

**PSYCHOPATHY AND COMORBID MENTAL
DISORDERS AMONG SOUTH AFRICAN FEMALE
OFFENDERS**

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I declare that the thesis hereby submitted by me for the Philosophiae Doctor Degree at the University of the Free State is my own, independent work and has not previously been submitted by me at another university or faculty. I furthermore cede copyright of the thesis in favour of the University of the Free State.

Ryan Botha

July 2014

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**Dedicated with love to my biggest supporter on this journey:
my wife, Camella**

**In loving memory of my son, David Ryan Botha
25/11/2013 – 07/12/2013**

FOR EXTERNAL EXAMINERS: DOCTORAL THESIS WRITTEN IN THE FIVE-ARTICLE FORMAT

According to the regulations put forward by the University of the Free State, a doctoral thesis may be submitted in the form of five publishable articles rather than in the traditional presentation of the thesis in the form of a monograph. With the approval of his/her promoters, this candidate has elected to submit the thesis in the five-article format.

Because not all external examiners are familiar with this concept and how it is presented by the University of the Free State, several aspects are highlighted below:

- 1) Each article should be viewed as an independent entity (which is ready for publication as is), but there should also be a close relationship between it and the other four articles so that they collectively form a logical entity (i.e. the thesis).**
- 2) The nature and scope of the literature review should conform to the general requirements of the journals in the specific field of study (with the concession that instructions to authors differ between different journals). Consequently, the scope of each literature review is not as extensive as in a traditional thesis written as a monograph. It should be considered that the option of writing a thesis in the form of articles involves five separate literature reviews (which are certainly related to each other, but which may also overlap and even be repetitious).**
- 3) Because a thesis written in the form of several articles is part of one project (forming a unit) and entails separate yet related articles, it is inevitable that they will overlap to a certain extent and that there might even be duplication. For example, overlap and repetition might occur in the following areas: the definition of key concepts, the exposition of theoretical models, the description of methodology and method, the lists**

of the sources that were consulted, deficiencies in the investigation, recommendations etc. To avoid duplication where possible, the attention of the examiner may at times be directed to other articles (i.e. see Article 1 for a more complete discussion of...)

- 4) It is important to note that the examiner should deem and accept each of the five articles as **WORTHY OF PUBLICATION** in accredited journals in the particular field of study. In other words, they are not necessarily articles that **HAVE BEEN PUBLISHED** but they should be of a suitable standard and quality and written in such a manner that they are ready for publication, according to the examiner's judgment.

The advantages of choosing to write a thesis in the form of articles are described below. For a more complete discussion, cf. Louw, D.A. & Fouche, J.B. (2002). Writing a thesis in article format: A way to promote a publishing culture? *South African Journal of Higher Education*, 16(3), 65-72.

- It focuses on practice, which requires the student to write articles – as opposed to a bulky thesis. It is true to say that most students are not trained to write articles. This is academically and didactically indefensible.
- There is the advantage of being able to publish: Because of factors such as the extra work involved, relatively few traditional theses are ever rewritten and published as articles.
- The article format has been accepted and even encouraged by several foreign and South African universities.

GENERAL OUTLINE

Article 1:

Gender and cultural considerations in the assessment of psychopathy

Article 2:

Factor structure of the Psychopathy Checklist-Revised [PCL-R] for South African female offenders

Article 3:

Psychopathy and its association with demographic variables in a South African female forensic context

Article 4:

Psychopathy and its relation to Axis I mental disorders in a South African female forensic context

Article 5:

Psychopathy and its relation to Axis II personality disorders in a South African female forensic context

EXECUTIVE SUMMARY

BESTUURSOPSOMMING

Executive summary

South Africa has one of the highest numbers of offenders among all African countries. Although the vast majority of crimes are perpetrated by males, recent statistics have shown that the number of crimes committed by females has increased in recent years. Among the crimes committed by sentenced female offenders in South Africa, aggressive and violent crimes are the most prevalent, followed by economic crimes. Internationally, psychopathy has been associated strongly with criminality, particularly violent crime. While extensive research has investigated the socio-economic and environmental variables contributing to violent crime in South Africa, there is very little research elucidating the potentially unique intrapsychic variables, such as psychopathy, that may underpin criminal behaviour in this country. Further, existing forensic psychological data are mainly available on male offenders in the Western world.

To address this lacuna in the empirical forensic psychology corpus, a research project was launched, and its outcomes are discussed by means of five related yet independent research articles. More specifically, the overarching aim of this research was to explore the clinical entity of female psychopathy in a South African forensic context. The research sample consisted of 108 medium- and maximum-security female offenders from the East London, Kroonstad and Johannesburg centres of the Department of Correctional Services. This sample was divided into three groups representing non-psychopathic, medium psychopathic, and advanced psychopathic offenders.

The first study presents a narrative review of the literature on psychopathy with the aim of delineating important gender and cultural considerations. The primary focus of this review is on gender, as this represents the key variable in the empirical studies that follow. First, an overview of psychopathy is presented with a view to contextualizing the foremost measure of the disorder, namely the Psychopathy Checklist-Revised (PCL-R). Second, the concept of psychopathy is defined and discussed in terms of its similarities and differences across gender. Of importance here are the gender-based disparities in psychopathy in terms of its prevalence,

severity, factor structure, behavioural expression, comorbidity, and treatment. Third, a review of cross-cultural research on the disorder is presented in the light of the diverse cultural composition of the sample used in the empirical studies that follow. In this regard, the 'individualistic-collectivist' framework and the concept of "secondary psychopathy" are elucidated in terms of their interpretive utility in assessing psychopathy in culturally diverse samples. An understanding of these gender and cultural variables forms an important theoretical background for interpreting the empirical data presented in the broader research corpus.

In the second study, several theoretical factorial structures of the Hare PCL-R were tested and compared. The exploratory factor analysis reveals that a three-factor model consistent with Cooke and Michie's (2001) factorial composition of psychopathy shows the best fit with the female offender data. This finding is consistent with other studies examining the factor structure of psychopathy across gender and diverse cultural groups. The results of this study suggest provisional support for the unified theory of psychopathy, as the affective dimension of the disorder was consistently stable across the different factorial models. The findings carry preliminary support for the reliability and validity of the three-factor model of PCL-R psychopathy in a South African female forensic context.

The third study explored psychopathy and its association with demographic variables in a South African female forensic context. This was conducted with a view to isolating demographic variables that discriminated between non-psychopathic, medium psychopathic and advanced psychopathic female offenders. Classification of the respective offender groups was conducted by using the PCL-R, the most validated instrument in psychopathy measurement. The chi-square test for independence revealed significant associations between the three groups with regard to the demographic variables under study. Specifically, age of first offense, marital status, number of children, child/adult abuse, suicide attempts and employment history all shared important empirical associations with the psychopathic offender group. Analyses of the demographic data provided associational support for the presence of secondary psychopathy in the current sample of offenders. The results underline the importance of specific demographic variables in identifying high-risk groups of offenders.

The fourth study examined the relationship between psychopathy as measured by the PCL-R, and Axis I mental disorders as measured by the Millon Clinical Multiaxial Inventory-III (MCMI-III). The Kruskal-Wallis H test and Mann-Whitney U test revealed a number of significant differences between levels of Axis I mental disorders and levels of psychopathy. In line with international literature, psychopaths evidenced significantly higher rates of substance abuse compared to non-psychopaths. Additionally, the high rate of psychiatric comorbidity across the sample provides tentative support for the phenotypic expression of secondary psychopathy in the present study. This finding also underlines the need for the adequate implementation of mental health interventions in South African forensic settings. Specifically, clinical intervention in treatable comorbid Axis I mental disorders may enhance the management and rehabilitation of psychopathic offenders. Finally, the issue of malingering warrants specific reflection, as it represents an important corollary of elevated psychopathy scores.

The fifth study examined the relationship between psychopathy, as measured by the PCL-R, and Axis II personality disorders, as measured by the MCMI-III. The Kruskal-Wallis H test and Mann-Whitney U test revealed a number of significant differences between levels of Axis II personality disorders and levels of psychopathy. Specifically, the results support international findings that significantly higher rates of Cluster B personality disorders are found among psychopathic offenders compared to non-psychopathic offenders. The findings underline the need for a clinical focus on Cluster B personality pathology in interventions with psychopathic offenders.

Keywords: PCL-R, psychopathy, South Africa, gender, culture, factor structure, demographic variables, secondary psychopathy, Axis I mental disorders, Axis II personality disorders, treatment

Bestuursopsomming

Suid-Afrika is die land in Afrika met een van die hoogste misdaadsyfers. Alhoewel die grootste aantal misdade deur mans gepleeg word, dui onlangse navorsing daarop dat die getal misdade wat deur vrouens gepleeg word, gedurende die afgelope aantal jare toegeneem het. Aggressiewe en gewelddadige misdade is die algemeenste misdade waarvoor vroulike misdadigers verhoor word, gevolg deur ekonomiese misdade. Psigopatie word internasionaal sterk met misdaad geassosieer, veral met gewelddadige misdaad. Alhoewel ekstensiewe navorsing met betrekking tot die bydraende sosio-ekonomiese en omgewingsveranderlikes tot geweld in Suid-Afrika bestaan, ondersoek min navorsing potensieel unieke intrapsigiese veranderlikes soos psigopatie wat kriminele gedrag in hierdie land mag ondersteun.

Om hierdie leemte in die corpus van forensiese sielkunde aan te spreek, is 'n navorsings projek geloods, wat vervolgens in vyf verwante dog onafhanklike navorsings artikels bespreek word. Meer spesifiek, was die oorkoepelende doel van hierdie navorsing om die kliniese entiteit van vroulike psigopatie in 'n Suid Afrikaanse konteks te bespreek. Die navorsingsteekproef het bestaan uit 108 vroulike medium- en maksimumsekuriteitoovertreders van die sentra van die Departement van Korrektiewe Dienste in Oos-Londen, Kroonstad en Johannesburg. Die steekproef is opgedeel in drie groepe wat nie-psigopatiëse, medium psigopatiëse en gevorderde psigopatiëse oortreders verteenwoordig het.

Die eerste studie bied 'n narratiewe oorsig van die literatuur aangaande psigopatie met die doel om belangrike geslag- en kulturele oorwegings te skets. Die primêre fokus van hierdie oorsig is op geslag, aangesien dit die hoofsaaklike veranderlike in die opvolgende studies is. 'n Oorsig van psigopatie word eerstens aangebied met die oogmerk om die hoofmaatstaf van die versteuring, naamlik die Psigopatie Oorsiglys-Hersien (PCL-R), te kontekstualiseer. Tweedens word die konsep psigopatie gedefinieer en beskryf in terme van die ooreenkomste en verskille tussen mans en vrouens. Wat veral hier van belang is, is die verskille ten opsigte van geslag in terme van voorkoms, erns, faktorstruktuur, gedragsuitdrukking, komorbiditeit en

behandeling. Derdens word 'n oorsig van kruiskulturele navorsing oor die versteuring gebied in die lig van die diverse kulturele samestelling van die steekproef wat in die empiriese studie gebruik is.

Ten opsigte hiervan word die “individualistiese-kollektivistiese” raamwerk en die konsep van “sekondêre psigopatie” verklaar in terme van die interpreterende bruikbaarheid daarvan om psigopatie in kulturele diverse groepe te ondersoek. Die verstaan van hierdie geslag- en kulturele veranderlikes bied 'n belangrike teoretiese agtergrond om die empiriese data wat binne die breër corpus aangebied word, te ondersoek.

In die tweede studie word verskeie teoretiese faktorstrukture van die “Hare PCL-R” getoets en vergelyk. Die ondersoekende faktoranalise het aangedui dat 'n driefaktormodel, wat strydig is met Cooke en Mickie (2001) se faktor samestelling van psigopatie, die beste ooreenkomste toon met die data van vroulike oortreders. Hierdie bevindinge stem ooreen met ander studies wat die faktorstruktuur van psigopatie in geslagsgroepe en diverse kultuurgroepe ondersoek het. Die resultate van hierdie studie bied voorwaardelike ondersteuning vir die gelykvormige teorie van psigopatie, aangesien die affektiewe dimensie van die versteuring konstant aangedui is as stabiel in terme van die verskillende faktormodelle. Die bevindinge ondersteuning voorlopig die betroubaarheid en geldigheid van die driefaktormodel van die PCL-R psigopatie in 'n Suid-Afrikaanse vroulike forensiese konteks.

Die derde studie het psigopatie en die assosiasie daarvan met demografiese veranderlikes in 'n Suid-Afrikaanse vroulike forensiese konteks ondersoek. Dit is uitgevoer met die doel om demografiese veranderlikes te isoleer wat tussen nie-psigopatiesee, medium-psigopatiesee en gevorderde-psigopatiesee vroulike oortreders onderskei. Die klassifisering van onderskeie groepe oortreders is uitgevoer deur die toepassing van die PCL-R. Hierdie instrument is die geldigste instrument vir die bepaling van psigopatie. Die chi-square-toets vir onafhanklikheid het betekenisvolle verhoudinge tussen die drie groepe met betrekking tot die demografiese veranderlikes wat ondersoek is, getoon. Ontleding van die demografiese veranderlikes bied geassosieerde ondersteuning vir die teenwoordigheid van sekondêre psigopatie in die huidige steekproef van oortreders. Die resultate

beklemtoon die belangrikheid van spesifieke demografiese veranderlikes in die identifisering van groepe hoërisiko-oortreders.

Die vierde studie het die verhouding tussen psigopatie, soos deur die PCL-R bepaal, en As 1 geestesversteurings, soos deur die Millon Clinical Multi-axial Inventory (MCMI-III) bepaal, ondersoek. Die Kruskal-Wallis H-toets en die Mann-Whitney U-toets het 'n aantal betekenisvolle verskille tussen vlakke van As 1 geestesversteurings en vlakke van psigopatie aangedui. Psigopate het ook betekenisvolle hoër vlakke van middelmisbruik getoon in vergelyking met nie-psigopate. Hierdie bevinding stem ooreen met internasionale literatuur. Addisioneel bied die hoë voorkoms van psigiatriese komorbiditeit in die steekproef tentatiewe ondersteuning vir die fenotipiese uitdrukking van sekondêre psigopatie in die huidige studie. Die bevindinge beklemtoon ook die behoefte aan gepaste toepassing van intervensies in geestesgesondheid in Suid-Afrikaanse forensiese omstandighede. Kliniese intervensie in behandelbare komorbiede As 1 geestesversteurings mag spesifiek die hantering en rehabilitasie van psigopatiese oortreders verhoog. Ten slotte behoort oor die kwessie van skynsiekte besin te word, aangesien dit 'n belangrike uitvloeisel van verhoogde psigopatietellings verteenwoordig.

Die vyfde studie het die verhouding tussen psigopatie, soos gemeet deur die PCL-R, en As II-persoonlikheidsversteuring, soos bepaal deur die MCMI-III, ondersoek. Die Kruskal-Wallis H-toets en Mann-Whitney U-toets dui 'n aantal betekenisvolle verskille aan tussen vlakke van As II-persoonlikheidsversteurings en vlakke van psigopatie. Die resultate ondersteun spesifiek internasionale bevindinge dat betekenisvolle hoër vlakke van Groep B-persoonlikheidsversteurings onder psigopatiese oortreders gevind word vergeleke met nie-psigopatiese oortreders. Die bevindinge bevestig die behoefte aan 'n kliniese fokus op groep B-persoonlikheidspatologie in intervensies met psigopatiese oortreders.

Sleutelwoorde: *PCL-R, psigopatie, Suid-Afrika, geslag, kultuur, faktorstruktuur, demografiese veranderlikes, sekondêre psigopatie, As 1-geestesversteuring, As II-persoonlikheidsversteurings, behandeling.*

Gender and cultural considerations in the assessment of psychopathy

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Gender and cultural considerations in the assessment of psychopathy

Abstract

The vast majority of research on psychopathy has been conducted on Western, male offenders. As such, there is a paucity of research attempting to examine the presence of psychopathy in female offenders, particularly those living in non-Western and multicultural contexts. This paper presents a narrative review of literature on psychopathy with the aim of delineating important gender and cultural considerations. First, an overview of psychopathy is presented with a view to contextualizing the foremost measure of the disorder, namely the Psychopathy Checklist-Revised (PCL-R). Second, the concept of psychopathy is defined and discussed in terms of its similarities as well as its differences across gender. Of importance here are the gender-based disparities in psychopathy in terms of its prevalence, severity, factor structure, behavioural expression, comorbidity, and treatment. Third, a review of cross-cultural research on psychopathy is presented. In this regard, the ‘individualistic-collectivist’ framework and the concept of “secondary psychopathy” are elucidated in terms of their interpretive utility in assessing psychopathy in culturally diverse samples. Understanding these gender and cultural variables forms an important backdrop for interpreting the empirical data on psychopathy in South Africa.

Keywords: Psychopathy, Psychopathy Checklist-Revised, South Africa, gender, cross-cultural, individualist-collectivist, secondary psychopathy

Introduction

The elevated crime rate in South Africa warrants research attention. Although this statement has become somewhat of a cliché, it remains true that research could make a significant contribution to curbing crime. In South Africa, there is a growing knowledge base outlining potential environmental variables such as poverty and socioeconomic inequality that contribute toward crime (Altbeker, 2007; Centre for the Study of Violence and Reconciliation [CSVR], 2009; Demombynes & Ozler, 2005; South African Police Service [SAPS] Annual Report, 2012-2013). However, a paucity of research into the unique underlying personality variables that may contribute toward criminal behaviour remains. With the objective of delineating possible connections between personality pathology and crime, international studies have demonstrated that the clinical construct of psychopathy shares an important empirical association with violent aggression, recidivism and diverse criminal activity (Dolan & Doyle, 2007; Glannon, 2014; Hare, 2003; Neumann, Hare & Newman, 2007). As the foremost offender taxonomy, psychopathy is at the forefront of forensic psychological research and practice.

However, the bulk of this research has focused on Caucasian males in the Western world, resulting in a dearth of information on the manifestation of psychopathy across gender and diverse cultural groups (Logan & Weizmann-Henelius, 2012). Female offending behaviour has likely remained on the periphery of mainstream forensic enquires into psychopathy due to deeply entrenched myths about females and crime, as well as the finding that rates of offending among females pale in comparison to males (Perri & Lichtenwald, 2010). Further compounding the issue is the considerable lack of research into cross-cultural female offending. Currently, there have been no systematic investigations into psychopathy among female offenders in the multicultural South African context. This is of particular concern in the light of the increasing incarceration rates of women in South Africa (Department of Correctional Services [DCS], 2013).

The following article will begin to address this lacuna in the empirical corpus of forensic psychology by providing a narrative review of psychopathy, which elucidates important gender and cultural considerations in the assessment of the disorder. First, an overview of psychopathy assessment is presented with the aim of contextualizing the measurement of the disorder. Second, empirical findings on psychopathy and the gender differences in them will be discussed. Third, a review of psychopathy in

diverse cultures is presented together with possible interpretive frameworks for understanding the disorder in these contexts. Finally, conclusions and recommendations will be outlined. This review will also function as an important theoretical backdrop for the empirical studies that follow this article.

Conceptualization of psychopathy and its measurement

As a distinct psychiatric entity, psychopathy is considered a very serious personality disorder and has proven largely intractable in the face of treatment efforts (Harris & Rice, 2006; Maibom, 2014). In terms of its expression, the disorder is marked by specific personality and behavioural features, which include deficient processing of emotion (e.g. lack of empathy and guilt), egocentricity, grandiosity, poor judgement, callous and manipulative interpersonal relationships and sensation-seeking behaviour (Brook, Brieman & Kosson, 2013; Glannon, 2014; Hare & Neumann, 2009; Hicks, Vaidyanathan & Patrick, 2010). Furthermore, psychopathy is also conceptualized as comprising overt and impulsive antisocial behaviours (Hare & Neumann, 2010; but see Skeem & Cooke, 2010, for a different perspective, which will be discussed in the second article).

With regard to the antecedents of psychopathy as a modern clinical entity, Pinel (1809; as cited in Casey, Rogers, Burns & Yiend, 2013) was one of the first to identify features of the disorder in his description of *manie sans délire* (insanity without delirium), a term he used to characterize patients whose actions were devoid of restraint and remorse. Morel (1857, as cited in Herpertz & Sass, 2000) provided a similar description of such behaviour in his categorization of *folie morale*, which exhibited as eccentricity, emotional liability, untrustworthiness and scant cognitive functions. In 1941, Cleckley wrote a seminal text on psychopathy titled *The Mask of Sanity*, which provided the first comprehensive description of the disorder by delineating 16 core traits of psychopathy. However, the somewhat vague and non-specific nature of these criteria led to researchers exploring a clearer and more effective operationalisation of psychopathy.

In 1980, Robert Hare built on the “Cleckley criteria” with the development of the Psychopathy Checklist (PCL; Hare, 1980) and the Psychopathy Checklist-Revised (PCL-R; Hare, 1991, 2003), which allowed for the adequate operationalisation of the disorder. On the basis of its expansive research base and strong theoretical core, the PCL-R has come to represent the international standard for assessing the

disorder (see Brook, Clark, Forth & Hare, 2006). The PCL-R comprises two highly correlated factors, with factor one representing interpersonal and affective features of the disorder and factor two indexing lifestyle and antisocial domains (McKeown, 2010; see Article 2 for a detailed description and analysis of the PCL-R factor structure). The 20 PCL-R items are scored on a 3-point ordinal scale (0, 1 and 2) according to the extent to which the rater judges that each applies to a given individual. Total scores can range from 0 to 40, reflecting the extent to which the individual resembles the prototypical psychopath. The cut-off score for classification as a prototypical psychopath is set at 30 for males. The PCL-R standardization sample used by Hare (2003) comprised 1218 female offenders. The mean PCL-R score for the sample was 19 with a standard deviation of 7.5. Researchers still have to reach consensus on the diagnostic cut-off score for women, and the cut-off score used generally has varied across studies. In European studies, cut-off scores between 25 to 28 or more have been proposed for the PCL-R (Cooke & Michie, 1999). From the bulk of available studies assessing psychopathy in women, the *de facto* cut-off score applied appears to be 25, which is five points lower than the standard PCL-R cut-off score of 30 utilized with males.

It could be argued that the PCL-R forms the theoretical foundation for psychopathy with its constituent interpersonal, affective, lifestyle and antisocial dimensions informing broader forensic psychological research and practice. Owing to the ubiquity of this instrument in the empirical studies that follow, the focus of this narrative review will be primarily on the PCL-R in the synthesis of studies addressing gender and cultural concerns in measuring psychopathy.

Neglected areas: gender and culture

It could be argued that significant advances in the study of psychopathy continue into the twenty-first century (Logan & Weizmann-Henelius, 2012). Notably, the American Psychiatric Association (APA) has recognized in the fifth edition of the *Diagnostic and Statistical Manual of Mental Disorders* (DSM-5, 2013) the unique contribution of the psychopathy construct in elucidating the underlying personality features of antisocial behaviour (Nickerson, 2014). The case might be made that the growing recognition of psychopathy in the formal classification system of psychiatry represents an important empirical moment. Specifically, research conducted using the PCL-R has helped shed light on the etiology and consequences of psychopathy.

However, all is not well in the world of psychopathy research and practice. There remain lingering concerns around the phallo-/ethnocentric conceptualization of PCL-R psychopathy to date. Consequently, the utility of instruments like the PCL-R in female, culturally diverse samples remains unclear. The lack of empirical data with regard to these populations carries important implications, as the assessment of psychopathy internationally is often used to guide planning and evaluation of treatment, risk assessment, parole and prediction of future violence (Wynn et al., 2012). Thus, results from the largely Western, androcentric samples used in the study of psychopathy cannot be simply transferred to female and culturally diverse populations. With a view to these critical gender and cultural caveats in the assessment of psychopathy, this review paper attempts to sketch the major literature on the topic.

Gender differences in psychopathy

Many of the long-standing myths surrounding women's capabilities have slowly dissipated following the advancement of women's rights in the twentieth century. However, despite subtle changes in society's perceptions of female offenders, deeply ingrained myths about this cohort of offenders still persist, including the reactive nature of criminal behaviour by females and the notion that offences by females are driven largely by mental illness, coercion or histories of abuse (Perri & Lichtenwald, 2010). While these are indeed pertinent causal factors in female etiological pathways to crime, they elide the possibility that female crimes may be orchestrated in a cold-blooded, instrumental manner and driven by a set of personality-based psychopathic traits (Perri & Lichtenwald, 2010).

Only within the last two decades have researchers begun to associate female criminality empirically with psychopathic behaviour. Studies have focused on applying psychopathy explicitly to women across a number of key dimensions. Research has focused on incarcerated female inmates (Cooke & Michie, 2001; De Vogel & De Ruiter, 2005; Jackson, Rogers, Newman & Lambert., 2002; Lehman & Ittel, 2012; Logan & Blackburn, 2009; Salekin, Rogers & Sewell, 1997; Vitale & Newman, 2001a; Vitale & Newman, 2001b; Vitale, Maccoon & Newman, 2011; Warren et al., 2003; Weizmann-Henelius et al., 2010), substance abusers (Cooney, Kadden & Litt, 1990; Hicks, Vaidyanathan & Patrick, 2010; Richards, Casey & Lucente, 2003; Rutherford, Cacciola, Alterman & McKay, 1996) and even university

students (Forth, Brown, Hart & Hare, 1996; Forth, Kisslinger, Brown & Harris, 1993; Lilienfeld & Andrews, 1996; Miller, Watts & Jones, 2011). These studies have shown that the female presentation of psychopathy deviates from the male presentation in significant ways.

Prevalence and severity

In terms of prevalence, Western forensic data from the United States and Europe suggest that psychopaths constitute 0.5% to 1% of the general population; while as many as 20% to 25% of prison populations qualify for the diagnosis (Hare, 2003; Wynn et al., 2012). Some studies have examined the prevalence of psychopathy in women in community, forensic mental health and correctional samples (Cooney et al., 1990; De Vogel & De Ruiter, 2005; Forth et al., 1996; Forth et al., 1993; Hicks et al., 2010; Lilienfeld & Andrews, 1996; Rutherford et al., 1996; Salekin et al., 1997; Vitale, Maccoon & Newman, 2011; Warren et al., 2003; Weizmann-Henelius et al., 2010), and general findings suggest that there are more male than female psychopaths. Females are also significantly less likely than males to be classified as psychopaths when the standard PCL-R cut-off score of 30 is utilized (Hazelwood, 2006). For example, in the United States, Salekin et al. (1997) found only 16% of 103 female offenders met this PCL-R cut-off score, while Hemphill, Hare and Wong (1998) reported a prevalence rate of 18.2% in their sample of 269 female offenders using this measure. Similarly, Warren et al. (2003) reported that only 17.4% of 138 American female prison inmates met the recommended PCL-R cut-off score. In Sweden, Grann (2000) performed a stepwise discriminant analysis with gender as the grouping variable and the 20 PCL-R variables as independent variables. Psychopathy was found to be far more common among males (31%) than females (11%). In a Dutch forensic sample, De Vogel and De Ruiter (2005) detected psychopathy in 10% of their female sample and 24% of their male sample using a lowered PCL-R diagnostic threshold score of 26 in both groups. In a more recent Finnish study of 97 female homicide offenders, a prevalence rate of 9% was found (using the PCL-R threshold of 30+), although it increased dramatically to 22% using the lower diagnostic score of 25+ (Weizmann-Henelius et al., 2010). In general, the base rate of psychopathy with female offender samples usually ranges from 9% to 23% but falls between 15% and 30% in men (Hare, 2003; Vitale, Smith, Brinkley & Newman, 2002; Weizmann-Henelius et al., 2010).

In terms of severity, the overall findings suggest that psychopathy as measured by the PCL instruments is less severe in women compared to men (Nicholls & Ogloff, 2002). Specifically, females have been found to score lower factor and total scores than males on the PCL-R (Forth et al., 1996; Hare, 2003; PCL-R factors will be expanded on in the section to follow) and the Psychopathy Checklist-Screening Version (PCL-SV; Hart, Cox & Hare, 1995). For example, Hare (2003) found a mean total score of 19 in female offenders and 22.1 in male offenders. In contrast, Hemphill et al. (1998) reported a mean PCL-R total score of 22.5 in 269 female offenders, which is comparable to findings by Neary (1990; $M = 21.2$) and Warren et al. (2005; $M = 22.8$). In line with Hare (2003), slightly lower mean scores have been found in female offenders by Jackson et al. (2002, $M = 18.2$) and Logan and Blackburn (2009; $M = 18.7$). Cooke and Michie (2001) applied item response theory (IRT) methods to demonstrate a link between scores across gender using data from the PCL-SV standardization sample. Results showed that women scored on average 1.8 points less (out of a total score of 24) than men on this measure (Cooke & Michie, 2001).

