

**THE DARK TRIAD, ADJUSTMENT, AND AGE AS PREDICTORS OF AGGRESSION
AMONGST SOUTH AFRICAN ADULT MALE OFFENDERS IN A MAXIMUM-
SECURITY CORRECTIONAL CENTRE**

by

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Submitted in partial fulfilment of the requirements for the degree

MASTER OF SOCIAL SCIENCE IN CLINICAL PSYCHOLOGY

in the Faculty of the Humanities

at the University of the Free State

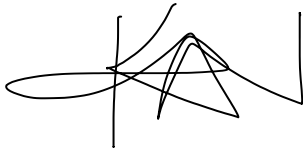
Bloemfontein

June 2024

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I hereby provide permission that this mini-dissertation be submitted for examination – in fulfilment of the requirements for a Master of Social Science (Clinical Psychology), in the Department of Psychology, Faculty of the Humanities, at the University of the Free State.

I approve the submission for assessment and that the submitted work has not previously, either in part or in its entirety, been submitted to the examiners or moderators.

Kind regards.

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The Dark Triad, Adjustment, and Age as Predictors of Aggression amongst South African Adult Male Offenders in a Maximum-Security Correctional Centre

Abstract

Violence and aggression are commonplace within South African correctional centres. Personality factors, adjustment to the correctional environment, and the offenders' age may contribute to the continued aggression within the correctional environment. Many studies have confirmed the well-established relationship between the Dark Triad traits (three aversive, interrelated personality traits: narcissism, Machiavellianism and psychopathy) and aggression. However, fewer studies have explored the Dark Triad traits as predictors of aggression within the correctional environment, particularly in non-Western countries. Several studies have linked offender adjustment and age with aggression among offenders. This study aimed to investigate the individual and collective contributions of the Dark Triad traits, adjustment, and age as possible predictors of aggression amongst adult South African male maximum-security incarcerated offenders. This quantitative study sampled 366 male maximum-security offenders through convenience sampling. Using a quantitative, cross-sectional correlational design, this study investigated the relationships between the predictor and outcome variables. The data were collected using the Buss and Perry Aggression Questionnaire (BPAQ), the Dark Triad Dirty Dozen (DDTD), and the Prison Adjustment Questionnaire (PAQ). The researcher conducted a hierarchical multiple regression analysis to determine which variable(s) or set(s) of variables explain a significant percentage of the variance in aggression amongst incarcerated adult male offenders. The findings revealed that the combination of all the predictor variables, including the Dark Triad traits as a set of predictor variables, were statistically and practically significant

predictors of verbal aggression, physical aggression, hostility, and anger. The results from the study can thus assist with developing appropriate rehabilitative programmes for male offenders within the correctional environment.

Keywords: Adjustment, Aggression, Age, Dark Triad, Male Offender, Maximum-Security Correctional Centre, South Africa

Background

South Africa's high rates of violence and violent offences are not uncommon (Ferreira & Koko, 2022; Jordaan & Hesselink, 2022; Langenhoven, 2023; Pretorius et al., 2024; Thobane & Prinsloo, 2018; Van Niekerk et al., 2015). These violent offences are mainly committed by male offenders (Bruce, 2019; Glaser, 2008) who are exposed to challenging conditions within correctional centres (e.g., violence, aggression, bullying, gang-related activities and overcrowding) when incarcerated for their offences (Brooke & Jackson, 2019; Jordaan & Hesselink, 2022; Muntingh, 2009; Wooldredge & Steiner, 2013). These offenders tend to use aggression and violence to cope with and adjust to the challenges within the correctional environment (Jordaan & Hesselink, 2022; Pretorius et al., 2024; Rocheleau, 2014a; Rogers et al., 2024). Poor physical conditions such as overcrowding (Csemáné Váradi, 2020), high noise levels, lack of privacy, and cluttered and unclean spaces have been associated with higher rates of serious violence within the correctional environment (Bierie, 2012; Rocheleau, 2013). Furthermore, recidivism is likely to be a concern when offenders perceive the correctional environment as fearful, threatening, and violent (Morris & Worrall, 2014). Offenders' continued cycle of aggression could result in several consequences, such as poor mental and physical health (Bierie, 2012; Jordaan & Hesselink, 2022; Nieuwoudt & Bantjes, 2019), longer sentences (Jordaan & Hesselink, 2022) and segregation within the correctional environment (Rocheleau, 2014b). Several studies have linked personality traits such as narcissism, psychopathy, and Machiavellianism with offending behaviour and aggression (Garofalo et al., 2020; Liu et al., 2021; Lyons, 2019; Međedović & Vujičić, 2022; Rolison et al., 2013). These three interrelated personality traits are characterized by callous-manipulation and make up the Dark Triad (Furnham et al., 2013; Wright et al., 2017). While these personality traits may predispose certain

individuals to offending behaviour, including aggression, not every individual who commits an offence meets the diagnostic criteria for a personality disorder (Fakhrzadegan et al., 2017; Hepper et al., 2014). Thus, it is important to identify subclinical personality traits that characterise offenders (Hepper et al., 2014; Kamaluddin et al., 2015). Furthermore, aggression within correctional centres poses several risks to offenders and the functioning of correctional centres (Auty et al., 2017). Poor mental and physical health (Bierie, 2012; Jordaan & Hesselink, 2022; Nieuwoudt & Bantjes, 2019), loss of life, self-injury, sexual victimisation, increased sentence length, recidivism, and reduced access to programmes are severe consequences that result from aggression within correctional centres (Jordaan & Hesselink, 2022; Mooney & Daffern, 2015). Therefore, it is important to better understand the predictors of aggression within the correctional environment to facilitate the development of appropriate interventions for offender rehabilitation.

Incarceration in South Africa

In South Africa, the Department of Correctional Services (DCS) is responsible for addressing unlawful conduct through offender rehabilitation programmes (Murhula & Singh, 2019). The DCS manages 243 correctional centres in South Africa, with 238 operationally active (Rogers et al., 2024). Correctional centres in South Africa are categorised into three main categories, namely minimum-security, medium-security, and maximum-security centres (Fitz, 2021). South Africa has both government-operated and private maximum-security correctional centres (Fitz, 2021). There are two operational private maximum-security correctional centres in South Africa (Jordaan & Hesselink, 2022; Jordaan et al., 2018; Langenhoven, 2023; Pretorius et al., 2024; Rogers et al., 2024). These correctional centres function differently from government-operated correctional centres, particularly in terms of management, facilities, staff-inmate ratio,

and available rehabilitation and development programmes (Jordaan & Hesselink, 2022; Langenhoven, 2023). According to the Correctional Services Act 111 of 1998, however, private correctional centres have no influence regarding which incarcerated offenders are detained in their correctional environment (Department of Correctional Services, 2018). Maximum-security correctional centres often house dangerous offenders who pose a major threat to themselves and society (Jordaan & Hesselink, 2022; Rogers et al., 2024). Maximum-security correctional centres tend to be extremely secure institutions where incarcerated offenders are under stringent control and monitored under direct supervision regarding their movements, rights, associations, and privileges (Rogers et al., 2024). Incarcerated offenders often experience or are subjected to bullying, violence, physical and sexual abuse, gang activities, exploitation, suicide, and, in severe cases, murder within the correctional environment (Jordaan & Hesselink, 2022; Langenhoven, 2023; Pretorius et al., 2024; Rogers et al., 2024). The rates of South African offenders who have reported some form of victimisation by either other offenders or correctional officers during the period of their incarceration are significantly high (Rogers et al., 2022). The DCS has numerous challenges regarding rehabilitating offenders that necessitate additional research to address these problems (Shishane et al., 2023).

Aggression

Kim et al. (2022) defined aggression as behaviour that intends to harm an individual who wants to avoid such harm. According to Allen and Anderson (2017), aggressive behaviour ranges from verbal aggression to physical aggression (e.g., stabbing, shooting). An extreme form of aggression is violence, which is a subset of aggression and has the intention to cause severe physical harm (Allen & Anderson, 2017; Stangor et al., 2014). Buss and Perry identified four aggression-related dimensions: physical aggression, verbal aggression, anger, and hostility (Buss

& Perry, 1992; Gallagher & Ashford, 2016). Physical and verbal aggression form part of the instrumental component of aggression, with anger representing the emotional component and hostility the cognitive component of aggression (Reyna et al., 2011). Anger is defined as an emotional state comprising feelings of varying intensities, ranging from mild frustration to intense rage (Spielberger & Reheiser, 2009). According to Buss (1961), hostility is an attitude that encompasses disliking and negatively evaluating others (Eckhardt et al., 2004). Verbal aggression is any form of communication through words, tone, or manner intended to cause an individual harm (Dewi & Kyranides, 2021; McLaughlin et al., 2010). Physical aggression is defined as behaviour that results in or can potentially cause physical harm to another individual (Brennan & Baskin-Sommers, 2021; Dewi & Kyranides, 2021). Physical aggression is often classified as either reactive (impulsive) aggression or premeditated (planned/instrumental) aggression (Euler et al., 2017; Gauthier et al., 2010; Wrangham, 2017). The Dark Triad, adjustment, and age have been previously linked to aggression. Several studies have also linked specific personality traits with aggression (Jonason et al., 2015; Muris et al., 2013; Pailing et al., 2014). Research suggests correlations between the Dark Triad traits and aggression (Koehn et al., 2019; Pailing et al., 2014; Wright et al., 2017). Furthermore, the Dark Triad traits have been positively correlated with aggression, indicating that higher levels of the Dark Triad traits are associated with increased levels of aggression (Maneiro et al., 2020). However, there is a dearth of research regarding the Dark Triad amongst offender populations in South Africa (Mangera, 2019; Mauda, 2013). Several studies have linked adjustment and aggression in offender populations (Jordaan & Hesselink, 2022; Leban et al., 2016; Mooney & Daffern, 2015; Rogers et al., 2024), specifically showing that better adjustment to the correctional environment reduces aggressive misconduct (Mooney & Daffern, 2015; Rogers et al., 2024). Previous research

suggests that age is associated with aggression in offenders, indicating that age has an inverse relationship with aggression; younger offenders tend to act more aggressively than older offenders (Barkhuizen et al., 2018; Camp et al., 2003; Cunningham et al., 2005). There is, however, limited South African literature linking the Dark Triad, adjustment, and age to aggression amongst male offenders, specifically within the maximum-security correctional context.

Dark Triad Traits and Aggression

The term *Dark Triad* was first developed by Paulhus and Williams (2002) to describe three clusters of unfavourable, subclinical personality traits within the general population (Garcia et al., 2015; Jonason & Webster, 2010). The Dark Triad refers to three correlated personality constructs: psychopathy, narcissism, and Machiavellianism (Jakobwitz & Egan, 2006). Previous research has linked these three traits with aggression (James et al., 2014; Lämmle et al., 2014; Pailing et al., 2014). These three traits share a *dark core*, manifesting as callous, manipulative and malevolent personalities (Furnham et al., 2013; Wright et al., 2017). The Dark Triad traits are associated with present-focused behaviour, sensitivity to rewards, hedonistic principles, lack of empathy, dominance-seeking, and sadistic, malevolent tendencies (Koehn et al., 2019). Sex differences also exist with the presence of the Dark Triad traits; men exhibit higher levels compared to their female counterparts (Aluja et al., 2022; Lyons, 2019).

