Gender, education and engagement in antisocial and risk-taking behaviours and emotional dysregulation

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This investigation examined the influence of gender and education attainment on engagement in antisocial and risk-taking behaviours and emotional dysregulation. A convenience sample (N = 285) of Australians, aged between 18 to 74, completed the Antisocial Engagement Questionnaire and the Difficulties in Emotion Regulation Scale. Gender differences were evident as females engaged in lower levels of antisocial and risk-taking behaviours and experienced more emotional dysregulation than males. The constructs of interest were also influenced by an individual's education attainment. Individuals with low education attainment had a higher propensity for engagement in antisocial and risk-taking behaviours and experienced increased emotional dysregulation compared to those with high education attainment. This research has contributed to our understanding of engagement in antisocial behaviours and emotional dysregulation and specifically identified gender differences within each of these constructs. It has also highlighted education attainment as a protective factor against engagement in antisocial behaviours and emotional dysregulation.

Introduction

Engagement in antisocial and risk-taking behaviours (ARTBs) has received increased attention in the research literature and has been defined as engagement in behaviours that disregard social norms, or compromise an individual's health or wellbeing (Brindle, Bowles & Freeman, 2018; *DSM-5*; American Psychiatric Association [APA], 2013; Hemphill et al., 2006; Horner et al., 2012). Although some engagement is considered typical, particularly during adolescence (Farrington & West, 1990; Houghton & Carroll, 2002), individuals who engage in ARTBs frequently and/or engage in severe behaviours may be at risk of continuing into further criminal activity (Mulvey, 2014). Consequently, it is the quantity of engagement and the severity of the behaviours that dictate if an individual is at-risk. Example ARTBs include smoking cigarettes (Horner et al., 2012), acts of violence (Hemphill et al., 2006; Loeber, 1997), vandalism (McGee & Newcomb, 1992), carrying weapons (Lowry et al., 1999), unsafe sex (Adams, Moody & Morris, 2013), the consumption of illicit substances (Johnston et al., 2005), and problematic substance usage (Horner et al., 2012). These behaviours are linked by their associated negative outcomes for the individual (Evers et al., 2012; Petry, Bickel & Arnett, 1998) making engagement a pressing concern with additional research being warranted (Hemphill et al., 2006). Therefore, to identify potential prevention pathways it was necessary to explore factors that influence engagement.

Review of the literature

To date a number of factors have been identified as influencing engagement in ARTBs, such as the consumption of substances at an early age (Anthony & Petronis, 1995;

Scholes-Balog et al., 2013), gender (Bacon, Burak & Rann, 2014; Castro, Carbonell & Anestis, 2011; Jordan, 2011; Ng, 2014), low academic achievement (Hayden, 2008), truancy (Hunt & Hopko, 2009), socio-economic status or class (Mensch & Kandel, 1988), low self-esteem (Loeber, 1997), poor impulse control (Hemphill et al., 2011; Loeber, 1997), and emotional dysregulation (Loeber, 1997; Scholes-Balog et al., 2013). Engagement in ARTBs is a complex ecological issue with multiple predictive factors being applicable to a range of behaviours. As previous studies have often focused on a narrow set of ARTBs, additional research is required to explore the influence of prominent predictive factors such as gender and education attainment on engagement in a range of ARTBs.

Gender differences in engagement in ARTBs and emotional dysregulation have been identified (Bacon et al., 2014; Castro et al., 2011; Jordan, 2011; Ng, 2014). For example, sex differences in Australian offenders are evident because in the offending population, the ratio of males to females was four to one (Ng, 2014). Gender differences in the types of ARTBs in which individuals are likely to engage have also been documented. For example, while women are more likely to engage in offences such as shoplifting, fraud, and receiving stolen goods, males have been found to engage in violent crimes, vehicle theft, and illicit substance-related offences (Forsythe & Adams, 2009). Gender differences are also evident in illicit substance-consumption patterns as males have a higher propensity for substance consumption compared to females (AIHW, 2014; Ng, 2014; Evers et al., 2012; McAdams et al., 2014). It has been suggested that differences between the sexes are a result of the socially constructed gender roles attached to each sex (Castro et al., 2011; Trillo & Redondo, 2013). Previous research into gender differences has been limited by focusing on a small number of antisocial behaviours and substances, warranting additional research to extend our knowledge of the influence of gender on engagement.