As noted, cut-off scores between 25 to 28 or more have been proposed for the PCL-R for use with women (Cooke & Michie, 1999; Hicks et al., 2010; Logan & Weizmann-Henelius, 2012; Weizmann-Henelius et al., 2010). Hare (2003) also supports the use of 25 as a cut-off score for women in the latest edition of the PCL-R manual. Further research on the cut-off score for women, specifically for use in culturally diverse settings, is clearly needed. In the section to follow, the different factorial structures of PCL-R psychopathy will be elucidated with a specific view to gender differences.

Factor structure

Psychopathy represents a complex and nuanced construct, and there is much debate regarding its factor structure as measured by the PCL-R. As mentioned, one of the strongest critiques levelled at measures of psychopathy and particularly its flagship, the PCL-R, is that the instrument was developed and validated primarily on men. Originally, the PCL-R items loaded two factor domains, one measuring *Interpersonal and Affective Deficits* (Hare factor one) and another measuring *Social Deviance* (Hare factor two; Hare, 1991). Some authors (e.g. Cooke & Michie, 2001) expressed concerns over the theoretical basis of this two-factor model and proposed an alternative three-factor model comprising *Arrogant and Deceitful Interpersonal*

Style, Deficient Affective Experience, and Impulsive and Irresponsible Behaviour. However, Bolt, Hare, Vitale and Newman (2004) performed an item response analysis and proposed a solution for the instrument involving the original two factors and an additional four facets. In their model, the original two factors were further split into four facets: the *Interpersonal* and *Affective* facets as numbers one and two and the *Lifestyle* and *Antisocial* facets as numbers three and four (Weizmann-Henelius et al., 2010). The basis for these divergences in the conceptualization and operationalisation of psychopathy must be considered in the context of empirical findings on the factor structure of the PCL-R across gender.

Specifically, these findings suggest important gender differences concerning the factor structure of PCL-R psychopathy (Hazelwood, 2006). For male psychopaths, impulsivity and delinquent behaviour (33.68%) account for most of the variance in scores on the PCL-R. Conversely, the interpersonal and affective characteristics of psychopathy accounted for the most variance (30.75%) in the PCL-R scores of female psychopaths. Thus, while behavioural characteristics best explain a prototypical male psychopath, personality characteristics are more indicative of psychopathy in the prototypical female (Hazelwood, 2006).

Generally, studies on the factor structure of PCL-R suggest that some symptoms of psychopathy may not combine to form comparable syndromes in men and women (Cooke & Michie, 2001; Grann, 2000; Jackson et al., 2002; Vitale et al., 2002; Warren et al., 2003). These findings have led to increasing debate among researchers as to whether Hare's (2003) two-factor model, the revised four-faceted model or the three-factor model of Cooke and Michie (2001) is most appropriate for assessing psychopathy in females. The latter model omits specific antisocial items that are generally more reflective of male behaviours and are not consistent with theories of psychopathy, specifically in females. Notably, it is thought that females are far less likely to exhibit antisocial acts explicitly, as they reflect such a marked departure from gender-based norms. For example, research has shown that female psychopaths displayed fewer explicit acts of violence and instead engaged in forms of manipulative and destructive relational aggression (Forouzan & Cooke, 2005). Warren et al. (2003) compared the Hare two-factor; four-facet model with the three-factor model (Cooke & Michie, 2001) and found that the latter provided the best fit for their data on 138 women in correctional services in the United States. In a recent

study conducted by Weizmann-Henelius et al. (2010), the authors also found that the three-factor model proved to be the best fit for a female homicide sample.

In sum, factor analytic studies suggest that the presentation of psychopathy in women appears comparable to that in men when the construct is measured in terms of the three-factor model proposed by Cooke and Michie (2001). It must be noted that no empirical studies have examined the factorial structure of the PCL-R among females within non-Western, multi-cultural settings such as South Africa.

Behavioural expression

In terms of the behavioural expression of psychopathy across genders, it is critical to recognize that men and women differ along biological, psychological and social lines (Logan & Weizmann-Henelius, 2012). This carries significant implications with regard to the presentation of symptoms of psychopathy. For example, violent female offenders show less externalizing behavioural problems during childhood than males do (Grann, 2000; Rutherford et al., 1996). Ratings of female psychopathy in youth have reflected much less aggression than that of males (Salekin, Rogers & Machin, 2001). Furthermore, Cruise, Colwell, Lyons and Baker (2003) reported that physical cruelty to people and/or animals and bullying/threatening were typical of psychopathy in male youths but not female youths. The authors also found that females appeared to engage in more promiscuous sexual behaviour than males did. Such sexual behaviours may serve as exploitative strategies for obtaining financial and social benefits (Wynn et al., 2012).

Researchers have also found that female offenders are less superior and arrogant in their interpersonal style, as well as less self-admiring than male offenders are (Rutherford et al., 1996; Zagon & Jackson, 1994). This finding brings into question the utility of the interpersonal components of PCL-R psychopathy, such as egocentricity and grandiosity, as these features may be more reflective of male behaviours. In fact, international studies have shown that subtle nuances in the manifestation of female psychopathy may not be detected within the current formulation of interpersonal behaviours in the PCL-R (Cooke et al., 2005; Strand & Belfrage, 2005). Female offenders have also been shown to experience negative affects (anger, fear, guilt, sadness) with greater intensity and frequency than male offenders do (Brebner, 2003; Fujita, Diener & Sandvik, 1991). In fact, the presence of negative emotionality and greater levels of psychopathology in females has become a consistent trend across studies (Hicks et al., 2010).

With a view to the more specific behavioural manifestations of psychopathy across gender, Forouzan and Cooke (2005) note that female psychopaths are less likely to engage in explicit acts of violence than males and instead manifest self-harming behaviours, running away, acts involving manipulation, verbal aggression, conning behaviour, and complicity in committing crimes. Kreis and Cooke (2011) also found that female psychopaths showed fewer instances of physical aggression but were adept at dominating, controlling and exploiting others through their sexuality, interpersonal skills, and more relationally aggressive means. Relational aggression often manifests as the deliberate manipulation of or damage to peer relationships by means of aggressive competitiveness, telling lies about the victim, bullying and other more subtle forms of interpersonal aggression (Lehmann & Ittel, 2012; Logan & Weizmann-Henelius, 2012). This is not to say that women's criminal behaviour does not manifest in overt forms of physical aggression and violence, but that such behavioural expressions are the exception rather than the rule. This lack of explicit violent behaviour in female psychopaths is reflected in the conceptualization of Cooke's Comprehensive Assessment of Psychopathic Personality (CAPP; Cooke, Hart & Logan, 2004). In line with Cooke and Michie's (2001) three-factor model of psychopathy, the CAPP omits antisocial behaviour items, as Cooke argues that they do not reflect the essence of psychopathy across gender and culture. As such, the author contends that the CAPP is more suited to studying psychopathy in female and multicultural groups. However, research with this test is still in its infancy, and further validation studies are needed to ground the measure empirically.

With regard to the underlying mechanisms driving the divergent expression of psychopathy across gender, researchers have unveiled some interesting findings. Specifically, results from studies testing response inhibition (Vitale & Newman, 2001b) and emotion processing (Justus & Finn, 2007; Vitale et al., 2011) suggest that deficits in these specific areas of functioning found in psychopathic males are not as apparent in psychopathic females. Some of these explicit divergences in the phenotypic expression of psychopathy across gender have led researchers to put forward gender-based typologies in understanding differential manifestation of traits in psychopathy. For example, Cunliffe and Gacono (2005) concluded that a histrionic rather than a narcissistic personality style is more characteristic of female psychopathy. In an earlier study, Hamburger, Lilienfeld and Hogben (1996) also found support for gender as a key moderator for the psychopathy-histrionic

personality relationship in females. However, later research has demonstrated a robust relationship between psychopathy and all Cluster B personality disorders (histrionic, borderline, narcissistic, and antisocial) in female psychopaths (Logan & Blackburn, 2009; Logan & Weizmann-Henelius et al., 2012; Rogers, Jordan & Harrison, 2007; Weizmann-Henelius et al., 2010). As such, further empirical enquiries are required to examine gender-based typologies systematically in the context of measuring psychopathy.

Thus, it would appear that expression of psychopathy by females manifests in more subtle, internalized and relationally aggressive behaviours, whereas males exhibit more overt, externalized and physically aggressive behaviours. This distinction is underpinned by the aforementioned disparate biological, psychological and social processes operative in men and women. Kreis and Cooke (2011) note that almost no systematic investigations have been made into the specific gender differences in psychopathic traits. Thus, whether or not the proposed narcissistic-histrionic typology (c.f. Cunliffe & Gacono, 2005) reflects distinct gender-based processes remains questionable. Such a conceptualization may be a better reflection of rater bias based on socially constructed gender norms than it is of ontologically stable, underlying sex-based mechanisms. The potential for rater bias has become pronounced in the assessment of psychopathy and comorbid psychiatric disorders, which will be expanded on in the section to follow.

Diagnostic comorbidity

In terms of comorbid psychopathology, research has shown a strong presence of Axis I symptoms in female inmates and an increased diagnosis of emotionally unstable personality disorders (PDs) such as histrionic PD and borderline PD (Hicks et al., 2010; Logan & Blackburn, 2009; Ridings & Luts-Zois, 2014; Sturek, Loper & Warren, 2008; see Articles 4 and 5 for a complete review of psychopathy and comorbid relationships). In both males and females, research has found a clear connection between psychopathy and alcohol/drug abuse (Wynn et al., 2012). In their study of violent women in secure settings, Logan and Blackburn (2009) found that all participants had been given a current or lifetime diagnosis of one or more Axis I disorders. Amongst these, psychotic disorders and disorders of mood occurred at a very high rate. Specifically, women with diagnoses such as schizophrenia or schizoaffective disorder were 13 times more likely to be given a diagnosis of a mood disorder. Further, more than 80% of the entire sample was given a diagnosis of one

or more PDs. Cluster B antisocial PD and borderline PD were most commonly diagnosed among the sample. Only a few studies have examined the relationship between psychopathy and PDs other than antisocial PD. However, research using clinical diagnosis or structured interview measures of PDs have generally found that the PCL-R total score correlates positively with all Cluster B PDs (Logan & Blackburn, 2009; Logan & Weizmann-Henelius, 2012; Rogers et al., 2007; Weizmann-Henelius et al., 2010). Blackburn and Coid (1998) also found positive associations of psychopathy with paranoid and passive-aggressive PDs and negative correlations with Cluster C PDs (avoidant, dependent, and obsessive-compulsive).

There have also been contradictory findings between males and females in studies measuring the relationship between psychopathy and anxiety. Specifically, studies have demonstrated negative correlations between anxiety and psychopathy in males (Blonigen et al., 2010; Hicks & Patrick, 2006). In contrast, Vitale et al. (2002) found a positive association between psychopathy and anxiety in females. A finding of higher comorbid anxiety and mood disorders in women represents a robust epidemiological trend (Gabbard, 2005; Hicks et al., 2010). A possible explanation for this may be that females are often socialized toward greater emotive expression than males and are more inclined to report symptoms of this nature. An additional corollary of disparate gender-based socialization processes may be the differences found in the diagnosis of antisocial PD. Research on male inmates reveals a greater presence of antisocial PD than what is found in women (Perri & Lichtenwald, 2010). However, the reluctance of some diagnosticians to label women with antisocial PD may reflect an adherence to sex-role stereotypes that eschews true prevalence rates of this PD among women (Perri & Lichtenwald, 2010). Forth et al. (1996) showed that, when diagnosing men and women with similar clinical features, mental health professionals tend to label men as exhibiting antisocial PD and women as exhibiting histrionic PD. Thus, lingering societal and cultural myths about male and female behaviour may distort the assessment of personality and clinical disorders in women.

Further, diagnostic disparities may also surface because of divergent classification systems. Specifically, the DSM IV-TR (APA, 2000) has largely conceptualized antisocial personality pathology in terms of observable behavioural traits. As noted, research has shown that behavioural features may not best describe female manifestations of psychopathic behaviour, which are better distilled through

personality features. Interestingly, the *International Classification of Diseases and Related Health Problems* (10th ed.; ICD-10; World Health Organization [WHO], 2008) category of dissocial personality disorder offers a more adequate description of personality variables contributing to psychopathic behaviour. As such, it may represent a more relevant classification system for assessing female expression of psychopathy. However, neither of these categories fully encompasses the complexity of the psychopathy construct and failure to reflect on the finer nomological nuances separating the disorders may have some untoward implications. Specifically, the inaccurate diagnosis of psychopathy and comorbid disorders based on gender norms and disparate classification systems may not provide an adequate basis for treatment initiatives, which will be examined more closely in the following section.

Treatment

The few empirical results regarding the treatment of psychopathic offenders provide a poor prognosis and appear to underline the need for management of psychopaths over treatment initiatives (Harris & Rice, 2006; Maibom, 2014; Moreira, Almeida, Pinto & Fâvero, 2014; Rice, Harris & Cormier, 1992; Richards et al., 2003, Wong & Hare, 2005). Recent research has highlighted the possible benefits of psychopharmacology in treating psychopathic offenders (Glannon, 2014). However, others contend that such optimism is misplaced, as psychopathy is fundamentally a “global disorder in an individual’s worldview” (Maibom, 2014, p. 32) and as such is not amenable to treatment in a piecemeal fashion. Regrettably, the vast majority of studies assessing treatment efficacy with psychopathic offenders have been conducted on males. There are some important caveats to consider in this regard when discussing the prospect of treatment with female psychopathic offenders.

The first of these pertains to the pathogenesis of psychopathy and the treatment implications therein. Notably, research has revealed a complex interplay between psychosocial conditions, genetics and neurobiological abnormalities (especially in the prefrontal cortex and limbic system) in the etiology of psychopathy (Blair, 2003; Blonigen, Carlson, Krueger & Patrick, 2002; Craig et al., 2009; Finger et al., 2011; MacDonald & Lacono, 2006; Moreira et al., 2014; Nickerson, 2014). However, there is strong evidence to suggest that psychosocial trauma such as physical and sexual abuse represents particularly pertinent pathways in the etiology of violent female offending behaviour (Loper, Mahmoodzadegan & Warren, 2008; Verona & Vitale,

2006). As such, interventions aimed at female psychopathy need to consider the vulnerability of this cohort to physical and sexual abuse. This is particularly important within the South African context as rates of violent and sexual abuse against women are amongst the highest in the world (CSV, 2009). Another important consideration is that offenders with psychopathic tendencies are not a homogenous group and women with the disorder do not generally score high on all four facets (interpersonal, affective, lifestyle and antisocial) of the disorder (Logan & Weizmann-Henelius, 2012). For example, it would not be appropriate to develop programmes to treat antisocial behaviours among female offenders if their specific personality pathology lies more in the affective or interpersonal domains (Wynn et al., 2012). Thus, treatment initiatives must align with what empirical findings delineate as critical areas of intervention among psychopathic women.

Psychopathy in culturally diverse contexts

Anthropological evidence suggests the broader applicability of the concept of psychopathy. In fact, recent research appears to suggest that several cultural groupings possess members who exhibit psychopathic features (Neumann, Schmitt, Carter, Embley, & Hare, 2012). In her study of the Yupic-speaking Eskimos of Alaska, the anthropologist Jane Murphy (1976) found that, in this group, the term *kunlangeta* was used to describe individuals who would “repeatedly lie, cheat and steal” (p. 1022). Such individuals were also sexually transgressive and failed to respond to reprimands by elders. Murphy also found a similar concept among the Yorubas of Africa, notably that of *arankan*. This term was used in this cultural group to describe individuals who were “uncooperative, selfish, full of malice and bullheaded” (Oakley, 2008, p. 265). Loots and Louw (2010) assessed maximum security male offenders in a culturally diverse South African sample and found that over a quarter of the sample met the criteria for psychopathy using the Psychopathy Personality Inventory-Revised (PPI-R; Lilienfeld & Widows, 2005). The few studies that have examined psychopathy cross-nationally/culturally have shown that important differences are evident in the cross-national/cultural manifestations of the disorder. These can be seen in terms of prevalence, severity, factor structure and the behavioural expression of psychopathy. Further, the “individualist-collectivist” framework (Berry, Poortinga, Segall & Dasen, 1992) and the concept of “secondary

psychopathy” (Vidal, Skeem & Camp, 2009) provide useful interpretive tools for understanding some of these differences.

Prevalence and severity

In terms of the prevalence of psychopathy, findings suggest that psychopathy is relatively rare in collectivist, rural settings and that individualist, urban, metropolitan areas are much more likely breeding grounds for psychopaths (Oakley, 2008). For example, Cooke and Michie (1999) found that there were more psychopaths from Scotland in the prisons of England and Wales than there were in Scottish prisons. Migration records revealed that many Scottish psychopaths had migrated to the more populated metropolitan areas of the South. Cooke and Michie (1999) hypothesize that the psychopath could operate more anonymously in the crowded metropolitan areas and that the city environment satiated the psychopath’s high impulsivity and need for stimulation. However, it is important to note that many non-psychopaths also migrate to the South and that the authors did not empirically examine all offenders in England’s city prisons. Findings by Florez-Mendoza, Alvarenga, Herrero and Abad (2008) in a Brazilian forensic setting revealed that only 13.7% of the sample scored above the PCL-R cut-off score of 30 recommended by Hare (2003), which is lower than general prevalence rates of psychopathy in offender settings in America.

With regard to severity, Cooke and Michie (1999) found cross-national differences in that the mean PCL-R scores of sixteen male European samples ($N = 2143$, $M = 16.2$, $SD = 8.4$) were substantially lower than those found in North American samples ($N = 1632$, $M = 22.8$, $SD = 7.9$) and that North American samples were shown to score 6 points higher on average than European samples did. Cooke, Hart and Michie (2004) found that North American offenders received total scores between 2 and 3 points higher on the PCL-R than European samples did. Further, Coid et al. (2009) found mean PCL-R scores among male offenders in England and Wales to be lower than those found by Hare (2003) in North American men. However, Wernike and Huss (2008) note that findings such as these should be considered with caution because a range of other contributory factors may account for these variations across cultures. The authors contend that the North American justice system arrests and convicts more offenders, which accounts for disproportionate prevalence rates of psychopathy across American and European cultures. They base their argument on the notion that the US has a much larger

prison population, as well as more stringent sentencing policies. Future research will have to control for these variables if it hopes to provide a more comparable reflection of cross-national/cultural differences. Thus, cross-cultural research appears to suggest that PCL-R cut-off scores ranging from 23 to 25 would be more appropriate in non-Western settings due to findings of lower severity in psychopathy (Cooke & Michie, 1999; Florez-Mendoza et al., 2008; Jozef & Silva, 1999; Morana, 2003). At present, no empirical studies exist that have examined psychopathy using the PCL-R in a South African context. As such, cut-off score thresholds for this measure are yet to be determined in this diverse cultural context.

Factor structure

As noted, psychopathy manifests as a complex and nuanced construct, and there is much debate regarding its factor structure as measured by the PCL-R. Much of this debate centres on the antisocial behaviour facet, which some authors, such as Cooke et al. (2005), believe does not theoretically cohere with the construct of psychopathy. As has been shown with female offenders, the traditional two-factor model of psychopathy does not seem to be appropriate in research on non-Western samples (Cooke, Michie & Skeem, 2007). Shariat et al. (2010) demonstrated that Cooke's three-factor hierarchical model showed the best fit with the data derived from an Iranian sample of offenders using the PCL-SV. Two out of three of the factor two items (i.e. lack of empathy and remorse) were the most discriminatory items in the sample. These findings again strengthen the notion that the affective deficit in psychopathy is the most robust cross-culturally. Recent research has provided strong evidence supporting the use of the three-factor model of psychopathy across culture (Florez-Mendoza et al., 2008; Shariat et al., 2010; Weizmann-Henelius et al., 2010). However, research attempting to assess the invariance of psychopathy across culture is still in its infancy, and further studies need to be conducted to determine which factor structure is more appropriate in non-Western samples. Additionally, issues such as language differences and the relevance of Western psychological concepts in diverse cultural settings need to be established. This is particularly true in the context of South Africa where there is a multiplicity of language groups and cultural belief systems. Shariat et al. (2010) suggest that factor analytic techniques may provide the best hope for effective cross-cultural test comparison and as such must become an integral feature of research on

psychological phenomena in non-Western settings (see Article 2 for an analysis of the factor structure of the PCL-R).

Behavioural expression

Disparities in the behavioural expression of psychopathy across culture should be considered with a view to the “individualistic-collectivist” dimension of cultural variation (Berry et al., 1992; Shariat et al., 2010). This is in line with Cooke’s findings of increased psychopathic behaviour in urban, individualistic settings and lower rates of psychopathy in rural, collectivist contexts. From this perspective, individualism is considered central in cultivating the expression of psychopathy-related traits, as it is likely to valorise behaviours such as grandiosity, egocentricity, glibness, superficiality, promiscuity and multiple marriage relationships (Cooke & Michie, 1999). This contention aligns with early research on Machiavellian behaviour, which found an increase in the use of deceptive, manipulative and exploitative behaviours in individualist societies such as North America (Christie & Geis, 1970; Wilson & Hernstein, 1985). Compton et al. (2001) found that the “individualist-collectivist” model accounted well for disparities in prevalence and manifestation of antisocial behaviours between Taiwanese and United States prisoners. Similarly, Shariat et al. (2010) found that, in collectivist cultures like that of Iran, some of the stock interpersonal features of psychopathy such as grandiose, deceitful and superficial behaviour could not effectively differentiate Iranian psychopaths from non-psychopaths. Instead, the authors noted that these interpersonal and behavioural features of the disorder were likely muted by an overriding collectivist ethic of social harmony and interconnection characterizing Iranian society. However, the authors (2010) were able to delineate overlapping features of psychopathy across the two cultures, which extended on previous findings of cross-cultural research on psychopathy. More specifically, the similarities were evinced in deficits in the affective dimension of psychopathy, which supports previous research demonstrating that deficient emotional experience represents the cross-cultural core of the disorder (Cooke et al., 2005). Simon Baron-Cohen’s (2011) thesis that psychopathy is essentially characterized by ‘zero degrees of empathy’ (p. 29) strongly aligns with this argument. Thus, it would appear that the interpersonal and behavioural features of psychopathy are most impressionable to disparate cultural behavioural prescriptions and are likely to be expressed with marked differences across diverse cultural settings. Essentially, affective components of psychopathy,

which have their origin in robust neurological substrate, are likely to remain stable cross-culturally (Nickerson, 2014).

While variation in the behavioural expression of psychopathy may be due to disparate cultural systems, an additional factor in the South African context warrants critical attention: the extreme poverty and socio-economic inequality operating as a key driving force behind criminal behaviour and its unique expression. Research has found that low socioeconomic status and social disadvantage share a strong association with the concept of secondary psychopathy, which is unique in terms of its phenotypic expression and pathogenesis (Newman, MacCoon, Vaughn & Sadeh, 2005; Piquero et al., 2012; Porter, 1996; Poythress, Skeem & Lilienfeld, 2006).

Researchers have also highlighted this heterogeneity of psychopathy and its relationship to PCL-R factors one and two (Ross, Bye, Wrobel & Horton, 2008; Swogger & Kosson, 2007; Vidal et al., 2009). Primary psychopathy, which has been associated with PCL-R factor one, has been conceptualized as manifesting in callous, calculating, manipulative and deceitful interpersonal behaviours, whereas secondary psychopathy, associated with PCL-R factor two, is conceptualized as having more of a neurotic basis that predisposes the sufferer toward impulsive and irresponsible behaviours (Ross et al., 2008).

The overlap between primary psychopathy symptoms and interpersonal individualistic traits proselytized in Western culture should be emphasized. Based on this association, one might expect a greater presence of PCL-R factor one interpersonal features in Western society. Such features may be more muted in non-Western, collectivist cultures due to disparate prescriptions for behaviour. Specifically, interpersonal dimensions of the disorder as conceptualized by Hare may not provide an accurate index of psychopathic behaviours in cultures where a strong ethic of interdependence dominates. As such, with its distinct pathogenesis in social disadvantage/low socio-economic status and phenotypic expression removed from mainstream Western-based interpersonal behaviours, the concept of secondary psychopathy warrants further empirical attention in research in non-Western contexts such as South Africa.

Research has highlighted that abuse and neglect represent pertinent etiological pathways into secondary psychopathy (Graham, Kimonis, Wasserman & Kline 2012; Loper et al., 2008; Vidal et al., 2009). Such findings accentuate the importance of the secondary psychopathy construct specifically in South African female offenders, as

women are far more likely to be victims rather than victimizers of others (Logan & Weizmann-Henelius, 2012). Further, much of the harm perpetrated by women is related directly to their own experience of abuse and to ongoing abusive and exploitative relationships (Statistics South Africa, 2011). These trends provide an important contextual backdrop for interpreting empirical findings on psychopathy among females.

Racially, studies have demonstrated that the mechanisms that underlie psychopathy may differ between racial groups (Kosson, Smith & Newman, 1990; Lorenz & Newman, 2002; Newman & Schmitt, 1998). For example, the pattern of external correlates of the PCL-R have been shown to differ by race, as African Americans do not manifest the same passive avoidance deficits (Kosson et al., 1990; Newman & Schmitt, 1998) or affective and information processing deficits (Lorenz & Newman, 2002) as Caucasians do. Cooke et al. (2004) cautioned, though, that these differences might stem from significant sociocultural factors that still needed to be explicated. Importantly, essentialist theories positing biological differences along racial lines have come to represent the nadir of social science research. Race is far better understood as a social construction or a discursive category that more accurately reflects the prejudices between groups than actual and ontologically stable biological differences do.

As such, essentialist attempts to link psychopathy more explicitly to race-related variables has created much controversy in the field of forensic research. In 2002, Richard Lynn published a paper titled "*Racial and ethnic differences in psychopathic personality*", which sought to explain putative group differences in the behavioural expression of psychopathy by reference to genetic and race-related factors. The article provoked a number of critical rejoinders (e.g. Skeem, Edens, Camp & Colwell, 2004; Zuckerman, 2003), which put forth important cautionary notes when interpreting putative race-based disparities in psychological measurements. Specifically, Lynn's argument was criticized for negating important socioeconomic variables that contributed to disparities in scores across ethnic groups and adopting ill-construed genetic explanations for putative group differences instead (Skeem et al., 2004). Skeem et al. (2004) found that environmental variables such as early exposure of African Americans to violence completely accounted for putative differences in psychopathic personality among low socio-economic offenders. In a similar vein, Monahan et al. (2001) found that neighbourhood disadvantage alone

contributes massively to elevated psychopathy scores in African Americans. In fact, the authors found that the effect of race alone in predicting violence completely disappeared after controlling for neighbourhood disadvantage.

In addition, research has shown that typically small differences in measures of psychopathy reflect rater bias on the part of examiners rather than putative group differences hinging on race (Kosson et al., 1990). In response to Lynn (2002), Zuckerman (2003) concluded that differences between the compared ethnic groups in terms of antisocial behaviour were a function of social class, historical circumstance and their position in Western society rather than a function of racial genetics. With a specific view to females, Ryan (2010) reported no differences in rates of psychopathy when ethnicity was the grouping variable. In the light of the relative absence of ethnic-based differences in psychopathy, the disorder should be validated in groups and across cultural contexts before comparing levels of putative symptoms of psychopathy (Skeem et al., 2004).

Conclusion

This narrative review provided a synthesis of the literature on psychopathy as it pertains to gender and culture. The rationale guiding this discussion was to demonstrate the differential manners in which psychopathy manifests across gender and culture and the implications that these disparities may carry. A careful appraisal of these findings clearly underlines the need for further empirical research studies to evaluate psychopathy across gender and diverse cultural groups. Specifically, the uncritical application of Western-based measures of psychopathy such as the PCL-R may carry some untoward implications. For example, emphasis on aspects of psychopathy such as overt antisocial behaviours, which may not pertain to females, may result in this severe personality pathology going undetected in this cohort. Additionally, the clinical efficacy of treatment centred on the behavioural aspects of the disorder may prove low among female offenders. In contrast, working with the emotional aspects of the disorder may prove more effective in the treatment of female psychopathy.

Findings of marked divergences in the manifestation of aspects of psychopathy across culture also highlight the need for further empirical attention to cross-cultural factors. Specifically, it would appear that Western-based descriptions of psychopathy

are more likely to metastasize in metropolitan, individualist settings where an ethic of competitiveness and self-centeredness tends to dominate. Consequently, this Western nomenclature is less likely to capture the disorder effectively in collectivist settings where there is a greater degree of interdependency and social harmony. This does not negate the presence of psychopathy in settings that are more collectivist, but underlines the need for researchers to expand their theoretical and conceptual lenses when attempting to understand the disorder in diverse contexts. It was suggested that the “individualist-collectivist” model and the construct of “secondary psychopathy” might help elucidate findings on psychopathy in culturally diverse samples.

Based on this review of psychopathy, a foremost recommendation for future research would be to focus on assessing the utility of this construct in female multicultural groups, as a considerable dearth of information remains in this area. This will serve as a specific focus for the empirical studies that follow.