Extensive research has identified the socially undesirable behaviour tendencies linked to these traits, which are often associated with offending tendencies (Koehn et al., 2019).

Individuals with these traits often disregard social norms, leading to misdemeanours such as lying, cheating, manipulation, and stealing (Lyons, 2019; Maneiro et al., 2020). Furthermore, the Dark Triad traits have been linked with the Diagnostic and Statistical Manual of Mental

Disorders (DSM) cluster B personality disorders such as Narcissistic Personality Disorder (NPD) and Antisocial Personality Disorder (APD) (Vossen et al., 2017). There are distinguishing factors between clinical and subclinical psychopathy, narcissism and Machiavellianism. Psychopathy is associated with the Diagnostic and Statistical Manual of Mental Disorders 5th edition text revision (DSM-IV TR) diagnosis of Antisocial Personality Disorder (APD) and Narcissistic Personality Disorder (NPD (LeBreton et al., 2006); narcissism with NPD and Machiavellianism with both APD and NPD.

Personality traits that favour offending behaviour have been widely researched to understand possible predictors of offending behaviour (Delcea & Enache, 2021). Previous attempts to understand offenders' personalities mainly focused on linking offences with the aforementioned personality disorders (Lyons, 2019). Research suggests that serious, frequent offending behaviour can be explained by extreme variation in personality such as personality disorders, perhaps more than other mental disorder diagnoses (Lyons, 2019) and that personality variation may play an important role in offenders' tendencies to commit various offences, even more than other factors such as socioeconomic status (Lyons, 2019; O'Riordan & O'Connell, 2014).

Although the three traits share certain similarities, each has distinctive features that differentiate them (Lyons, 2019). Psychopathy is associated with impulsivity, lack of empathy, risk-taking behaviour, and anxiety (Book et al., 2015; Garcia et al., 2015). Machiavellianism is characterised by a cynical worldview, lack of morality, and calculated social manipulation (Jones & Paulhus, 2013; Kowalski et al., 2019; Muris et al., 2017). Narcissism is characterised by grandiosity, entitlement, and a continuous need for affirmation (Malesza & Kaczmarek, 2018; Rogoza & Ciecuch, 2018). According to Pailing et al. (2014), the Dark Triad traits tend to result

in different behavioural outcomes of aggression. Psychopathic aggression is characterised by individuals retaliating impulsively when threatened physically. Narcissistic aggression, on the other hand, is characterised by a need to prevail over an opponent following a perceived threat to the individual's ego (Pailing et al., 2014; Paulhus et al., 2018). Machiavellianism has been linked to hostility, the cognitive component of aggression (Jones & Neria, 2015). Individuals with an unstable sense of self (i.e., those with higher levels of Dark Triad traits) are more likely to act aggressively due to perceived ego threats (Cale & Lilienfeld, 2006). Narcissistic and psychopathic individuals' motivations for self-enhancement and regaining their pride are associated with aggression, stemming from a need to retaliate due to an ego threat (Cale & Lilienfeld, 2006). Studies have also linked psychopathy and narcissism with poor adjustment to the correctional environment. Offenders with psychopathic traits tend to struggle with adjustment to the correctional environment (Bresin et al., 2014; Pinheiro et al., 2021), while those offenders with narcissistic traits display higher levels of institutional misconduct and violence, which are indicators of poor adjustment to the correctional environment (Chipollini, 2022; Niemeyer et al., 2020).

Adjustment and Aggression

Adjustment within the correctional environment refers to an offender's psychological and behavioural responses and strategies used to cope within the correctional environment (Butler, 2019; Fedock, 2017). Wright (1991) identified three dimensions of adjustment: internal, external, and physical. These dimensions encompass offenders' perceptions of their adjustment problems, concerns about control and security within the correctional environment, and emotional and psychological distress that offenders may experience (Gonçalves et al., 2021). Incarcerated offenders who are well-adjusted are less likely to transgress in the correctional environment and

experience a better quality of life during and after the incarceration period. Well-adjusted offenders are also more likely to engage in rehabilitation programmes and maintain social connections (Duba & Jordaan, 2023). Conversely, those with poorer adjustment to the correctional environment are more likely to engage in transgressions, have fewer social connections, and experience more physical and mental health problems, as well as maladaptive coping strategies (Duba & Jordaan, 2023; Rogers et al., 2024). According to Drury and DeLisi (2010), adjustment to the correctional environment is an important predictor of violent misconduct among offenders. Several studies suggest that incarcerated offenders tend to use aggression to adjust to the correctional environment (Innes, 1997; Jordaan & Hesselink, 2022; MacKenzie, 1987; Pretorius et al., 2024; Reid & Listwan, 2015; Rogers et al., 2024). The age of incarcerated offenders has also been linked to adjustment within the correctional environment. Younger offenders tend to be more poorly adjusted to the correctional environment than older offenders (Rogers, 2019; Rogers et al., 2024).

Age and Aggression

Age has also been found to be a predictor of aggression among offenders (Blowers & Blevins, 2014; MacKenzie, 1987). Younger incarcerated offenders are more inclined to use aggression to cope within the correctional environment (Morris & Worrall, 2014; Rocheleau, 2014b). Younger offenders often use aggression to cope, while older offenders realise the detriments of their past aggressive behaviour and, therefore, tend to refrain from such actions (Blowers & Blevins, 2015; Jordaan & Hesselink, 2022; MacKenzie, 1987; Pretorius et al., 2024). Furthermore, younger offenders may use aggression to protect themselves from victimisation and to demonstrate their strength, thereby attaining higher status within correctional centres (Valentine et al., 2015). A study on South African offenders found that older offenders who were

assaulted, whilst incarcerated, reported that the alleged offenders were mostly younger offenders (Booyens et al., 2023). Additionally, a South African study found that younger offenders were more likely to engage in misconduct than older offenders (Fitz, 2021). Previous research has found that younger offenders often commit offences within the correctional centre and tend to respond to stressors aggressively experienced within the correctional environment. This is due to a lack of ineffective coping skills coupled with possible psychological immaturity (Duba & Jordaan, 2023).

Purpose of this Study

Aggression and violence are not uncommon within correctional centres in South Africa (Barkhuizen et al., 2018). Aggression within correctional centres poses several risks and has detrimental effects on offenders (Auty et al., 2017). Reducing aggression and violence in correctional centres is an important objective, as it lessens the financial burden on correctional centre authorities and improves the psychosocial well-being of staff and offenders (Rocheleau, 2013; Weightman et al., 2020). The Dark Triad, adjustment, and age have been linked to aggression amongst offenders in previous studies. Therefore, this study aimed to determine which predictor variable(s), or set of predictor variables, explained a significant percentage of variance in aggression amongst adult male incarcerated offenders in a maximum-security correctional centre in South Africa.

Method

Research Design

This study followed a quantitative, non-experimental research approach using a cross-sectional correlational design (Gravetter & Forzano, 2018). Quantitative research involves collecting and analysing numerical data (Gravetter & Forzano, 2018). A non-experimental

research approach encompasses data collection of participants in natural settings (Chew, 2019), thus not aiming to find a cause-effect relationship between variables by manipulating the independent variable (Christensen et al., 2015). A cross-sectional research design is conducted at a single point in time, collecting data during a brief period without following individuals over time (Christensen et al., 2015; Wang & Chen, 2020). Correlational research investigates the relationships between variables and to what degree the variables are interrelated (Lillykutty & Samson, 2018). In this study, the independent (predictor) variables investigated were the Dark Triad (i.e., psychopathy, Machiavellianism, narcissism), adjustment, and age, while the dependent (outcome) variable was aggression (i.e., physical aggression, verbal aggression, anger, hostility). The chosen research design was considered the most appropriate for addressing the aims and examining the relationships between this study's variables (Gravetter & Forzano, 2018).

Participants and Sampling

The researcher obtained ethical clearance from the General and Human Research Ethics Committee (GHREC) at the University of the Free State (UFS-HSD2022/1692/23) and approval from the DCS to conduct the study in a private maximum-security correctional centre located in South Africa. The researcher obtained written informed consent from each participant. Participants were informed that participation in the study is voluntary and that they may withdraw at any time. They were also made aware of any possible risks pertaining to their involvement in this study. No form of deception was used during the study, and participants received a detailed research information leaflet describing the purpose of the study. Furthermore, the researcher ensured the anonymity of all participants by excluding identifying information on all questionnaires and assigning numerical codes to each participant.

Convenience sampling, a non-probability sampling technique (Gravetter & Forzano, 2018), was used to recruit participants, and data were collected from male incarcerated offenders. Non-probability sampling represents a group of non-random sampling techniques whereby each subject within the target population does not have an equal chance of being selected into the sample group (Elfil & Negida, 2017; Gravetter & Forzano, 2018). Convenience sampling is a sampling method that is often used due to practical considerations and entails recruiting participants that are easily accessible (i.e., proximity) and available to the researcher (Christensen et al., 2015; Elfil & Negida, 2017; Gravetter & Forzano, 2018). The sample consisted of 366 South African adult male maximum-security incarcerated offenders aged between 22 and 67. The average age of the participants was 37.80 years ($SD=7.980$; Minimum age=22; Maximum age=67). The majority of the participants identified as African ($n=302$; 82.5%), with the rest being Coloured ($n=48$; 13.1%), White ($n=13$; 3.6%), Indian ($n=2$; .5%), and Asian ($n=1$; .3%). In addition, 93.2% ($n=341$) of the sample indicated that they were born in South Africa. Most participants were single ($n=260$; 71.0%) (i.e., not in a relationship). The average sentence length was 26.37 years ($SD=16.731$; Minimum sentence length=10 years; Maximum sentence length=168 years). The majority of the participants ($n=208$; 59.6%) were first-time offenders (i.e., never been incarcerated before this sentence), while 40.4% ($n=148$) were repeat offenders. Additionally, 10.1% ($n=37$) of the participants indicated that they had a previous history of psychiatric treatment, and 41.0% ($n=150$) of the participants indicated that they belonged to a gang in the correctional environment. Moreover, 52.5% ($n=192$) were sentenced for violent offences, while 41.8% ($n=153$) and 5.7% ($n=21$) were respectively sentenced for sexual and economic offences. Lastly, most of the participants ($n=289$; 78.9%)

obtained some form of schooling, while 3.6% ($n=13$) had no form of schooling, and 17.5% ($n=64$) obtained tertiary qualifications.

Measurement Scales

The researcher used measurement scales (questionnaires) to collect data from participants. Each participant completed a self-compiled demographic questionnaire, the Buss and Perry Aggression Questionnaire (BPAQ), the Dark Triad Dirty Dozen (DDTD), and the Prison Adjustment Questionnaire (PAQ). The self-compiled demographic questionnaire was used to obtain biographical information about the participants, such as age, ethnicity, level of education, type of offence, sentence length, previous incarceration history, psychiatric history, and gang involvement.