Research has also been undertaken to document gender differences in emotional dysregulation (Gentzler, Kerns & Keener, 2010; Johnson et al., 2010; McRae, Ochsner, Mauss, Gabrieli & Gross, 2008; Song et al., 2012; Thayer, Rossy, Ruiz-Padial & Johnsen, 2003). It has been found that females, compared to males, experience more difficulties with regulating negative emotions, emotional acceptance, emotional clarity, use of adaptive emotional regulation strategies, and goal-related behaviour (Bender, Reinholdt-Dunne, Esbjørn & Pons, 2012; Medrano & Trógolo, 2014; Neumann, van Lier, Gratz & Koot, 2010), suggesting that females may have a higher propensity for emotional dysregulation. It has been suggested that emotional regulation is partially shaped by gender expectations regarding emotional expression and regulation (Gentzler et al., 2010). For example, in the United States, females are expected to be more emotional than males, which has an impact on the focus parents place on emotions during interactions with their children, with this socialisation process usually continuing into adulthood (Gentzler et al., 2010). However, discrepancies regarding the relationship between gender and emotional dysregulation were found in the research literature (Anderson, Reilly, Gorrell, Schaumberg & Anderson, 2016; Bardeen & Stevens, 2015; Bliton et al., 2016; Donahue, Goranson, McClure & van Male, 2014; Izadpanah et al., 2016), warranting additional research.

An investigation was undertaken to explore whether engagement in ARTBs and emotional dysregulation were influenced by education attainment. This research defined *education attainment* as the highest level of education attained by the participant (e.g., Year 11, high school graduate, or university graduate). There is evidence in the research literature for a link between engagement in ARTBs and education attainment. For example, lower levels of academic success, as measured through academic performance is associated with an increase in engagement in ARTBs (Hayden, 2008; McEvoy & Welker, 2000; Snow & Powell, 2012). The relationship between engagement in ARTBs and low education attainment is expected as school exclusion and non-attendance have both been linked to increased engagement in ARTBs (Hayden, 2008; Hunt & Hopko, 2009). In addition to an increased propensity for engagement in ARTBs, lower education attainment has also been linked to the consumption of substances such as alcohol, tobacco, and illicit drugs (Bacio et al., 2015).

There is also evidence to suggest that the relationship between education attainment and engagement in ARTBs is bidirectional, as academic success is a protective factor against engagement in ARTBs (Hayden, 2008; Sheppard, 2011; Walsh, 2010; Wissink, 2014). This may be partially because obtaining qualifications and skill sets are considered to be helpful in breaking out of antisocial trajectories as they remove some of the barriers to an antisocial-free lifestyle (Hayden, 2008) and because engagement in antisocial behaviour and the consumption of substances is minimised through adopting adult roles and responsibilities (Kandel & Yamaguchi, 1999; Mulvey, 2014). These findings highlight the potential for education attainment to limit engagement in ARTBs. Further investigation is required to explore education attainment and engagement in a large selection of ARTBs as previous research has focused on academic success rather than education attainment and has only explored the influence of education on a narrow number of ARTBs.

Academic success also has a positive association with increased use of adaptive emotional regulation (Denham, Bassett & Zinsser, 2012; Gumora & Arsenio, 2002; Liew, 2012; Onchwari & Keengwe, 2011; Petrides, Frederickson & Furnham, 2004). What is less well known, however, is the potential influence of an individual's education attainment on emotional dysregulation. Based on logical reasoning, it was anticipated that as academic success results in lower emotional dysregulation so too would education attainment, as this is a related construct.

Research questions

1. Are male participants more likely to engage in ARTBs compared to female participants?
2. Do female participants demonstrate more difficulties with emotional dysregulation in comparison to male participants?
3. Do individuals with low education attainment demonstrate a higher propensity for engagement in ARTBs compared to individuals with high education attainment?
4. Are individuals with low education attainment more likely to experience emotional dysregulation compared to individuals with high education attainment?

Method

Participants

The sample (n = 285) was recruited through social networking sites and snowball sampling. Sixty percent of the participants were female. Although the participants' ages ranged from 18 to 74 years of age, this was predominantly a young sample, with 35.1% aged between 18 to 24 and 46% between ages 25 to 34. 10.9% of the sample were aged between 35 to 44 and a smaller number of the participants were between the ages of 45 to 54 (3.9%), 55 to 64 (2.8%) and 65 to 74 (1.4%). It was largely an Australian-born sample (86%), with a small portion of the participants being born in Europe (9.8%), North America (1.8%), South America (.04%), Africa (1.8%), and Asia (0.4%). The respondents' education attainment levels showed diversity. The majority of the sample comprised university graduates (32.3%), with a smaller number of participants reporting they had only partially completed higher education degrees (completed first year, 13%; completed second year, 9.8%; completed third year, 8.8%). In addition, 22.5% of the sample reported graduating from high school as their highest level of education attainment and a number of the respondents had only partially completed high school (13%).