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Factor structure of the Psychopathy Checklist-Revised [PCL-R] for South African female offenders

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Factor structure of the Psychopathy Checklist-Revised [PCL-R] for South African female offenders

Abstract

The clinical entity of psychopathy is essential in understanding diverse criminal behaviour. Unfortunately, a paucity of empirical research examining this construct within female offender populations, especially those living in non-Western contexts, exists. The present study addresses this lacuna by examining the reliability and factor structure of the Hare Psychopathy Checklist-Revised (PCL-R) in a South African female forensic context. The PCL-R was administered to South African female inmates (N = 108), and criminal offence records were obtained from prison files to align scoring procedures with the protocol recommended by Hare (2003). Several theoretical factorial structures of the Hare PCL-R were tested and compared. In terms of the Hare two-factor model, the exploratory factor analysis revealed partial support for Hare factor one and considerable support for Hare factor two, while the four-facet model could not be confirmed in the sample. The structure of the three-factor model of Cooke and Michie (2001) was largely replicated in the current study. The affective dimension of psychopathy was found to be stable across all three factorial models, which is in line with international findings on the cross-cultural expression of psychopathy. The results provide provisional support for the PCL-R as a valid and reliable instrument for the assessment of psychopathy among female offenders in the South African forensic context.

Keywords: Psychopathy, Psychopathy Checklist-Revised, South Africa, factor structure, gender, cross-cultural

Introduction

A comprehensive review of criminal activity in South Africa concluded that rates of violent crime in the country are among the highest in the world (Altbeker, 2007). An adequate understanding of this troubling social issue necessitates empirical forensic enquiries moving beyond the well-documented environmental contributors to crime in South Africa. Internationally, the clinical construct of psychopathy has been associated with violent aggression and diverse criminal activity (Dolan & Doyle, 2007; Glannon, 2014; Hare, 2003; Neumann, Hare & Newman, 2007). As such, this severe personality disorder may provide a useful starting point exploring the underlying intrapsychic contributors to crime in South Africa. However, existing data on psychopathy derive largely from Western, male offender populations, which opens up serious concerns about the applicability of psychopathy across gender and culture. This is particularly alarming when one considers that widespread gender differences have been found in the expression of psychopathy (Hicks, Vaidyanathan, & Patrick, 2010; Lehman & Ittel, 2012; Logan & Blackburn, 2009; Logan & Weizmann-Henelius, 2012; Vitale, Maccoun, & Newman, 2011; Warren et al., 2003; Weizmann-Henelius et al., 2010). Additionally, research has found substantial evidence for cross-cultural expression in the assessment of psychopathology in general (Alaracon, Foulks, & Vakkur, 1998; Brislin & Lo, 2006; Rogler, 1999; Triandis & Suh, 2002; Wynn, Hoiseth, & Petterson, 2012) and psychopathy specifically (Cooke, Michie, Hart, & Clark, 2005; Shariat et al., 2010). At present, evidence supporting the use of psychopathy measurement instruments in females and non-Western cultural groups is limited. Without strong empirical support, researchers and practitioners using such measurements need to be cautious to assume that psychopathy manifests similarly across gender and culture.

Loots and Louw (2010) conducted one of the only studies to date on psychopathy in a South African male forensic context by using the Psychopathic Personality Inventory-Revised (PPI-R; Lilienfeld & Widows, 2005). While partial support was found for the factor structure of this instrument, a number of items performed poorly in this context. These findings underscore the need for further research on the reliability and factor structure of instruments measuring psychopathy in the South African context, especially among female offenders. The current study took the initial steps in addressing the dearth of psychometric data on psychopathy

across gender and culture by providing an exploratory factor analysis (EFA) of the Hare Psychopathy-Checklist Revised (PCL-R; 1991; 2003) in a South African female forensic context.

Factor structure of PCL-R psychopathy

Psychopathy is a severe personality disorder typified by extreme emotional deficits and a complete disregard for societal norms (Hare, 2003; see article one for a detailed description of psychopathy). The most validated instrument for the assessment of psychopathy is the PCL-R (Casey, Rogers, Burns, & Yiend, 2013). There is a growing body of research on the factor structure of PCL-R psychopathy, particularly in North America and the United Kingdom (Blackburn, 2007; Cooney, Kadden, & Litt, 1990; Forouzan & Cooke, 2005; Forth, Brown, Hart, & Hare, 1996; Forth, Kisslinger, Brown, & Harris, 1993; Hare, 2003; Ryan, 2010; Salekin, Rogers, & Sewell, 1997; Weizmann-Henelius et al., 2010). The majority of this research has investigated the two-factor model of the PCL-R (Hare & Neumann, 2009). In this model, factor one comprises the emotional and interpersonal features of the disorder, whereas factor two encompasses the lifestyle and antisocial components of the disorder (Hare, 2003).

Research findings on male populations have given support for an overall superordinate factor of psychopathy as well as the two specific factors (Hare, 2003). However, in response to criticism about the factorial congruence of the two-factor model as well as its theoretical basis, Bolt, Hare, Vitale and Newman (2004) developed a two-factor, four-facet solution for the instrument. The four-facet model consists of 18 items representing interpersonal, affective, behavioural and antisocial features of the disorder. Hare (2003) reported that confirmatory factor analysis (CFA) studies had shown the four-facet model to produce excellent fit statistics. However, this reformulation continued to draw criticism because its emphasis of socially deviant and antisocial behaviour was not theoretically consistent with psychopathy. Specifically, some commentators argue that the underlying personality features capture the essence of psychopathy. On this basis, the disorder should not be conflated with overt antisocial behaviour, which may not be consistent with the disorder across gender and culture (see Cooke & Michie, 2001; Skeem & Cooke, 2010; Strand & Belfrage, 2005; Weizmann-Henelius et al., 2010).

Following a meta-analysis of composite datasets used in the development of the two-factor model, Cooke and Michie (2001) proposed an alternative three-factor model made up of a select set of 13 items from Hare's original 17-item, two-factor model. In Cooke and Michie's (2001) model, the original factor one was divided into separate interpersonal and affective factors, each of which comprised four items. Only five items of the original factor two items were retained and loaded onto a third factor, which reflected impulsive and irresponsible behavioural components. It is believed that the three-factor model better distils the intrapsychic properties of psychopathy rather than its behavioural manifestations (Cooke, Hart, & Logan, 2004; Cooke, Hart, & Michie, 2004; Skeem & Cooke, 2010; Weizmann-Henelius et al., 2010). As noted, Cooke and Michie (2001) argue that criminal behaviour is a correlate or consequence of psychopathy rather than a fundamental feature of the disorder. As such, the three-factor formulation of the test does not examine deviant and antisocial features of psychopathy. This omission may be difficult to reconcile in the broader context of PCL-R psychopathy measurement, which generally takes place in Western, male offender settings. However, such paradigmatic shifts in conceptualizing psychopathy seem to carry weight in assessing the disorder in female and culturally diverse samples. This may be explained by the fact that behaviour-based antisocial features of the disorder are possibly more mutable and responsive to shaping by diverse socio-cultural forces. Because of their culturally impressionable nature, these features are likely to vary in their expression across gender and culture. Strong evidence for using the three-factor model with females and diverse cultural groups exists (Florez-Mendoza, Alvarenga, Herrero, & Abad, 2008; Logan & Weizmann-Henelius, 2012; Shariat et al., 2010; Weizmann-Henelius et al., 2010). Findings of this nature may carry important interpretive value in investigations of psychopathy among female offenders in the diverse South African context. The issue of gender in the context of psychopathy assessment will be elucidated in the section to follow.

Gender differences in the factor structure of the PCL-R

Collectively, studies investigating the prevalence and severity of psychopathy in females have provided evidence for lower prevalence rates (see De Vogel & De Ruiter, 2005; Hazelwood, 2006; Hemphill, Hare, & Wong, 1998; Salekin, Rogers, & Sewell, 1997; Warren et al., 2003; Weizmann-Henelius et al., 2010) and total scores

(see Forth et al., 1996; Hare, 2003; Neary, 1990; Warren et al., 2005) in women than in males. Forouzan and Cooke (2005) raised various issues regarding the application of the standard PCL-R diagnostic criteria to women after they had found a number of differences in the behavioural expression of psychopathy across gender (see Article 1 for a complete review of gender differences in the expression of psychopathy). An understanding of these gender differences in assessing PCL-R psychopathy is crucial for practical and theoretical reasons (McKeown, 2010). With a view to these putative gender differences in assessing psychopathy, researchers have questioned the manner in which the measurement of psychopathy, particularly its flagship, the PCL-R, should be modified for women.

It is important to note that conventional statistical methods (i.e. mean and standard deviation) cannot provide an accurate index of whether PCL-R psychopathy items and total scores operate equivalently across groups (Shariat et al., 2010). To determine this, it is essential that researchers consider two types of consistency: *structural consistency* that determines whether the disorder is characterized by the same set of symptoms across groups, and *measurement consistency* that assesses whether scores are equivalent across groups (Shariat et al., 2010). These questions can be answered only by means of specialized factor analytic techniques. As such, comparing the PCL-R across gender requires an empirical evaluation of its factor structure, the results of which will be focused on in the review of empirical findings to follow.

Investigations into the factor structure of the PCL-R provide strong evidence for gender differences in the expression of psychopathy. Notably, Salekin et al. (1997) found evidence for the two-factor model in female offenders, but the PCL-R items loaded onto different factors in comparison with the original two-factor solution. For example, in females, the PCL-R items of “poor behavioural controls” and “impulsivity” loaded onto both factors, while “many short-term relationships” did not load onto either factor. The authors suggest that in women, factor one is best characterized by a lack of empathy, proneness to boredom and sensation seeking, while factor two is characterized by early behavioural problems, adult antisocial behaviour and promiscuity.

Generally, studies on the two-factor structure of PCL/PCL-R suggest that some symptoms of psychopathy may not combine to form comparable syndromes in men and women (Cooke & Michie, 2001; Grann, 2000; Jackson, Rogers, Neumann, &

Lambert, 2002; O'Connor, 2001; Ryan, 2010; Strand & Belfrage, 2005; Vitale & Newman, 2001; Warren et al., 2003; Weizmann-Henelius et al., 2010). These findings have led to increasing debate among researchers as to whether Hare's two-factor model, the revised four-facet model or Cooke and Michie's three-factor model is most appropriate for assessing psychopathy in females. The latter model omits specific antisocial items that are generally more reflective of male behaviours and not consistent with theories of psychopathy in females. Notably, it is believed that females are far less likely to exhibit antisocial acts explicitly, as they reflect such a marked departure from gender-based norms (Weizmann-Henelius et al., 2010).

Warren et al. (2003) compared Hare's two-factor and four-facet model and Cooke and Michie's three-factor model and found that the latter provided the best fit for their data on 138 women in correctional services in the United States. Strand and Belfrage (2005) used EFA to assess the validity of the Psychopathy Checklist-Screening Version (PCL-SV; Hart, Cox, & Hare, 2005) and found support for a three-factor model; however, they identified gender differences at the item level. Specifically, men were found to score higher on four factor one items ("superficial", "grandiose", "lacks remorse", "lacks empathy") and three factor two items ("lacks goals", "adolescent antisocial behaviour", and "adult antisocial behaviour"), while women scored higher on the "lying", "deceitfulness" and "lack of control" items. In a recent study conducted by Weizmann-Henelius et al. (2010), they found that Cooke and Michie's three-factor model proved to be the best fit for a female homicide sample. The above findings offer preliminary evidence to suggest that the presentation of psychopathy in women appears comparable to that in men when the construct is measured in terms of *Arrogant and Deceitful Interpersonal Style*, *Deficient Affective Experience*, and *Impulsive and Irresponsible Behaviour* as conceptualized in the three-factor model (Logan & Weizmann-Henelius, 2012).

Against this background, the aim of the present study was to extend on international investigations into the factor structure of psychopathy with a view to assessing its reliability and validity among female offenders in the unique South African forensic context. The two-factor model, four-facet model (Hare, 2003) and the three-factor model (Cooke & Michie, 2001) were investigated using EFA techniques. The specific methodological steps taken to investigate the different factorial models in terms of their applicability in the current sample will be elaborated on in the section to follow.

Methodology

Participants and procedures

To ensure that the rights of the participants were upheld, permission for the current study was granted by two ethical committees representing the Department of Psychology and the Faculty of Humanities at the University of the Free State. Following a review of the research proposal, the Department of Correctional Services (DCS) also granted permission to conduct the study. A non-experimental quantitative research design was employed to collect data from three correctional centres located in three South African provinces.

The respective correctional centres used in the study were the Wesbank Female Correctional Centre in the Eastern Cape, Kroonstad Female Correctional Centre in the Free State and Johannesburg Female Correctional Centre in Gauteng. Prior to the recruitment of offenders into the sample, meetings with psychologists and social workers at the respective correctional centres were requested. These meetings were conducted with the aim of selecting offenders who were most likely to exhibit features of psychopathy. This was achieved by sending letters to the various offender institutions providing an outline of the type of offenders required for the study. In meetings with the prison psychologists, social workers and prison staff, the selection criteria for the sample were explained.

It is important to note that the focus of the research was not to assess the prevalence of psychopathy in the general prison population. Instead, the current study was interested specifically in the manifestation of the psychometric properties of psychopathy among female offenders in South Africa. This objective was pursued with a view to determining the factor structure of the PCL-R in a South Africa female forensic context. Following the meetings with the prison staff, purposive sampling was used to select the sample. The sampling frame comprised 122 offenders from the three correctional centres. A number of the participants opted not to participate in the study for different reasons (i.e. privacy, work schedule conflicts etc.). In the end, 108 female offenders participated in the study (89% response rate). Each offender was interviewed separately once she had signed a consent form whereby she agreed to participate in the study and provided permission for the use of the information. Interviews were conducted by the principal researcher and co-supervisor with the assistance of three trained translators. Two of the translators possessed post-graduate degrees in the social sciences, while the third was a

licensed psychologist. The majority of the PCL-R interviews were conducted in English, Afrikaans, Xhosa and Sesotho. The data collection phase of this research spanned a period of eight months.

Measures

The following measures were used in the study:

- 1) A self-compiled biographical questionnaire which included information regarding factors such as age, family background, educational levels, antisocial history and other criminogenic variables.
- 2) The revised version of the *Psychopathy Checklist* (PCL-R; Hare, 1991, 2003). This instrument is the most validated of all psychopathy measures and is deemed the “gold standard” of psychopathy assessment worldwide (Casey et al., 2013). PCL-R assessments of all offenders were based on the results of an interview with the offender. In addition, for the majority of offenders, a review of file records consisting of psychological evaluations, police records, criminal history, family background and other criminogenic data was conducted. To enhance the reliability and validity of the PCL-R administration, one of the present research supervisors (Loots) underwent an accredited PCL-R four-day training program in Edinburgh, Scotland, under the tutelage of David Cooke, an expert on psychopathy. Loots conducted similar training sessions with the principal researcher and translators to ensure reliability and validity in the administration of the instrument. Training entailed extensive introduction to theories and studies of psychopathy as well as ratings of case summaries. The training was based on the PCL-R materials provided by Cooke. International research indicates that the PCL-R has high inter-rater reliability with interclass correlations ranging from .87 to .95 and good internal consistency ranging from .83 to .91 (Vitale & Newman, 2001). There is also evidence of good reliability of the PCL-R, as measured by intra-class correlations of .95 and above, when used with a female sample (Vitale, Smith, Brinkley, & Newman, 2002). No empirical studies in South Africa employing the PCL-R could be traced to corroborate the psychometric properties found in the present study.

Conducting of PCL-R

Each of the correctional centres used in this study houses a diverse range of cultures, ethnicities and even nationalities. As such, the administration of the instruments presented some challenges with regard to potential language and comprehension difficulties. To circumvent this issue, trained interpreters were used in conducting the PCL-R interview. The translators assisted in the correct interpretation of questions and helped contextualize specific terms and phrases. The PCL-R did not present too many challenges in this regard, as it is in the form of a semi-structured interview. As a result, the measure invites a certain degree of dialogue, which allows for clarification and contextualization of feedback from participants.

Statistical analysis

The present study analysed the Polychoric matrix during EFA to determine which PCL-R factorial model could be reproduced in the present offender data. Bartlett's Test of Sphericity was significant, with the Kaiser-Meier-Olkin (KMO) measure of sampling adequacy being above the recommended level of 0.6 (Field, 2005). Based on these findings, one can conclude that the Polychoric matrix is factor analysable (Henson & Roberts, 2006). Using principal axis factor analysis to determine the underlying structure of the latent variable, an oblique rotation was used, assuming that the factors were correlated (Byrne, 2005; Henson & Roberts, 2006). Owing to the statistical basis of parallel analysis (see Horn, 1965; Zwick & Velicer, 1986), this method was chosen to determine the number of factors to be extracted. A simple structure was adopted as the criterion for deleting items with significant cross-loadings on multiple factors (Worthington & Whittaker, 2006). Consequently, items should load significantly only on one factor with items having zero correlations with other factors (Worthington & Whittaker, 2006). Factor loadings of 0.3 were deemed as significant given the sample size of 108 (see Hair, Black, Babin, Anderson, & Tatham, 2006). In essence, the current study used EFA to determine whether the same factor structures that were proposed by Hare (2003) and Cooke and Michie (2001) respectively could be observed in the current sample.

Results and Discussion

The analysis will first consider each of the original factor models as suggested by Hare (2003) and Cooke and Michie (2001) separately in terms of their reliability coefficients. Following this, the models will be compared with a view to identifying the factorial composition that best represents the data in the present study. Table 1 (below) represents the descriptive statistics and item breakdown of the respective PCL-R psychopathy factor models in the current sample.

Table 1: Descriptive statistics and item breakdown of the PCL-R by two-, three- and four-factor models

<i>Item</i>	<i>Description</i>	<i>Two factor</i>	<i>Three factor</i>	<i>Four facet</i>	<i>min</i>	<i>max</i>	<i>Mean</i>	<i>SD</i>
1	Glibness/superficial	Factor 1	Factor 1	Facet 1	0	2	.54	.63
2	Grandiose sense of self	Factor 1	Factor 1	Facet 1	0	2	.51	.66
3	Need for stimulation	Factor 2	Factor 3	Facet 3	0	2	1.18	.60
4	Pathological lying	Factor 1	Factor 1	Facet 1	0	2	.94	.58
5	Conning/manipulative	Factor 1	Factor 1	Facet 1	0	2	.92	.76
6	Lack of remorse/guilt	Factor 1	Factor 2	Facet 2	0	2	1.07	.69
7	Shallow affect	Factor 1	Factor 2	Facet 2	0	2	.73	.62
8	Callous lack of empathy	Factor 1	Factor 2	Facet 2	0	2	.76	.67
9	Parasitic lifestyle	Factor 2	Factor 3	Facet 3	0	2	1.09	.76
10	Poor behavioural controls	Factor 2	Omitted	Facet 4	0	2	1.55	.57
11	Promiscuous sexual behaviour	Omitted	Omitted	Omitted	0	2	.98	.84
12	Early behavioural problems	Factor 2	Omitted	Facet 4	0	2	.82	.77
13	Lack of realistic goals	Factor 2	Factor 3	Facet 3	0	2	1.26	.67
14	Impulsivity	Factor 2	Factor 3	Facet 3	0	2	1.68	.50
15	Irresponsibility	Factor 2	Factor 3	Facet 3	0	2	1.68	.49
16	Failure to accept responsibility	Factor 1	Factor 2	Facet 2	0	2	.97	.69
17	Many short-term relationships	Omitted	Omitted	Omitted	0	2	.76	.80
18	Juvenile delinquency	Factor 2	Omitted	Facet 4	0	2	.18	.51
19	Revocation of conditional release	Factor 2	Omitted	Facet 4	0	2	1.60	.52
20	Criminal versatility	Omitted	Omitted	Facet 4	0	2	.18	.47

It is important to note that item 19, “revocation of conditional release”, was dropped from the analysis due to the high percentage of omissions on this item. Inconsistent feedback and inadequate information in institutional files may have

affected the rating of this item. The exclusion of this item would have affected the representation of items in Hare’s two-factor *Social Deviance* dimension (factor two) and four-facet *Antisocial* dimension (facet four). However, the exclusion of this item had no impact on the representation of Cooke and Michie’s three-factor model items, as it is not included in their conceptualization of psychopathy. It is important to note that Hare’s two-factor model comprises 17 items that load onto *Interpersonal/Affective* factor one and *Social Deviance* factor two. The four-facet model comprises eighteen items that load onto *Interpersonal* facet one, *Affective* facet two, *Lifestyle* facet three and *Antisocial* facet four. Finally, the three-factor model retains only thirteen PCL-R items that load onto *Arrogant and Deceitful Interpersonal Style*, *Deficient Affective Experience*, and *Impulsive and Irresponsible Behaviour*. The reliability and validity of the three factorial models will be discussed in greater detail in the section to follow.

Reliabilities

Observation of the reliability estimates for Hare’s two-factor model (as represented in Table 2 below) suggests a more than acceptable degree of internal consistency for the scale. Notably, a Cronbach Alpha of .81 was found for Hare’s *Interpersonal/Affective* Hare factor one and .79 for *Social Deviance* factor two. Thus, one may conclude that the scale performs reliably in a South African female forensic context.

Table 2: Alpha Coefficients for Hare’s two-factor model

<i>Factors</i>	<i>Cronbach</i>
Factor 1	.81
Factor 2	.79

Hare’s four-facet model contains 18 items from the original item pool and retains the two superordinate factors as proposed in Hare’s two-factor model. Table 3 (below) summarizes the Alpha coefficients of Hare’s four-facet model. In the current study, *Affective* facet one of the model was shown to produce a good reliability estimate of .80. *Interpersonal* facet two also revealed a good reliability estimate of .78. The analysis revealed *Lifestyle* facet three to be particularly problematic with a very poor reliability estimate of .43. In this case, “lack of realistic, long-term goals”

(item 13) was shown to be a problematic item, as its omission from the scale brought the reliability into an acceptable range of .61, which suggests that item 13 may need refinement for use in the South Africa female forensic context. Specifically, an evaluation of realistic long-term goals did not seem to reflect any aspect of psychopathy in the current sample. It must be noted that many of the offenders recruited into the sample were serving lengthy sentences and thus may not have spent much time reflecting on the practicalities of far removed goals. *Antisocial* facet four was shown to have a good reliability score of .81. This score improved considerably to .88 when “juvenile delinquency” (item 18) was omitted, which suggests that this item may need to be refined for use in the South African forensic context. The rating of item 18 would have been affected by certain difficulties with file ratings in the present study. Specifically, many of the offender files did not contain all the requisite data to corroborate interview findings. In many cases, scant information on juvenile delinquency was available in the offender files.

Table 3: Alpha coefficients for Hare’s four-facet model

<i>Facets</i>	<i>Cronbach</i>
Facet 1	.81
Facet 2	.78
Facet 3	.61
Facet 4	.88

Cooke and Michie’s (2001) conceptualization of psychopathy removes antisocial components of the disorder and retains only 13 items from the original item pool. These 13 items comprise the three scales of the three-factor model, namely *Arrogant and Deceitful Interpersonal Style*, *Deficient Affective Experience*, and *Impulsive and Irresponsible Behaviour*. The reliability estimates for factors one and two in this model were found to be good, with Cronbach Alpha coefficients of .80 and .79 respectively (presented in Table 4 below). However, in line with the poor performance of facet three in Hare’s four-facet model, a similar result was to be expected in the three-factor model. Indeed, the reliability estimate for factor three was low at .43. Again, the troublesome item was shown to be “lack of realistic, long-term goals” (item 13) as its omission yielded an acceptable reliability estimate of .61.

Table 4: Alpha coefficients for Cooke and Michie’s three-factor model

<i>Factors</i>	<i>Cronbach</i>
Factor 1	.80
Factor 2	.79
Factor 3	.61

Factorial structure

A statistical aphorism warrants mentioning at this point of the analysis, namely that a finding of reliability does not presuppose validity. The mere fact that the various dimensions discussed above produced acceptable reliability estimates does not mean that they were able to reproduce a corresponding factor structure to Hare’s (2003) original two-factor; four-facet or Cooke and Michie’s (2001) three-factor models. To ascertain this, EFA was conducted with a view to investigating the number of dimensions in the present data.

Hare’s two-factor model. By means of parallel analysis, a two-dimensional factor structure was investigated. The analysis revealed significant cross-loadings on “glibness/superficial charm” (item 1), “grandiose sense of self worth” (item 2), “pathological lying” (item 4), “conning/manipulative” (item 5) and “failure to accept responsibility for own actions” (item 16). In EFA, the aim is to produce a simple factor structure (see Worthington & Whittaker, 2006), which suggests that items load significantly only on one factor with items having zero correlations with other factors. To address this issue, a second round of analysis that omitted cross-loading items was conducted, and again two dimensions were revealed in the data. All of the items in the rotated loading matrix loaded at a significant level onto the two dimensions. In the current study, factor loadings of 0.3 and above were viewed as statistically significant (Hair et al., 2006).

At this point, theory was brought in to clarify the findings. More specifically, the investigation sought to ascertain whether the items clustered around the two dimensions in a manner that was theoretically consistent with Hare’s (2003) original formulation. It was found that “need for stimulation/proneness to boredom” (item 3), “parasitic lifestyle” (item 9), “poor behavioural controls” (item 10), “early behavioural problems” (item 12), “impulsivity” (item 14), “irresponsibility” (item 15), and “juvenile delinquency” (item 18) loaded onto one of the dimensions, which is a good

representation of the original items comprising Hare's factor two *Social Deviance* scale. The reliability estimate for this scale was high at .87. In terms of the second dimension produced in the analysis, "lack of remorse/guilt" (item 6), "shallow affect" (item 7) and "callous/lack of empathy" (item 8) loaded significantly. This representation of items, although theoretically consistent with factor one items, was too small to suggest tenability for Hare's complete factor one scale, namely the *Interpersonal/Affective* scale. Specifically, there was a poor representation of interpersonal items in this instance. This is in line with international studies (e.g. Cooke et al., 2005; Cooke, Michie, Hart, & Hare, 1999; Strand & Belfrage, 2005), which have found that the interpersonal items of factor one are less prominent in women when using a two-factor conceptualization. However, the items that loaded onto this dimension corresponded well with the *Affective* facet two in Hare's revised two-factor, four-facet model. With the exception of "failure to accept responsibility for own actions" (item 16), which was a cross-loading item, the remaining three items of "lack of remorse/guilt" (item 6), "shallow affect" (item 7) and "callous/lack of empathy" (item 8) produced an almost perfect representation of facet two with a reliability estimate of .99.

This is a compelling finding when one considers the broader research on psychopathy across gender and diverse cultural groups. With a view to females, the stability of the affective component of psychopathy in the current sample suggests the somewhat static and rigid nature of this dimension (see Wynn et al., 2012). It could be argued that the interpersonal features of psychopathy are more mutable and potentially impressionable to shaping by diverse socio-cultural and gender prescriptions for behaviour. With a view to the diverse multi-cultural context of South Africa, the present findings also carry some important implications. Specifically, research on the factor structure of psychopathy cross-culturally has consistently found evidence for metric equivalence in terms of the affective components of the disorder (see Cooke et al., 2005; Shariat et al., 2010). This has led to claims that deficient emotional processing represents the "pan-cultural core" (Cooke et al., 2005, p. 293) of the disorder (Baron-Cohen, 2011). As noted, the present analysis of the two-factor model also reveals substantial support for the stability of the affective facet of psychopathy in a South African female forensic context.

Taken together, the above analysis reveals partial support for Hare's factor one and considerable support for Hare's factor two in the sample. However, it would

appear that a full representation of PCL-R psychopathy items is limited in a South African female forensic context when the analysis is constrained to two dimensions. Table 5 (below) presents the items that loaded onto two separate dimensions following the omission of cross-loading items.

Table 5: Item loadings of the revised two-factor model

<i>Item</i>	<i>F 1</i>	<i>F 2</i>
Item 3	.658	
Item 6		.720
Item 7		.683
Item 8		.997
Item 9	.439	
Item 10	.851	
Item 12	.576	
Item 14	.681	
Item 15	.759	
Item 18	.358	

Bartlett's statistic = 289.8 (df = 45, p = 0.000010)
Kaiser-Meyer-Olkin (KMO) test = 0.73671

Hare's four-facet model. With Hare's four-facet model, it was unclear how many dimensions the Parallel Analysis suggested for further investigation. In terms of the validity of *Interpersonal* facet one, the EFA showed that it was not able to reproduce itself as a standalone scale in the present sample. Building on the analysis of the original two-factor model, it was shown that *Affective* facet two emerged as a separate dimension in the current sample with its three constituent items providing an excellent reliability estimate of .99. The validity of *Lifestyle* facet three and *Antisocial* facet four in terms of their ability to replicate Hare's distinction of the two is questionable in the present study. These two facets merged in the present sample in a manner more consistent with Hare's two-factor conceptualization. It may be that the distinction between antisocial behaviour and lifestyle may not have been made in the present sample. Many of the participants came from impoverished backgrounds where crime is generally a feature of everyday life. This contextual confluence may elide the finer nuances of the two facets as suggested in Hare's four-facet model. In other words, it could be argued that features of psychopathy such as interpersonal, lifestyle and behavioural features are more impressionable to shaping by a variety of gender and cultural/contextual factors and are thus less likely to remain stable in

diverse gender and cultural contexts. Affective components derive from a more robust neurological substrate (see Nickerson, 2014) and are thus likely to be stable across gender and culture.