The *Buss and Perry Aggression Questionnaire* (BPAQ; Buss & Perry, 1992) was used to measure the participants' aggression levels. The BPAQ is a 29-item self-report questionnaire with four dimensions (subscales): (i) Physical Aggression, (ii) Verbal Aggression, (iii) Anger, and (iv) Hostility (Buss & Perry, 1992; Williams et al., 1996). The BPAQ items are rated on a five-point Likert-type scale with response options ranging from 1 (“*extremely uncharacteristic of me*”) to 5 (“*extremely characteristic of me*”) (Buss & Perry, 1992). Higher scores on the BPAQ indicate higher levels of aggression (Gallagher & Ashford, 2016). In offender population studies, the BPAQ has yielded adequate to exceptional internal consistencies ranging between .62 and .90 (Jordaan & Hesselink, 2022; Jordaan et al., 2018; Pretorius et al., 2024; Rogers, 2019; Rogers et al., 2024). Research conducted on male maximum-security offenders in South Africa reported adequate to good internal consistencies for the BPAQ subscales, ranging from .70 to .83 for Physical Aggression, .63 to .90 for Verbal Aggression, .62 to .85 for Anger, and .71 to .87 for Hostility (Jordaan & Hesselink, 2022; Pretorius, 2019; Rogers, 2019; Rogers et al., 2024).

In order to measure the participants' Dark Triad traits, the researcher used the *Dark Triad Dirty Dozen* (DTDD; Jonason & Webster, 2010). The DTDD measures the personality traits of psychopathy, narcissism, and Machiavellianism. This scale is a self-report rating scale that consists of 12 items on a seven-point Likert-type scale with response options ranging from 1 (“*disagree strongly*”) to 7 (“*strongly agree*”). High scores on the DTDD represent a higher degree of each Dark Triad trait (Kajonius et al., 2016). The DTDD has previously been used in research on offender populations (Alavi et al., 2024; Balcioglu et al., 2023; Međedović et al., 2024). Adequate to good internal consistencies for the DTDD subscales were reported in previous studies on offenders, ranging from .76 to .84 for Machiavellianism, .70 to .79 for Psychopathy, and .80 to .83 for Narcissism (Balcioglu et al., 2023; Flexon et al., 2016; Navas et al., 2021).

The *Prison Adjustment Questionnaire* (PAQ; Wright, 1991) was used to measure the adjustment of the participants. The PAQ is a 30-item self-report measure with three subscales relating to adjustment: (i) Physical Adjustment (real and tangible physical problems), (ii) External Adjustment (problems related to other people) and (iii) Internal Adjustment (distress within the individual) (Gonçalves et al., 2021; Wright, 1991). Adequate internal consistencies for the subscales were reported in studies on South African male and female offenders: .71 for Physical Adjustment, .76 to .79 for External Adjustment, and .68 to .73 for Internal Adjustment (Langenhoven, 2023; Rogers, 2019; Rogers et al., 2024). Higher scores on each subscale indicate more adjustment problems and poorer adjustment to the correctional environment (Van Tongeren & Klebe, 2010).

Data Analysis

The data were analysed using the Statistical Package for the Social Sciences (SPSS) (Version 30, IBM Corporation, 2024). Descriptive statistics (mean, standard deviation, skewness, and kurtosis) and Pearson correlations were calculated to explore the relationships between the variables and assess distributional issues. The researcher conducted hierarchical multiple regression analyses to determine which individual predictor variable(s) or combination(s) of predictor variables explain a significant percentage of the variance (Gravetter & Forzano, 2018) in aggression amongst South African adult male incarcerated offenders in a South African maximum-security correctional centre. In this study, the predictor (independent) variables included the Dark Triad (i.e., psychopathy, narcissism, Machiavellianism), adjustment (i.e., internal adjustment, external adjustment, physical adjustment), and age, with the criterion variable being the male offenders' levels of aggression (i.e., physical aggression, verbal aggression, anger, hostility). Effect sizes were calculated to determine the practical significance of the findings. Only medium to large effect sizes obtained in this study will be discussed in further detail. According to Steyn (2005, 2009), correlations with an effect size of .10 are small, an effect size of .30 is medium, and an effect size of .50 is large. Regarding regression analyses, Cohen (1992) stated that an effect size of .02 is small, an effect size of .15 is medium, and an effect size of .35 is considered large. The 1% and 5% levels of significance were used in the data analyses.

Results

Descriptive Statistics

Table 1 illustrates the means, standard deviations, internal consistencies, skewness and kurtosis of the various measurement scales. Cronbach's alpha coefficient (α) was calculated to indicate the internal consistency of the subscales.

Table 1

Descriptive Statistics and Reliability Coefficients for the BPAQ Subscales, DTDD Subscales, and PAQ Subscales

Measures	<i>N</i>	<i>M</i>	<i>SD</i>	α	Skewness	Kurtosis
<i>BPAQ</i>						
Physical Aggression	366	20.5000	6.68867	.731	.316	-.425
Verbal Aggression	366	13.5683	4.07189	.601	.138	-.097
Anger	366	16.3689	5.59040	.712	.226	-.749
Hostility	366	20.9372	6.70791	.764	.014	-.337
<i>DTDD</i>						
Machiavellianism	366	10.3689	5.53920	.766	.755	-.110
Psychopathy	366	11.0137	5.78447	.767	.600	-.511
Narcissism	366	11.6202	6.16179	.814	.428	-.782
<i>PAQ</i>						
Internal Adjustment	366	11.0601	3.25647	.637	.103	-.648
External Adjustment	366	9.7541	3.07079	.682	-.015	-1.375
Physical Adjustment	366	12.8716	3.62826	.609	.069	-1.054

Table 1 shows that the Cronbach alpha coefficients for the BPAQ, DTDD, and PAQ subscales range from .601 to .814. These scales displayed acceptable to good levels of internal consistency (Vogt, 2005) and were thus included in the subsequent analyses. As part of the descriptive statistics in this table, it was investigated whether the data is normally distributed by calculating the skewness and kurtosis values of the different subscales. According to Kahane (2008), the cut-off point for skewness is $> |2|$ and kurtosis $> |4|$. Table 1 shows that the scores on all the subscales are within these cut-off points and, thus, do not deviate substantially from normality.

Pearson Correlations

Before conducting the regression analyses, Pearson correlations were calculated for the independent (predictor) variables: Dark Triad (i.e., Machiavellianism, psychopathy, narcissism), adjustment (i.e., internal adjustment, external adjustment, physical adjustment), and age, as well as the dependent (outcome) variable, namely aggression (i.e., physical aggression, verbal aggression, anger, hostility). All the assumptions of correlational analyses (i.e., normality, linearity, homoscedasticity) were met. The Pearson correlations are illustrated in Table 2.

Table 2*Correlations between the BPAQ Subscales, DTDD Subscales, PAQ Subscales and Age (N=366)*

	1	2	3	4	5	6	7	8	9	10	11
1. Physical Aggression	-	.557**	.645**	.531**	.447**	.352**	.291**	.288**	.222**	.236**	-.134*
2. Verbal Aggression		-	.532**	.510**	.339**	.320**	.334**	.209**	.120*	.208**	-.050
3. Anger			-	.683**	.416**	.428**	.420**	.247**	.243**	.222**	-.036
4. Hostility				-	.391**	.426**	.396**	.279**	.296**	.297**	-.056
5. Machiavellianism					-	.524**	.492**	.245**	.134*	.141**	-.098
6. Psychopathy						-	.566**	.172**	.130*	.160**	-.085
7. Narcissism							-	.159**	.048	.101	.004
8. Internal Adjustment								-	.406**	.522**	-.027
9. External Adjustment									-	.681**	.041
10. Physical Adjustment										-	.033
11. Age											-

**p≤.01, *p≤.05

Table 2 indicates that Physical Aggression has a statistically significant positive correlation with Machiavellianism. This correlation is statistically significant at the 1% level with a medium effect size of .45. This finding suggests that male offenders tend to have higher levels of physical aggression when they have higher levels of Machiavellianism. This finding may also indicate that male offenders seem to have lower levels of Machiavellianism when they have lower levels of physical aggression. Table 2 further shows that Physical Aggression has a statistically significant positive correlation with Psychopathy. This correlation is statistically significant at the 1% level with a medium effect size of .35. This finding indicates that male offenders tend to have higher levels of physical aggression when they have higher levels of psychopathy. This finding may also suggest that male offenders have lower levels of psychopathy when they have lower levels of physical aggression. Table 2 also indicates that Physical Aggression has a statistically significant positive correlation with Narcissism. This correlation is statistically significant at the 1% level with an effect size that gravitates towards a medium effect size (.29). This finding suggests that male offenders tend to have higher levels of physical aggression when they have higher levels of narcissism. This finding may also indicate that male offenders have lower levels of narcissism when they have lower levels of physical aggression.

Furthermore, Table 2 indicates that Physical Aggression has a statistically significant positive correlation with Internal Adjustment. This correlation is statistically significant at the 1% level with an effect size that gravitates towards a medium effect size (.29). This finding suggests that male offenders tend to have higher levels of physical aggression when they experience poorer internal adjustment. This finding may also indicate that male offenders seem to experience better internal adjustment when they have lower levels of physical aggression.

Additionally, Table 2 indicates that Verbal Aggression has a statistically significant positive correlation with Machiavellianism. This correlation is statistically significant at the 1% level with a medium effect size of .34. This finding suggests that male offenders tend to have higher levels of verbal aggression when they have higher levels of Machiavellianism. This finding may also indicate that male offenders have lower levels of Machiavellianism when they have lower levels of verbal aggression. Table 2 further shows that Verbal Aggression has a statistically significant positive correlation with Psychopathy. This correlation is statistically significant at the 1% level with a medium effect size of .32. This finding suggests that male offenders tend to have higher levels of verbal aggression when they have higher levels of psychopathy. This finding may also indicate that male offenders seem to have lower levels of psychopathy when they have lower levels of verbal aggression. Table 2 further shows that Verbal Aggression has a statistically significant positive correlation with Narcissism. This correlation is statistically significant at the 1% level with a medium effect size (.33). This finding indicates that male offenders tend to have higher levels of verbal aggression when they have higher levels of narcissism. This finding may also indicate that male offenders seem to have lower levels of narcissism when they have lower levels of verbal aggression.

In addition, Table 2 indicates that Anger has a statistically significant positive correlation with Machiavellianism. This correlation is statistically significant at the 1% level with a medium effect size of .42. This finding seems to suggest that male offenders tend to have higher levels of anger when they have higher levels of Machiavellianism. This finding may also indicate that male offenders have lower levels of Machiavellianism when they have lower levels of anger. Table 2 further shows that Anger has a statistically significant positive correlation with Psychopathy. This correlation is statistically significant at the 1% level with a medium effect size of .43, suggesting that male offenders tend to have higher levels of

anger when they have higher levels of psychopathy. This finding may also indicate that male offenders have lower levels of psychopathy when they have lower levels of anger. In addition, Table 2 shows that Anger has a statistically significant positive correlation with Narcissism. This correlation is statistically significant at the 1% level with a medium effect size (.42). This finding suggests that male offenders tend to have higher levels of anger when they have higher levels of narcissism, also indicating that male offenders seem to have lower levels of narcissism when they have lower levels of anger.