Materials

The participants completed demographic questions and a series of online questionnaires designed to measure emotional dysregulation (*Difficulties in Emotion Regulation Scale*, DERS, Gratz & Roemer, 2004) and engagement in ARTBs (*Antisocial Engagement Questionnaire*, AEQ).

The Antisocial Engagement Questionnaire (AEQ)
The AEQ was developed from the content of the *Self-Report Delinquency* scale devised by Elliot and Ageton and national crime surveys (Brindle, Bowles & Freeman, 2018). The AEQ assesses content relating to antisocial and risk-taking behaviour such as minor infringements, minor theft, public intoxication, disorderly behaviour in public, vehicle theft, carrying a weapon, credit card theft, making obscene telephone calls, wallet theft, arson, breaking and entering, using a fake form of identification, truancy, shoplifting, vandalism, physical violence, sexual assault, threatening physical violence, and using strongarm methods to obtain desired items. Example items include, "Have you ever been drunk in a public place?" and "Have you ever stolen or tried to steal a motor vehicle such as a car or motorcycle?" It also assesses an individual's substance-related behaviours, such as consumption of alcohol, tobacco, marijuana, hallucinogens, tranquilisers, amphetamines, methamphetamines, barbiturates, heroin, crack, cocaine, inhalants and misuse of prescription medication. Example items include, "Have you ever consumed marijuana or hashish (grass, pot, or hash)? and "Have you ever consumed methamphetamines?"

In addition, the AEQ enquires into social problems experienced as a result of engagement in ARTBs, such as missing work, legal problems, or interpersonal problems. The items of

the AEQ are phrased to assess the participant's engagement retrospectively. Respondents are required to estimate their frequency of engagement in each ARTB item using frequency categories. The participants' answers are then used to generate frequency and severity scores. The public perception method was used to calculate and allocate severity weightings to each of the AEQ items. The items were ranked by their means and then a numerical procedure utilised by Sellin-Wolfgang (1964) and Figlio (1975) was applied to calculate each item severity weighting. The process for calculating the AEQ *Total Score* requires the administrator to calculate the total *Severity Score* (sum of the item severity weightings) and the total *Frequency Score* (sum of the item frequency ratings) for all of the AEQ items. The AEQ Total Score is then calculated by multiplying the total Severity Score by the total Frequency Score and then dividing the product by the total number of items engaged in by the respondent (Palmer & Hollin, 2001).

The Difficulties in Emotional Regulation Scale (DERS; Gratz & Roemer, 2004)
The DERS assesses whether an individual has difficulties understanding, modulating, and accepting their emotions using 36 items. This scale yields a total score and six subscale scores: emotional acceptance, goal-directed behaviour, impulse-control, emotional awareness, emotion-regulation strategies, and emotional clarity. The participants indicate how often each item applies to themselves on a 5-point Likert-type scale (1 = almost never to 5 = almost always), with higher scores indicating elevated emotional dysregulation. Previous research has found that the DERS Total Score and subscales have high internal consistency, convergent validity, test-retest reliability, and satisfactory predictive validity (Gratz & Roemer, 2004; Weinberg & Klonsky, 2009).

Procedure

The questionnaires were posted online via an online survey provider and advertised through social networking sites. The survey link redirected participants to an online page explaining the research. The respondents were then presented with demographic questions, followed by the assessment instruments.

Results

The mean and standard deviation for the AEQ total scores and behaviour type (antisocial behaviour, substance related behaviours and social problems) as well as the DERS total score and subscale scores were calculated to explore gender differences in engagement in ARTBs and emotional dysregulation (see Table 1).