Overall, the analysis reveals excellent support for *Affective* facet two but no support for *Interpersonal* facet one, *Lifestyle* facet three and *Antisocial* facet four of Hare's four-facet model as standalone scales. Instead, the dimensions and their attendant items are more reflective of Hare's two-factor model. This suggests a limited capacity for PCL-R psychopathy items to distinguish features of the disorder in a South African female forensic context when the analysis is conducted in line with the four-facet model. Again, the invariance of the affective facet across the two models lends credence to assertions made by Cooke et al. (2005) that deficient emotional processing may represent the cross-cultural core of psychopathy.

Cooke and Michie's three-factor model. In terms of the validity of Cooke and Michie's three-factor model, the results were quite promising. Specifically, by means of parallel analysis, the EFA showed three separate dimensions emerging from the selective 13-item pool used in this model. Closer examination revealed cross-loadings for "shallow affect" (item 7) and "parasitic lifestyle" (item 9) and negative loadings for "lack of realistic long-term goals" (item 13). These were omitted from the subsequent analysis, and again three dimensions emerged with significant item loadings of above 0.3. At this point, closer examination of the original item constellations of the three-factor model was necessary to elucidate the findings.

Parallel analysis revealed that "lack of remorse/guilt" (item 6); "callous/lack of empathy" (item 8) and "failure to accept responsibility for own actions" (item 16) were found to cluster under dimension number one, which corresponded well with *Deficient Affective Experience* factor two, with the exception of "shallow affect" (item 7) not being represented in this cluster. An examination of the second dimension produced in the EFA found that it corresponded perfectly with the original item cluster of *Arrogant and Deceitful Interpersonal Style* factor one. Specifically, "glibness/superficial charm" (item 1); "grandiose sense of self worth" (item 2); "pathological lying" (item 4) and "conning/manipulative" (item 5) all loaded onto this dimension at significant levels. Finally, the item cluster of "need for stimulation/proneness to boredom" (item 3), "impulsivity" (item 14) and "irresponsibility" (item 15) was found to correspond well with the *Impulsive and Irresponsible Behavioural Style* factor three with the exclusion of "parasitic lifestyle"

(item 9) and “lack of realistic long-term goals” (item 13), due to cross-loadings and negative loadings respectively. The reliability estimates for each of these three dimensions were excellent in the revised model, with .93 for dimension one, .93 for dimension two and .98 for dimension three.

With regard to the three-factor formulation of psychopathy, the results of the EFA provide provisional support for the validity of this model in the South African female forensic context. These results suggest that the item representation and corresponding factor dimensions of PCL-R psychopathy appear to be maximized in the present sample when the analysis is conducted in accordance with *Arrogant and Deceitful Interpersonal Style, Deficient Affective Experience, and Impulsive and Irresponsible Behaviour*. As noted, international research has provided evidence for the use of the three-factor model of psychopathy across gender (Weizmann-Henelius et al., 2010) and across culture (Florez-Mendoza et al., 2008; Shariat et al., 2010). Table 6 below presents the different dimensions produced and attendant item loadings of the three-factor formulation.

Table 6: Item loadings of the revised three-factor model

<i>Variable</i>	<i>F 1</i>	<i>F 2</i>	<i>F 3</i>
Item 1		0.816	
Item 2		0.969	
Item 3			0.498
Item 4		0.616	
Item 5		0.624	
Item 6	0.921		
Item 8	0.736		
Item 14			1.003
Item 15			0.532
Item 16	0.798		

Bartlett’s statistic = 377.6 (df = 45, p = 0.000010)

Kaiser-Meyer-Olkin (KMO) test = 0.74446

In sum, with regard to Hare’s two-factor model, parallel analysis revealed partial support for *Interpersonal/Affective* factor one and considerable support for *Social Deviance* factor two in the sample. In line with the present study, Salekin et al. (1997) also found evidence for the two-factor model in female offenders, but the PCL-R items loaded onto different factors in comparison with the original two-factor solution. In their study, it was found that “poor behavioural controls” and “impulsivity”

loaded onto both factors, while “many-short terms relationships” did not load onto either factor. The majority of cross-loading items in the present analysis of Hare’s two-factor model relate to interpersonal components of the disorder and may suggest the need for refinement of these items among females. This is line with international studies (see Cooke et al., 2005; Cooke et al., 1999; Strand & Belfrage, 2005), which have found that factor one interpersonal items are less prominent in females. Differences emerging in the interpersonal behaviours of males and females as well as across diverse cultural groups due to divergent gender prescriptions and cultural norms may explain this pattern of findings. It is clear, though, that the interpersonal facets of psychopathy were not well represented in the current sample when using a two-factor formulation of the disorder.

With regard to Hare’s four-facet model, it is unclear how many dimensions the parallel analysis suggested for further investigation. The analysis revealed excellent support for *Affective* facet two but no support for *Interpersonal* facet one, *Lifestyle* facet three and *Antisocial* facet four of Hare’s four-facet model as standalone scales. Instead, the dimensions and their attendant items were more reflective of Hare’s two-factor model. It may be that the convergence of lifestyle and antisocial items into one dimension derived from contextual factors such as the pervasive poverty and everyday crime in South Africa, thus eliding the finer nuances of these dimensions as suggested by Hare. These findings are in contrast to those by Ryan (2010), who reported that the four-facet model of PCL-R psychopathy best fit her sample of female offenders, followed by a three-factor model. However, it is important to note that Ryan used a sample of Western-based female offenders, whereas the current study employed a non-Western sample. The results suggest that psychopathy and its constituent items are not well reproduced in a South African female forensic sample when conceptualised in line with the four-facet model.

In terms of Cooke and Michie’s three-factor model, parallel analysis showed three separate dimensions emerging from the data. With regard to the attendant item constellations of these three dimensions, results revealed that they were largely similar to those reported in the original formulation of the three-factor model. This corroborates findings of tenability for the three-factor model across gender (Weizmann-Henelius et al., 2010) and culture (Florez-Mendoza et al., 2008; Shariat et al., 2010). Specifically, the reduced item pool of the three-factor model resulted in

a more accurate reflection of related factor dimensions and may suggest that these items provide a better description of psychopathy in South African female offenders.

A consistent finding across the three models was the invariance of affective components of PCL-R psychopathy. In each of the three models, the affective items were found to be represented well with good reliability estimates. The invariance of the affective facet across the different models lends credence to the notion that deficient emotional processing may represent the cross-cultural core of the disorder. The somewhat static and fixed nature of the affective dimension across gender and culture may suggest that a robust neurobiological substrate implicit in emotional experiencing warrants specific attention in further investigations into psychopathy in these groups. It could be argued that other features of psychopathy, such as interpersonal, lifestyle and behavioural features, are more impressionable to shaping by a variety of gender and cultural factors during assessment and are thus less likely to remain stable in diverse gender and cultural contexts. However, the likelihood of these factors emerging in diverse gender and cultural groups seems to be enhanced when psychopathy is conceptualized in line with the three-factor model.

Conclusion

The present study sought to investigate the performance of three seminal models of psychopathy in a South African female forensic context, namely the two-factor and four-facet models (Hare, 2003) as well as the three-factor model (Cooke & Michie, 2001). Results revealed that the three-factor model appeared to fit the current sample of offenders best. Specifically, the EFA of the three-factor model items produced three separate dimensions with attendant item compositions largely similar to the original model of Cooke and Michie (2001). The results suggest that the operationalisation of psychopathy in line with *Arrogant and Deceitful Interpersonal Style, Deficient Affective Experience, and Impulsive and Irresponsible Behaviour* is most appropriate in a South African female forensic context. Invariance of affective components of the disorder across the various models suggests that affective components derive from a more robust neurological substrate and are thus likely to be stable across gender and culture (Nickerson, 2014). This study may provide provisional support for this unified theory of psychopathy, as the affective dimension of the disorder was shown to be consistently reliable and valid. However, it is important to note that research attempting to assess the invariance of

psychopathy among non-Western female groups is still in its infancy, and further studies need to be conducted to determine definitively which factor structure is more appropriate in these contexts.

As noted, Loots and Louw (2010) conducted one of the first systematic enquiries into the clinical entity of psychopathy among male offenders in South Africa. A key recommendation made by them was to extend this empirical investigation to other offender groupings such as females. The authors also called for an assessment of the utility of the PCL-R in the South African context. This study has responded to both of these recommendations and as such represents an original empirical contribution. Specifically, this study is the first to provide psychometric data on the PCL-R factor structure in females in a South African forensic context. However, these contributions need to be considered in the light of several limitations.

First, while the number of participants in the current study was larger than those reported in other studies of female offenders, the sample size was not amenable to analysis by means of confirmatory fit statistics. Such analysis would have allowed for a more conclusive picture with regard to the PCL-R factor structure of South African female offenders. A foremost recommendation would be that future validation studies of structural models of psychopathy be conducted with larger samples. Further, confirmatory factor analysis must be applied to provide a more robust assessment of the structural invariance of PCL-R psychopathy across gender and culture.

Second, the following study drew on the gender disparities found predominantly in Western-based offender samples to make sense of the data. Comparative studies of psychopathy across males and females in South African forensic settings would allow for a contextually closer understanding of gender differences in the manifestation of the disorder.

Third, while this study sought to make sweeping cross-cultural comparisons by referring to Western and non-Western groups, a more nuanced analysis of variations within the group was not a feature of the research. This is problematic in the light of the diverse cultural composition of the sample, which may index a rich variety of cultural discourses structuring the offenders' frames of reference. Future studies will need to be more sensitive to the heterogeneity of offender samples in the South African context. The complex nature of these enquiries requires information that can be obtained only by an in-depth exploration of people's feelings and experience. This

implies that a qualitative approach should be used in future research studies into psychopathy.

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Psychopathy and its association with demographic variables in a South African female forensic context

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Psychopathy and its association with demographic variables in a South African female forensic context

Abstract

Several studies have identified an association between psychopathy and specific demographic variables. However, these studies have been conducted predominantly on male offenders in the Western world. The following research responds to this gap in the psychopathy literature base by providing a description of the demographic variables of three groups of female South African offenders (N = 108). Specifically, the analysis aims to isolate demographic variables that discriminate between non-psychopathic, medium psychopathic and advanced psychopathic traits. Demographic data were obtained by means of a self-compiled biographical questionnaire, and levels of psychopathy were determined by using the Psychopathy Checklist-Revised (PCL-R). The chi-square test for independence revealed significant associations between the three groups with regard to the demographic variables under study. Notably, age of first offense, marital status, number of children, child/adult abuse, suicide attempts and employment history all shared an empirical association with psychopathic offenders. Distillation of the demographic data provides provisional support for the manifestation of secondary psychopathy in the present sample. The results underline the importance of specific demographic variables in identifying high-risk groups of offenders.

Keywords: Psychopathy, Psychopathy Checklist-Revised, demographic variables, South Africa, female offenders, secondary psychopathy

Introduction

A narrow delineation of environmental contributors to crime fails to capture the complex nature of criminal behaviour. While factors such as socio-economic inequality and poverty represent pertinent causal pathways into criminal activity in South Africa, underlying intrapsychic contributors such as personality pathology have been largely negated. This is troubling in the light of international findings that the personality disorder of psychopathy shares an important empirical association with criminal behaviour. Driven largely by Robert Hare's groundbreaking research on Western male offenders, psychopathy is now at the forefront of clinical and forensic conceptualizations of crime. However, a paucity of research into psychopathy among female offenders, particularly within non-Western and multicultural contexts, remains (Logan & Weizmann-Henelius, 2012; Perri & Lichtenwald, 2010). Currently, there have been no forensic research enquiries into psychopathy among female offenders in the unique South African context. The following study aims to address this gap in the empirical forensic psychology base by examining demographic variables relating to South African female offenders on the non-psychopathic to advanced psychopathic continuum. A brief review of the literature on psychopathy in women will be presented with a view to providing a theoretical background for later empirical findings (see Article 1 for a detailed description of psychopathy and gender differences).

Psychopathy, as conceptualized in the Psychopathy Checklist-Revised (PCL-R; Hare, 1991, 2003) can be understood as a unique constellation of personality and behavioural anomalies (Rogstad & Richards, 2008). Personality pathology manifests in callousness, deceitfulness, egocentricity, superficial charm, failure to form intimate emotional bonds, low anxiety, and a lack of responsibility (Glannon, 2014; Hicks, Vaidyanathan, & Patrick, 2010; Moreira, Almeida, Pinto, & Fâvero, 2014; Wynn, Hoiseth, & Petterson, 2012). The behavioural components of the disorder are indexed by a lack of respect for social norms and rules as well as irresponsible and impulsive, violent behavioural displays (Hare, 2003). Research on psychopathy has revealed important gender differences in terms of prevalence (Hazelwood, 2006; Hemphill, Hare, & Wong, 1998; Salekin, Rogers, & Sewell, 1997; Warren et al., 2003), severity (Forth, Brown, Hart, & Hare, 1996; Forth, Kisslinger, Brown, & Harris, 1993; Hemphill et al., 1998; Hare, 2003; Lehman & Ittel, 2012; Neary, 1990; Warren et al., 2005), and behavioural expression (Brebner, 2003; Forouzan & Cooke, 2005;

Fujita, Diener, & Sandvik, 1991; Grann, 2000; Hicks et al., 2010; Logan & Blackburn, 2009; Rosenfield, 2000; Rutherford, Cacciola, Alterman, & McKay, 1996; Salekin, Rogers, & Machin, 2001; Vitale, Maccoon, & Newman, 2011; Warren & South, 2006; Weizmann-Henelius et al., 2010).

Collectively, these studies suggest that, although psychopathy occurs more frequently and typically more severely in men, the disorder also exists in women (Wynn et al., 2012). In terms of behavioural expression, female psychopathy manifests in more subtle, internalized and relationally aggressive behaviours, whereas males exhibit behaviours that are more overt, externalized and physically aggressive. Expanding the existing knowledge base on psychopathy among females requires delineating demographic variables that may differentiate female offenders on the non-psychopathic to advanced psychopathic continuum. Outlined below is a discussion of demographic variables that have been associated empirically with psychopathy.

Demographic variables associated with psychopathy

It should be noted that the majority of literature on the demographic features of psychopaths pertains to male offenders; consequently, it cannot simply be extrapolated to females.

Age of first offence. Some evidence suggests that the frequency and severity of psychopathic criminal activities appears to decrease with age among males (Anderson, Sestoft, Lillebaek, Mortensson, & Kramp, 1999; Hare, McPherson, & Forth, 1988; Porter, Birt, & Boer, 2001) and females (Lehmann & Ittel, 2012; Ullrich, Paelecke, Kahle, & Marneros, 2003). However, many researchers and clinicians feel that these changes are primarily behavioural and do not reflect shifts in the configuration of the personality pathology of psychopaths. Hicks et al. (2010) found that secondary psychopaths in particular had a significantly higher number of criminal charges before age 17 than control prisoners and primary psychopaths had (see Article 1 for a detailed description of primary versus secondary psychopathy). General research provides a picture of psychopaths as exhibiting extensive criminal careers that stretch back to a history of early offending behaviour.

Ethnicity, culture and race. Cooke, Kosson and Michie (2001) found that the PCL-R was metrically equivalent across samples of 358 White and 356 African American prisoners. However, there is some evidence for differences in behavioural

correlates (factor two) of the disorder across diverse ethnic groups. The static nature of factor one items across ethnic groups has led researchers to claim that deficient experiencing of emotion could be considered as the “pan-cultural core” (p. 293) of the disorder (Cooke, Michie, Hart, & Clark, 2005). Findings of putative differences in levels of psychopathy across cultural groups (e.g. Lynn, 2000) need to be interpreted with much caution. This type of research has been criticized heavily for negating important socioeconomic variables that contribute to such disparities (see Skeem, Edens, Camp, & Colwell, 2004; Zuckerman, 2003). Ryan (2010) found no ethnic differences among female offenders in terms of their PCL-R scores. Overall, research indicates that the PCL-R has considerable cross-cultural generalizability.

Level of education. Research sketching the relationship between psychopathy and levels of education is limited. In the case of secondary psychopathy, researchers have argued that low intelligence may increase the sufferer’s vulnerability toward chronic misbehaviour (Lykken, 1995). Hicks et al. (2010) found that secondary psychopaths attained a significantly lower level of educational achievement than control prisoners did. With a specific view to females, Kennealy, Hicks and Patrick (2007) found that years of education exhibited significant negative associations with PCL-R total and factor two scores and was unrelated to factor one scores. An important caveat with regard to psychopathic offenders would be the lack of opportunities for educational attainment due to earlier age of incarceration and higher rates of juvenile delinquency (Hare, 2003). In this sense, it is difficult to disaggregate psychopathy and educational level in terms of causal relationships.

Family trouble with the law. Researchers in general have found that convicted parents are one of many variables associated with psychopathy (Farrington, 2006; Farrington, Ullrich, & Salekin, 2010; Harris & Rice, 2006). For instance, Hicks et al. (2010) found that the proportion of secondary psychopaths who had a father with a criminal record was significantly higher than that of control prisoners was. With a specific view to female offenders, Kennealy et al. (2007) found that only factor two scores of the PCL-R significantly correlated with maternal criminality. Such findings may provide tentative support for the notion that secondary psychopathy, traditionally associated with PCL-R factor two aspects of the disorder; has a distinctive pathogenesis emanating from social determinants such as poor parenting and neglect (Moreira et al., 2014; Piquero et al., 2012; Poythress, Skeem & Lilienfeld, 2006; Porter, 1996). However, it would be pernicious to assume that exposure to

parental criminality shares a direct and causal relationship with psychopathy. In many cases, exposure to such adverse environmental variables does not result in criminal behaviour.

Criminal history. A large body of criminal justice research points to a robust relationship between having a criminal record and the likelihood of committing persistent unlawful behaviours (Kjelsberg & Friestad, 2008; Mitchell, Wilson, & McKenzie, 2007). Research suggests that psychopathy is an important predictor for recidivism, and more specifically, for violent recidivism (Dolan & Doyle, 2000; Hart & Dempster, 1997; Hemphill et al., 1998; Lyon, Hart, & Webster, 2001; Serin & Amos, 1995). In terms of female offenders, Kimonis, Frick, Cauffman, Goldweber and Skeem (2012) could not find any relationship between PCL-R emotional detachment subscales and recidivism, which led them to question the utility of this tool for risk assessment in this cohort. This finding underscores the need for further research among women, as differential performance in specific facets of the test does not necessarily undermine its utility for risk assessment. Alternatively, the emotional expression of females may manifest in more nuanced forms, which may not be detected easily by PCL-R items as they stand.

Studies have also found notable differences in the types of crimes committed by psychopathic and non-psychopathic offenders respectively. In their study of 317 federal offenders, Porter et al. (2001) found that psychopathic offenders consistently committed more violent and non-violent crimes than their non-psychopathic counterparts from late adolescence to their late 40's. As such, one would expect psychopathic offenders to exhibit criminal careers that are more extensive and diverse. In terms of the types of offences committed, psychopaths are more likely to be involved in a wider range and higher rate of violent behaviours than non-psychopathic offenders are (Piquero et al., 2012). Hicks et al. (2010) found that primary psychopaths had a higher number of nonviolent criminal charges than control offenders had, while secondary psychopaths exhibited significantly more violent criminal charges than control offenders did. A possible explanation for these findings may derive from the deficits secondary psychopaths exhibit with regard to controlling impulses and regulating emotion, which may predispose them toward forms of criminal activity that are more reactive and violent.

Marital Status. Criminal justice researchers have assessed the effect of marriage on the likelihood of one becoming involved in criminal activities, and general findings

suggest that marriage functions as a protective factor in this regard (Benda, Toombs, & Peacock, 2003; Gibson, Roberson, & Daniel, 2009; Visher, Knight, Chalfin, & Roman, 2009). These findings have significant implications in the context of psychopaths, who are less likely to maintain long-term marital relationships, demonstrating a pathological penchant for promiscuous and superficial, short-term relationships instead (Hare, 2003). However, it warrants mentioning that the monogamous marriage is not a universal cultural ideal and has its origins in Western Judeo-Christian discourses. In diverse multicultural contexts such as South Africa, relational patterns vary widely from monogamous to polygamous and from common law to traditional/religious. As such, the imposition of the Western standard of monogamy may not be an accurate index for measuring psychopathy in a cultural context where multiple relationships are a cultural norm.

Abuse. Ill treatment during childhood has been linked widely to symptoms of personality disorder, including psychopathy in both genders (Farrington, 2003; Weiler & Widom, 1996). Investigations into criminal pathways have consistently found that environmental factors like parental rejection, neglect and abuse are associated with later antisocial behaviour and psychopathy (Baron-Cohen, 2011; Graham, Kimonis, Wasserman, & Kline, 2012; Loper, Mahmoodzadegan, & Warren, 2008; Marshall & Cooke, 1999; Piquero et al., 2012; Teicher, 2000). Porter (1996) theorized that physical and sexual abuses are critical environmental determinants in the formation of secondary psychopathy. Poor supervision and a disruptive family environment have been found to increase the odds of both the impulsive/irresponsible lifestyle and antisocial factors in adulthood, which are associated with secondary psychopathy, but not the interpersonal and affective factors, which are associated more with primary psychopathy (Farrington, 2007; Poythress et al., 2006). Hicks et al. (2010) found that a significantly higher proportion of secondary psychopaths experienced childhood physical abuse when compared with control prisoners, while a significantly greater proportion of primary psychopaths experienced childhood sexual abuse in comparison with control prisoners. Weizmann-Henelius et al. (2010) found that the association between sexual abuse and psychopathy was significant for females but not for males. Offender data have revealed that females are at a far greater risk of experiencing childhood and adult abuse (Porter, 1996; Loper et al., 2008). However, this association is largely

correlational in nature and it is important to note that abuse does not predispose all sufferers to psychopathic forms of behaviour.

Suicide attempts. A positive relation has been found between psychopathy and suicide attempts in samples of imprisoned men and women (Anderson et al., 1999; Verona, Patrick & Joiner, 2001; Verona, Hicks, & Patrick, 2005). For example, Anderson et al. (1999) found high PCL-R scores to be associated with a greater number of past suicide attempts. Research has also found that the behavioural/social deviance aspects of psychopathy (factor two) significantly relate to a history of suicide attempts among males (see Douglas, Herbozo, Poythress, Belfrage, & Edens, 2006; Verona et al., 2001) and females (see Kimonis et al., 2012). These results point toward a possible relationship between suicidal attempts/behaviour and secondary psychopathy.

Socioeconomic and employment status. Low socioeconomic status (SES) has been shown to be a good predictor of psychopathic traits in adulthood. Hicks et al. (2010) found less privileged familial status (as assessed by the father's occupational status) among antisocial offenders and psychopaths. Walsh and Kosson (2007) found that low SES moderated the effect of psychopathy on violent behaviour among white Americans. Mealey (1995) argued that secondary psychopaths were more likely to come from lower-class backgrounds, whereas primary psychopaths were likely to come from higher SES (see Babiak, Neumann, & Hare, 2010). It could be argued that the majority of offenders reflect a low SES demographic and may be more likely to exhibit clinical symptomatology concomitant with secondary psychopathy. Unemployment rates in South Africa are amongst the highest in the world, which is of concern in the light of its aforementioned relationship with criminal behaviour (Census, 2011). However, it is important to note though that lower SES does not predict psychopathic behaviours but shares an important association. As such, there is great danger and potential prejudice in extrapolating this association to broader sectors of South Africa where many people living in dire poverty do not engage in criminal activity.

Alcohol and drug abuse. Research has shown that psychopaths are more likely than non-psychopaths to have a lifetime diagnosis of alcohol disorder and any drug-related disorder (Smith & Newman, 1990). Specific correlations have been found between alcohol/substance abuse and the antisocial/lifestyle dimension of the disorder (factor two) among males (Crocker et al., 2005) and females (Hicks et al.,

2010; Kennealy et al., 2007). This corroborates findings elsewhere in the empirical psychopathy base and underlines a potential relationship between components of secondary psychopathy and alcohol/drug abuse-related behaviours in these groups.

One must reflect on an important caveat at this point in the discussion, namely that many of the above-mentioned demographic variables associated with psychopathy are also linked with poverty. South African poverty levels are among the highest in the world; therefore, it would be very difficult to systematically disaggregate the role of poverty from psychopathy in the present non-experimental research design.

Methodology

Participants and procedures

To ensure that the rights of the participants were upheld, permission for the current study was granted by two ethical committees representing the Department of Psychology and the Faculty of Humanities at the University of the Free State. Following a review of the research proposal, the Department of Correctional Services also granted permission to conduct the study. A non-experimental quantitative research design was employed to collect data from three correctional centres located in three South African provinces.

The respective correctional centres used in the study were the Wesbank Female Correctional Centre in the Eastern Cape, Kroonstad Female Correctional Centre in the Free State and Johannesburg Female Correctional Centre in Gauteng. Prior to the recruitment of offenders into the sample, a meeting with the prison-based psychologists and social workers was requested. These meetings were conducted with the aim of selecting offenders who were most likely to exhibit features of psychopathy. This was achieved by sending letters to the various offender institutions providing an outline of the type of offenders required for the study. In meetings with the prison psychologists, social workers and prison staff, the selection criteria for the sample were further explained.

It is important to note that the focus of this study was not to assess the prevalence of psychopathy in the general prison population *per se*. Instead, we were interested specifically in the manifestation of psychopathy among female offenders in South Africa. This objective was pursued with a view to determining the relationship

between PCL-R psychopathy and specific demographic variables. Following the meetings with the prison staff, purposive sampling was used to select the sample.

The sampling frame originally comprised 122 offenders from the three correctional centres. A few participants opted not to participate in the study, for a number of different reasons (i.e. privacy, work schedule conflicts etc.). In the end, 108 female offenders participated in the study (89% response rate). Each offender was interviewed separately once she had signed a consent form whereby she agreed to participate in the study and provided permission for the use of the information. Interviews were conducted by the principal researcher and co-supervisor with the assistance of three trained translators. Two of the translators possessed postgraduate degrees in the social sciences, while the third was a licensed psychologist. The majority of the PCL-R interviews were conducted in English, Afrikaans, Xhosa and Sesotho. The data collection phase of this research spanned a period of eight months.

Measures

The following measures were implemented in the present study:

- 1) A self-compiled biographical questionnaire that included information regarding demographic factors such as age of first offence, family background, educational levels, abuse history, antisocial history and other criminogenic variables.
- 2) The revised version of the *Psychopathy Checklist* (PCL-R; Hare, 1991, 2003). This instrument is the most validated of all psychopathy measures and is deemed the “gold standard” of psychopathy assessment worldwide (Casey, Rogers, Burns, & Yiend, 2013). PCL-R assessments of all offenders were based on the results of an interview with the offender. In addition, for the majority of offenders, a review of file records consisting of psychological evaluations, police records, criminal history, family background and other criminogenic data was conducted. To enhance the reliability and validity of the PCL-R administration, one of the present research supervisors (Loots) underwent an accredited four-day training program in Edinburgh, Scotland, under the tutelage of David Cooke, an expert on psychopathy. Loots conducted similar training sessions with the principal researcher and translators to ensure reliability and validity in the

administration of the instrument. Training entailed extensive introduction to theories and studies of psychopathy as well as ratings of case summaries. International research indicates that the PCL-R has high inter-rater reliability with interclass correlations ranging from .87 to .95 and good internal consistency ranging from .83 to .91 (Vitale & Newman, 2001). There is also evidence of good reliability of the PCL-R, as measured by intra-class correlations of .95 and above, when used with a female sample (Vitale, Smith, Brinkley, & Newman, 2002). No empirical studies in South Africa employing the PCL-R to corroborate the psychometric properties found in the present study could be traced (see Article 2 for a complete analysis of the reliability and validity of the PCL-R).

Conducting of PCL-R

Each of the correctional centres used in this study houses a diverse range of cultures, ethnicities and even nationalities. As such, the administration of the instruments presented some serious challenges with regard to potential language and comprehension difficulties. To circumvent this issue, trained interpreters were used in conducting the PCL-R interview. The translators assisted in the correct interpretation of questions and helped contextualize specific terms and phrases. The PCL-R did not present too many challenges in this regard, as it was in the form of a semi-structured interview. As a result, the test invites a certain degree of dialogue, which allows for clarification and contextualization of participant feedback.