Moreover, Table 2 indicates that Hostility has a statistically significant positive correlation with Machiavellianism. This correlation is statistically significant at the 1% level with a medium effect size of .39. This finding suggests that male offenders tend to have higher levels of hostility when they have higher levels of Machiavellianism. This finding may also suggest that male offenders have lower levels of Machiavellianism when they have lower levels of hostility. Table 2 further indicates that Hostility has a statistically significant positive correlation with Psychopathy. This correlation is statistically significant at the 1% level with a medium effect size of .43. This finding indicates that male offenders tend to have higher levels of hostility when they have higher levels of psychopathy, also suggesting that male offenders seem to have lower levels of psychopathy when they have lower levels of hostility. In addition, Table 2 suggests that Hostility has a statistically significant positive correlation with Narcissism. This correlation is statistically significant at the 1% level with a medium effect size (.40). This finding suggests that male offenders tend to have higher levels of hostility when they have higher levels of narcissism. This finding may also indicate that male offenders seem to have lower levels of narcissism when they have lower levels of hostility.

Furthermore, Table 2 indicates that Hostility has a statistically significant positive correlation with External Adjustment. This correlation is statistically significant at the 1%

level with a medium effect size (.30). This finding seems to suggest that male offenders tend to have higher levels of hostility when they experience poorer external adjustment, also indicating that male offenders experience better external adjustment when they have seemingly lower levels of hostility. Also evident in Table 2 is that Hostility has a statistically significant positive correlation with Physical Adjustment. This correlation is statistically significant at the 1% level with a medium effect size (.30). This finding suggests that male offenders tend to have higher levels of hostility when they experience poorer physical adjustment. This finding may also indicate that male offenders experience better physical adjustment when they have lower levels of hostility.

Hierarchical Regression Analyses

The researcher explored the proportion of the variance in Aggression (i.e., Physical Aggression, Verbal Aggression, Anger, and Hostility) accounted for by the independent (predictor) variables (i.e., Dark Triad, Adjustment, Age). The following assumptions of regression analyses (i.e., outliers, multi-collinearity, normality, linearity, and homoscedasticity of residuals) were investigated, and none of the assumptions were violated. Four hierarchical regression analyses were conducted with one of the BPAQ subscales as the criterion variable.

Hierarchical Regression Analysis with Physical Aggression as the Criterion Variable

The results of the hierarchical regression analysis with Physical Aggression as the criterion variable are reported in Table 3.

Table 3*Contributions of the DTDD Subscales, PAQ Subscales, and Age to R² with Physical**Aggression as the Criterion Variable*

<i>Variables in equation</i>	<i>R²</i>	<i>Contribution to R²: full minus reduced model</i>	<i>F</i>	<i>f²</i>
1. [Age] + [IA + EA + PA] + [P + N + M]	.270	1-5=.154	25.1744**	.21
2. [Age] + [IA + EA + PA] + P	.198	2-5=.082	36.808**	.10
3. [Age] + [IA + EA + PA] + N	.178	3-5=.062	27.1533**	.08
4. [Age] + [IA + EA + PA] + M	.255	4-5=.139	67.1678**	.19
5. [Age] + [IA + EA + PA]	.116			
6. [Age] + [P + N + M] + [IA + EA + PA]	.270	6-10=.043	7.02922**	.06
7. [Age] + [P + N + M] + IA	.258	7-10=.031	15.0404**	.04
8. [Age] + [P + N + M] + EA	.254	8-10=.027	13.0295**	.04
9. [Age] + [P + N + M] + PA	.255	9-10=.028	13.5302**	.04
10. [Age] + [P + N + M]	.227			
11. [IA + EA + PA] + [P + N + M] + [Age]	.270	11-12=.009	4.4137**	.01
12. [IA + EA + PA] + [P + N + M]	.261			

Key: IA = Internal Adjustment, EA = External Adjustment, PA = Physical Adjustment, P = Psychopathy, N = Narcissism, M = Machiavellianism

**p≤.01, *p≤.05

Table 3 shows that the combination of the independent variables accounted for 27.0% ($F_{7;358} = 18.917; p \leq .001$) of the variance in the Physical Aggression scores of the sample. This finding is statistically significant at the 1% level, and the corresponding effect size ($f^2 = .37$) suggests it is of considerable practical significance. Table 3 further indicates that the DTDD subscales (Psychopathy, Narcissism, and Machiavellianism), as a set (combination) of predictor variables, accounted for 15.4% of the variance in the Physical Aggression scores of the male incarcerated offenders. This finding is statistically significant at the 1% level, and the corresponding effect size ($f^2 = .21$) suggests it is practically significant. Psychopathy, Narcissism, and Machiavellianism respectively explained 8.2% ($F_{5;360} = 36.808; p \leq .01; f^2 = .10$), 6.2% ($F_{5;360} = 27.1533; p \leq .01; f^2 = .08$) and 13.9% ($F_{5;360} = 67.1678; p \leq .01; f^2 = .19$) of the variance in the participants' physical aggression. Machiavellianism explained a statistically and practically significant proportion of the variance in the Physical Aggression scores of the sample.

It is also evident from Table 3 that the PAQ subscales (Internal Adjustment, External Adjustment, and Physical Adjustment), as a set (combination) of predictor variables, accounted for 4.3% of the variance in the Physical Aggression scores of the male incarcerated offenders. This finding is statistically significant at the 1% level, and the corresponding effect size ($f^2 = .06$) suggests that this finding is of little practical significance. Internal Adjustment, External Adjustment, and Physical Adjustment respectively explained 3.1% ($F_{5;360} = 15.0404; p \leq .01; f^2 = .04$), 2.7% ($F_{5;360} = 13.0295; p \leq .01; f^2 = .04$) and 2.8% ($F_{5;360} = 13.5302; p \leq .01; f^2 = .04$) of the variance in the participants' physical aggression. The relevant effect sizes suggest that these findings are of little practical significance.

Additionally, Table 3 indicates that Age, as an individual predictor variable, accounted for .9% of the variance in the Physical Aggression scores of the male incarcerated offenders. This finding is statistically significant at the 1% level, and the corresponding effect size ($f^2 = .01$) suggests that this finding is of little practical significance.

Hierarchical Regression Analysis with Verbal Aggression as the Criterion Variable

The results of the hierarchical regression analysis with Verbal Aggression as the criterion variable are reported in Table 4.

Table 4

Contributions of the DTDD Subscales, PAQ Subscales, and Age to R² with Verbal Aggression as the Criterion Variable

<i>Variables in equation</i>	<i>R²</i>	<i>Contribution to R²: full minus reduced model</i>	<i>F</i>	<i>f²</i>
1. [Age] + [IA + EA + PA] + [P + N + M]	.187	1-5=.126	18.4945**	.16
2. [Age] + [IA + EA + PA] + P	.138	2-5=.077	32.1578**	.10
3. [Age] + [IA + EA + PA] + N	.152	3-5=.091	38.6321**	.11
4. [Age] + [IA + EA + PA] + M	.147	4-5=.086	36.2954**	.10
5. [Age] + [IA + EA + PA]	.061			
6. [Age] + [P + N + M] + [IA + EA + PA]	.187	6-10=.025	3.66954**	.03
7. [Age] + [P + N + M] + IA	.175	7-10=.013	5.67273*	.02
8. [Age] + [P + N + M] + EA	.167	8-10=.005	2.16086	.01
9. [Age] + [P + N + M] + PA	.184	9-10=.022	9.70588**	.03
10. [Age] + [P + N + M]	.162			
11. [IA + EA + PA] + [P + N + M] + [Age]	.187	11-12=.000	-	-
12. [IA + EA + PA] + [P + N + M]	.187			

Key: IA = Internal Adjustment, EA = External Adjustment, PA = Physical Adjustment, P = Psychopathy, N = Narcissism, M = Machiavellianism

**p≤.01, *p≤.05

Table 4 shows that the combination of the independent variables accounted for 18.7% ($F_{7;358} = 11.802; p \leq .001$) of the variance in the Verbal Aggression scores of the sample. This finding is statistically significant at the 1% level, and the corresponding effect size ($f^2 = .23$) suggests it is of practical significance. Table 4 further indicates that the DTDD subscales (Psychopathy, Narcissism, and Machiavellianism), as a set (combination) of predictor variables, accounted for 12.6% of the variance in the Verbal Aggression scores of the male incarcerated offenders. This finding is statistically significant at the 1% level, and the corresponding effect size ($f^2 = .16$) suggests that it is practically significant. Psychopathy, Narcissism, and Machiavellianism respectively explained 7.7% ($F_{5;360} = 32.1578; p \leq .01; f^2 = .10$), 9.1% ($F_{5;360} = 38.6321; p \leq .01; f^2 = .11$) and 8.6% ($F_{5;360} = 36.2954; p \leq .01; f^2 = .10$) of the variance in the participants' verbal aggression. The relevant effect sizes suggest that these findings are of little practical significance.

Also evident in Table 4 is that the PAQ subscales (Internal Adjustment, External Adjustment, and Physical Adjustment), as a set (combination) of predictor variables, accounted for 2.5% of the variance in the Verbal Aggression scores of the male incarcerated offenders. This finding is statistically significant at the 1% level, and the corresponding effect size ($f^2 = .03$) suggests that this finding is of little practical significance. Internal Adjustment and Physical Adjustment respectively explained 1.3% ($F_{5;360} = 5.67273$; $p \leq .05$; $f^2 = .02$) and 2.2% ($F_{5;360} = 9.70588$; $p \leq .01$; $f^2 = .03$) of the variance in the participants' verbal aggression. The relevant effect sizes suggest that these findings are of little practical significance.

Hierarchical Regression Analysis with Anger as the Criterion Variable

Table 5 shows the results of the hierarchical regression analysis with Anger as the criterion variable.

Table 5

Contributions of the DTDD Subscales, PAQ Subscales, and Age to R² with Anger as the Criterion Variable

<i>Variables in equation</i>	<i>R²</i>	<i>Contribution to R²: full minus reduced model</i>	<i>F</i>	<i>f²</i>
1. [Age] + [IA + EA + PA] + [P + N + M]	.296	1-5=.209	35.4271**	.30
2. [Age] + [IA + EA + PA] + P	.231	2-5=.144	67.4122**	.19
3. [Age] + [IA + EA + PA] + N	.238	3-5=.151	71.3386**	.20
4. [Age] + [IA + EA + PA] + M	.216	4-5=.129	59.2347**	.16
5. [Age] + [IA + EA + PA]	.087			
6. [Age] + [P + N + M] + [IA + EA + PA]	.296	6-10=.037	6.27178**	.05
7. [Age] + [P + N + M] + IA	.277	7-10=.018	8.96266**	.03
8. [Age] + [P + N + M] + EA	.292	8-10=.033	16.7797**	.05
9. [Age] + [P + N + M] + PA	.279	9-10=.020	9.98613**	.03
10. [Age] + [P + N + M]	.259			
11. [IA + EA + PA] + [P + N + M] + [Age]	.296	11-12=.000	-	-
12. [IA + EA + PA] + [P + N + M]	.296			

Key: IA = Internal Adjustment, EA = External Adjustment, PA = Physical Adjustment, P = Psychopathy, N = Narcissism, M = Machiavellianism

**p≤.01, *p≤.05

It is evident from Table 5 that the combination of the independent variables accounted for 29.6% ($F_{7;358} = 21.547; p \leq .001$) of the variance in the Anger scores of the sample. This finding is statistically significant at the 1% level, and the corresponding effect size ($f^2 = .42$) suggests it is of considerable practical significance. Table 5 further shows that the DTDD subscales (Psychopathy, Narcissism, and Machiavellianism), as a set (combination) of predictor variables, accounted for 20.9% of the variance in the Anger scores of the male incarcerated offenders. This finding is statistically significant at the 1% level, and the corresponding effect size ($f^2 = .30$) suggests that this finding is practically significant. Psychopathy, Narcissism, and Machiavellianism respectively explained 14.4% ($F_{5;360} = 67.4122; p \leq .01; f^2 = .19$), 15.1% ($F_{5;360} = 71.3386; p \leq .01; f^2 = .20$) and 12.9% ($F_{5;360} = 59.2347; p \leq .01; f^2 = .16$) of the variance in the participants' anger. The relevant effect sizes suggest that these findings are of practical significance.