As can be seen from Table 1, males demonstrated higher mean engagement scores compared to the female participants for antisocial behaviour, substance related behaviour and social problems resulting from engagement in ARTBs. Females demonstrated more difficulties compared to males in overall levels of emotional dysregulation. This gender difference was also evident at a subscale level as the female participants reported higher levels of difficulties with non-acceptance of emotional experiences, difficulties with goal-

Table 1: Gender comparison of the mean and standard deviation for engagement in antisocial and risk-taking behaviours and emotional dysregulation

	Male (n = 114)		Female (n = 171)	
	M	*SD*	*M*	*SD*
AEQ Total Score	158.58	37.33	146.83	38.49
Antisocial Behaviour	106.77	25.34	98.19	24.51
Substance Related Behaviour	38.11	11.58	36.38	12.43
Social Problems	13.71	5.46	12.26	5.40
DERS Total Score	77.30	20.74	84.87	25.41
DERS Non A	12.42	5.14	14.29	6.09
DERS Goals	13.85	4.66	15.02	4.66
DERS Impulse	10.39	3.76	12.29	5.10
DERS Awareness	14.11	4.99	13.79	5.04
DERS Strategies	15.65	5.88	18.24	7.26
DERS Clarity	10.89	3.98	11.23	4.19

Notes: M = mean; *SD* = standard deviation; AEQ Total = Antisocial Engagement Questionnaire Total Score; DERS Total Score = Difficulties in Emotional Regulation Scale Total Score; DERS Non A = DERS non-acceptance subscale; DERS Goals = DERS goal-directed behaviour subscale; DERS Impulse = DERS impulse control subscale; DERS Awareness = DERS awareness subscale; DERS Strategies = DERS emotional regulation strategies subscale; DERS Clarity = DERS clarity subscale.

directed behaviour, impulse control, use of emotional regulation strategies and lower emotional clarity compared to their male counterparts. The exception was emotional awareness whereby the male participants reported more difficulties compared to the female participants.

A MANOVA was conducted to explore gender differences in engagement in ARTBs and emotional dysregulation. As Box's M test of homogeneity of the variance-covariance matrices was not significant, it was appropriate to utilise Wilks lambda to evaluate multivariate significance. Levene's test for homogeneity of variance indicated that homogeneity of variance had not been violated. The means, standard deviations, and *F* ratios are presented in Table 2.

Table 2: Gender comparison for overall engagement in antisocial and risk-taking behaviours and emotional dysregulation

	Male (n = 114)		Female (n = 171)				
	M	*SD*	*M*	*SD*	*F*	*p*	□ 2
AEQ total score	158.58	37.33	146.83	38.49	6.528	.011	.02
DERS total score	77.30	20.74	84.87	25.41	6.999	.009	.02

Notes: M = mean; *SD* = standard deviation; AEQ total = Antisocial Engagement Questionnaire Total Score; DERS total score = Difficulties in Emotional Regulation Scale total score.

The results indicated that there were significant, weak gender differences in a linear combination of the dependent variables, Wilks lambda = .931, $F(5, 279) = 3.15$, $p < .001$. As a significant multivariate effect for gender was found, an investigation into the

univariate *F* tests for each of the dependent variables was undertaken to examine how each of these dependent variables contributed to the multivariate effect. It was found that gender had a significant influence on an individual's AEQ total score, $F(1, 283) = 6.53$, $p < .05$, partial $\eta^2 = .02$, with female participants engaging in significantly fewer ARTBs, as measured by the AEQ. Gender also had a significant impact on an individual's level of emotional dysregulation, with female participants demonstrating more difficulties with emotional regulation than male participants, $F(1, 283) = 6.99$, $p < .05$, partial $\eta^2 = .02$.

The constructs were also investigated for any significant differences in education attainment using a MANOVA. Although the minor variation in cell size was not ideal, this requirement was not essential in this context (Coakes & Ong, 2011). As Box's M test of homogeneity of the variance-covariance matrices was significant, this indicated that the homogeneity of variance-covariance matrices assumption was violated. As a result, Pillai's criterion was used to evaluate multivariate significance. An examination of Levene's test of homogeneity of variance for the dependent variables indicated that homogeneity of variance could be assumed. The means, standard deviations, and *F* ratios for the revised education attainment categories are presented in Table 3.

Table 3: Education attainment comparison for overall engagement in antisocial and risk-taking behaviours and emotional dysregulation

	Did not grad. high school (n = 39)		Graduated high school (n = 64)		Enrolled uni. but didn't complete (n=90)		Graduated university (n = 92)				
	M	*SD*	*M*	*SD*	*M*	*SD*	*M*	*SD*	*F*	*p*	η^2
AEQ TS	167.7	49.42	161.0	39.18	151.0	32.53	138.6	33.78	7.55	.001	.08
DERS TS	92.64	28.13	83.80	22.04	78.64	21.54	79.02	24.33	3.87	.010	.04

Note. *M* = mean; *SD* = standard deviation; AEQ TS = Antisocial Engagement Questionnaire total score; DERS TS = Difficulties in Emotional Regulation Scale total score.