Statistical analysis

SPSS version 21 (IBM Corp, 2012) was employed to analyze the data. Recent taxometric analyses revealed that psychopathy represents a dimensional construct rather than a categorical construct and should therefore be measured on a continuum (Marcus, Johns, & Edens, 2004). To reflect the dimensional nature of psychopathy, on the basis of their PCL-R total scores, the participants were divided into three groups representing scores ranging from 0-18 (non-psychopathic), 19-24 (medium psychopathic) and 25-40 (advanced psychopathic) (cf. Hicks et al., 2010; Hildebrand & De Ruiter, 2004). Owing to the categorical nature of the variables under analysis, nonparametric statistics were used (Pallant, 2005). Specifically, a

chi-square test for independence was used to identify significant association among the three groups in terms of the selected demographic variables (Field, 2009).

Results and discussion

The majority of the participants in this study were drawn from the Wesbank (42%) and Kroonstad (38%) correctional centres for women located in the Eastern Cape and Free State provinces, respectively. A further 20% of the sample came from the Johannesburg Women's Correctional Centre in Gauteng. Using the lower diagnostic score of 25 recommended for studies with woman, the prevalence rate of psychopathy in the current sample was 19%. A further 30% of the sample formed the medium-range psychopathic group, which comprised offenders who scored in the 19-24 range on the PCL-R. Finally, 51% of the offenders fell in the non-psychopathic group, which comprised offenders who scored 18 and lower on the PCL-R. It may be that the prevalence rates of psychopathy in the present study are inflated by the purposive sampling procedures used to maximize the inclusion of psychopathic offenders in the study. As such, the actual rates of psychopathy in South African offender institutions may be much lower than those found in the present study.

Most of the participants were between the ages of 21 and 40, followed by those between 41 and 63 years. Afrikaans was the most spoken language, followed by Xhosa, English, Sesotho, Zulu, Tswana, Northern Sotho, Ndebele and Venda. In terms of the marital status of the offenders, 41% indicated that they had been married at least once, while a further 31% noted that they were involved in a long-term relationship. Just over one quarter of the sample (27%) noted that they had many short-term relationships. The majority of the sample (87%) indicated having one (24%) or at least two or more children (63%). The majority of the participants had completed secondary education and received some tertiary education (64%). These findings are comparable to findings on educational attainment among South African females (see Artz, Hoffman-Wanderer, & Moul, 2012) and male offenders (Loots & Louw, 2010), as well as to international research (Lehmann & Ittel, 2012). There are a number of explanations for the high levels of education found in the sample. First, participants required a minimum of Grade 10 to complete the MCMI-III, one of the instruments used in the broader research project. Strict imposition of these exclusion criteria on the offender population would have limited access to our desired sample severely. As such, the offenders' reading and comprehension ability

as reported by prison staff was used for inclusion into the sample, irrespective of formal educational history. Second, the selected sample is not representative of the wider prison population, which is also reflected in the disproportionate ethnic composition of the sample. Malingering may have been another plausible explanation for the high percentage of educated participants. Research suggests that offenders with psychopathic features are more inclined to mangle than those without psychopathy (Edens, Buffington, & Tomicic, 2000; Hare, 2003; Ryan, 2010).

The diversity of criminal offences was grouped into economic, homicide and other categories. Economic crimes represented just over half of the sample (52%), followed by homicide, which comprised a further 46% of the sample. The majority of the sample (73%) comprised first-time offenders, while just over a quarter of the sample (27%) had a history of criminal offences prior to their current sentence. The vast majority of recidivists were caught for economic crimes in subsequent offences. In terms of the participants' ages at the time of their first offences, 32% were under the age of 25, 36% were between the ages of 26 and 36, while a further 32% were over the age of 37. The majority of the sample (80%) indicated that their family had not been involved in criminal activity. The remaining 20% noted that either their parents or their siblings had been involved in criminal activity.

Just under half of the participants (48%) were serving sentences of less than 10 years, while a further 38% were serving sentences of 11 to 20 years. Just fewer than 10% of the participants had received life sentences. In terms of the employment status of the offender population under study, 49% indicated that they were either unemployed or intermittently employed. Just over half of the population (51%) noted that they had regular employment. When participants were asked about how they felt about the crimes committed, 44% felt that either the system had failed them or circumstances had led them to commit the crime. Just over half of the sample (56%) expressed regret and responsibility for their crimes. The majority of the sample (65%) indicated that alcohol and/or drugs played no role in the crime committed, while 27% indicated that alcohol and/or drugs had played a great role in the crime.

In terms of abuse histories, just over two thirds of the sample (68%) indicated that they had experienced either child or adult abuse. Of the offenders who had reported abuse, 35% reported experiencing physical abuse, 12% sexual abuse and 21% reported experiencing both psychical and sexual abuse. Just under a quarter of the sample (23%) indicated that they had attempted suicide once, while a further

23% of the sample reported trying to commit suicide two or more times. Table 1 below represents a summary of the demographic data of the sample.

Table 1: Demographic characteristics

Characteristic	Sample (N = 108)	
	No.	%
Correctional centre (province) (N = 108)		
Wesbank Correctional Centre (Eastern Cape)	45	42
Kroonstad Correctional Centre (Free State)	41	38
Johannesburg Correctional Centre (Gauteng)	22	20
Offender group (N = 108)		
Non-psychopathic	55	51
Medium psychopathic	32	30
Advanced psychopathic	21	19
Age (N = 107)		
20-40	62	58
41-63	45	42
Ethnicity (N = 108)		
Xhosa	27	25
Sesotho	9	8
Afrikaans	34	31
Tswana	5	5
English	23	21
Zulu	7	7
Northern Sotho	1	1
Venda	1	1
Ndebele	1	1
Marital status (N = 108)		
Single	3	3
Many short-term relationships	28	26
One or more marriages	44	41
Long-term relationship	33	31
Number of children (N = 108)		
None	14	13
One	26	24
Two or more	68	63
Level of education (N = 108)		
None	2	2
Some primary	14	13
Some secondary	28	26
Completed secondary	35	32
Tertiary	29	27
Family trouble with the law (N = 108)		
None	86	80
Father	3	3
Mother	1	1
Brother	10	9
Sister	2	2
2 or more family members	6	5
Age of first offence (N = 104)		
25 and below	33	32
26-36	37	35
37 and above	34	33
History of previous offence (N = 108)		
None	79	73
1-2	20	18
2-4	2	2

Characteristic	No.	%
5-6	1	1
7 and more	6	6
Current offence (N = 108)		
Economic	52	48
Homicide	46	43
Other	10	9
Length of current sentence (N = 108)		
Less than 10 years	51	47
11 to 20 years	41	38
21 to 40 years	7	7
Life	9	8
Employment status (N = 108)		
Unemployed	17	16
Intermittent employment	36	33
Regular employment	55	51
Remorse/guilt (N = 108)		
System failed me	14	13
Circumstances	33	31
Regret/responsibility	60	56
Alcohol/drug influence on crime (N = 108)		
No role	70	65
Social drinking	9	8
Big role	29	27
History of abuse (N = 108)		
No abuse	35	32
Childhood abuse	17	16
Adult/domestic abuse	28	26
Child and adult abuse	28	26
Physical/sexual abuse or both (N = 108)		
None	34	32
Physical abuse	38	35
Sexual abuse	13	12
Physical and sexual abuse	23	21
History of suicide attempts (N = 108)		
None	59	54
Once	25	23
2-4	19	18
5 and more	5	5
Economic background (N = 108)		
Low	44	41
Average	56	52
High	8	7

The majority of the sample (93%) described their socio-economic status as either low (41%) or average (52%), while a small percentage (7%) described their economic background as high. Again, this demography is disproportionate to the broader socio-economic strata in South Africa. The self-reported SES levels may be a legacy of the researchers having used a very unique clinical sample as well as potential malingering in the sample. Robust research evidence demonstrates the notoriety of psychopaths for dishonesty (see Edens et al., 2000; Hare, 2003; Porter & Woodworth, 2007). This may have had an effect on some of the findings with regard to the cohort of offenders in the present study.

A chi-square test for independence was used to determine if any significant associations existed between the three groups and the demographic variables under study. An important caveat warrants mentioning at this stage of the analysis. Chi-square tests for independence require a minimum cell count in order to compute group comparisons. Many of the categories in the demographic table fell below this required cell count threshold. For example, certain language groups were represented by only one participant. To circumvent the issue, some categories were merged for the purpose of increasing the cell sizes, which would allow for meaningful comparison between the groups. For example, the education categories of “none”, “some primary”, and “some secondary” became “some primary/secondary”. In other cases, certain categories were completely excluded as it would not have made any sense to combine them with other similar categories. For example, only the “English”, “Xhosa” and “Afrikaans” language/ethnic groups were retained, as their category sizes allowed for comparisons between the groups.

The chi-square test for independence results (Table 2 below) indicated significant group differences with regard to the following variables: age of first offence, marital status, number of children, child/adult abuse history, suicide attempts, and employment history. The effect sizes of each of these significant relationships were in the moderate to large range, which underlines the practical significance of the results (Cohen, 1988). The following section will elucidate the significant relationships between these demographic variables and the three offender groups in greater depth.

Age of first offence. Significant group differences were detected in terms of the offender’s age at first offence: $X^2 (4, N = 104) = 15.539, p = .004, w = .38$. In the advanced-psychopathic group, 52% of the offenders were likely to be in the age category of 25 and below, whereas only 20% of the non-psychopathic group and 38% of the medium-psychopathic group were likely to fall in this age category. A high proportion (48%) of medium-psychopathic offenders fell in the 26 to 36 age category at the time of their first offence. The majority of non-psychopathic offenders (48%) fell in the age category of 37 and above. These findings are in line with the literature on psychopathy, which suggests that psychopaths exhibit extensive criminal careers that are likely to stretch back into a history of early offending behaviour (Hare, 2003).

Table 2: Chi – square test for significant group differences

Variable	Non- psychopathic		Medium psychopathic		Advanced psychopathic		X ²	d/f	p-value
	n	%	n	%	n	%			
<u>Age</u>									
20-40	27	50	19	59	16	76	4.294	2	.117
41-63	27	50	13	41	4	24			
<u>Age of first offence</u>									
25 and below	11	20	11	38	11	52	15.539	4	.004**
26-36	17	32	14	48	6	29			
37 and above	26	48	4	14	4	19			
<u>Language</u>									
Xhosa	12	26	12	50	3	21	6.961	4	.138
Afrikaans	20	44	9	37	5	36			
English	14	30	3	13	6	43			
<u>Marital status</u>									
Single	2	4	0	0	1	5	18.127	6	.006**
Many short-term relationships	7	13	10	31	11	52			
One or more marriages	29	53	13	41	2	10			
Long-term relationship	17	31	9	28	7	33			
<u>No. Of children</u>									
None	4	7	5	16	5	24	11.085	4	.026*
One	11	20	6	19	9	43			
Two or more	40	73	21	66	7	33			
<u>Level of education</u>									
Some primary/secondary	18	33	14	45	10	48	7.449	4	.112
Completed secondary	23	43	5	16	7	33			
Tertiary	13	24	12	39	4	19			
<u>Length of current sentence</u>									
Less than 10 years	32	58	14	44	4	24	7.576	4	.108
11 to 20 years	17	31	13	41	11	52			
20 years and above	6	11	5	15	5	24			
<u>Current offence</u>									
Economic	28	54	17	61	7	39	2.123	2	.346
Homicide	24	46	11	39	11	61			
<u>Remorse</u>									
System failed	5	9	7	22	2	9	5.592	4	.232
Circumstance	14	26	10	31	9	43			
Regret	35	65	15			48			
<u>SES</u>									
Low	20	36	14	44	10	48	3.128	4	.537
Middle	29	53	16	50	11	52			
High	6	11	2	6	0	0			

Variable	Non- psychopathic		Medium psychopathic		Advanced psychopathic		X ²	d/f	p-value
<u>History of abuse</u>									
No abuse	25	45	10	31	0	0			
Childhood abuse	6	11	5	16	6	29			
Adult abuse	12	22	12	37	4	19	22.451	6	.001**
Child and adult abuse	12	22	5	16	11	52			
<u>History of suicide attempts</u>									
None	38	69	16	50	5	24			
Once	11	20	9	28	5	24	18.229	4	.001**
2 or more	6	11	7	22	11	52			
<u>Employment status</u>									
Unemployed	5	9	4	13	8	38			
Intermittent employment	16	29	15	47	5	24	13.682	4	.001**
Regular employment	34	62	13	40	8	38			
<u>Alcohol abuse</u>									
No role	37	67	20	62	13	62			
Social drinking	4	7	4	13	1	5	1.577	4	.813
Big role	14	26	8	25	7	33			

These findings also support the argument that the severity of psychopathy appears to diminish over time (see Lehmann & Ittel, 2012; Ullrich et al., 2003). However, the following research only provided a cross-sectional snapshot of the data, and further longitudinal studies are needed to assess this trend systematically.

Marital status. In terms of the marital status of the various offenders, the chi-square analysis found that there were significant differences between the three groups of offenders, $X^2(2, N = 108) = 18.127, p = .006, w = .41$. In the non-psychopathic group, 84% of the offenders noted that they were either married or involved in a long-term relationship. This figure contrasts sharply with the offenders in the advanced psychopathic group, where 52% noted that they had been involved in many short-term relationships. A higher proportion of the medium psychopathic group also reported having many short-term relationships (31%) compared to the non-psychopathic group (13%). These findings are in line with the general literature, which reports that psychopaths are likely to engage in more short-term and superficial relationships (Hare, 2003). However, the majority of the data supports this

relational trend in male psychopaths; therefore, further studies concerning the relationship between females and promiscuity is needed.

Number of children. Significant differences between the three groups in terms of the offenders' number of children were found, $X^2(2, N = 108) = 11.085, p = .026, w = .32$. Specifically, a greater proportion of the advanced psychopathic group were likely to have one child (43%) in comparison with the non-psychopathic (20%) and medium psychopathic groups (19%). However, the non-psychopathic (73%) and medium psychopathic (66%) groups were more likely than the psychopathic group (33%) to report having two or more children. Research describing the childbearing trends of psychopathic offenders compared to those of non-psychopathic offenders is scant. A tentative extrapolation to account for these trends in the present dataset may be derived from the offenders' marital status. Specifically, non-psychopaths and potentially medium psychopaths as a result of exhibiting a greater tendency toward marital and long-term relationships are likely to have larger families. Psychopaths, on the other hand, reported a greater frequency of short-term relationships (Hare, 2003). This could potentially result in only one child from a prematurely ended relationship. An additional explanation may be that psychopaths have fewer opportunities to procreate because of longer sentences and early offending behaviour. These assertions are speculative at best, and further research into the childbearing practices of psychopathic offenders is clearly required to gain better insight in this regard.

Child/adult abuse history. In terms of the offenders' reported experiences of abuse, statistically significant differences were found between the groups: $X^2(6, N = 108) = 22.451, p < .001, w = .45$. Notably, the advanced psychopathic offenders all reported experiencing abuse as a child or adult. Specifically, of the advanced psychopathic group, 29% reported experiencing child abuse, 19% experienced adult abuse and the remaining 52% reported experiencing both child and adult abuse. This is in line with research findings that neglect and abuse are associated with later antisocial behaviour and psychopathy (Graham et al., 2012; Loper et al., 2008). Further, neglect and abuse have been conceptualized as one of the primary etiological pathways into secondary psychopathy (Piquero et al., 2012; Porter, 1996; Ross, Bye, Wrobel, & Horton, 2008; Skeem, Johansson, Andershed, Kerr, & Loudon, 2007; Vidal, Skeem, & Camp, 2009). According to Porter (1996), secondary psychopaths acquire the core emotional detachment of psychopathy as a

consequence of experiencing physical or sexual abuse, which leads them to disengage their capacity for forming emotional bonds. This contention carries important albeit tentative etiological implications for the present study, as a significant proportion of the medium and advanced psychopathic offenders reported histories of abuse. An important caveat warrants mentioning at this point, namely the issue of malingering among psychopathic offenders (Hare, 2003). It has been found that psychopathic offenders may over report negative symptoms and experiences in an attempt to mitigate themselves from their actions (Ryan, 2010). This has particular relevance in the context of psychopathy where greater degrees of manipulation and pathological lying are likely to manifest.

Suicide attempts. Significant group differences regarding history of suicide attempts among the three groups of offenders were reported: $X^2(4, N = 108) = 18.229, p < .001, w = .41$. The advanced psychopathic groups (76%) demonstrated a significantly higher percentage of suicide attempts compared to the non-psychopathic (33%) and medium psychopathic (50%) groups. Research has shown a positive correlation between psychopathy and suicide in samples of imprisoned men and women (Verona et al., 2001; Verona et al., 2005). The finding of higher rates of suicide attempted in the medium psychopathic and especially the advanced psychopathic groups in this study provide additional evidence for such a relationship existing in the South Africa context. The finding of high rates of attempted suicide in the medium psychopathic and advanced psychopathic groups may be considered in the context of the high abuse rates experienced by these offenders. Kimonis et al. (2012) found that abuse histories shared a significant relationship with suicide-related behaviours in female psychopathic offenders. The authors further reported finding a significant relationship between suicide-related behaviours and secondary psychopathy. Specifically, the antisocial subscales (factor two) of the PCL-R were found to be associated more strongly with suicide-related behaviour. Such findings make sense in the context of the phenotypic expression of secondary psychopathy where a greater degree of impulsive behaviours and emotional dysregulation persist. Secondary psychopathy has also been associated with a greater presence of anxiety, mood and other comorbid disorders that may increase suicide-related behaviours (Vidal et al., 2009).

Employment status. Finally, significant group differences were found in terms of the employment status of the three groups: $X^2(4, N = 108) = 13.682, p < .001, w =$

.36. Notably, the advanced psychopathic (38%) group reported higher rates of unemployment compared to the medium psychopathic (13%) and non-psychopathic (9%) groups. It is important to note that the resultant social disadvantage and potential poverty stemming from unemployment have been outlined as a potential etiological pathway into secondary psychopathy (Graham et al., 2012). Further, when one considers the relationship between unemployment and recidivist offender behaviour, it makes sense that the advanced psychopathic group reported higher levels of unemployment than the non-psychopathic and medium psychopathic group did. It is important to note that the higher unemployment rates of the advanced psychopathic group in the present study may also have been related to their younger age at the time of incarceration.

Many of the above associations are particularly interesting in the context of secondary psychopathy, which has been shown to be theoretically related to environmental deprivation/abuse (Graham et al., 2012; Loper et al., 2008; Newman, Maccoun, Vaughn, & Sadeh, 2005); low socioeconomic status (SES)/unemployment (Porter, 1996; Walsh & Kosson, 2007) and impulsive risk-taking behaviours i.e. suicidal behaviour (Verona et al., 2001; Verona et al., 2005). It could be argued that the distillation of demographic data pertaining to the psychopathic offenders in the current study yields a rather compelling image, namely that of the secondary psychopath. Provisional evidence for this association stems from the elevated factor two scores evinced by the medium and advanced psychopathic offenders as well as the specific demographic variables that best delineated these groups. In the following study, the overall sample mean of PCL-R factor one was 6.44, whereas the PCL-R factor two mean was 10.13. Vidal et al. (2009) suggest that primary and secondary psychopaths would score high on PCL-R factors one and two respectively. The following study appears to suggest a stronger presence of secondary psychopathic symptomatology in the sample. It is the position of the author that the concept of secondary psychopathy warrants specific attention in a South African female forensic context where diverse psychosocial determinants need to be considered in elucidating criminal behaviour and attendant psychopathology. It is argued that the psychopathy subtypes represent different causal pathways and manifestations of psychopathy and thus allow for a more nuanced conceptualization of the disorder in a multicultural context such as South Africa. The associational evidence found for secondary psychopathy in the current

study needs to be explored more robustly and systematically by means of experimental and longitudinal research designs.

Conclusion

This study sought to bolster the fight against crime in South Africa by focusing on the clinical entity of psychopathy and its relationship to certain demographic variables in a female forensic context. It became clear from the above-mentioned findings that certain demographic variables share an important association with the clinical entity of psychopathy in female offenders. Specifically, age of first offence, marital status, number of children, child/adult abuse, suicide attempts and employment history shared an empirical association with psychopathic offenders in the present study. Many of these salient relationships were shown to be consistent with international findings among female offender populations. Additionally, distillation of the demographic data in this study appears to provide associational support for the phenotypic expression of secondary psychopathy in the sample. The significance of these findings lies in their offering of fresh empirical insight into the intrapersonal dynamics of crime and their relationship to demographic features. Concerning the limitations of this study, a number of issues warrant mentioning.

First, there are notable concerns regarding the sample size and composition. Specifically, while the sample size of the current study was larger than sample sizes reported in other studies of female offenders, the sample was not amenable to elaborate statistical procedures; therefore, generalization of findings must be done with caution. Merging of the medium and advanced psychopathy groups will allow for the use of more robust statistics in future studies. Further, the results of the present study cannot be generalized beyond the three provinces used in the data-collection process, namely the Eastern Cape, the Free State and Gauteng. The ethnic composition of the present sample is also disproportionate to the broader population demographics, which further undermines the generalizability of the results. This limitation must be considered in the light of the purposive sampling procedures employed. Specifically, recruitment of offenders into our sample was done with a specific view to maximizing the number of offenders who were likely to show elevated scores on psychopathy. Therefore, the strengths of the present study lie in comparing subjects with low, medium and high PCL-R scores with regard to a

number of demographic dimensions, rather than in studying the prevalence of psychopathy *per se*.

Second, no systematic attempt has been made in the present research to disaggregate the two variants of psychopathy, namely primary and secondary psychopathy. Consequently, any extrapolation about which variant of psychopathy is likely to be manifesting in the present sample should be regarded as tentative and exploratory at best. This underlines the need for empirical research in the form of experimental and longitudinal studies. Such methodological enquiries into the heterogeneity of psychopathy will allow for systematic testing of the primary-secondary hypothesis.

Third, there is a risk of circularity in some of the analyses performed, as the PCL-R includes some features related to both criminal and social data obtained by means of the self-compiled questionnaire. Additionally, the accuracy of the information obtained is questionable in the light of the self-report nature of the data collection instruments. Research (Hare, 2003; Ryan, 2010) has shown that psychopaths are likely to engage in negative impression management in an attempt to induce sympathy in the clinician or to exculpate themselves from their crimes. Thus, self-report data on certain variables (i.e. abuse, suicide) need to be evaluated with caution.

In addition to addressing the above-mentioned deficiencies in this study, future research projects should aim to compare psychopathy directly across males and females in South Africa to obtain a more contextually accurate index of gender differences in the disorder. Qualitative research is also required to help bring complexity and depth to the broader quantitative trends found in the present study. This phenomenological understanding of psychopathy is critical in the context of cross-cultural research into the disorder.

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Psychopathy and its relation to Axis I mental disorders in a South African female forensic context

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Psychopathy and its relation to Axis I mental disorders in a South African female forensic context

Abstract

The identification of offenders who meet the criteria for psychopathy and Axis I mental disorders is critical in the context of offender treatment and rehabilitation. This study examines the relationship between female psychopathy, as measured by the Psychopathy Checklist-Revised (PCL-R), and Axis I mental disorders, as measured by the Millon Clinical Multiaxial Inventory-III (MCMI-III), a DSM-IV-aligned assessment tool, in a South African forensic context. Participants included 108 purposively sampled female offenders incarcerated in South Africa. The Kruskal-Wallis H test and Mann-Whitney U test revealed a number of significant differences between levels of psychopathy and Axis I mental disorders. In line with international literature, psychopaths evidenced significantly higher rates of substance abuse compared to non-psychopaths. Additionally, in the present study, the high rate of psychiatric comorbidity across the sample provides tentative support for the phenotypic expression of secondary psychopathy. The current findings underline the need for the adequate implementation of mental health interventions in South African forensic settings. Finally, the issue of malingering warrants specific reflection as it represents an important corollary of elevated psychopathy scores.

Keywords: Psychopathy, Psychopathy Checklist-Revised, Millon Clinical Multiaxial Inventory-III, Axis I mental disorders, secondary psychopathy, malingering, treatment

Introduction

Like many developing countries, South Africa is plagued by dire levels of poverty, marked socio-economic inequalities and extremely high unemployment rates, which in many ways cultivate the conditions for a culture of crime (Altbeker, 2007; Demombynes & Ozler, 2005; South African Police Service Annual Report, 2012-2013). Although the vast majority of crimes are perpetrated by males, statistics have shown that the number of crimes committed by females has increased in recent years (Department of Correctional Services [DCS], 2013). Among the crimes committed by female offenders in South Africa, aggressive and violent crimes are the most prevalent, followed by economic crimes (DCS, 2013). While studies have investigated the socio-economic and environmental variables contributing to violent crime in South Africa (see Demombynes & Ozler, 2005; South African Police Service Annual Report, 2012-2013), there is very little research elucidating the possible mental health issues underpinning criminal behaviour in the country.

Internationally, forensic psychological data available are mainly on male offenders (Watzke, Ullrich, & Marneros, 2006) and the majority of available data from prison surveys are derived from Western populations (Fazel & Danesh, 2002). Disparities in the prevalence of mental disorders in prisons across different countries have also been emphasized (see Anderson, Sestoft, Lillebeak, Mortensson, & Kramp, 1999; Naidoo & Mkize, 2012). Further, studies have shown that comorbidity of disorders is higher among women than it is among men in custodial settings (Singleton, Meltzer, Gatward, Coid, & Deasy, 1998) and in general (Frank, 2000). These findings underline the need for detailed information on mental disorders among female offenders in non-Western contexts.

The current study aims to address this gap in the literature by examining the relationship between psychopathy as defined respectively by the Psychopathy Checklist-Revised (PCL-R; Hare, 1991, 2003) and Millon Clinical Multiaxial Inventory-III (MCMI-III; Millon, Davis, Millon & Grossman, 2009) Axis I mental disorders in a South African female forensic context. Psychopathy represents an important clinical and forensic construct in offender contexts and warrants specific empirical attention. While there is much clinical pessimism around the treatment of this severe personality disorder (see Hobson, Shine, & Roberts, 2000; Maibom, 2014; Meloy, 1988), strong support for the efficacy of clinical interventions aimed at Axis I mental disorders (Gabbard, 2005) remains. As such, the rehabilitation of

clinical psychopaths may be enhanced when interventions are directed toward treatable comorbid Axis I mental disorders (Hilving, 2010). A review of psychopathy in women and attendant Axis I mental disorder relationships will now follow with a view to providing a theoretical background to the present line of enquiry.

Psychopathy in females

Psychopathy is a malignant personality disorder that consists of affective, interpersonal, lifestyle and antisocial features (Dolan & Doyle, 2007; Hicks, Vaidyanathan, & Patrick, 2010; Wynn, Hoiseth & Petterson, 2012). The affective characteristics include shallow affect as well as a lack of empathy, remorse and guilt. Interpersonal characteristics include glibness, grandiosity, pathological lying and manipulation, while the lifestyle/antisocial characteristics include a lack of respect for social norms and rules as well as irresponsible and impulsive, violent behavioural displays (Hare, 2003). Although the majority of psychopathy research concerns male offender samples, several studies in recent years have included female offenders, focusing on prevalence (Hazelwood, 2006; Hemphill, Hare, & Wong, 1998; Logan & Weizmann-Henelius, 2012; Salekin, Rogers, & Sewell, 1997; Warren et al., 2003), severity (Forth, Brown, Hart, & Hare, 1996; Hemphill et al., 1998, Hare, 2003, Lehmann & Ittel, 2012; Neary 1990; Warren et al., 2005), and behavioural differences (Brebner, 2003; Forouzan & Cooke, 2005; Fujita, Diener, & Sandvik, 1991; Grann, 2000; Hicks et al., 2010; Rutherford, Cacciola, Alterman, & McKay, 1997; Salekin, Rogers, & Machin, 2001; Rosenfield, 2000; Vitale, Maccoon, & Newman, 2011; Weizmann-Henelius et al., 2010; see Article 1 for a complete discussion of gender differences in the expression of psychopathy). Collectively, these studies suggest that, although psychopathy occurs more frequently and typically more severe in men, the disorder also exists in women (Wynn et al., 2012). Further, the behavioural expression of the disorder is likely to differ across gender with females showing instability that is more emotional, verbal violence and relational manipulation, and, to a lesser degree than males, criminal behaviour and physical violence (Dolan & Vøllm, 2009). In addition to the abovementioned gender-based permutations found in the construct of psychopathy, there is also evidence to suggest gender differences in comorbidity of psychopathy and Axis I mental disorders. An understanding of these differences is essential in attempts to establish

adequate treatment protocol for female offenders with comorbid psychopathy and Axis I mental disorders.