Table 5 also shows that the PAQ subscales (Internal Adjustment, External Adjustment, and Physical Adjustment), as a set (combination) of predictor variables, accounted for 3.7% of the variance in the Anger scores of the male incarcerated offenders. This finding is statistically significant at the 1% level, and the corresponding effect size ($f^2 = .05$) suggests that this finding is of little practical significance. Internal Adjustment, External Adjustment, and Physical Adjustment respectively explained 1.8% ($F_{5;360} = 8.96266; p \leq .01; f^2 = .03$), 3.3% ($F_{5;360} = 16.7797; p \leq .01; f^2 = .05$) and 2.0% ($F_{5;360} = 9.98613; p \leq .01; f^2 = .03$) of the variance in the participants' anger. The relevant effect sizes suggest that these findings are of little practical significance.

Hierarchical Regression Analysis with Hostility as the Criterion Variable

The results of the hierarchical regression analysis with Hostility as the criterion variable are reported in Table 6.

Table 6

Contributions of the DTDD Subscales, PAQ Subscales, and Age to R² with Hostility as the Criterion Variable

<i>Variables in equation</i>	<i>R²</i>	<i>Contribution to R²: full minus reduced model</i>	<i>F</i>	<i>f²</i>
1. [Age] + [IA + EA + PA] + [P + N + M]	.307	1-5=.180	30.9957**	.26
2. [Age] + [IA + EA + PA] + P	.259	2-5=.132	64.1296**	.18
3. [Age] + [IA + EA + PA] + N	.255	3-5=.128	61.8523**	.17
4. [Age] + [IA + EA + PA] + M	.230	4-5=.103	48.1558**	.13
5. [Age] + [IA + EA + PA]	.127			
6. [Age] + [P + N + M] + [IA + EA + PA]	.307	6-10=.067	11.5373**	.10
7. [Age] + [P + N + M] + IA	.269	7-10=.029	14.2818**	.04
8. [Age] + [P + N + M] + EA	.296	8-10=.056	28.6364**	.08
9. [Age] + [P + N + M] + PA	.289	9-10=.049	24.8101**	.07
10. [Age] + [P + N + M]	.240			
11. [IA + EA + PA] + [P + N + M] + [Age]	.307	11-12=.001	.51659	-
12. [IA + EA + PA] + [P + N + M]	.306			

Key: IA = Internal Adjustment, EA = External Adjustment, PA = Physical Adjustment, P = Psychopathy, N = Narcissism, M = Machiavellianism

**p≤.01, *p≤.05

Table 6 shows that the combination of the independent variables accounted for 30.7% ($F_{7;358} = 22.641; p \leq .001$) of the variance in the Hostility scores of the sample. This finding is statistically significant at the 1% level, and the corresponding effect size ($f^2 = .44$) suggests that this finding is of considerable practical significance. Table 6 further indicates that the DTDD subscales (Psychopathy, Narcissism, and Machiavellianism), as a set (combination) of predictor variables, accounted for 18.0% of the variance in the Hostility scores of the male incarcerated offenders. This finding is statistically significant at the 1% level, and the corresponding effect size ($f^2 = .26$) suggests that it is practically significant. Psychopathy, Narcissism, and Machiavellianism respectively explain 13.2% ($F_{5;360} = 64.1296; p \leq .01; f^2 = .18$), 12.8% ($F_{5;360} = 61.8523; p \leq .01; f^2 = .17$) and 10.3% ($F_{5;360} = 48.1558; p \leq .01; f^2 = .13$) of the variance in the participants' anger. The relevant effect sizes suggest that these findings are of practical significance.

Furthermore, Table 6 shows that the PAQ subscales (Internal Adjustment, External Adjustment, and Physical Adjustment), as a set (combination) of predictor variables, account for 6.7% of the variance in the Hostility scores of the male incarcerated offenders. This finding is statistically significant at the 1% level, and the corresponding effect size ($f^2 = .10$) suggests that this finding is of little practical significance. Internal Adjustment, External Adjustment, and Physical Adjustment respectively explain 2.9% ($F_{5;360} = 14.2818; p \leq .01; f^2 = .04$), 5.6% ($F_{5;360} = 28.6364; p \leq .01; f^2 = .08$) and 4.9% ($F_{5;360} = 24.8101; p \leq .01; f^2 = .07$) of the variance in the participants' hostility. The relevant effect sizes suggest that these findings are of little practical significance.

Discussion

Baumeister et al. (1996) emphasised the relationship between the Dark Triad traits and aggression (Cale & Lilienfeld, 2006; Liu et al., 2021), stating that the concept of threatened egotism could be the reason narcissism and possibly psychopathy can lead to aggression (Liu et al., 2021). An ego threat refers to a threat to the self whereby an individual's favourable self-perception is compromised (Baumeister et al., 1996; Crysel et al., 2013). According to this theory, individuals with an inflated sense of self who are confronted with reality or others' negative evaluations of them tend to feel threatened/vulnerable (Baumeister et al., 1996; Hart et al., 2017; Liu et al., 2021). This can lead to these individuals engaging in aggressive behaviours (Hart et al., 2017; Liu et al., 2021). These individuals tend to retaliate and engage in aggressive behaviour to gain status, improve their image or seek revenge (Hart et al., 2018; Liu et al., 2021). Previous studies have found that ego threat interacts with narcissism and psychopathy in predicting aggression (Bushman & Baumeister, 1998; Crysel et al., 2013; Jones & Paulhus, 2011). Machiavellians' strategic and manipulative nature (Jones & Neria, 2015; Sherry et al., 2006) may also resemble the self-enhancement motivations seen in narcissistic and psychopathic individuals, which can lead to aggression

following an ego threat (Cale & Lilienfeld, 2006). Prior research has shown the Dark Triad traits to be interrelated (Aluja et al., 2022; Bertl et al., 2017; Garcia et al., 2015; Jakobwitz & Egan, 2006; Jordan et al., 2021; Paulhus & Williams, 2002). Therefore, this theory might also apply to Machiavellianism, as Machiavellianism shares similar traits to narcissism, such as manipulateness (Rauthmann, 2012). In correctional centres, offenders often experience adversarial interactions with other offenders and correctional officers (Chong, 2013; Logan et al., 2020). The offenders with higher Dark Triad traits may view these interactions as threatening to their sense of self or a negative evaluation of them, triggering a need to retaliate.

Statistically and practically significant positive correlations were identified between Machiavellianism and physical aggression, psychopathy and physical aggression, and narcissism and physical aggression. These findings imply that offenders with higher levels of Machiavellianism, psychopathy, and narcissism have increased levels of physical aggression, also suggesting that male maximum-security incarcerated offenders who display less physical aggression are likely to have lower levels of Dark Triad traits. These findings are consistent with existing literature, suggesting that Dark Triad traits are associated with increased levels of aggression (James et al., 2014; Lämmle et al., 2014; Pailing et al., 2014). Internal adjustment was also found to be statistically and practically significantly positively correlated with physical aggression. This finding implies that poorer internal adjustment is associated with higher levels of physical aggression. This finding may also suggest that lower levels of physical aggression are associated with improved adjustment. Internal adjustment refers to (a) discomfort around other offenders and staff within the correctional centre, (b) anger, and (c) difficulty sleeping (Wright, 1985). This implies that as offenders are more poorly adjusted to the correctional centre, they experience more discomfort around other offenders and staff, increased anger, and more difficulties sleeping. Well-adjusted offenders tend to experience

less discomfort around others, less anger, and fewer sleeping problems and are less inclined to act aggressively (Rogers et al., 2024; Wright, 1985). Previous research found that when offenders struggle to adjust to the correctional environment, they tend to engage in institutional misconduct and act aggressively (Rocheleau, 2013; Rogers et al., 2024).

Furthermore, statistically and practically significant positive correlations were identified between Machiavellianism and verbal aggression, psychopathy and verbal aggression, and narcissism and verbal aggression. These findings seem to suggest that male offenders with higher levels of Machiavellianism, psychopathy, and narcissism have increased levels of verbal aggression and that lower levels of the Dark Triad traits are associated with lower levels of verbal aggression. There is a lack of research linking the Dark Triad traits to verbal aggression in offender populations. However, previous research has found psychopathy to be positively associated with verbal aggression in adolescents and young adults (Fanslau et al., 2023; Gogoriță, 2019). In a study conducted with sports students, narcissism and Machiavellianism were found to be a positive predictor of verbal aggression (Vionea et al., 2021). This could be due to a narcissist's response to an ego threat and a Machiavellian's need to manipulate others to achieve success (Vionea et al., 2021).

Statistically and practically significant positive correlations were also identified between Machiavellianism and anger, psychopathy and anger, and narcissism and anger. These findings suggest that offenders with higher levels of Machiavellianism, psychopathy, and narcissism seem to experience increased anger, and as the Dark Triad traits decrease, anger also decreases. Few studies have focused on the relationship between the Dark Triad traits and anger in offenders. However, studies have postulated that narcissism is related to increased anger (Maciantowicz & Zajenkowski, 2018; Witte et al., 2002).

Machiavellianism, narcissism, and psychopathy yielded statistically and practically significant positive correlations with hostility. These findings seem to imply that male

offenders with higher levels of Machiavellianism, narcissism, and psychopathy seem to have higher levels of hostility and lower levels of these traits are associated with lower levels of hostility. Studies have found secondary psychopathy to be correlated with anger and hostility (Curtis & Jones, 2020). Primary psychopathy is characterised by affective deficit. Secondary psychopathy refers to a disturbance in affect as well as increased emotionality and is linked to antisocial behaviour and neuroticism (Curtis & Jones, 2020; Jakobwitz & Egan, 2006). Higher levels of neuroticism, as is common within the offender population (Becerra-Garcia et al., 2013), are associated with increased hostility and aggression (Hornsveld & Kraaimaat, 2023; Sanz et al., 2010). Vulnerable narcissism has been associated with higher levels of hostility (Czarna et al., 2019). A possible explanation for this is that when narcissistic individuals receive negative feedback from others, which can be perceived as an ego threat, hostility can be elicited (Li et al., 2015). Research suggests that Machiavellianism is associated with a hostile view of the world and is thus positively correlated with hostility (Jones & Neria, 2015; Matt & Krawczyk, 2017).