The findings for the multivariate test of significance indicated that significant group differences on a linear combination of the dependent variables were present, Pillai's trace = .153, $F(15, 837) = 3.01$, $p < .001$. As significant group differences were found, an investigation into the univariate *F* tests for each of the dependent variables was undertaken to examine how each of the dependent variables contributed to the multivariate effect. It was found that education attainment had a significant influence on an individual's engagement in ARTBs, as measured by the AEQ total score, $F(3, 281) = 7.55$, $p < .001$, partial $\eta^2 = .08$. Education attainment also had a significant impact on an individual's emotional dysregulation, DERS total score $F(3, 281) = 3.87$, $p < .001$, partial $\square^2 = .04$).

To further explore these significant results, planned contrasts using Bonferroni's test were undertaken. Planned contrasts (Bonferroni adjusted $\alpha = .025$) revealed that individuals

who had graduated from university demonstrated significantly lower AEQ total scores compared to those who reported that they had not completed high school (mean difference = -29.01, $p < .001$), and those who had graduated from high school (mean difference = -22.39, $p < .05$), suggesting that engagement decreased with education attainment. Individuals who did not graduate high school reported significantly more emotional regulation difficulties compared to those who had enrolled in a university course (mean difference = 13.99, $p < .05$), or those who had graduated from university (mean difference = 13.62, $p < .05$), suggesting that emotional dysregulation decreased with education attainment.

Discussion

The influence of gender and education attainment on engagement in ARTBs, and emotional dysregulation was explored to ascertain an improved understanding of these constructs. As anticipated, females had a lower propensity for engagement in ARTBs across an extensive range of behaviours compared to males, which is congruent with previous research that has found females have a lower propensity for engagement in a limited number of ARTBs (Bacon et al., 2014; Castro et al., 2011; Jordan, 2011; Trillo & Redondo, 2013) and substance consumption (AIHW, 2014; Ng, 2014; Evers et al., 2012; McAdams et al., 2014) compared to males. As discussed, previous research has suggested that these gender differences are a result of socially constructed gender roles (Bem, 1978; Castro et al., 2011; Trillo & Redondo, 2013), with most females following a more feminine gender role that is associated with submissive behaviour, vulnerability, and decreased risk-taking (Castro et al., 2011; Trillo & Redondo, 2013) and males following a masculine gender role that is associated with risk-taking and aggression (Castro et al., 2011; Ferguson et al., 2012; Jordan, 2011; McAdams et al., 2014; Trillo & Redondo, 2013). Consequently, the present findings could be explained by the internalisation of gender roles. The finding that males have a higher propensity for engagement in antisocial behaviours and substance-related behaviours has utility for the development of interventions. Regardless of a lower propensity for engagement, females should also be considered in the development of interventions.

The second research question contended with gender differences in emotional dysregulation. In support of previous research, it was found that female respondents reported higher emotional dysregulation then males (Bender et al., 2012; Neumann et al., 2010). One explanation for these gender differences is that the sexes differ at a neurobiological level. Previous research has found that males have lower activity in response to emotional reappraisal in prefrontal regions and lower emotional responding (amygdala response) and reward processing (use of the ventral striatal regions) in comparison to females (McRae et al., 2008). Another explanation for the sex differences is that socially constructed gender roles influence an individual's emotional expression and regulation (Gentzler et al., 2010). Bem (1978) stated that gendered expressions are traits that are stereotypically associated with each gender. Most individuals behave as prescribed by their biologically determined gender role, and individuals who associate with either role will engage in and refrain from behaviours in order to meet the expectations of their

gender role (Castro et al., 2011). As the masculine gender role is associated with risk-taking and aggression (Castro et al., 2011; Ferguson, Carlson, Hunter & Whitten, 2012; Jordan, 2011; McAdams et al., 2014; Trillo & Redondo, 2013) it is to be expected that males would have a higher propensity for engagement in ARTBs and that females more commonly following a feminine gender role that is associated with submissive behaviour and vulnerability, would have a lower propensity for engagement in ARTBs (Castro et al., 2011; Trillo & Redondo, 2013).