Psychopathy and Axis I mental disorders

A brief note on the conceptualization of Axis I mental disorders will help elucidate the theoretical assumptions outlined in the present study. The third and fourth editions of the *Diagnostic and Statistical Manual of Mental Disorders* (DSM-III; American Psychiatric Association [APA], 1980; DSM-IV; APA, 1994) make a distinction between Axis I mental disorders and Axis II personality disorders. In the DSM-IV-TR (APA, text revised, fourth edition, 2000), major Axis I mental disorders include the following: schizophrenia; mood disorders; anxiety disorders; dissociative disorders; paraphilias/sexual dysfunctions; substance-related disorders; eating disorders; dementia and other cognitive disorders (Gabbard, 2005). This multiaxial system of differentiating Axis I mental and Axis II personality disorders was implemented to designate the latter as requiring further clinical and research focus (Grohol, 2013). On the basis of the scant empirical support found for fundamental differences between Axis I and II disorders, the DSM-5 (APA, 2013) has moved to a nonaxial documentation of diagnosis (Grohol, 2013). It is important to note that research is ongoing in support of this new nosology, and the current study retains DSM-IV-TR axis distinctions with this in mind. Additionally, the MCMI-III assessment procedure employed to assess the presence of Axis I psychopathology in the current sample is aligned with DSM-IV-TR axis distinctions.

With regard to the relationship between psychopathy and Axis I mental disorders, a dearth of empirical data remains, especially among female offender populations. Studies focusing on the relationship between male psychopathy and DSM-III/DSM-IV Axis I mental disorders have found significant relationships between psychopathy and substance abuse disorders (Hart & Hare, 1989; Hemphill, Hart, & Hare, 1994; Rutherford, Alterman, & Cacciola, 2000; Smith & Newman, 1990), but rarely with any other Axis I mental disorders. Hildebrandt and De Ruiter (2004) found that PCL-R scores were associated positively with Axis I drug abuse/dependence and negatively with schizophrenia and its variants, paraphilias and any other Axis I mental disorder. Robust findings of comorbid alcohol/substance abuse disorders with PCL-R psychopathy across samples emphasize the need for a sharp clinical focus on these areas in the treatment protocol of psychopathic offenders. Swanson (1994)

found higher lifetime comorbidity between Axis II antisocial personality disorder (ASPD), which is historically conflated with psychopathy, and nearly all other disorders, particularly alcohol/drug dependence and depression. Contrary to general findings, Anderson et al. (1999) found anxiety disorders to be pronounced in high-scoring psychopaths. In accounting for these findings, the authors speculated whether these psychopaths paralleled so-called “secondary psychopaths” (p. 37). Secondary psychopathy, associated with PCL-R factor two (lifestyle and antisocial items), is conceptualized as having more of a neurotic basis, which predisposes the sufferer toward a range of impulsive and irresponsible behaviours (Ross, Bye, Wrobel, & Horton, 2008). Because of its neurotic basis, secondary psychopathy has also been associated with a greater presence of anxiety, mood and other comorbid disorders (see Article 1 for a detailed discussion of primary and secondary psychopathy). Skeem, Johansson, Andershed, Kerr, and Louden (2007) corroborate these findings, noting that secondary psychopaths have been shown to manifest more borderline personality features, poorer interpersonal function and more symptoms of major mental disorders.

As noted, the above findings are generally applicable to research among males and are thus not immediately transferable to females. With regard to the prevalence of Axis I mental disorders amongst female offenders, Teplin, Abram, and McClelland (1996) showed that all mental disorders, except for schizophrenia and panic disorder, could be found significantly more often in female offenders than in women in the normal population. Female offenders have also been found to suffer from mental disorders more frequently than men do in North American prisons (Ditton, 1999), as well as in England and Wales (Maden, Swinton, & Gunn, 1994). Higher rates of anxiety (Anderson et al., 1999) and unipolar affective disorders (Fazel & Danesh, 2002) have also been found among female offenders compared to men. Watzke et al. (2006) found that 73.5% of their sample of female offenders reported having had lifetime mental disorders (excluding personality disorders). The female offenders in the sample showed a higher rate of depressive and anxiety-related disorders than their male counterparts did. In general, anxiety-related disorders and emotional instability are more evident in female offenders than they are in males. As such, the issue of internalizing psychopathology may be of particular significance in treating female psychopathic offenders. For instance, Sevecke, Lehmkuhl, and Krishcer (2009) found higher internalizing problem scores in delinquent females than

in males. Furthermore, the authors found positive relationships between suicidal behaviour, which is commonly associated with internalizing psychopathology such as depression and anxiety, and psychopathy total scores in females, but not in males. Logan and Blackburn (2009) also found that females with psychopathic traits are likely to manifest more Axis I psychopathology, particularly mood and psychotic disorders. Some studies have shown a relationship between female psychopathy and alcohol/substance (see Kennealy, Hicks, & Patrick, 2007; Logan & Blackburn, 2009), while Vaughn, Newhill, Delisi, Beaver, and Howard (2008) in their investigation of psychopathic features among teenage delinquent girls were not able to detect any significant relationship between drug abuse and psychopathy. It is important to consider that drug accessibility likely would have been more difficult in this younger cohort, which may explain the non-significant relationships found.

Malingering is an additional caveat that warrants mentioning in the context of psychopathy and comorbid psychopathology. Psychopathic offenders have been shown to demonstrate a strong predilection toward pathological lying and deception (Hare, 2003; Ryan, 2010). Psychopaths have especially been shown to lie where they perceive potential benefit or even just for fun. They have a strong inclination toward impression management and are likely to create a negative impression (faking bad profile) when this is desirable (Willemsen & Verhaeghe, 2012). For instance, psychopaths may overexaggerate symptoms of psychopathology in an effort to exculpate themselves from their criminal behaviour. Thus, the issue of malingering needs to be considered when interpreting psychopathic offenders' performance on self-report inventories of psychopathology such as the MCMI-III.

In sum, evidence of gender-based disparities in psychopathy and Axis I mental disorders as well as the scant empirical data on female psychopathy and comorbidity underline the need for further investigations in this cohort. With a view to the gender differences in psychopathy and the paucity of research on psychopathy and Axis I mental disorders in non-Western settings, the present study has chosen to focus on female offenders in the multicultural context of South Africa. An important contribution of this study is to examine the relationship between psychopathy and Axis I mental disorders with the aim of gaining deeper insight into the specific treatment or rehabilitation needs of this cohort. To assess psychopathy and potential Axis I comorbidity, a number of methodological procedures were implemented. These will be discussed in the following section.

Methodology

Participants and procedures

To ensure that the rights of the participants were upheld, permission for the current study was granted by two ethical committees representing the Department of Psychology and the Faculty of Humanities at the University of the Free State. Following a review of the research proposal, permission to conduct the study was also granted by the Department of Correctional Services (DCS). A non-experimental quantitative research design was employed to collect data from three correctional centres located in three South African provinces.

The respective correctional centres used in the study were the Wesbank Female Correctional Centre in the Eastern Cape, the Kroonstad Female Correctional Centre in the Free State and the Johannesburg Female Correctional Centre in Gauteng. Prior to the recruitment of offenders into the sample, a meeting with the prison-based psychologists and social workers was requested. These meetings were conducted with the aim of selecting offenders who were most likely to exhibit features of psychopathy. This was achieved by sending letters to the various offender institutions providing an outline of the type of offenders required for the study. In meetings with the prison psychologists, social workers and prison staff, the selection criteria for the sample were explained further.

It is important to note that the focus of our research was not to assess the prevalence of psychopathy in the general prison population. Instead, we were interested specifically in the manifestation of psychopathy among female offenders in South Africa. This objective was pursued with a view to determining the relationship between PCL-R psychopathy and comorbid Axis I mental disorders. Following the meetings with the prison staff, purposive sampling was used to select the sample.

The sample comprised 122 offenders from the three correctional centres. For a number of different reasons (i.e. privacy, work schedule conflicts etc.), a few participants opted not to participate in the study. Eventually, 108 female offenders participated in the study (89% response rate). Once the participants had signed consent forms whereby they agreed to participate in the study and provided permission for the use of the information, each offender was interviewed separately. Interviews were conducted by the principal researcher and co-supervisor with the assistance of three trained translators. Two of the translators possessed post-

graduate degrees in the social sciences, while the third was a licensed psychologist. The majority of the PCL-R interviews and MCMI-III administration was conducted in English, Afrikaans, Xhosa and Sesotho. The data-collection phase of this research spanned a period of eight months.

Measures

The following measures were used in the study:

- 1) A self-compiled biographical questionnaire, which included information regarding factors such as age, family background, educational levels, antisocial history and other criminogenic variables.
- 2) The revised version of the *Psychopathy Checklist* (PCL-R; Hare, 2003). This instrument is the most validated of all psychopathy measures and is deemed the “gold standard” of psychopathy assessment worldwide (Casey, Rogers, Burns, & Yiend, 2013). PCL-R assessments of all offenders were based on the results of an interview with the offender. In addition, for the majority of offenders, a review of file records consisting of psychological evaluations, police records, criminal history, family background and other criminogenic data was conducted. No inter-rater reliability data were collected in the present study, but the alpha coefficient of .91 for the PCL-R general factor is similar to that reported by Hare (2003). To enhance the reliability and validity of the PCL-R administration, one of the present research supervisors (Loots) underwent a four-day training program in Edinburgh, Scotland under the tutelage of David Cooke, an expert on psychopathy. Loots conducted similar training sessions with the principal researcher and translators to ensure reliability and validity in the administration of the instrument. Training entailed extensive introduction to theories and studies of psychopathy as well as ratings of case summaries. International research indicates that the PCL-R has high inter-rater reliability with inter-class correlations ranging from .87 to .95 and good internal consistency ranging from .83 to .91 (Vitale & Newman, 2001). There is also evidence of good reliability of the PCL-R, as measured by intra-class correlations of .95 and above, when used with a female sample (Vitale, Smith, Brinkley, & Newman, 2002). No empirical studies in South Africa employing the PCL-R could be traced to corroborate

the psychometric properties found in the present study (see Article 2 for a complete analysis of the reliability and validity of the PCL-R).

- 3) The *Millon Clinical Multiaxial Inventory-III* (MCMI-III; Millon, Davis, Millon, & Grossman, 2009) was used to assess diagnostic comorbidity of Axis I mental disorders among three female offender groups. The MCMI-III assesses 10 clinical syndromes and 14 personality disorders. The instrument is closely aligned with the DSM-IV in terms of the conceptualization of Axis I and II psychopathology. This instrument has been applied in forensic settings and serves as a useful screening tool for personality disorders and clinical syndromes in such settings. International research has demonstrated acceptable levels of reliability for the MCMI-III. Alpha coefficients for the validity scales range from .86 to .95, whereas the alpha levels for the clinical personality scales range from .66 to .89 with a median of .81 (Millon, Davis, Millon, & Grossman, 2009). No studies using the MCMI-III in a South African female forensic context could be traced to compare the present findings on rates of comorbid psychopathology.

Conducting of PCL-R and administration of MCMI-III

Each of the correctional centres used in this study houses a diverse range of cultures, ethnicities and even nationalities. For this reason, the administration of the instruments presented some serious challenges with regard potential language and comprehension difficulties. To circumvent this issue, trained interpreters were used in conducting the PCL-R interview and administration of the MCMI-III. The translators assisted in the correct interpretation of questions and helped contextualize specific terms and phrases. The PCL-R did not present many challenges in this regard, as it is in the form of a semi-structured interview. Consequently, the test invites a certain degree of dialogue, which allows for clarification and contextualization of participant feedback. Certain MCMI-III items were paraphrased to make them more appropriate to the South African context. Caution was taken to ensure that paraphrased components of MCMI-III statements did not affect the validity of the instrument. For instance, changes from “across the Atlantic” to “overseas” did not affect the underlying meaning of this MCMI-III item but simply afforded the participants a contextually closer understanding.

Statistical analysis

SPSS version 21 (IBM Corp, 2012) was employed to analyze the data. Recent taxometric analyses reveal that psychopathy represents a dimensional rather than a categorical construct and therefore should be measured on a continuum (Marcus, Johns, & Edens, 2004). To reflect the dimensional nature of psychopathy, the participants' PCL-R total scores were divided into three groups representing scores ranging from 0 to 18 (non-psychopathic), 19 to 24 (medium psychopathic) and 25 to 40 (advanced psychopathic) (cf. Hicks et al., 2010; cf. Hildebrand & De Ruiter, 2004). The rationale behind this categorization was based on research supporting a score of 25 as indicative of strong psychopathic traits in females (Hicks et al., 2010; Hilving, 2010; Warren & South, 2006). Owing to the non-normally distributed nature of the data and unequal group sizes, non-parametric statistics were used to conduct the analysis (Field, 2009). Specifically, Kruskal-Wallis *H* tests for independent samples were conducted to determine whether scores (continuous measures) differed significantly between the groups in terms of the presence of Axis I mental disorders (Field, 2009). Post-hoc tests were computed to determine which groups were statistically significant from one another in terms of levels of Axis I mental disorders. Specifically, Mann-Whitney *U* tests were used to conduct the analysis (Field, 2009). To control for increased risk of Type 1 error because of multiple group comparisons, Bonferroni adjustments were calculated to develop alpha levels that are more stringent for determining significance (Pallant, 2005). The alpha level of .05 was divided by the number of group comparisons (.05/3) and yielded a stricter alpha value of .017. This revised alpha level was used to determine significance in the Mann-Whitney analysis.

Results and discussion

An overview of the relevant demographic characteristics of the sample will be presented first (Table 1; see Article 3 for the complete demographic table), followed by Table 2, which discloses the prevalence rates of psychopathy in the current sample. It is important to reiterate that the recruitment of offenders into our sample was done with a specific view to maximizing the number of offenders who were likely to show elevated scores on psychopathy. Because of this purposive sampling procedure, much of the biographical data produced is disproportionate to broader

demographics in South Africa and does not allow for generalizing prevalence rates on psychopathy.

Table 1: Demographic characteristics

Characteristic	Sample (N = 108)	
	No.	%
Correctional centre (province) (N = 108)		
Wesbank Correctional Centre (Eastern Cape)	45	42
Kroonstad Correctional Centre (Free State)	41	38
Johannesburg Correctional Centre (Gauteng)	22	20
Offender group (N = 108)		
Non-psychopathic	55	51
Medium psychopathic	32	30
Advanced psychopathic	21	19
Age of first offence (N = 104)		
25 and below	33	32
26-36	37	35
37 and above	34	33
History of previous offence (N = 108)		
None	79	73
1-2	20	18
2-4	2	2
5-6	1	1
7 and more	6	6
Current offence (N = 108)		
Economic	52	48
Homicide	46	43
Other	10	9
Length of current sentence (N = 108)		
Less than 10 years	51	47
11 to 20 years	41	38
21 to 40 years	7	7
Life	9	8
History of abuse (N = 108)		
No abuse	35	32
Childhood abuse	17	16
Adult/domestic abuse	28	26
Child and adult abuse	28	26
Physical/sexual abuse or both (N = 108)		
None	34	32
Physical abuse	38	35
Sexual abuse	13	12
Physical and sexual abuse	23	21
History of suicide attempts (N = 108)		
None	59	54
Once	25	23
2-4	19	18
5 and more	5	5
Employment status (N = 108)		
Unemployed	17	16
Intermittent employment	36	33
Regular employment	55	51

Table 2: Prevalence of psychopathy

<i>PCL-R score range</i>	<i>Total</i>	<i>% of total n</i>
Non-psychopathic (≤ 18)	55	51
Medium psychopathic (19 – 24)	32	29
Advanced psychopathic (≥ 25)	21	20

Using the lower diagnostic score of 25 as recommended for studies with women (see Hilving, 2010; Warren & South, 2006), the prevalence rate of advanced-psychopathy in the current sample was 19%. On the basis of the score categories utilized in the study (cf. Hildebrand & De Ruiter, 2004), a further 30% of the sample formed the medium psychopathic group, which comprised offenders who scored in the 19-24 range on the PCL-R. Finally, 51% of the offenders fell in the non-psychopathic group, which comprised offenders who scored 18 and lower on the PCL-R.

To better assess the specific Axis I mental disorders in terms of how they differed across the three groups, a Kruskal-Wallis *H* test for group differences was conducted. The Kruskal-Wallis *H* test for group differences revealed significant differences between the three groups of offenders on the following Axis I mental disorders: Bipolar Disorder, Alcohol Dependence, Drug Dependence, Thought Disorder and Delusional Disorder. The results of the analysis are presented in Table 3 below. In the following section, the relationship between psychopathy and specific Axis I mental disorders will be discussed separately.

Bipolar disorder. Statistically significant differences in bipolar disorder across the three groups of female offenders were revealed (Gp1, *n* = 55: non-psychopathic, Gp2, *n* = 32; medium psychopathic, Gp3, *n* = 21; advanced psychopathic), $X^2(2, N = 108) = 11.395, p = .003, r = .33$. The Mann-Whitney *U* test revealed significant differences in levels of bipolar disorder between the non-psychopaths (*Mdn* = 72, *n* = 55) and advanced psychopaths (*Mdn* = 94, *n* = 21), $U = 282, z = -3.43, p < .001, r = .39$.

Table 3: Kruskal-Wallis *H* test results for group differences on Axis I mental disorders

<i>Axis I Mental Disorder</i>	<i>Non- psychopathic (<19) (N=55)</i>	<i>Medium psychopathic (19-24) (N=32)</i>	<i>Advanced psychopathic (>25) (N=21)</i>	<i>X²</i>	<i>df</i>	<i>p-value</i>
	Median	Median	Median			
Anxiety	88	88	89	1.058	2	.589
Somatoform	68	65.50	70	3.254	2	.197
Bipolar	72	76.50	94	11.395	2	.003**
Dysthymia	78	77.50	86	.751	2	.687
Alcohol Dependence	62	71	71	9.528	2	.009**
Drug Dependence	56	63.50	71	17.683	2	.000**
Post Traumatic Stress Disorder	73	68.50	75	1.290	2	.525
Thought Disorder	67	68	74	9.286	2	.010**
Major Depression	87	88.50	92	1.820	2	.403
Delusional Disorder	68	70.50	82	14.043	2	.001**

Note: $p \leq 0.01^{**}$ $p \leq 0.05$

The advanced psychopathic group ($Mdn = 94, n = 21$) did not score significantly higher on bipolar disorder than the medium psychopathic group ($Mdn = 76.50, n = 32$), $U = 242, z = -1.70, p = .088, r = .23$. No empirical research that supports the relationship between bipolar disorder as conceptualized by Millon et al. (2009) and high PCL-R scores could be traced. A review of Millon's conceptualization of bipolar disorder was conducted to help elucidate this finding. The review revealed a strong symptom overlap between Millon's bipolar disorder and PCL-R psychopathy. For instance, the Millon et al. (2009) bipolar criteria of superficial elation, inflated self-esteem, restless overactivity and distractibility, impulsivity, irritability, planning for unrealistic goals, and domineering interpersonal relations all mirror PCL-R items of shallow affect, grandiose sense of self-worth, impulsivity and irresponsibility, poor behavioural controls, lack of realistic, long-term goals and conning/manipulative interpersonal style. Thus, it may be that high PCL-R scorers were more likely to endorse bipolar disorder items as conceptualized by Millon et al. (2009) due to strong symptom overlap, specifically in relation to the lifestyle and behavioural items. In this respect, psychopathy can be seen as a dimensional entity, comprising a myriad of underlying pathology, as opposed to it operating as an ontologically distinct disorder.

Another explanation may have to do with the phenotypic expression of psychopathy and Axis I comorbid clinical disorders in women. As noted, research among female offenders has shown a higher incidence of disorders of mood in this cohort compared to male offenders (Watzke et al., 2006). Logan and Blackburn (2009) also reported high rates of mood and psychotic disorders in their sample of violent female offenders. The notion of increased internalizing psychopathology in female offenders/juveniles carries empirical support (Fazel & Danesh, 2002; Logan & Blackburn, 2009; Sevecke et al., 2009).

There is a paucity of empirical research examining the efficacy of treatment methods for offenders suffering from psychopathy and comorbid Axis I mental disorders. While psychopathy appears to be extremely intractable in the face of clinical interventions, other comorbid mental disorders may be more responsive to treatment. The treatment of psychopathic offenders suffering from comorbid bipolar disorder will likely require extensive psychopharmacological intervention followed by psychosocial support. There is strong support for the efficacy of these treatment modalities with bipolar patients (Clayton, 2008). Psychologists and social workers

working in offender institutions in South Africa may potentially enhance the outcomes of rehabilitating clinical psychopaths when interventions are aimed toward treatable comorbid mental disorders.

Alcohol and drug dependence. Statistically significant differences in alcohol dependence were also revealed across the three groups of female offenders (Gp1, $n = 55$: non-psychopathic; Gp2, $n = 32$: medium psychopathic; Gp3, $n = 21$: advanced psychopathic), $X^2(2, N = 108) = 9.528, p = .009, r = .28$. The Mann-Whitney U test revealed no significant differences in levels of alcohol dependence between the non-psychopaths ($Mdn = 62, n = 55$) and medium psychopaths ($Mdn = 71, n = 32$), $U = 629, z = -2.10, p = .027, r = .23$ as well as between the non-psychopaths ($Mdn = 62, n = 55$) and advanced psychopaths ($Mdn = 71, n = 21$), $U = 343, z = -2.72, p = .061, r = .31$, once the stricter significance threshold of .017 was employed. However, the elevated scores of the medium and advanced psychopathic groups were in expected directions with both groups demonstrating higher scores on alcohol dependence than the non-psychopathic group did. No significant group differences were detected between the medium psychopathic ($Mdn = 71, n = 32$) and advanced psychopathic ($Mdn = 71, n = 21$) groups, $U = 291, z = -.81, p = .413, r = .11$.

Differences were also found between the three groups with regard to levels of drug dependence (Gp1, $n = 55$: non-psychopathic; Gp2, $n = 32$: medium psychopathic; Gp3, $n = 21$: advanced psychopathic), $X^2(2, N = 108) = 17.683, p < .001, r = .40$. In terms of specific group differences, the non-psychopaths ($Mdn = 56, n = 55$) recorded lower scores than the medium psychopaths did ($Mdn = 63.50, n = 32$), $U = 565, z = -2.78, p = .005, r = .30$, and significant differences were also found between the non-psychopaths ($Mdn = 56, n = 55$) and advanced psychopaths ($Mdn = 71, n = 21$), $U = 249, z = -3.82, p < .001, r = .44$.

In line with international findings (see Blackburn & Coid, 1998; Hart & Hare, 1989; Hemphill et al., 1994; Kennealy et al., 2007; Logan & Blackburn, 2009; Smith & Newman, 1990), the present study revealed that medium and high-scoring psychopathic offenders share a robust association with alcohol/substance abuse. In a study assessing psychopathy and alcohol/substance abuse among female offenders in particular, Kennealy et al. (2007) also found support for significant relationships between substance abuse and PCL-R total and factor two scores. Similarly, Logan and Blackburn (2009) reported a significant correlation between psychopathy and alcohol/substance abuse in their sample of violent female

offenders. The association between PCL-R factor two scores, which encompass impulsive and irresponsible behavioural displays and externalizing pathology such as alcohol/substance abuse, makes theoretical sense.

It is important to note that elevated levels of alcohol/substance abuse in psychopathic offenders (obtained through self-report) need to be considered in the context of possible malingering. Offender exculpations of criminal activity based on alcohol/substance use are a well-established trend (Hare, 2003). Further empirical studies are required to assess this relationship systematically. Robust findings of comorbidity between psychopathy and alcohol/substance abuse in offender settings underline the need for prioritization of clinical interventions and support programmes addressing these issues.

The understanding of alcoholism and substance abuse as biopsychosocial diseases calls for both medical and psychosocial interventions (Garbutt, 2008). Prison-based psychologists and social workers will potentially enhance treatment efforts with clinical psychopaths if interventions are directed toward the comorbid treatable alcohol/substance abuse problems.

Thought and delusional disorder. The Kruskal-Wallis H test further revealed a statistically significant difference in levels of thought disorder across the three groups of female offenders (Gp1, $n = 55$: non-psychopathic; Gp2, $n = 32$: medium psychopathic; Gp3, $n = 21$: advanced psychopathic), $X^2(2, N = 108) = 9.286, p = .010, r = .30$. The Mann-Whitney U test revealed no significant differences in levels of thought disorder between the non-psychopaths ($Mdn = 67, n = 55$) and medium psychopaths ($Mdn = 68, n = 32$), $U = 834, z = -.401, p = .681, r = .20$. However, the advanced psychopathic group scored significantly higher on levels of thought disorder ($Mdn = 74, n = 21$) than the non-psychopathic group did ($Mdn = 67, n = 55$), $U = 309, z = -3.13, p = .002, r = .36$.

Statistically significant differences were also found with regard to delusional disorder across the three groups of female offenders (Gp1, $n = 55$: non-psychopathic; Gp2, $n = 32$: medium psychopathic; Gp3, $n = 21$: advanced psychopathic), $X^2(2, N = 108) = 14.043, p < .001, r = .36$. The Mann-Whitney U test did not reveal any significant differences in levels of delusional disorder between the non-psychopaths ($Mdn = 68, n = 55$) and medium psychopaths ($Mdn = 70.50, n = 32$), $U = 649, z = -2.04, p = .042, r = .22$. However, the Mann-Whitney U test did reveal significant differences in levels of delusional disorder between the non-

psychopaths ($Mdn = 68, n = 55$) and advanced psychopaths ($Mdn = 82, n = 21$), $U = 266, z = -3.62, p < .001, r = .50$. Anderson et al. (1999) found that disorders of a psychotic variant occurred most frequently in high-scoring PCL-R groups. Blackburn and Coid (1998) used the PCL-R and the Structured Clinical Interview for Disorders (SCID-II) with a sample of 18 psychopaths and 68 non-psychopaths and found that psychopaths suffered from a variety of Axis I mental disorders, including disorders in the psychotic spectrum such as schizophrenia. Logan and Blackburn (2009) also reported high levels of psychotic disorders in their sample of violent female offenders. In the present study, medium and high PCL-R scorers revealed a similar pattern of psychiatric comorbidity, evincing a greater association with thought and delusional disorder as conceptualized by Millon (2008) than the non-psychopaths did.

Again, such findings need to be considered in the context of higher rates of malingering and faking bad scores among psychopathic offenders (Hare, 2003; Klaver, Lee, Spidel, & Hart, 2009). Psychopaths have been shown to lie easily when they perceive potential benefit or even just for fun. They have a strong inclination to impression management and are likely to create a negative impression (faking bad profile) when this is desirable (Willemsen & Verhaeghe, 2012). As such, overexaggerating of psychopathology of a psychotic variant in the present sample of advanced-psychopaths may serve as a ploy to exonerate them from criminal behaviours as well as engender sympathy in the clinician. Future studies will need to control for the pathological penchant toward deception evinced by psychopathic offenders.

With a view to treatment, a clinical focus on the treatable aspects of disorders of a psychotic variant may assist in the rehabilitation of clinical psychopaths with comorbid thought and delusional disorder. However, further research is required to assess the efficacy of such treatment modalities.

In general, a high prevalence of Axis I psychiatric comorbidity was found in the study sample. Almost 86% of the sample met criteria for at least one Axis I mental disorder, which is comparable with findings elsewhere (Hildebrandt & De Rooter, 2004; Logan & Blackburn, 2009). Additionally, PCL-R psychopathy showed a theoretically consistent pattern of associations with Axis I mental disorders. Specifically, the medium and high PCL-R scorers showed a stronger association with alcohol and drug dependence than the low PCL-R scorers did, which is consistent

with international findings (Blackburn & Coid, 1998; Hart & Hare, 1989; Hemphill et al., 1994; Kennealy et al., 2007; Logan & Blackburn, 2009; Smith & Newman, 1990). As noted, the association between high PCL-R scorers and bipolar disorder as conceptualized by Millon makes sense in the context of female phenotypic expressions of psychopathy and item overlap across the two measures. Finally, the finding of higher rates of thought and delusional disorder among high PCL-R scorers is consistent with international research where high rates of psychotic spectrum disorders have been found in psychopathic offenders (Anderson et al., 1999; Blackburn and Coid, 1998; Logan & Blackburn, 2009). Elevated scores of psychopathology of a psychotic variant may also be a form of negative impression management, which is a common finding among psychopathic offenders (Hare, 2003; Klaver et al., 2009). Treatment initiatives will need to focus on treatable comorbid Axis I mental disorders to enhance the rehabilitation of clinical psychopaths.