External adjustment was also statistically and positively correlated with hostility. External adjustment refers to problems relating to other offenders and staff (Gonçalves et al., 2021), specifically (a) physical fights with other offenders, (b) arguments with other offenders and (c) arguments with staff. The BPAQ's Hostility consists of resentment and suspicion of others (Buss & Perry, 1992). In comparison to prior research, this finding suggests that male offenders who experience better external adjustment have lower levels of hostility and that those with poorer external adjustment seem to have higher levels of hostility. However, research has also suggested that individuals who are repeatedly exposed to violence may consider anger and hostility as appropriate means of solving problems (Steiner & Meade, 2016). Hostility has a statistically significant positive correlation with physical adjustment. Physical adjustment refers to problems such as (a) fear of attack, (b)

injury, (c) arguments with staff and (d) being taken advantage of by other offenders (Buss & Perry, 1992). This finding indicates that male offenders who experience poorer physical adjustment seem to have higher levels of hostility and that those with better physical adjustment have lower levels of hostility. This finding is consistent with literature that found that individuals within violent environments may also behave in a hostile manner as a means of self-protection (Halnon & Anderson, 2001; Steiner & Meade, 2016).

The findings of the hierarchical regression analyses indicated that the combination of all the predictor variables statistically and practically significantly predicted physical aggression, verbal aggression, anger, and hostility. This implies that age, adjustment, and the Dark Triad traits, as a combination, are relevant factors as a combination in predicting aggression amongst male incarcerated offenders within the correctional environment. Furthermore, the Dark Triad traits, as a combination, statistically and practically significantly predicted physical aggression, verbal aggression, anger, and hostility amongst male incarcerated offenders within the correctional environment. Machiavellianism as an individual predictor variable statistically and practically significantly predicted physical aggression, anger, and hostility amongst male incarcerated offenders within the correctional environment. Despite the lack of research linking Machiavellianism and aggression in offender populations, this study's findings are consistent with existing literature on Machiavellianism and aggression in other populations. Machiavellians have been found to use instrumental aggression to achieve their goals (Noor et al., 2023; Warburton & Anderson, 2015). These individuals do not experience remorse for their actions towards others. However, they are more likely to use indirect forms of aggression to avoid potential consequences to themselves (Warburton & Anderson, 2015). Machiavellian individuals have a need for revenge in response to others' perceived wrongful behaviour towards them (Colón, 2023), similar to narcissistic individuals when facing ego threats. Instrumental aggression that

is callous and unemotional has been associated with deficits in empathy (Chialant et al., 2016). Machiavellians tend to lack empathy; however, they can cognitively understand others' emotional states, which is often used to manipulate others for their personal gain (Colón, 2023). Therefore, the findings of this study suggest that male offenders with higher levels of Machiavellianism may use aggression in retaliation to perceived threats from other offenders, as well as for personal advances within the correctional setting.

Psychopathy and narcissism as individual predictor variables statistically and practically significantly predicted anger and hostility amongst male incarcerated offenders within the correctional environment. The combination of callous, unemotional traits and persistent patterns of severe aggression characterised by psychopathic individuals during their youth has been found to serve as a strong predictor of violent recidivism amongst offenders (Anderson & Kiehl, 2013; Vitacco & Vincent, 2006). Individuals with higher levels of psychopathy are more likely to act aggressively as their deficits in empathy have been suggested to lead to them not being responsive to the distress signals of others (Blair, 2018). Research has suggested that the behavioural expression/trigger of anger is reactive aggression (Bertsch et al., 2020; Blair, 2011, 2018). Psychopathic individuals tend to engage in both reactive (impulsive) and instrumental (premeditated) aggression (Anderson & Kiehl, 2013; Blair, 2018). Offenders also engage in both premeditated and impulsive aggression (Lanciano et al., 2022). Prior research also suggests that narcissism is linked to both anger and hostility (Kałowski et al., 2021; Krizan & Johar, 2015; Maciantowicz & Zajenkowski, 2018; Maciantowicz et al., 2019). More specifically, a grandiose narcissist's inclination towards anger and aggression has been found to be situational and linked to ego threats (Bushman & Baumeister, 1998; Maciantowicz & Zajenkowski, 2018). However, vulnerable narcissism is linked to reactive aggression due to provocation (Hart et al., 2017; Maciantowicz & Zajenkowski, 2018) and chronic anger driven by distrust and shame (Krizan & Johar, 2015;

Maciantowicz & Zajenkowski, 2018). In a study conducted on violent offenders, narcissism was found to be a predictor of premeditated and impulsive aggression (Liu et al., 2021). Therefore, the findings of this study are consistent with the literature and suggest that offenders with higher levels of psychopathy and narcissism tend to exhibit more anger, which is usually displayed through reactive aggression.

The DTDD subscales accounted for 15.4% of the variance in physical aggression of the incarcerated male offenders. These findings confirm previous studies which suggest that individuals with higher levels of the Dark Triad personality traits tend to be more physically aggressive. Pailing et al. (2014) found that psychopathy and Machiavellianism specifically were predictors of self-reported violence, with violence being an extreme form of physical aggression that has the primary goal of intentional injury (Allen & Anderson, 2017). Jones and Neria (2015) found that psychopathy is positively associated with physical aggression. Higher levels of narcissism have also been linked to aggression and violence, both impulsive and premeditated forms; this was found to be mainly due to these individuals feeling threatened, humiliated, or criticised by others (Kjærviik & Bushman, 2021). Within correctional centres, offenders often experience conflict and threats of violence (Rocheleau, 2013), which can trigger a need to retaliate using physical aggression in order to protect their image or seek retribution (Felson, 2018).

The DTDD subscales accounted for 12.6% of the variance in verbal aggression of the incarcerated male offenders. Previous research has suggested that individuals with higher levels of the Dark Triad traits tend to be more verbally aggressive. Specifically, individuals with higher levels of psychopathy have been found to be more verbally aggressive (Jain et al., 2022; Thomson et al., 2019). Furthermore, Machiavellianism and narcissism have been found to be positive predictors of verbal aggression (Vionea et al., 2021). However, there is a dearth of literature linking verbal aggression and the Dark Triad traits in offender populations.

The DTDD subscales accounted for 20.9% of the variance in the anger scores of the male incarcerated offenders. Few studies explored the emotional component of aggression (anger) in relation to the Dark Triad. Vulnerable narcissism, however, characterised by hypersensitivity to rejection and extreme self-consciousness, has been associated with anger (Czarna et al., 2019; Krizan & Johar, 2015; Maciantowicz & Zajenkowski, 2018). This may suggest that when narcissistic male offenders' fragile sense of self is challenged by other offenders, they experience feelings of anger (Liu et al., 2021). Machiavellians may also be prone to anger (Lau & Marsee, 2012). Machiavellian individuals are associated with having higher levels of neuroticism (Lau & Marsee, 2012). Neuroticism often leads some individuals to perceive situations as more threatening than others (Liu et al., 2013), thus providing a possible explanation for these individuals experiencing more anger.

The DTDD, as a set (combination) of predictor variables, accounted for 18.0% of the variance in the hostility scores of the male incarcerated offenders. Previous research has shown Machiavellianism to positively predict hostility (Jones & Neria, 2015). Grandiosity, a defining characteristic of narcissism (O'Reilly & Hall, 2021), has also been found to predict hostility. Understandably, narcissistic individuals' sense of superiority leads to a diminished view of others (Jones & Neria, 2015).

This study aimed to determine which variables or combinations of variables are predictors of aggression among male maximum-security incarcerated offenders. Aggression and violence in correctional centres negatively impact offenders and the functioning of correctional centres and pose several risks (Auty et al., 2017). Previous research has shown that aggression in correctional centres is associated with severe consequences such as poor mental and physical health (Bierie, 2012; Jordaan & Hesselink, 2022; Nieuwoudt & Bantjes, 2019), loss of life, self-injury, sexual victimisation, increased sentence length, recidivism and reduced access to programmes (Jordaan & Hesselink, 2022; Mooney & Daffern, 2015).

Therefore, it is imperative to better understand the predictors of aggression in correctional contexts to facilitate the development of appropriate offender rehabilitation interventions.

Limitations

Several limitations may have influenced the results of this study. The use of convenience sampling limited the generalisability of the findings, as this method does not produce results that can be applied to a broader population. Due to the specialised correctional environment this study focused on, the results cannot be generalised to incarcerated offenders in government-operated correctional centres in South Africa. Another limitation is the reliance on self-reporting measures, which are susceptible to cognitive biases such as self-promotion and reactivity. Participants may have intentionally provided misleading or inaccurate information when completing the questionnaires. Despite these limitations, the study's results are significant as they contribute to the limited research on the Dark Triad, adjustment, age and aggression within the South African offender population.

Recommendations

Future research can further investigate the relationship between the Dark Triad traits, adjustment, age and aggression across different South African correctional centres. Similar research can be conducted at government-operated minimum-, medium-, and maximum-security correctional centres and with a more diverse sample of offenders to ensure the generalisability of the findings. There is a dearth of literature on the Dark Triad traits and aggression in female offenders, which future research can also aim to address. Previous research studies relating to the Dark Triad and offenders' adjustment have also relied heavily on a cross-sectional questionnaire design. Therefore, longitudinal studies would be beneficial to explore the long-term impacts of the Dark Triad and adjustment on aggression within offender populations.

Value of this study

Several reasons have been identified regarding the value this study holds for the South African population both within and outside the correctional environment. First, there is a dearth of literature on South African offender populations. Also, the findings contribute to the South African knowledge base on incarcerated offender populations and the Dark Triad as a predictor of aggression amongst South African adult males in a maximum-security correctional centre. Furthermore, this study provided insight into which variables are statistically significant predictors of aggression amongst male incarcerated offenders in a maximum-security correctional centre. Subsequently, potential areas of reform can be identified to reduce levels of aggression within the correctional environment. Thus, providing the DCS and correctional staff with better awareness and understanding of offenders with Dark Triad personality traits may assist in the management of these individuals within the correctional environment. Lastly, this study has informed future research on aggression within the South African male offender population on which interventions and rehabilitation programmes can be based.

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APPENDIX A: DCS PERMISSION TO CONDUCT RESEARCH



correctional services

Department:
Correctional Services
REPUBLIC OF SOUTH AFRICA

Private Bag X136, PRETORIA, 0001 Poyntons Building, C/O WF Nikomo and Sophie De Bruyn Street, PRETORIA
Tel (012) 307 2059 Fax 086 539 2693

Dear Ms Naidoo KA

RE: The Dark triad, adjustment and age as predictors of aggression amongst South African male offenders in a maximum-security Correctional Centre.

It is with pleasure to inform you that your request to conduct research in the Department of Correctional Services on the above topic has been approved.

Your attention is drawn to the following:

- This ethical approval is valid from **02/082023 to 02/08/2024**.
- The relevant Regional and Area Commissioner where the research will be conducted will be informed of your proposed research project.
- It is your responsibility to make arrangements for your interviewing times.
- Your identity document/passport and this approval letter should be in your possession when visiting regional offices/Correctional Centres.
- You are required to use the terminology used in the White Paper on Corrections in South Africa (February 2005) and Correctional Services Act (No.111 of 1998) e.g. "Offenders" not "Prisoners" and "Correctional Centres" not "Prisons".
- You are not allowed to use photographic or video equipment during your visits, however the audio recorder is allowed.
- You are required to submit your final report to the Department for approval by the Commissioner of Correctional Services before publication (including presentation at workshops, conferences, seminars, etc) of the report.
- Should you have any enquiries regarding this process, please contact the REC Administration for assistance at telephone number (012) 307 2059./ 0723271937

Thank you for your application and interest to conduct research in the Department of Correctional Services.

