trauma questions, and questions about physical and sexual experiences.

For each event, please indicate (circle) whether it happened and, if it did, the number of times and your approximate age when it happened (give your best guess if you are not sure). Also note the nature of your relationship to the person involved and the specific nature of the event, if appropriate.

Crime-Related Events		Circle one		<i>If you circled yes, please indicate</i>	
				Number of times	Approximate age(s)
1	Has anyone ever tried to take something directly from you by using force or the threat of force, such as a stick-up or mugging?	No	Yes		
2	Has anyone ever attempted to rob you or actually robbed you (i.e., stolen your personal belongings)?	No	Yes		
3	Has anyone ever attempted to or succeeded in breaking into your home when you were <u>not</u> there?	No	Yes		
4	Has anyone ever attempted to or succeed in breaking into your home while you <u>were</u> there?	No	Yes		
General Disaster and Trauma		Circle one		<i>If you circled yes, please indicate</i>	
				Number of times	Approximate age(s)
5	Have you ever had a serious accident at work, in a car, or somewhere else? (If yes , please specify below) _____	No	Yes		
6	Have you ever experienced a natural disaster such as a tornado, hurricane, flood or major earthquake, etc., where you felt you or your loved ones were in danger of death or injury? (If yes , please specify below) _____	No	Yes		

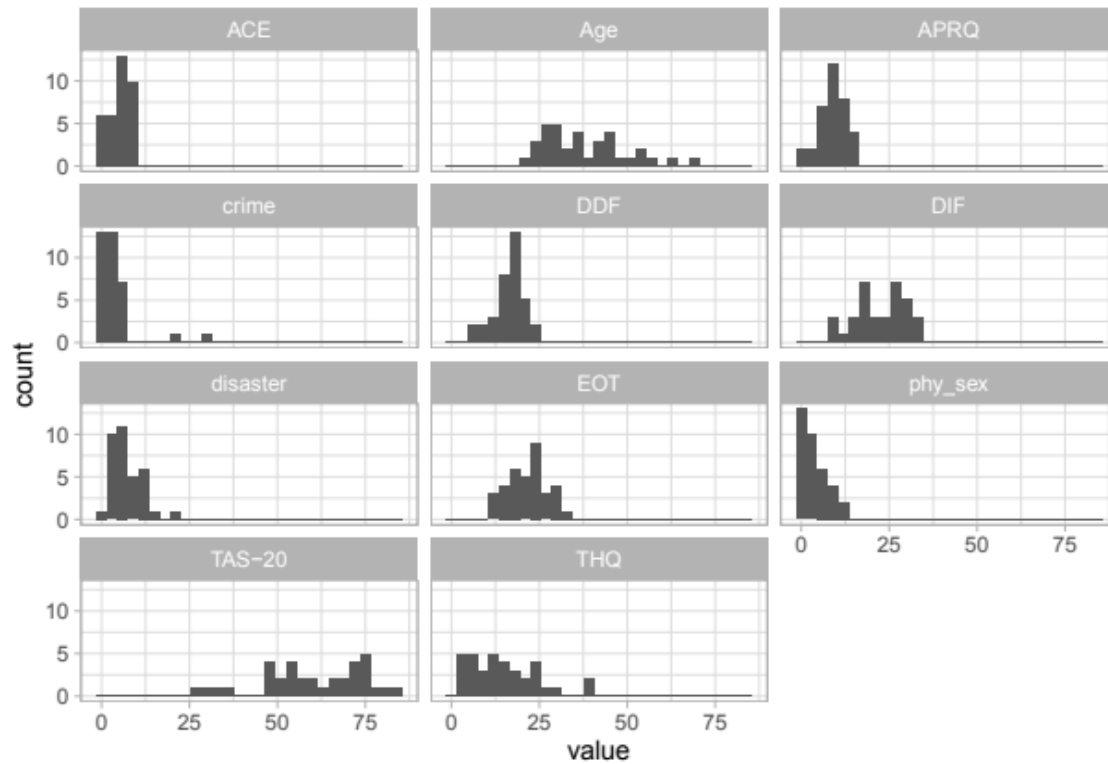
7	Have you ever experienced a “man-made” disaster such as a train crash, building collapse, bank robbery, fire, etc., where you felt you or your loved ones were in danger of death or injury? (If yes , please specify below) _____	No	Yes		
8	Have you ever been exposed to dangerous chemicals or radioactivity that might threaten your health?	No	Yes		
9	Have you ever been in any other situation in which you were seriously injured? (If yes , please specify below) _____	No	Yes		
10	Have you ever been in any other situation in which you feared you <u>might</u> be killed or seriously injured? (If yes , please specify below) _____	No	Yes		
11	Have you ever seen someone seriously injured or killed? (If yes , please specify who below) _____	No	Yes		
12	Have you ever seen dead bodies (other than at a funeral) or had to handle dead bodies for any reason? (If yes , please specify below) _____	No	Yes		
13	Have you ever had a close friend or family member murdered, or killed by a drunk driver? (If yes , please specify relationship [e.g., mother, grandson, etc.] below) _____	No	Yes		
14	Have you ever had a spouse, romantic partner, or child die? (If yes , please specify relationship below) _____	No	Yes		
15	Have you ever had a serious or life-threatening illness? (If yes , please specify below) _____	No	Yes		
16	Have you ever received news of a serious injury, life-threatening illness, or unexpected death of someone close to you? (If yes , please indicate below) _____	No	Yes		

17	Have you ever had to engage in combat while in military service in an official or unofficial war zone? (If yes , please indicate where below) _____	No	Yes		
Physical and Sexual Experiences		Circle one	If you circled yes, please indicate		
			Repeated?	Approximate age(s) and frequency	
18	Has anyone ever made you have intercourse or oral or anal sex against your will? (If yes , please indicate nature of relationship with person [e.g., stranger, friend, relative, parent, sibling] below) _____	No	Yes		
19	Has anyone ever touched private parts of your body, or made you touch theirs, under force or threat? (If yes , please indicate nature of relationship with person [e.g., stranger, friend, relative, parent, sibling] below) _____	No	Yes		
20	Other than incidents mentioned in Questions 18 and 19, have there been any other situations in which another person tried to force you to have an unwanted sexual contact?	No	Yes		
21	Has anyone, including family members or friends, ever attacked you with a gun, knife, or some other weapon?	No	Yes		
22	Has anyone, including family members or friends, ever attacked you <u>without</u> a weapon and seriously injured you?	No	Yes		
23	Has anyone in your family ever beaten, spanked, or pushed you hard enough to cause injury?	No	Yes		
24	Have you experienced any other extraordinarily stressful situation or event that is not covered above? (If yes , please specify below) _____	No	Yes		

Citation:

Hooper, L. M., Stockton, P., Krupnick, J., & Green, B. L. (2011). The development, use, and psychometric properties of the Trauma History Questionnaire. *Journal of Loss and Trauma, 16*, 258-283.

Appendix F: Distribution of Measures



ACE = Adverse Childhood Experiences, APRQ = Alexithymia Provoked Response Questionnaire, TAS-20 = Toronto Alexithymia Scales, DIF = Difficulty Identifying Feelings subscale, DDF = Difficulty Describing Feelings subscale, EOT = Externally Orientated Thinking subscale, THQ = Trauma History Questionnaire, crime = THQ crime subscale, Disaster = THQ disaster subscale, phy_sex = THQ physical and sexual subscale.