Interestingly, in addition to the above-mentioned comorbid psychopathology, the present study also found high rates of anxiety and disorders of mood across the entire sample (see Table 3). This is in contrast with the conceptualization of psychopathy as proposed by Hare (2003), which posits that psychopaths are generally devoid of anxiety and fear. Findings of high rates of anxiety among psychopathic offenders have been reported elsewhere in the empirical corpus on psychopathy (Anderson et al., 1999; Darke, Hall & Swift, 1994; Logan & Blackburn, 2009; Ridings & Luts-Zois, 2013). The concept of secondary psychopathy may be a useful starting point in attempting to elucidate these findings. Although commonly viewed as a unitary construct, some authors (e.g. Vidal, Skeem, & Camp, 2009) have highlighted the heterogeneity of psychopathy by delineating two distinct subtypes of the disorder. Primary psychopathy, which has been associated with PCL-R factor one, has been conceptualized as manifesting in callous, calculating, manipulative and deceitful behaviours, whereas secondary psychopathy, associated with PCL-R factor two, is conceptualized as having more of a neurotic basis, which predisposes the sufferer toward impulsive and irresponsible behaviours (Ross et al., 2008). Research suggests that primary and secondary psychopaths score high on PCL-R factors one and two respectively (Vidal et al., 2009). Logan and Blackburn (2009) found that female secondary psychopaths are likely to manifest more Axis I psychopathology, particularly anxiety, more experiences of childhood abuse, lower

scores on PCL-R factor one and higher scores on PCL-R factor two. In the present study, there was a stronger endorsement of specific factor two items (i.e. impulsivity and irresponsibility items), which is reflected in the higher overall mean score of PCL-R factor two (10.13) compared to factor one (6.44) in the sample. Very few empirical studies systematically examine the relationship between PCL-R factors one and two and the psychopathy subtypes. As such, the theoretical thread between the two remains tenuous and in need of rigorous exploration. However, a growing body of research (e.g. Ross et al., 2008) makes the association, which offers a rationale for its featuring in the present study. As noted, because of its neurotic basis, secondary psychopathy has been associated with a greater presence of anxiety, mood and other comorbid disorders. On close inspection of the demographic data in the present study, one may speculate whether the offenders in the sample parallel what has come to be known as “secondary psychopaths”. In addition to the high rates of comorbid anxiety and mood disorders in the sample, many of the demographic variables in this study implicate possible environmental factors in the pathogenesis of the disorder, which is in line with broader research (Piquero et al., 2012; Poythress, Skeem, & Lilienfeld, 2006; Porter, 1996). Secondary psychopathy has been shown to be theoretically related to environmental deprivation/abuse (Graham, Kimonis, Wasserman, & Kline, 2012; Loper, Mahmoodzadegan, & Warren, 2008; Newman, MacCoon, Vaughn, & Sadeh, 2005), low socioeconomic status (SES)/unemployment (Porter, 1996; Walsh & Kosson, 2007), and impulsive risk-taking behaviours (i.e. suicide) (Verona, Patrick, & Joiner, 2001; Verona, Hicks, & Patrick, 2005). A chi-square test for independence revealed that each of these variables was significantly associated in medium and high PCL-R scorers (unemployment, $X^2 [4, N = 108] = 13.682, p < .001, w = .36$; abuse, $X^2 [6, N = 108] = 22.451, p < .001, w = .45$; and suicide, $X^2 [4, N = 108] = 18.229, p < .001, w = .41$; see Article 3 for a complete analysis of demographic differences across levels of psychopathy). It is important to note that the present data do not allow conclusions to be drawn regarding this critical issue, as correlation does not imply causation. Further experimental research is needed to assess the concept of secondary psychopathy in South African forensic settings empirically.

Conclusion

This study attempted to elucidate the relationship between PCL-R psychopathy and MCMI-III/DSM-IV Axis I mental disorders in a South African female forensic context. Results revealed a pattern of correlations between psychopathy and alcohol/substance abuse that is consistent with international literature. Findings of bipolar disorder in the psychopathic group align with international findings of internalizing psychopathology and mood disorders in this cohort. Finally, elevated scores on disorders of a psychotic variant should be interpreted cautiously in the context of the psychopathic offender's pathological penchant for deception. Alternatively, high rates of psychopathology in the sample may also provide tentative support for the phenotypic expression of secondary psychopathy. It is worth noting that secondary psychopaths are more likely to benefit from psychotherapeutic and psychopharmacological interventions than primary psychopaths (Vidal et al., 2009). This stems from the assumption that secondary psychopathy is a psychosocially embedded condition and is thus more responsive to traditional treatment interventions. The attendant comorbid symptomatology of secondary psychopathy, namely anxiety, depression and emotional instability, is amenable to psychotherapeutic intervention. Psychologists and social workers at the various correctional institutions must take cognizance of these findings. Awareness of the heterogeneous nature of psychopathy and the treatment implications thereof will help erode some of the clinical pessimism around the disorder pervading correctional settings. Furthermore, intervention aimed at treatable comorbid Axis I mental disorders may help enhance the rehabilitation of clinical psychopaths.

A number of limitations warrant consideration when interpreting the results of this study. The first major limitation pertains to the sample size and composition. Even though the sample size of the current study was larger than sample sizes reported in other studies of female offenders, the sample was not amenable to elaborate statistical procedures; therefore, the generalization of findings must be done with caution. Furthermore, the results of the present study cannot be generalized beyond the three provinces used in the data-collection process, namely the Eastern Cape, the Free State and Gauteng. The ethnic composition of the present sample is also disproportionate to the demographics of the broader population, which further limits the generalizability of the results. Limitations regarding the generalizability of the sample must be considered in the light of the fact that recruitment of offenders for

our sample was done with a specific view to maximizing the number of offenders who were likely to show elevated scores on psychopathy. Therefore, the strengths of the present study lie in comparing subjects with low, medium and high PCL-R scores across the spectrum of Axis I psychopathology rather than in studying the prevalence of psychopathy *per se*.

A second major limitation of this study concerns the nature of the measurement instruments used. Research (Hare, 2003; Ryan, 2010) has shown that psychopaths are likely to engage in negative impression management in an attempt to induce sympathy in the clinician or to exculpate themselves from their crimes. Thus, self-report data on levels of psychopathology need to be evaluated with caution. It has also been noted that questionnaires on anxiety and depression measure general distress rather than specific symptoms of anxiety and depression (Clarke & Watson, 1991; Coyne, 1994). Thus, high scores on these measuring instruments may indicate internalized psychopathology but could alternatively indicate general distress without internalized psychopathology (e.g. stress due to prison conditions). In fact, it has been proposed that high psychopathic individuals can experience some level of distress because of negative life experiences such as imprisonment (Frick, Lilienfeld, Ellis, Loney, & Silverthorn, 1999). This may provide an explanation for the lack of discriminant validity evinced between non-psychopaths and psychopaths in the present study on levels of Axis I internalizing pathology (i.e. anxiety and depression).

A third caveat that warrants mentioning is the use of a large portion of MCMI-III profiles where the offender's debasement scores were in a questionable range ($n = 34$). The rationale underlying their inclusion was twofold. First, motivation for their inclusion was based on the fact that none of the profiles ($N = 108$) were found to be invalid based on their invalidity and inconsistency scores. This result may have been because, in the majority of cases, the MCMI-III questions were read out aloud to the participants in their home language to circumvent language difficulties. The presence of the rater in this procedure may have curtailed the formation of possible response sets and random responding. A second motivation for their inclusion derived from the fact that a large portion ($n = 12$) of the debasement profiles were found in the advanced psychopathy group, which was fairly small to begin with ($n = 21$). As a result, the omission of cases from this group undermined meaningful comparisons between the three groups. It is worth noting that the Kruskal-Wallis H test continued

to show statistically robust associations between the groups for drug dependence ($p = .018$) following the omission of offenders with elevated debasement scores.

Studies that have examined the association between PCL-R psychopathy and Axis I mental disorders have found that the diagnosis of psychopathy is rarely significantly associated with Axis I pathology other than substance abuse disorders (Hart & Hare, 1989; Rutherford et al., 2000).

A fourth limitation pertains to the lack of psychometric data provided on the MCMI-III. Further empirical research using the MCMI-III is required to establish whether the conceptualization of psychopathology in this instrument can be transferred to non-Western, female forensic contexts. This is unclear in the present study, as it did not provide an analysis of the psychometric properties of this instrument. A reliability and factor analysis of the existing MCMI-III database will serve as the focus for future articles. Further confounding this issue is the differential conceptualization of mental disorders in the DSM-IV/DSM-5 and the *International Classification of Diseases and Related Health Problems* (10th ed.; ICD-10; World Health Organization [WHO], 2008). Future research needs to establish whether these diagnostic systems represent appropriate and comparable nomenclatures for use in cross-cultural contexts such as South Africa.

Finally, there has been no systematic attempt in the present research to disaggregate the two variants of psychopathy, namely primary and secondary psychopathy. Consequently, any extrapolation about which variant of psychopathy is likely to be manifesting in the present sample should be regarded as tentative and exploratory at best. This underlines the need for future empirical research in the form of experimental and longitudinal studies. Such methodological enquiries into the heterogeneity of psychopathy will allow for systematic testing of the primary-secondary hypothesis.

In addition to addressing the abovementioned deficiencies in the present study, future studies should be carried out in which the characteristics of male and female offenders in South Africa are compared directly. This would facilitate a contextually closer understanding of gender differences in the manifestation of the disorder. The heterogeneity of offender samples in the South African context also warrants consideration in future studies. The complex nature of these enquiries requires information that can be obtained only by an in-depth exploration of people's feelings and experience. This implies that a qualitative approach should be used in future

research studies on psychopathy. Understanding the phenomenology of psychopathy in South African women represents a critical adjunct to large-scale empirical studies. It is hoped that the present research will serve as a catalyst for future phenomenological and empirical enquires into psychopathy in South Africa.

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Psychopathy and its relation to Axis II personality disorders in a South African female forensic context

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Psychopathy and its relation to Axis II personality disorders in a South African female forensic context

Abstract

Cross-culturally, there remains a paucity of research about personality pathology among female offenders. This study aims to address this gap in the forensic psychology empirical base by examining the relationship between female psychopathy, as measured by the Psychopathy Checklist-Revised (PCL-R) and Axis II personality disorders, as measured by the Millon Clinical Multiaxial Inventory-III (MCMI-III), a DSM-IV-aligned assessment tool, in a South African forensic context. Participants included 108 purposively sampled female offenders incarcerated in South Africa. The Kruskal-Wallis H test and Mann-Whitney U test revealed a number of significant differences in levels of Axis II personality pathology between the non-psychopathic, medium psychopathic and advanced psychopathic groups. Importantly, the results support international findings that significantly higher rates of Cluster B personality pathology are found among psychopathic offenders compared to non-psychopathic offenders. These findings carry important treatment implications for staff working with female offenders in South African correctional centres.

Keywords: Psychopathy, Psychopathy Checklist-Revised, Millon Clinical Multiaxial Inventory-III, DSM-5, Axis II personality disorders, Cluster B personality disorders, treatment

Introduction

Some commentators have deemed psychopathy as the first and most salient of the personality disorders (PDs) (Moreira, Almeida, Pinto, & Fâvero, 2014). Empirical focus on the psychopathic personality is in part due to its robust association with aggression, violence, diverse criminal activity and other externalizing pathology (Glannon, 2014; Neumann, Hare, & Newman, 2007; Trull & Durrett, 2005). In the light of these important correlations, clinical research into psychopathy may provide fresh insight into the elevated crime rates plaguing South Africa. Cross-culturally, there remains a dearth of information on personality pathology such as psychopathy, especially in female offenders. This is disquieting in view of widely reported disparities in the expression of psychopathy across gender (Brebner, 2003; Forouzan & Cooke, 2005; Lehman & Ittel, 2012; Logan & Weizmann-Henelius, 2012; Perri & Lichtenwald, 2010; Vitale, Maccoon, & Newman, 2011; Weizmann-Henelius et al., 2010) and culture (Cooke, Michie, Hart, & Clark, 2005; Florez-Mendoza, Alvarenga, Herrero, & Abad, 2008; Shariat et al., 2010; see Article 1 for a complete review of gender and cultural differences in the expression of psychopathy). To address this caveat, the current study examines comorbid relationships between psychopathy and Axis II PDs in a South African female forensic context.

Psychopathy and personality disorder classification

Psychopathy represents one of the most serious personality pathologies and has proven largely intractable in the face of clinical intervention (Harris & Rice, 2006, Maibom, 2014; Moreira et al., 2014). The disorder is defined by a constellation of personality and behavioural features, including a lack of guilt and empathy, shallow emotions, callous and manipulative relationships, grandiosity, impulsivity, and a tendency toward persistent involvement in socially deviant behaviour (Berkout, Gross & Kellum, 2013; Hare, 2003; Wynn, Hoiseth, & Petterson, 2012).

Touted as the “gold standard” for psychopathy measurement and boasting an expansive empirical base, the Psychopathy Checklist-Revised (PCL-R; Hare, 1991, 2003) has been the most widely deployed tool in research on psychopathy to date (Logan & Weizmann-Henelius, 2012). The original PCL-R manual provided extensive data on male offenders and forensic psychiatric patients without making any comparisons in psychopathy across gender (Hare, 1991). By contrast, the second edition of the manual (see Hare, 2003) contains data from over 1200 female

offenders and makes specific reference to the issue of gender in psychopathy assessment (Nicholls, Ogloff, Brink, & Spidel, 2005).

Despite its ubiquity in forensic psychological assessment and conceptualization of offenders, the term “psychopathy” has been largely omitted from the *Diagnostic and Statistical Manual of Mental Disorders* (DSM) (American Psychiatric Association [APA]; 1952, 1968, 1980, 1994, 2000, 2013) and thus remains on the periphery of the formal classification system of psychiatry (Filone, Strohmaier, Murphy, & DeMatteo, 2014).

The DSM is a seminal psychiatric text that outlines and describes diagnostic criteria for the classification of mental and behavioural health disorders (Sadock, Kaplan, & Sadock, 2007). Since the first edition (DSM-I) was published in 1952, the DSM has undergone a number of revisions. A new revision, namely the DSM-5 (fifth edition), was published in May 2013. It is important to note that the DSM-5 was expected to include a diagnostic nomenclature that would have affected the assessment and diagnosis of PDs significantly (Filone et al., 2014). With a view to the personality pathology of psychopathy, the diagnostic criteria for antisocial PD were expected to undergo significant reformulation in order to bring it conceptually closer to psychopathy in terms of overlapping personality and behavioural symptoms. However, the APA rejected most of the proposed changes to PDs, and the DSM-IV classification system was largely retained.

As such, existing nomenclature for the classification of PDs in DSM-5 remains organized around three distinct clusters. Cluster A comprises schizotypal, schizoid and paranoid PDs, all marked by odd and detached behavioural features (APA, 2000). Cluster B PDs, described as the dramatic, erratic and emotional constellation, includes narcissistic, borderline, antisocial and histrionic PDs (Hildebrandt & De Ruiter, 2004). Finally, Cluster C is typified by anxious and fearful personality pathologies that include obsessive-compulsive, dependent and avoidant PDs. In terms of the relationship between PCL/PCL-R psychopathy and DSM-based PDs, a number of interesting patterns have emerged. The following section will review psychopathy and Axis II comorbidity in general before focusing specifically on females.

Psychopathy and Axis II comorbidity

Collectively, studies have repeatedly demonstrated positive correlations between PCL-R psychopathy scores and Cluster B PDs (Hildebrandt & De Ruiter, 2004) and negative correlations between PCL-R psychopathy scores and Cluster C PDs (Rutherford, Cacciola, Alterman, & McKay, 1996). For instance, Hart and Hare (1989) detected positive correlations between PCL total scores and antisocial as well as histrionic PDs in a sample of males awaiting trial. In line with these findings, Rutherford et al. (1996) found significant correlations between the PCL-R total score and a number of symptoms of DSM-III-R antisocial, borderline, narcissistic and histrionic PDs in a sample of 250 male methadone patients. Similarly, Stalenheim and Von Knorring (1996) and Blackburn and Coid (1998) found that PCL-R psychopathy was strongly associated with the presence of Cluster B PDs in male forensic psychiatric and offender samples. Each of these studies point toward a robust relationship between PCL-R psychopathy and Cluster B personality pathology among males.

There are also specific patterns of correlations between psychopathy and PDs. For instance, an asymmetric relationship between psychopathy and antisocial PD has been observed. Specifically, the majority of PCL-R psychopaths meet the criteria for antisocial PD, whereas many participants diagnosed with antisocial PD do not meet the criteria for psychopathy (Hare, 2003). Prevalence studies suggest that up to 70-80% of sentenced offenders meet the criteria for antisocial PD, while only 20% score over 30 on the PCL-R (Hare, 1998). These disparities derive from the fact that the psychopathy construct encompasses a variety of interpersonal and affective dimensions that go beyond the largely behavioural-based DSM conceptualization of antisocial PD. These conceptual disparities also partially informed the now rejected proposed revisions to existing antisocial PD/psychopathy nomenclature for the DSM-5 (Filone et al., 2014; Hart & Hare, 1996). That said, it appears that some of the accepted revisions to DSM-5 personality nosology acknowledge underlying personality dimensions in antisocial behaviour by referring to “pathological personality traits” (APA, pp. 659-663) in the definition of antisocial PD (Nickerson, 2014).

It is important to note that research on psychopathy has revealed important gender differences in terms of prevalence (Hazelwood, 2006; Hemphill, Hare, & Wong, 1998; Salekin, Rogers, & Sewell, 1997; Warren et al., 2003), severity (Forth,

Brown, Hart, & Hare, 1996; Forth, Kisslinger, Brown, & Harris, 1993; Hemphill et al., 1998; Hare, 2003; Lehman & Ittel, 2012; Neary 1990; Warren et al., 2005), and behavioural expression (Brebner, 2003; Forouzan & Cooke, 2005; Fujita, Diener, & Sandvik, 1991; Grann, 2000; Hicks, Vaidyanathan & Patrick, 2010; Logan & Blackburn, 2009; Rosenfield, 2000; Rutherford et al., 1996; Salekin, Rogers, & Machin, 2001; Vitale, Maccoon, & Newman, 2011; Warren & South, 2006; Weizmann-Henelius et al., 2010; see Article 1 for a detailed description of gender differences in psychopathy).

In addition to the gender-based permutations found in the construct of psychopathy, evidence also suggests gender differences in comorbidity of psychopathy and Axis II personality disorders. Specifically, studies have shown that comorbidity of PDs is higher among women than in men in custodial settings (Singleton, Meltzer, Gatward, Coid, & Deasy, 1998) and in general (Frank, 2000). Further, the vast majority of available data from prison surveys are derived from Western populations (Fazel & Danesh, 2002). An understanding of these differences is essential in attempts to establish adequate treatment protocol for female offenders with comorbid psychopathy and Axis II PDs in a South African forensic context. It is important to note that only a handful of studies have examined PCL-R psychopathy in terms of its relationship to comorbid Axis II personality pathology among women. An overview of these studies will be presented with a view to outlining the specific treatment needs of offenders with comorbid psychopathy and Axis II PDs.

Empirical associations between psychopathy and Axis II comorbidity were reported by Weizmann-Henelius, Sailas, Viemero, and Eronen (2002). With reference to their findings, the authors argued that when a female offender is violent toward a victim who is not close or well known to her, she is more likely to be psychopathic, and is more likely to have Cluster B borderline PD and antisocial PD. In their study on psychopathy and comorbid Axis II PDs, Putkonen, Komunlainen, Virkunen, Eronen, and Lonnqvst (2003) also argue that most violent female offenders have PDs that fall under the Cluster B type. Putkonen and his colleagues also found lower rates of anxiety in violent female offenders, a trait that would generally be associated with Cluster C personality pathology. In terms of the etiological pathways into severe personality pathology, researchers have suggested that offenders with more horrific childhood experiences appear more likely to develop Cluster B PDs later (Loper, Mahmoodzadegan, & Warren, 2008; Warren & South,

2006). As such, an understanding of these comorbid relationships and the etiological pathways into psychopathic behaviour is of paramount importance in addressing the treatment needs of female offender populations effectively.

Women with moderate to high levels of psychopathy have also been found to exhibit a significant presence of Cluster B PDs in a study by Rogers, Jordan, and Harrison (2007). The authors reported that 62% of their sample exhibited at least one DSM-IV PD, with Cluster B antisocial PD and borderline PD sharing the strongest association with psychopathy. Similar findings were reported by Logan and Blackburn (2009) in their study of violent female offenders. Using DSM-IV criteria, the authors found that their sample had on average two PD diagnoses each, with 62% of the entire sample exhibiting two or more diagnoses and 35% three or more PD diagnoses. In terms of the relationship between PCL-R psychopathy and DSM-IV Axis II PDs, the authors found a number of positive correlations between the two. Specifically, through the application of the Cooke and Michie (2001) three-factor model of psychopathy, they found that factor one, measuring *arrogant and deceitful interpersonal style*, correlated positively with dimensional scores on measures of narcissistic, histrionic, and antisocial PDs (see Article 2 for a complete description of the Cooke and Michie model of psychopathy). Factor two, measuring *deficient affective experience*, correlated negatively with the dimensional score of borderline PD, and correlated positively with the dimensional score of narcissistic PD. Their findings suggest a clear pattern of relationships between Axis II Cluster B personality pathology and psychopathy.

In a similar vein, Hilving (2010) and Weizmann-Henelius et al. (2010) detected Cluster B PDs to be more prevalent among psychopathic females than either Cluster A or Cluster C PDs. Importantly, Weizmann-Henelius et al. (2010), in line with Logan and Blackburn (2009), discovered that the interpersonal factor of the Cooke and Michie (2001) three-factor model correlated with borderline, histrionic and narcissistic PDs. The associations between the interpersonal features of psychopathy and Cluster B personality pathology emphasize the need for a sharp clinical focus on interpersonal features of the disorder with female offenders in terms of treatment protocol.

Collectively, these findings indicate that a robust relationship exists between psychopathy and Cluster B personality pathology in female offenders. The efficacy of clinical interventions with psychopathic offenders may also be enhanced by an

understanding of Cluster B personality pathology and attendant symptomatology in treatment protocol.

Based on findings outlined in the broader forensic research corpus on psychopathy and Axis II PD comorbidity, we expect PCL-R scores to correlate positively with PDs of the dramatic-erratic-emotional cluster (Cluster B) and correlate negatively with PDs of the anxious-fearful cluster (Cluster C). An important contribution of this study is to explore the potential role of intrapsychic contributors to crime such as personality pathology and to gain deeper insight into the specific treatment or rehabilitation needs of female offenders on the non-psychopathic to advanced psychopathic continuum. To assess whether psychopathy and comorbid Cluster B relationships exist in a South African female forensic context, a number of methodological procedures were implemented. These will be expounded in the following section.

Methodology

Participants and procedures

To ensure that the rights of the participants were upheld, permission for the current study was granted by two ethical committees representing the Department of Psychology and the Faculty of Humanities at the University of the Free State. Following a review of the research proposal, the Department of Correctional Services (DCS) also granted permission to conduct the study. A non-experimental quantitative research design was employed to collect data from three correctional centres located in three South African provinces.

The respective correctional centres used in the study were the Wesbank Female Correctional Centre in the Eastern Cape, the Kroonstad Female Correctional Centre in the Free State and the Johannesburg Female Correctional Centre in Gauteng. Prior to the recruitment of offenders into the sample, meetings with the prison-based psychologists and social workers were requested. These meetings were conducted with the aim of selecting offenders who were most likely to exhibit features of psychopathy. This was achieved by sending letters to the various offender institutions providing an outline of typical offenders required for the study. Upon meeting with the prison psychologists, social workers and prison staff, the selection criteria for the sample were explained further.

It is important to note that the focus of our research was not to assess the prevalence of psychopathy in the general prison population. Instead, we were interested specifically in the manifestation of psychopathy among female offenders in South Africa. This objective was pursued with a view to determining the relationship between PCL-R psychopathy and comorbid Axis II personality disorders. Following the meetings with the prison staff, purposive sampling was used to select the sample.

The sample comprised 122 offenders from the three correctional centres. For a number of different reasons (i.e. privacy, work schedule conflicts etc.), a few participants opted not to participate in the study. Eventually, 108 female offenders participated in the study (89% response rate). Once the participants had signed a consent form whereby they agreed to participate in the study and provided permission for the use of the information, each participant was interviewed separately. Interviews were conducted by the principal researcher and co-supervisor, with the assistance of three trained translators. Two of the translators possessed postgraduate degrees in the social sciences, while the third was a licensed psychologist. The majority of the PCL-R interviews and MCMI-III administration was conducted in English, Afrikaans, Xhosa and Sesotho. The data-collection phase of this research spanned a period of eight months.

Measures

The following measures were used in the study:

- 1) A self-compiled biographical questionnaire which included information regarding factors such as age, family background, educational levels, antisocial history and other criminogenic variables.
- 2) The revised version of the *Psychopathy Checklist* (PCL-R; Hare, 2003). This instrument is the most validated of all psychopathy measures and is deemed the “gold standard” of psychopathy assessment worldwide (Casey, Rogers, Burns, & Yiend, 2013). PCL-R assessments of all offenders were based on the results of an interview with the offender. In addition, for the majority of offenders, a review of file records consisting of psychological evaluations, police records, criminal history, family background and other criminogenic data was conducted. No inter-rater reliability data were collected in the present study, but the alpha coefficient of .91 for the PCL-R general factor is

similar to that reported by Hare (2003). To enhance the reliability and validity of the PCL-R administration, one of the present research supervisors (Loots) underwent a four-day training program in Edinburgh, Scotland under the tutelage of psychopathy expert, David Cooke. Loots conducted similar training sessions with the principal researcher and translators to ensure reliability and validity in the administration of the instrument. Training entailed extensive introduction to theories and studies of psychopathy as well as ratings of case summaries. International research indicates that the PCL-R has high inter-rater reliability with interclass correlations ranging from .87 to .95 and good internal consistency ranging from .83 to .91 (Vitale & Newman, 2001). There is also evidence of good reliability of the PCL-R, as measured by intra-class correlations of .95 and above, when used with a female sample (Vitale, Smith, Brinkley, & Newman, 2002). No empirical studies in South Africa employing the PCL-R could be traced to corroborate the psychometric properties found in the present study (see Article 2 for a complete analysis of the reliability and validity of the PCL-R).

- 3) The *Millon Clinical Multiaxial Inventory-III* (MCMI-III; Millon, Davis, Millon, & Grossman, 2009) was used to assess diagnostic comorbidity of Axis II personality disorders in three female offender groups. The MCMI-III assesses 10 clinical syndromes and 14 personality disorders. This instrument has been applied in forensic settings and serves as a useful screening tool for personality disorders and clinical syndromes in such settings. The MCMI-III requires respondents to possess a Grade 10 reading level. Research has demonstrated acceptable levels of reliability for the MCMI-III. Alpha coefficients for the validity scales range from .86 to .95, whereas the alpha levels for the clinical personality scales range from .66 to .89 with a median of .81 (Millon et al., 2009). No studies using the MCMI-III in a South African female forensic context could be traced to compare the present findings on rates of comorbid personality pathology.

Conducting of PCL-R and administration of MCMI - III

Each of the correctional centres used in this study houses a diverse range of cultures, ethnicities and even nationalities. For this reason, the administration of the instruments presented some serious challenges with regard to potential language

and comprehension difficulties. To circumvent this issue, trained interpreters were used in conducting the PCL-R interview and administration of the MCMI-III. The translators assisted in the correct interpretation of questions and helped contextualize specific terms and phrases. The PCL-R did not present many challenges in this regard, as it is in the form of a semi-structured interview. As a result, the test invites a certain degree of dialogue, which allows for clarification and contextualization of participant feedback. Certain MCMI-III items were paraphrased to make them more appropriate to the South African context. Caution was taken to ensure that paraphrased components of MCMI-III statements did not affect the validity of the instrument. For instance, changes from “across the Atlantic” to “overseas” did not affect the underlying meaning of this MCMI-III item but simply afforded the participants a contextually closer understanding.

Statistical analysis

SPSS version 21 (IBM Corp, 2012) was employed to analyze the data. Recent taxometric analysis revealed that psychopathy represents a dimensional construct rather than a categorical construct; therefore, it should be measured on a continuum (Marcus, Johns, & Edens, 2004). To reflect the dimensional nature of psychopathy, the participants' PCL-R total scores were divided into three groups representing scores ranging from 0 to 18 (non-psychopathic), 19 to 24 (medium psychopathic) and 25 to 40 (advanced psychopathic) (cf. Hicks, Vaidyanathan, & Patrick, 2010; Hildebrand & De Ruiter, 2004). The rationale behind this categorization was based on research supporting a score of 25 as indicative of strong psychopathic traits in females (Hicks et al., 2010; Hilving, 2010; Warren & South, 2006). Owing to the abnormally distributed nature of the data and unequal group sizes, non-parametric statistics were used to conduct the analysis (Field, 2009). Specifically, a chi-square test was used to assess group differences in the frequencies of the different personality clusters (categorical data). Kruskal-Wallis *H* tests for independent samples were conducted to determine whether scores (continuous measures) differed significantly between the groups in terms of the presence of Axis II PDs (Field, 2009). Post-hoc tests were computed to determine which groups were statistically significant from one another in terms of levels of Axis II PDs. Specifically, Mann-Whitney *U* tests were used to conduct the analysis. To control for increased risk of Type 1 error because of multiple group comparisons, Bonferroni adjustments

were made to develop alpha levels that were more stringent for determining significance (Pallant, 2005). The alpha level of .05 was divided by the number of group comparisons (.05/3) and yielded a stricter alpha value of .017 (see Filed, 2009). This revised alpha level was used to determine significance in the Mann-Whitney analysis.