Yours faithfully

ND MBULI
DC: POLICY COORDINATION & RESEARCH
DATE: 02/08/2023

APPENDIX B: GHREC ETHICAL CLEARANCE



GENERAL/HUMAN RESEARCH ETHICS COMMITTEE (GHREC)

03-Apr-2023

Dear Kelsy Naidoo

Application Approved

Research Project Title:

The Dark Triad, adjustment and age as predictors of aggression amongst South African male offenders in a maximum-security correctional centre

Ethical Clearance number:

UFS-HSD2022/1692/23

We are pleased to inform you that your application for ethical clearance has been approved. Your ethical clearance is valid for twelve (12) months from the date of issue. We request that any changes that may take place during the course of your study/research project be submitted to the ethics office to ensure ethical transparency. Furthermore, you are requested to submit the final report of your study/research project to the ethics office. Should you require more time to complete this research, please apply for an extension. Thank you for submitting your proposal for ethical clearance; we wish you the best of luck and success with your research.

Outcome: Approved

Please upload DCS approval once obtained. Also, ensure a copy of the DCS approval is kept on file.

It is strongly recommended that the consent form indicate the expected survey completion time, which may be rather long.

Yours sincerely

Dr Adri Du Plessis

Chairperson: General/Human Research Ethics Committee

Adri
Du
Plessis

Digitally
signed by Adri
Du Plessis
Date:
2023.04.04
10:24:46
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APPENDIX C: INFORMED CONSENT FORM



RESEARCH STUDY INFORMATION LEAFLET AND CONSENT FORM

DATE

2022-2023

TITLE OF THE RESEARCH PROJECT

The Dark Triad, adjustment and age as predictors of aggression amongst South African male offenders in a maximum-security correctional centre.

PRINCIPLE INVESTIGATOR / RESEARCHER(S) NAME(S) AND CONTACT DETAILS:

Kelsy Abriana Naidoo

kelsynaidoo@gmail.com

FACULTY AND DEPARTMENT:

*Faculty of Humanities
Department of Psychology*

STUDY LEADER(S) NAME AND CONTACT DETAILS:

*Dr Jacques Jordaan (UFS staff member)
Jordaan11@ufs.ac.za*

WHAT IS THE AIM / PURPOSE OF THE STUDY?

This research study aims to investigate the possible predictors of aggression amongst incarcerated male offenders in a South African correctional centre. The research intends to determine how the Dark Triad, adjustment and age predicts aggression amongst incarcerated male offenders.

WHO IS DOING THE RESEARCH?

The researcher, is a postgraduate student completing a Master of Social Sciences in Clinical Psychology at the University of the Free State. The research study is being conducted in order to fulfil the requirements of this degree. Furthermore, the researcher has an interest in the predictors of aggression amongst male incarcerated offenders in South African correctional centres.

HAS THE STUDY RECEIVED ETHICAL APPROVAL?

This study has received approval from the Research Ethics Committee of UFS. A copy of the approval letter can be obtained from the researcher.

Approval number: *UFS-HSD2022/1692/23*

205 Nelson Mandela Drive/Ryalaan, Park West/Parkwes, Bloemfontein 9301, South Africa/Suid-Afrika
P.O. Box/Posbus 339, Bloemfontein 9300, South Africa/Suid-Afrika, T: +27(0)51 401 9111, www.ufs.ac.za



WHY ARE YOU INVITED TO TAKE PART IN THIS RESEARCH PROJECT?

The purpose of this study is to understand aggression amongst incarcerated male offenders. As you are incarcerated in this correctional centre and have met the criteria for this study (which include male offenders of all sentence lengths, types of offences and ages), you have been approached to participate in this study. The researcher is interested in understanding your unique experience of being incarcerated. Approximately 340 participants will be requested to participate in this study.

WHAT IS THE NATURE OF PARTICIPATION IN THIS STUDY?

Participation in this study is voluntary. If you choose to participate in this study you will have to sign a consent form at the end of this information leaflet. You will be then requested to complete four separate questionnaires that will be compiled as a booklet. The questionnaires take approximately 30 minutes to complete, however, there will be no time limit to allow you enough time to complete the questionnaires. Some of the questions are sensitive and asking for personal information. Nonetheless, your honesty in answering these questions is urged and will assist in understanding your experience of being incarcerated. The first questionnaire is a demographic questionnaire that includes personal questions such as age, race, home language, type of offense, type of offender, sentence length, previous incarceration history, psychiatric history and gang involvement. The second questionnaire, the Buss and Perry Aggression Questionnaire, directly relates to the purpose of this study, which is understanding your level of aggression within the correctional environment. The third questionnaire, Dark Triad Dirty Dozen (DTDD) will be used to determine which personality traits you have. The fourth questionnaire, The Prison Adjustment Questionnaire (PAQ), will be used to understand your adjustment to the circumstances of the correctional environment. A specific amount of time and a specific setting will be allocated for the completion of the questionnaires over the course of a few days. You will not be requested to disclose any personal identifying information such as your name, identity number or correctional number, in any of the questionnaires.

CAN THE PARTICIPANT WITHDRAW FROM THE STUDY?

Every participant has the right to choose to participate in the study or not to participate in the study. Participation is voluntary and there is no penalty or loss of benefit for non-participation. Being in this study is voluntary, and you are under no obligation to consent to participation. If you do decide to take part, you will be given this information sheet to keep and be asked to sign a written consent form. You are free to withdraw at any time and without giving a reason. However, once the questionnaire booklet has been completed, you will not be able to withdraw from the study as the researcher will not be able to identify your responses.

WHAT ARE THE POTENTIAL BENEFITS OF TAKING PART IN THIS STUDY?

There are limited benefits from participating in this study. You will not receive any incentives for participating in this study, including: money, rewards, benefits and privileges. Participating in this study will have no effect on your sentence length or parole. The benefits associated with participating in this study are related to incarcerated male offenders in South Africa. The findings of this study will contribute to the South African knowledge base on incarcerated male offender populations and the

Dark Triad, adjustment and age as possible predictors of aggression. This may help to identify potential areas of reform to reduce levels of aggression within the correctional environment.

WHAT IS THE ANTICIPATED INCONVENIENCE OF TAKING PART IN THIS STUDY?

There are some inconveniences and risks associated with taking part in this study. Deciding to take part in this study may inconvenience your responsibilities to participate in programmes, schooling, workshops, or other activities you are involved in at the correctional centre. Participating may also be associated with emotional or psychological distress due to the sensitive nature of some of the questions. As such, the researcher will ensure that a psychologist and/or a social worker employed at the correctional centre can offer you debriefing or counselling services should it be needed.

WILL WHAT I SAY BE KEPT CONFIDENTIAL?

The researcher will make every effort to ensure that your rights to confidentiality, privacy, and anonymity are maintained as far as possible. The following steps will be taken to ensure that your right to confidentiality is maintained: You will not be required to provide your name, surname, identity number or correctional number when answering any of the questionnaires, to ensure anonymity. Once the questionnaire booklet has been completed, the researcher will ensure that all the information you have provided remains confidential and persons not involved in this study will not have access to it. The information provided will be used to compile a dissertation, articles and or presentations. However, this information will not indicate identifying particulars of the participants. Your answer booklets will be given a code number and you will be referred to it in any publications.

HOW WILL THE INFORMATION BE STORED AND ULTIMATELY DESTROYED?

The researcher will store hard copies of your answers for a period of five years in a locked cupboard/filing cabinet in the Department of Psychology at the University of the Free State. For future research or academic purposes; electronic information will be stored on a password protected computer. Future use of the stored data will be subject to further Research Ethics Review and approval if applicable. After five years the research data collected will be destroyed in a non-hazardous manner at a recycling deposit. There will be no inconvenience and/discomfort to you as the participant. Others who may be involved with destroying the data will not be able to identify you as your responses will not contain any identifying particulars.

WILL I RECEIVE PAYMENT OR ANY INCENTIVES FOR PARTICIPATING IN THIS STUDY?

There will be no incentives for participating in this research study, including: any form of payment, reimbursements, privileges, benefits, gifts, alterations of sentence length or parole. Participation in this study is voluntary and has no associated benefits.

HOW WILL THE PARTICIPANT BE INFORMED OF THE FINDINGS / RESULTS OF THE STUDY?

If you would like to be informed of the final research findings, please inform your supervising officers who will be notified to refer you to the research leader. You will then have the opportunity to arrange

a time where you will be able to receive feedback related to the study from the research leader. See the contact details below:

Research Supervisor contact

Dr Jacques Jordaan

JordaanJ1@ufs.ac.za

Research ethics committee secretary

Charne Vercueil

VercueilCC@ufs.ac.za

Thank you for taking the time to read this information sheet and for participating in this study. below. If you would like to participate in this study, please read the consent form below and sign in the allocated space provided.

CONSENT TO PARTICIPATE IN THIS STUDY

I, _____ (participant's full names to be included), confirm that I voluntarily agree to participate in the research study.

I, the Participant, further confirm that–

1. the Researcher has explained the nature, procedure, potential benefits and anticipated inconvenience of my participation in the Study;
2. I have read (or had explained to me) and understood the Study as explained in the attached information sheet;
3. I have had sufficient opportunity to ask questions and am prepared to participate in the Study;
4. I understand that my participation in the Study is entirely voluntary and that I am free to withdraw at any time without penalty (if applicable);
5. I voluntarily provide the UFS and the Researcher with my personal information and consent to the UFS and the Researcher collecting, disclosing and processing my personal information in order to conduct the Study and any related activities in relation thereto;
6. I hereby acknowledge and confirm that I understand the purpose for which the UFS and the Researcher may collect, store, use, delete, destroy, outsource, transfer or otherwise process, as the context and circumstances may require and as contemplated in terms of POPIA, my personal information as set out herein;
7. I am aware that the findings of the Study will be anonymously processed into a research report, journal publications and/or conference proceedings and that my personal information will be aggregated and deidentified at such stage;
8. I also give the UFS permission to share, without notification, the collected data with other researchers at the UFS or other Higher Education Institutions. This permission is dependent on the same principles of ethical research practices, anonymity/confidentiality, safekeeping of information, and other issues listed above applying.

I, the Participant, agree to the recording of the questionnaires.

Full Name of Participant: _____

Signature of Participant: _____ Date: _____

Full Name(s) of Researcher(s): _____

Signature of Researcher: _____ Date: _____

APPENDIX D: QUESTIONNAIRE BOOKLET

PARTICIPANT NO. _____

Dear participant. Thank you for choosing to participate in this study. Please complete the following questions below.

Please circle your chosen response and/or fill in the answers in the space provided where necessary.

1. DEMOGRAPHICAL QUESTIONNAIRE

1.1 SEX

Male	1
Female	2

1.2 AGE IN YEARS

1.3 RACE

Black	1
Coloured	2
White	3
Asian	4
Indian	5
Other	6
Please specify (if other):	<input type="text"/>

1.4 HOME LANGUAGE

English	1
Afrikaans	2
Sesotho	3
Xhosa	4
Zulu	5
Setswana	6
Tshivenda	7
Xitsonga	8
IsiNdebele	9

Lesotho	2
Swaziland	3
Zimbabwe	4
Mozambique	5
Botswana	6
Other	7
Please specify which country (if other):	

1.6 MARITAL STATUS

Married	1
Widowed	2
Separated	3
Divorced	4
Single (never been married before)	5

1.7 RELIGION

Christian	1
Muslim	2
Hindu	3
Jewish	4
Traditional African religion	5
Atheist	6
Other	7
Please specify which religion (if other)	

1.8 LEVEL OF EDUCATION

What is your highest level of education?