The findings showed that individuals with low academic success have a higher propensity for engagement in ARTBs (Bacio et al., 2015; Hayden, 2008; Hunt & Hopko, 2009) and substance use (Bacio et al., 2015; Scholes-Balog et al., 2013). As expected, individuals with low education attainment engaged in more ARTBs and substance use behaviours, compared to those with high education attainment. This is arguably because engagement in ARTBs and substance consumption are time-consuming activities that are incompatible with positive educational trajectories and, as a result could coincide with a disengagement from school and lower education attainment. Consequently, individuals who are moving towards an antisocial trajectory should be supported to increase school engagement, and to minimise the individual's engagement in an antisocial lifestyle. This relationship was also found to be bidirectional as high education attainment was associated with low engagement in ARTBs, suggesting that obtaining qualifications and skill sets are protective factors against engagement in ARTBs.

It was also found that low education attainment was associated with emotional dysregulation and that high education attainment was associated with fewer difficulties with emotional regulation. Although this is the first study to examine emotional dysregulation and education attainment, the findings aligned with previous research, in which academic success has been associated with increased use of adaptive emotional regulation processes (Denham et al., 2012; Gumora & Arsenio, 2002; Liew, 2012; Onchwari & Keengwe, 2011; Petrides et al., 2004). One explanation for this bidirectional association is that academic attainment requires students to demonstrate a developed ability to use multiple integrated emotional regulation processes with flexibility. A student's failure to appropriately regulate their emotional experience could act as a barrier to academic success and education attainment, as the individual may be preoccupied with their emotional experience and therefore struggle to remain academically engaged, interact prosocially with their peers, and meet educational expectations. These findings highlight the importance for education institutions to focus on the emotional development of their students because this was identified as a predictor of education attainment.

Research implications

This research has implications for education settings. The investigation found that education attainment acts as a barrier to engagement in ARTBs and consequently supports the benefit of education institutions focusing on improving the education attainment of at-risk individuals through supporting their academic engagement. Strategies identified through previous research that can be used to re-engage at-risk students include promoting a positive school community, access to a range of subjects and secondary

qualifications, differentiation of the curriculum based on student interests, access to individual support services (such as tutoring or counselling), and the development of individual education plans as in the Victorian Education Department's *Student Engagement Policy Guidelines* (Victorian Department of Education and Early Childhood Development, 2009). The research findings also support the importance of universal school-based preventative interventions to promote re-engagement and minimise engagement in ARTBs, such as the *Good Behaviour Game* (Barrish, Saunders, & Wolf, 1969), *You Can Do it!* (Bernard, 2008), *Friends for Life* (Stallard et al., 2005), *Resilient Families* (Shortt et al., 2007), and the *School Health and Alcohol Harm Reduction Project*, SHAHRP (McBride, Farringdon, Midford, Meuleners & Phillips, 2004).

Education attainment was also influenced by an individual's ability to regulate their emotional experience, and as a result, these findings support the Australian education curriculum goals, which state that developing students' social and emotional wellbeing is a central foundation for learning, student wellbeing, and adult life (Ministerial Council on Education, Employment, Training and Youth Affairs, 2008). These findings also support the implementation of education initiatives that aim to develop the emotional regulation skills of students to increase academic engagement and education attainment, such as *Promoting Alternative Thinking Strategies* (PATHS; Greenberg et al., 1995), *Friendly Schools Plus* (Cross et al., 2011), and *Aussie Optimism* (Morrison et al., 2013).

The research findings will assist with informing exploratory models and intervention efforts that aim to decrease the negative societal and individual outcomes associated with engagement in ARTBs through the development of policies and preventative strategies, and to help individuals with exiting the antisocial lifestyle and avoiding future criminal behaviour. This research responded to the need for additional research to extend our understanding of engagement in ARTBs and attend to this prevalent social problem.

Limitations

There are some limitations associated with this research that must be considered. First, a cross-sectional convenience sample was used for the analyses, which limits the generalisability of the findings. The factors that were found to influence the constructs of interest should be explored in clinical populations as these factors could potentially be used to reduce engagement in ARTBs and difficulties with emotional dysregulation. It must also be acknowledged that only a portion of the factors identified through the review of the research literature as having the propensity to influence the constructs of interest were investigated, warranting further research of additional factors. As the present research collected categorical data for age, this undermined the integrity of exploration into precise ages of engagement. The influence of age on engagement in ARTBs and age of educational attainment warrants further research.

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