Results and discussion

An overview of the relevant demographic characteristics of the sample will be presented first (Table 1; see Article 3 for a complete demographic table), followed by Table 2, which discloses the prevalence rates of psychopathy in the current sample. It is important to reiterate that the recruitment of offenders into our sample was done with a specific view to maximizing the number of offenders who were likely to show elevated scores on psychopathy. Because of this purposive sampling procedure, much of the biographical data produced is disproportionate to broader demographics in South Africa and does not allow for the generalizing of prevalence rates on psychopathy.

Table 1: Demographic characteristics

Characteristic	Sample (N = 108)	
	No.	%
Correctional centre (province) (N = 108)		
Wesbank Correctional Centre (Eastern Cape)	45	42
Kroonstad Correctional Centre (Free State)	41	38
Johannesburg Correctional Centre (Gauteng)	22	20
Offender group (N = 108)		
Non-psychopathic	55	51
Medium psychopathic	32	30
Advanced psychopathic	21	19
Age of first offence (N = 104)		
25 and below	33	32
26-36	37	35
37 and above	34	33
History of previous offence (N = 108)		
None	79	73
1-2	20	18
2-4	2	2
5-6	1	1
7 and more	6	6
Current offence (N = 108)		
Economic	52	48
Homicide	46	43
Other	10	9

Characteristic	No.	%
Length of current sentence (N = 108)		
Less than 10 years	51	47
11 to 20 years	41	38
21 to 40 years	7	7
Life	9	8
History of abuse (N = 108)		
No abuse	35	32
Childhood abuse	17	16
Adult/domestic abuse	28	26
Child and adult abuse	28	26
Physical/sexual abuse or both (N = 108)		
None	34	32
Physical abuse	38	35
Sexual abuse	13	12
Physical and sexual abuse	23	21
History of suicide attempts (N = 108)		
None	59	54
Once	25	23
2-4	19	18
5 and more	5	5
Employment status (N = 108)		
Unemployed	17	16
Intermittent employment	36	33
Regular employment	55	51

Table 2: Prevalence of psychopathy

PCL-R score range	Total	% of total n
Non-psychopathic (≤ 18)	55	51
Medium psychopathic (19 – 24)	32	29
Advanced psychopathic (≥ 25)	21	20

Using the lower diagnostic score of 25 as recommended for studies with women (Hilving, 2010; Warren & South, 2006), the prevalence rate of psychopathy in the current sample was 19%. Based on the score categories utilized in the study (cf. Hildebrand & De Ruiter, 2004), a further 30% of the sample formed the medium psychopathic group, which comprised offenders who scored in the 19-24 range on the PCL-R. Finally, 51% of the offenders fell in the non-psychopathic group, which comprised offenders who scored 18 and lower on the PCL-R.

To assess the assumption that the medium and advanced psychopathic groups were likely to demonstrate higher rates of Cluster B personality pathology than the

non-psychopathic group, a chi-square test for independence was conducted. The cut-off scores used to delineate medium psychopathic from advanced psychopathic groups built on the criteria used by Hildebrandt and de Ruiter (2004), which were in turn based on Hare's (2003) findings that scores higher than 19 on the PCL-R suggest strong psychopathic traits. In essence, these score categories may be quite arbitrary, and further empirical validation of these cut-off ranges is required. The results of the analysis revealed that the advanced psychopathic group had a significantly higher proportion of Cluster B personality pathology: $X^2(2, N = 108) = 28.404, p < .001, w = .26$. This result is in line with international findings of higher levels of Cluster B personality pathology among psychopathic female offenders (Hilving, 2009; Logan & Blackburn, 2009; Weizmann-Henelius et al., 2010). Figure 1 below depicts the relationship between psychopathy groups and Cluster B personality pathology.

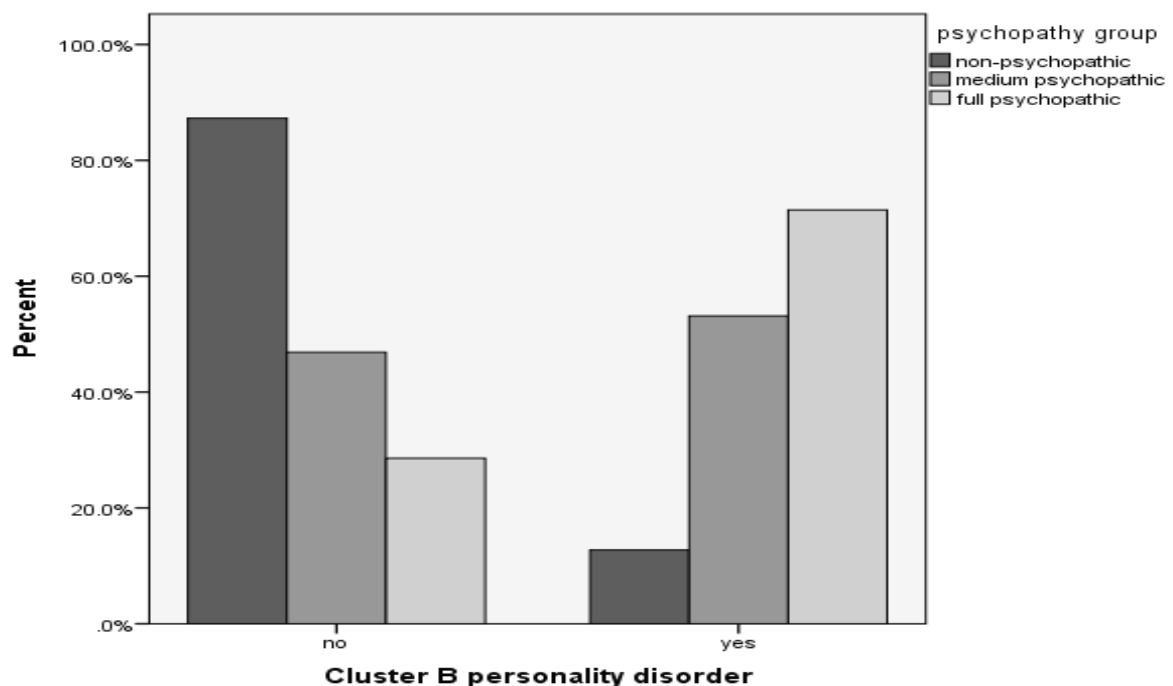


Figure 1: Associations between psychopathy and Cluster B personality disorders

To assess the specific PDs better in terms of how they differed across the three groups a, Kruskal-Wallis H test for group differences was conducted. Table 3 below summarizes the results of the analysis:

Table 3: Kruskal-Wallis *H* results for group differences on Axis II personality disorders (PDs)

Axis II Personality Disorder (PD)	Non- psychopathic (<19) (N=55)	Medium psychopathic (19-24) (N=32)	Advanced psychopathic (>25) (N=21)	X ²	df	p-value
	Median	Median	Median			
Schizoid PD	70	68.50	77	2.611	2	.271
Avoidant PD	74	73	74	2.050	2	.470
Dependent PD	76	58.50	76	3.429	2	.180
Histrionic PD	44	52	45	2.846	2	.241
Narcissistic PD	56	74	79	16.391	2	.000**
Antisocial PD	58	64	70	19.169	2	.000**
Sadistic PD	70	80.50	84	21.637	2	.000**
Compulsive PD	61	57.50	37	11.283	2	.004**
Passive-Aggressive PD	75	83.50	88	8.530	2	.014**
Masochistic PD	74	73.50	75	.639	2	.729
Schizotypal PD	66	67.50	81	13.978	2	.001**
Borderline PD	67	74	78	12.498	2	.002**
Paranoid PD	70	72.50	75	4.905	2	.086

Note p≤0.01** p≤0.05*

The Kruskal-Wallis H Test revealed statistically significant differences in levels of psychopathy and the narcissistic, antisocial, sadistic, compulsive, passive-aggressive, schizotypal and borderline personality disorders across the three groups of female offenders. In the following section, the relationship between psychopathy and specific Axis II PDs will be discussed separately.

Narcissistic PD. The analysis revealed a statistically significant difference in Narcissistic PD across the three groups of female offenders (Gp1, $n = 55$: non-psychopathic; Gp2, $n = 32$: medium psychopathic; Gp3, $n = 21$: advanced psychopathic), $X^2(2, N = 108) = 16.391, p < .001, w = .38$. The Mann-Whitney U test revealed significant differences in levels of narcissistic PD between the non-psychopaths ($Mdn = 56, n = 55$) and medium psychopaths ($Mdn = 74, n = 32$), $U = 512, z = -3.24, p < .001, r = .35$. In terms of differences in the level of narcissistic PD across the non-psychopathic and advanced psychopathic groups, similar results were found. The advanced psychopathic group ($Mdn = 79, n = 21$) scored significantly higher median scores on narcissistic PD than the non-psychopathic group did ($Mdn = 56, n = 55$), $U = 292, z = -3.31, p < .001, r = .38$. The Mann-Whitney U revealed no significant differences between the medium psychopathic ($Mdn = 74, n = 32$) and advanced psychopathic ($Mdn = 79, n = 21$) groups ($U = 303, z = -.591, p = .55, r = .081$) in levels of narcissistic PD.

The above-mentioned findings are in line with international research on psychopathy, which has consistently found an association of psychopathy with narcissistic PD (Logan & Blackburn, 2009; Weizmann-Henelius et al., 2010). In other words, higher levels of psychopathy are associated with higher levels of narcissism. It is important to note the conceptual confusion surrounding psychopathy, especially as it relates to other destructive personalities such as narcissistic PD and antisocial PD (Hersen & Thomas, 2006). Specifically, Hare's (2003) conceptualization of psychopathy shares some traits with narcissistic PD (e.g. egocentricity, lack of empathy) in terms of underlying personality dimensions. In addition, research has implicated impairment in neurobiological empathy circuitry as a central pathogenic pathway in the etiology of both disorders (Baron-Cohen, 2011; Moreira et al., 2014). Although no empirical studies delineate the specific treatment needs of psychopaths with comorbid PDs, one can extrapolate from the above-mentioned research that enhancing levels of empathy may represent an area of specific clinical intervention in the treatment of psychopathic offenders with comorbid narcissistic PD (Gabbard,

2005). While studies seem to suggest poor treatment outcomes with clinical psychopaths, the rehabilitation of such offenders may be enhanced when the focus of intervention is on treatable comorbid PDs (Hilving, 2010).

Antisocial PD. Statistically significant differences in antisocial PD were also revealed across the three groups of female offenders (Gp1, $n = 55$: non-psychopathic; Gp2, $n = 32$: medium psychopathic; Gp3, $n = 21$: advanced psychopathic), $X^2(2, N = 108) = 19.169, p < .001, w = .42$. The Mann-Whitney U test revealed significant differences in levels of antisocial PD between the non-psychopaths ($Mdn = 58, n = 55$) and medium psychopaths ($Mdn = 64, n = 32$) ($U = 528, z = -3.10, p = .002, r = .33$) as well as between the non-psychopaths ($Mdn = 58, n = 55$) and advanced psychopaths ($Mdn = 70, n = 21$) ($U = 245, z = -3.87, p < .001, r = .44$). The significant group differences were in the expected directions with medium and advanced psychopaths demonstrating higher scores on antisocial PD than the non-psychopathic group did. Internationally, antisocial PD has evinced a robust association with psychopathy (Fazel & Danesh, 2002; Hildebrandt & De Ruiter, 2004; Warren & South, 2006). These findings are corroborated in the present study where the medium and advanced psychopathic groups showed significantly higher levels of antisocial PD. This finding may contradict the notion that antisocial behaviours are of less importance in understanding female offender treatment needs. However, the manner in which female forms of antisocial behaviour are exhibited may be somewhat more muted and thus less sensitive to a traditional clinical focus on external and observable antisocial acts. This is in line with Forouzan and Cooke's (2005) argument that female antisocial activities are more likely to manifest in self-harming behaviours, running away, acts involving manipulation, verbal and relational aggression, conning behaviour, and complicity in committing crimes. The current conceptualization of PCL-R psychopathy may require reformulation of certain behaviour-based items with a view to capturing the more nuanced female manifestations of antisocial behaviour better. In terms of treatment, antisocial PD and psychopathy have often been conflated as one clinical entity and equated with being untreatable (Filone et al., 2014). At present, there is no corpus of controlled empirical research offering encouragement for individual therapy among those suffering from psychopathy (Hobson, Shine, & Roberts, 2000; Maibom, 2014; Meloy, 1988) and/or antisocial PD (Gabbard, 2005). With a specific view to female psychopathic offenders, Richards, Casey and Lucente (2003) found that elevated

psychopathy scores were associated significantly with poor treatment response. Therefore, further research is needed to establish whether the treatment of women with moderate to severe psychopathy and antisocial PD can be made more effective.

Sadistic PD. Differences were found between the three groups in levels of sadistic PD (Gp1, $n = 55$: non-psychopathic; Gp2, $n = 32$: medium psychopathic; Gp3, $n = 21$: advanced psychopathic), $X^2(2, N = 108) = 21.637, p < .001, w = .45$. In terms of specific group differences, the non-psychopaths ($Mdn = 70, n = 55$) recorded lower scores than the medium psychopaths did ($Mdn = 80.50, n = 32$) ($U = 547, z = -2.94, p = .003, r = .32$), and significant differences were also found between the non-psychopaths ($Mdn = 70, n = 55$) and advanced psychopaths ($Mdn = 84, n = 21$) ($U = 207, z = -4.31, p < .001, r = .49$). As expected, the medium and advanced psychopaths revealed significantly higher median scores than the non-psychopaths did on levels of sadistic PD. Again, it is theoretically consistent with the construct of psychopathy that the sadistic personality pathology demonstrates an association with the disorder (Blackburn, 2007). Treatment initiatives will need to implement methods to address sadistic behavioural proclivities as a distinct criminogenic need of psychopathic offenders. Further research is needed to assess the efficacy of interventions with offenders exhibiting psychopathy and comorbid sadistic PD. Again, intervention efficacy is likely to be maximized if the treatable components of sadistic PD in psychopathic offenders are targeted.

Compulsive PD. The Kruskal-Wallis H Test revealed a statistically significant difference in compulsive PD across the three groups of female offenders (Gp1, $n = 55$: non-psychopathic; Gp2, $n = 32$: medium psychopathic; Gp3, $n = 21$: advanced psychopathic), $X^2(2, N = 108) = 11.283, p = .004, w = .32$. The advanced psychopathic group scored significantly lower ($Mdn = 37, n = 21$) than both the non-psychopathic ($Mdn = 61, n = 55$) ($U = 296, z = -3.27, p < .001, r = .38$) and medium psychopathic ($Mdn = 57.50, n = 32$) groups did on compulsive PD: $U = 192, z = -2.62, p = .009, r = .36$. These findings are in line with those of Rutherford et al., (1996), who reported negative correlations between high PCL scorers and Cluster C PDs. Similar results were reported by Blackburn and Coid (1998), who reported negative correlations between psychopathy and dependent and compulsive PDs. With a specific view to violent female offenders, Putkonen et al. (2003) also reported lower scores on aspects of Cluster C personality pathology such as anxiety. These findings suggest that personality pathology of the anxious and fearful spectrum may

not have much relevance in the context of psychopathic offender treatment. This is consistent with broader research on psychopathy, which has demonstrated low levels of emotional arousal and anxiety in psychopathic offenders (Blair, 2003; Hare, 2003).

Passive-aggressive PD. Statistically significant differences in passive-aggressive PD were also revealed across the three groups of female offenders (Gp1, $n = 55$: non-psychopathic; Gp2, $n = 32$: medium psychopathic; Gp3, $n = 21$: advanced psychopathic), $X^2(2, N = 108) = 8.530, p = .014, w = .28$. The Mann-Whitney U test revealed no significant differences in levels of passive-aggressive PD between the non-psychopaths ($Mdn = 75, n = 55$) and medium psychopaths ($Mdn = 83.50, n = 32$), $U = 649, z = -2.03, p = .041, r = .22$. However, the Mann-Whitney U test did reveal significant differences in levels of passive-aggressive PD between the non-psychopaths ($Mdn = 75, n = 55$) and advanced psychopaths ($Mdn = 88, n = 21$), $U = 350, z = -2.64, p = .008, r = .30$. In both instances, the medium and advanced psychopathic groups showed higher median scores on passive-aggressive PD than the non-psychopaths.

Internationally, researchers have reported positive correlations between psychopathy and passive-aggressive PDs, which is consistent with the findings of the present study in a female offender population (Blackburn & Coid, 1998; Forth et al., 1996; Hart & Hare, 1989; Sturek, Loper & Warren, 2008). Treatment should focus on enhancing the emotional insight of offenders presenting with comorbid psychopathic and passive-aggressive symptomatology to become aware of the consequences of their self-destructive decision making (Millon et al., 2009). Intervening in the treatable aspects of comorbid Passive-Aggressive PD may enhance rehabilitation efforts among clinical psychopaths in offender institutions.

Schizotypal PD. The results of the Kruskal-Wallis H test revealed statistically significant differences in Schizotypal PD across the three groups (Gp1, $n = 55$: non-psychopathic; Gp2, $n = 32$: medium psychopathic; Gp3, $n = 21$: advanced psychopathic), $X^2(2, N = 108) = 13.978, p < .001, w = .36$. The median score of the advanced psychopathic groups ($Mdn = 81, n = 21$) on schizotypal PD was shown to be significantly higher than both the non-psychopathic ($Mdn = 66, n = 55$) ($U = 267, z = -3.61, p < .001, r = .41$) and medium psychopathic ($Mdn = 67.50, n = 32$) ($U = 175, z = -2.93, p = .003, r = .40$) groups. Researchers have reported associations between antisocial PD and Cluster A personality pathology (Warren & South, 2006).

This may explain the higher presence of Cluster A schizotypal PD in the advanced psychopathy group, as they demonstrated the highest levels of Antisocial PD. Blackburn, Logan, Donnelly, and Renwick (2008) found that secondary psychopaths manifested higher levels of schizotypal PD compared to primary psychopaths (see Article 1 for a comprehensive description of primary and secondary psychopathy).

Secondary psychopathy is conceptualized as having a neurotic basis, which predisposes the sufferer toward impulsive/irresponsible behaviours and severe emotional dysregulation (Ross, Bye, Wrobel, & Horton, 2008). Because of its neurotic character, expressions of disorganized, irresponsible and impulsive criminal behaviour evinced in secondary psychopaths may overlap with features of schizotypal PD, which provides a theoretical basis for reported correlations (Blackburn et al., 2008). There is little empirical literature on treatment efficacy among schizotypal patients, but anecdotal support exists for the use of individual-expressive supportive therapy, dynamic group psychotherapy or a combination of the two (Gabbard, 2005). Evidence exists for the internalization of the therapeutic relationship as the major vehicle for change in schizotypal patients. Further research is required to assess treatment efficacy among psychopathic offenders with comorbid schizotypal PD.

Borderline PD. Finally, statistically significant differences were also found between the three groups (Gp1, $n = 55$: non-psychopathic; Gp2, $n = 32$: medium psychopathic; Gp3, $n = 21$: advanced psychopathic) on Borderline PD, $X^2(2, N = 108) = 12.498, p = .002, w = .34$. Specifically, the advanced psychopathic group ($Mdn = 78, n = 21$) scored significantly higher on borderline PD when compared to the non-psychopathic group ($Mdn = 67, n = 55$), $U = 270, z = -3.57, p < .001, r = .41$. As noted, PCL-R psychopathy has been found to correlate with all Cluster B personality pathology (Logan & Blackburn, 2009; Sturek et al., 2008). Some theorists have posited borderline PD as a unique phenotype of secondary psychopathy (Ridings & Luts-Zois, 2014; Skeem, Johansson, Andershed, Kerr, & Eno Loudon, 2007). As noted, secondary psychopathy is viewed as having a neurotic basis in terms of etiology and expression, which predisposes the sufferer toward impulsive and/or irresponsible behaviours, reactive anger and severe emotional dysregulation (Hicks et al., 2010; Ross et al., 2008). The characteristic deficits in emotional regulation, interpersonal relationships and impulse control concomitant with Borderline PD are likely to parallel variants of secondary psychopathy (Hicks et al., 2010; Ridings &

Luts-Zois, 2014). Further empirical enquiries are needed to assess the relationship between Borderline PD and secondary psychopathy systematically.

With regard to the treatment of psychopathic offenders with comorbid borderline PD, clinical interventions will need to pay specific attention to the areas of emotion dysregulation, impulse control problems and interpersonal disruptions (Magnavita, 2004). Dialectical behaviour therapy involving individual and group meetings with therapists is an empirically based approach to treating borderline PD (Bateman & Fonagy, 1999). A cornerstone of this intervention is to stabilize the offender's sense of self, recognizing that a lack of secure attachment and potential early abuse have dramatically undermined this capacity (Gabbard, 2005). Based on the demographic features of the present sample (see Article 3 for a complete description of demographic variables), one would argue that the issue of early abuse and environmental trauma warrants specific clinical attention in the South African female forensic context. Again, further research is required to assess the efficacy of existing treatment approaches in psychopathic offenders with comorbid borderline PD.

In sum, the high percentage of offenders with a PD diagnosis in the present study is comparable with prevalence rates of between 60% and 80% internationally (Kullgren, Grann, & Holmberg, 1996). For example, De Ruiter and Greeven (2000) found that 80% of a Dutch sample of 85 forensic psychiatric patients met the diagnostic criteria for at least one PD, while Logan and Blackburn (2009) reported that over four fifths (82%) of their entire sample of female forensic psychiatric offenders in England were given a diagnosis of one or more PDs. With a specific view to Axis II PD comorbidity, Blackburn (2009) found that 61% of their entire sample had two or more PD diagnoses, and 35% had three or more PD diagnoses. In the present study, 58% of the participants were found to have two or more PD diagnoses and 36% were found to have three or more PDs. These findings are strikingly similar to those reported by Logan and Blackburn (2009) and corroborate their assertion that a high level of comorbidity among female offenders should be considered the rule rather than the exception. This is based on the general finding that females in offender institutions consistently exhibit elevated levels of psychopathology (Fazel & Danesh, 2002). Therefore, mental health care should be very high on the list of offender-based programs offered in South African correctional centres.

PCL-R psychopathy also showed a theoretically consistent pattern of associations with Axis II PDs in the present study. Specifically, in the majority of the group comparisons that exceeded set significance thresholds, the medium and advanced psychopathic groups scored higher than the non-psychopaths did on Cluster B personality pathology as well as on Cluster A schizotypal PD. Further, the majority of the effect sizes fell in the medium to large range (see Pallant, 2005), which underscores the practical significance of the results. Such relationships would have been anticipated when considering the positive correlations found between Cluster B personality pathology and levels of psychopathy in the literature (Logan & Blackburn, 2009; Putkonen et al. 2003). These findings are particularly promising in the light of the fact that Cluster B personality pathology is more difficult to detect by means of self-report measures due to the characteristic lack of self-insight and defensiveness inherent to Cluster B PDs (Logan & Blackburn, 2009; Zimmerman & Coryell, 1990). With regard to compulsive PD, a distinct Cluster C personality pathology, the advanced psychopathic group scored significantly higher than the non-psychopathic group, a finding that is theoretically consistent with the literature on psychopathy.

Conclusion

This study set out to examine the relationship between psychopathy and Axis II personality pathology in a South African female forensic context. Results reveal a pattern of correlations that are consistent with international literature. Specifically, psychopathic female offenders are at greater risk of suffering from comorbid Cluster B personality pathology. In terms of the treatment implications of the present study, the findings suggest a very high clinical need for the treatment of female offenders in the South African forensic context. This is particularly troubling in the light of the dire shortage of mental health professionals deployed in these settings in South Africa. The Department of Correctional Services (DCS) and the Professional Board of Psychology (PBP) in South Africa need to make better use of existing mental health care practitioners in the country and create additional community service posts for counselling and clinical psychologists in forensic settings. The PBP's implementation of forensic psychologist training programmes in 2014 will help in the effort to ensure that offenders receive quality forensic mental health care and management.

A number of treatment recommendations were made in the present study. Specifically, while psychopathy has been shown to be largely intractable and potentially exacerbated in response to treatment initiatives, clinicians may have more success treating the comorbid PDs accompanying psychopathy. Therefore, it would be prudent for prison-based social workers and psychologists to have a thorough knowledge of potential comorbid PDs, as interventions in these areas may improve efforts to rehabilitate offenders. The results of the present study suggest that Cluster B PDs are most likely to be comorbid with psychopathy. Research suggests that the demonstration of empathy and encouragement for the individual to develop empathy toward others have been most efficacious in the treatment of Cluster B PDs (Bockian & Jongsma, 2001). In turn, the development of empathy may assist in managing psychopathy, as a lack of empathic orientation ultimately allows psychopaths to manipulate, hurt, and exploit others around them (Maibom, 2014). As noted, no studies systematically examine the treatment efficacy of interventions for psychopaths with comorbid PDs. While the present study has tentatively outlined specific areas in need of clinical intervention, further research is needed to test empirically which therapeutic approaches are most efficacious for female psychopathic offenders.

Despite the original empirical contributions made by the present study, there are a number of notable limitations. Specifically, there are concerns regarding the sample size and composition. Although the sample of recruited offenders ($N = 108$) is considered large in the context of PCL-R psychopathy research, these numbers are not amenable to complex statistical analysis, which affects the generalizability of the results. Further, despite attempts to enhance the external validity of this study by selecting offenders from correctional centres in three South African provinces, the results cannot be extrapolated beyond these settings. In fact, the generalizability of the results in these settings is also limited due to the disproportionate demographic composition of the sample because of the purposive sampling procedures used.

An additional limitation pertains to the nature of the assessment instruments used in this study. First, these instruments have been normed on traditionally Western populations and as such require further empirical validation to determine their functioning in cross-cultural contexts such as South Africa. While tentative support exists for the reliability and validity of the PCL-R in a South African female forensic context (see Article 2 for reliability and factorial analyses of the PCL-R), the

psychometric properties of the MCMI-III are yet to be established and will serve as a focus for future studies. This study also relied exclusively on the self-report method of data collection with regard to Axis II personality disorders, which is subject to intentional distortion. Specifically, research (see Hare, 2003; Ryan, 2010) has shown that psychopaths are likely to engage in negative impression management in an attempt to induce sympathy in the clinician or to exculpate themselves from their crimes. Thus, self-report data on levels of Axis II pathology need to be evaluated with caution.

An additional caveat that warrants mentioning is the use of a large portion of MCMI-III profiles where the offenders' debasement scores were within a questionable range ($n = 34$). The rationale underlying their inclusion was twofold. First, motivation for their inclusion was based on the fact that none of the profiles ($N = 108$) were found to be invalid based on their invalidity and inconsistency scores. These results may have been obtained because, in the majority of cases, the MCMI-III questions were read out aloud to the participants in their home language to circumvent language difficulties. The presence of the rater in this procedure may have curtailed the formation of possible response sets and random responding. A second motivation for their inclusion derived from the fact that a large portion ($n = 12$) of the debasement profiles were found in the advanced-psychopathy group, which was fairly small to begin with ($n = 21$). As a result, the omission of cases from this group would have undermined meaningful comparisons between the three groups. As noted, the overexaggeration of symptoms of pathology among psychopaths carries much empirical support (Edens, Buffington & Tomicic, 2000; Hare, 2003; Porter & Woodworth, 2007; Ryan, 2010). It is worth noting that a statistically robust association between Axis II Cluster B personality pathology and psychopathy remained following the omission of the above-mentioned problematic cases. Specifically, narcissistic, antisocial (two out of four Cluster B PDs) and sadistic PD continued to be represented at significantly higher levels (.002, .016 and .002, respectively) in the psychopathy groups following the omission of offender profiles with elevated debasement scores. However, the statistical differences between the three groups on compulsive, passive-aggressive, borderline and schizotypal PDs fell away.

In addition to responding to the outlined deficiencies in the present study, a contextually closer understanding of gender differences in the manifestation of the

psychopathy will be achieved by directly comparing male and female South African offenders in future research. Furthermore, the rich heterogeneity of the South African population is reflected in the 11 official languages and the variety of cultures, ranging from traditionally African to those with a predominantly Western influence (Loots & Louw, 2010). Understanding the phenomenology of psychopathy in this rich cultural fabric implies a qualitative methodology where a detailed and nuanced exploration of the disorder can be achieved. Such research represents a critical adjunct to future large-scale empirical studies. Hopefully, the present study serves as an important catalyst for this long and exciting research road ahead.

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