No Formal Education	1
Grade 1	2
Grade 2	3
Grade 3	4
Grade 4	5
Grade 5	6
Grade 6	7
Grade 7	8
Grade 8	9
Grade 9	10
Grade 10	11
Grade 11	12
Grade 12	13

Sepedi	10
SiSwati	11
Other	12
Please specify (if other):	

1.5 LEVEL OF EDUCATION

What is your highest level of education?

No Formal Education	1
Grade 1	2
Grade 2	3
Grade 3	4
Grade 4	5
Grade 5	6
Grade 6	7
Grade 7	8
Grade 8	9
Grade 9	10
Grade 10	11
Grade 11	12
Grade 12	13
Higher Certificate	14
Tertiary Diploma	15
Tertiary Degree	16

1.6 TYPE OF OFFENCE

What crime(s) are you currently serving time for in this correctional centre?

Homicide, murder, attempted murder, conspiracy to commit murder, culpable homicide	1
Drug offence, possession of drugs, selling of drugs, drug trafficking	2
Sexual offence, rape, sexual assault, indecent assault, any sex-related offence	3
Theft, fraud, forgery, extortion, impersonation, shoplifting or any other economic-related offence	4
House breaking with intent to commit a crime, robbery, car-jacking	5
Assault, grievous bodily harm	6
Weapons offence, illegal possession of a weapon or any other weapon-related offence	7
Other:	8
Please specify (if other):	

Yes	1	
No	2	
Please specify which disorder (if yes):		

1.14 GANG INVOLVEMENT

Are you part of/involved in a gang at the correctional centre?

Yes	1	
No	2	
Please specify which gang (if yes):		

**Thank you for time and input
Please complete the next Questionnaire**

2. PRISON ADJUSTMENT QUESTIONNAIRE

Offenders adjust to incarceration in correctional centres in different ways. Some people sleep better in the correctional centre than in the outside world, others get into physical fights.

We are interested in how you are adjusting to incarceration at this correctional centre.

You will be asked to compare how you feel or act here to how you felt or acted in the outside world. You will also be asked how often you feel or act a certain way.

Please mark the response which best represents you and how you feel with an X.

Choose only one response for each question. There are no right or wrong answers, only how you are handling incarceration at this correctional centre.

2.1 In comparison to your life before incarceration, are you	
More comfortable with the people outside of the correctional centre	3
More comfortable with the people in the correctional centre	2
Experience the same amount of comfort with people inside of the correctional centre and the people outside of the correctional centre	1
2.2 How often do you experience discomfort around fellow incarcerated offenders?	
Most of the time (you are uncomfortable several times a day)	5
At least once a day	4
Occasionally (Every few days)	3
Seldom	2
Never	1
2.3 How often do you feel uncomfortable around the staff?	
Most of the time (you are uncomfortable several times a day)	5
At least once a day	4
Occasionally (every few days)	3
Seldom	2
Never	1
2.4 Would you say that you are	
Angrier in the correctional centre	4
Angrier in the outside world	3
About as angry in the correctional centre as in the outside world	2
Very seldom angry either place	1
2.5 How often do you experience anger in this correctional centre?	
Most of the time (you are angry several times a day)	5
At least once a day	4
Occasionally (every few days)	3
Seldom	2
Never	1

2.6 Do you experience feelings of being ill	
More frequently in the correctional centre	4
More frequently in the outside world	3
About as frequently in the correctional centre as in the outside world	2
Very seldom either place	1
2.7 Since you have been in the correctional centre, how often have you been sick?	
Most of the time (you are sick several times a day)	5
At least once a day	4
Occasionally (every few days)	3
Seldom	2
Never	1
2.8 Do you have	
More trouble sleeping in the correctional centre	4
More trouble sleeping in the outside world	3
About as much trouble sleeping in the correctional centre as in the outside world	2
Very seldom have trouble sleeping either place	1
2.9 How often do you have trouble sleeping in this correctional centre?	
Most of the time (you have trouble sleeping in the correctional centre)	5
At least once a day	4
Occasionally (every few days)	3
Seldom	2
Never	1
2.10 In comparison to life outside of the correctional centre, are you	
More afraid of being attacked in the correctional centre	4
More afraid of being attacked in the outside world	3
About as afraid of being attacked in the correctional centre as being attacked in the outside world	2
Not afraid of being attacked either place	1
2.11 How often are you afraid of being attacked in the correctional centre?	
Most of the time (you are afraid several times a day)	5
At least once a day	4
Occasionally (every few days)	3
Seldom	2
Never	1
2.12 Do you get involved in	
More physical fights in the correctional centre	4
More physical fights in the outside world	3
About as many physical fights in the correctional centre as in the outside world	2
Very seldom fight in either place	1
2.13 How often do you get involved in physical fights in this correctional centre?	
Most of the time (you fight several times a day)	5
At least once a day	4
Occasionally (every few days)	3
Seldom	2
Never	1

2.14 Do you get involved in	
More angry arguments in the correctional centre	4
More angry arguments in the outside world	3
About as many angry arguments in the correctional centre as in outside	2
Very seldom get into angry arguments in either place	1
2.15 How often do you have a heated argument with another offender?	
Most of the time (you argue several times a day)	5
At least once a day	4
Occasionally (every few days)	3
Seldom	2
Never	1
2.16 How often do you argue with correctional officers?	
Most of the time (you argue several times a day)	5
At least once a day	4
Occasionally (every few days)	3
Seldom	2
Never	1
2.17 Are you injured or hurt?	
More often in the correctional centre	4
More often in the outside world	3
About the same in the correctional centre as in the outside world	2
Very seldom injured either place	1
2.18 How often are you injured or hurt in this correctional centre?	
Most of the time (you are injured several times a day)	5
At least once a day	4
Occasionally (every few days)	3
Seldom	2
Never	1
2.19 Are you taken advantage of	
More often in the correctional centre	4
More often in the outside world	3
About the same in the correctional centre as in the outside world	2
Very seldom taken advantage of in either place	1
2.20 How often are you taken advantage of by other offender(s)?	
Most of the time (you are taken advantage of several times a day)	5
At least once a day	4
Occasionally (every few days)	3
Seldom	2
Never	1
2.21 Do you feel that your cell is your home?	
Never	1
Seldom	2
Often	3
Always	4

2.22 Do you get enough exercise?	
Never	1
Seldom	2
Often	3
Always	4
2.23 Do you get enough sleep?	
Never	1
Seldom	2
Often	3
Always	4
2.24 Do you get enough to eat?	
Never	1
Seldom	2
Often	3
Always	4
2.25 Do you have enough to do?	
Never	1
Seldom	2
Often	3
Always	4
2.26 Do you have enough privacy?	
Never	1
Seldom	2
Often	3
Always	4
2.27 Do you understand the rules?	
Never	1
Seldom	2
Often	3
Always	4
2.28 Do you have good friends here?	
Never	1
Seldom	2
Often	3
Always	4

Thank you for time and input
Please complete the next Questionnaire

3. AGGRESSION QUESTIONNAIRE

Please mark the response which best represents you and how you feel with an X.
Choose only one response for each question. There are no right or wrong answers.

	Extremely uncharacteristic of me	Uncharacteristic of me	Neither uncharacteristic nor characteristic of me	Characteristic of me	Extremely characteristic of me
3.1 Once in a while I can't control the urge to strike another person.	1	2	3	4	5
3.2 Given enough provocation, I may hit another person.	1	2	3	4	5
3.3 If somebody hits me, I hit back.	1	2	3	4	5
3.4 I get into fights a little more than the average person.	1	2	3	4	5
3.5 If I have to resort to violence to protect my rights, I will.	1	2	3	4	5
3.6 There are people who pushed me so far that we came to blows.	1	2	3	4	5
3.7 I can think of no good reason for ever hitting a person.*	1	2	3	4	5
3.8 I have threatened people I know.	1	2	3	4	5
3.9 I have become so mad that I have broken things.	1	2	3	4	5
3.10 I tell my friends openly when I disagree with them.	1	2	3	4	5
3.11 I often find myself disagreeing with people.	1	2	3	4	5
3.12 When people annoy me, I may tell them what I think of them.	1	2	3	4	5
3.13 I can't help getting into arguments when people disagree with me.	1	2	3	4	5
3.14 My friends say that I'm somewhat argumentative.	1	2	3	4	5
3.15 I flare up quickly but get over it quickly.	1	2	3	4	5

3.16 When frustrated, I let my irritation show.	1	2	3	4	5
3.17 I sometimes feel like a powder keg (barrel of gunpowder) ready to explode.	1	2	3	4	5
3.18 I am an even-tempered person.*	1	2	3	4	5
3.19 Some of my friends think I'm a hothead.	1	2	3	4	5
3.20 Sometimes I fly off the handle for no good reason.	1	2	3	4	5
3.21 I have trouble controlling my temper.	1	2	3	4	5
3.22 I am sometimes eaten up with jealousy.	1	2	3	4	5
3.23 At times I feel I have gotten a raw deal out of life.	1	2	3	4	5
3.24 Other people always seem to get the breaks.	1	2	3	4	5
3.25 I wonder why sometimes I feel so bitter about things.	1	2	3	4	5
3.26 I know that "friends" talk about me behind my back.	1	2	3	4	5
3.27 I am suspicious of overly friendly strangers.	1	2	3	4	5
3.28 I sometimes feel that people are laughing at me behind my back.	1	2	3	4	5
3.29 When people are especially nice, I wonder what they want.	1	2	3	4	5

**Thank you for time and input
Please complete the next Questionnaire**

4. DARK TRIAD DIRTY DOZEN

Please mark the response which best represents you and how you feel with an X.
Choose only one response for each question. There are no right or wrong answers.

	Strongly Disagree	Disagree	Somewhat Disagree	Neutral	Somewhat Agree	Agree	Strongly Agree
4.1 I tend to manipulate others to get my way.	1	2	3	4	5	6	7
4.2 I have used deceit or lied to get my way.	1	2	3	4	5	6	7
4.3 I have use flattery to get my way.	1	2	3	4	5	6	7
4.4 I tend to exploit others towards my own end.	1	2	3	4	5	6	7
4.5 I tend to lack remorse.	1	2	3	4	5	6	7
4.6 I tend to be unconcerned with the morality of my actions.	1	2	3	4	5	6	7
4.7 I tend to be callous or insensitive.	1	2	3	4	5	6	7
4.8 I tend to be cynical (distrustful of others; pessimistic).	1	2	3	4	5	6	7
4.9 I tend to want others to admire me.	1	2	3	4	5	6	7
4.10 I tend to want others to pay attention to me.	1	2	3	4	5	6	7
4.11 I tend to seek prestige or status.	1	2	3	4	5	6	7
4.12 I tend to expect special favours from others.	1	2	3	4	5	6	7

Thank you for your time and input
You have now completed all of the Questionnaires.

APPENDIX E: SIMILARITY INDEX

K. Naidoo

ORIGINALITY REPORT

20% SIMILARITY INDEX	18% INTERNET SOURCES	11% PUBLICATIONS	3% STUDENT PAPERS
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PRIMARY SOURCES

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