Do psychopathic traits vary with age among women? A cross-sectional investigation

J. Michael Maurer[1,4], **Bethany G. Edwards**[1,2], **Carla L. Harenski**[1], **Jean Decety**[3], **Kent A. Kiehl**[1,2,5]

[1]The Mind Research Network, Albuquerque, NM, USA

[2]Department of Psychology, University of New Mexico, Albuquerque, NM, USA

[3]Department of Psychology and Department of Psychiatry and Behavioral Neuroscience, University of Chicago, Chicago, IL, USA

Abstract

Previous studies with men suggest that certain psychopathic traits vary with age. Specifically, younger men score higher on psychopathic traits measuring impulsive-antisocial behavior, including impulsivity, irresponsibility, and criminal versatility, compared to older men. On the other hand, younger and older men score comparably on psychopathic traits reflecting core personality traits of interpersonal and affective dysfunction, including conning and manipulative behavior and a lack of empathy, guilt, and remorse. However, it is currently not known whether psychopathic traits similarly vary with age among women. This study examined whether psychopathy scores (assessed via the Hare Psychopathy Checklist – Revised [PCL-R]) varied with age among a sample of 501 incarcerated women ranging from 19 to 57 years of age. Consistent with previous studies performed with men, younger women scored higher on psychopathic traits measuring impulsive-antisocial behavior (i.e., PCL-R Factor 2, Facet 3, and Facet 4 scores) compared to older women. However, scores on PCL-R Factor 1, Facet 1, and Facet 2, assessing core personality traits, including interpersonal and affective dysfunction, were comparable across women in different age categories investigated. Results obtained in this preliminary study suggest the variation of PCL-R Factor 2 traits and the stability of PCL-R Factor 1 traits across the lifespan is invariant across gender.

Keywords

psychopathy; age; incarcerated women; personality traits; antisocial behavior

Introduction

Individuals scoring high on psychopathy can be characterized by a constellation of interpersonal, affective, and behavioral symptoms. One of the most frequently used

[4]Corresponding Author during Review: J. Michael Maurer, Ph.D., The Mind Research Network, 1101 Yale Boulevard NE, Albuquerque, NM 87106, mmaurer@mrn.org. [5]Corresponding Author after Review: Kent A. Kiehl, Ph.D., The Mind Research Network, 1101 Yale Boulevard NE, Albuquerque, NM 87106, kkiehl@mrn.org.

assessments to measure psychopathy, the Hare Psychopathy Checklist – Revised (PCL-R; Hare, 2003), assesses twenty different psychopathic traits. Psychopathy, as measured by the PCL-R, has been conceptualized across gender as a heterogeneous construct that can be separated into two-factor and/or four-facet models. Factor 1 of the PCL-R measures core personality traits, reflecting interpersonal dysfunction (e.g., Facet 1 traits including conning and manipulative behavior and pathological lying) and affective deficits (e.g., Facet 2 traits such as shallow affect and a lack of empathy, guilt, and remorse). Factor 2 of the PCL-R measures impulsive-antisocial behavior, including lifestyle/behavioral psychopathic traits (e.g., Facet 3 traits, such as impulsivity and irresponsibility) and antisocial/developmental psychopathic traits (e.g., Facet 4 traits measuring criminal versatility and history of juvenile delinquency) (Hare, 2003; Harpur et al., 1989; Verona & Vitale, 2018; Vitacco et al., 2005). While traits that comprise Factor 2 of the PCL-R are commonly associated with other forms of externalizing disorders (e.g., antisocial personality disorder (APD)), those that comprise Factor 1 of the PCL-R help distinguish psychopathic individuals from individuals who strictly exhibit forms of antisocial psychopathology, such as APD (Hare et al., 1991).

Individuals meeting criteria for psychopathy represent a subgroup of individuals notorious for their involvement in criminal activity. Compared to non-psychopaths, psychopaths engage in multiple forms of criminal activity (Hare, 2003), are more likely to be incarcerated (Kiehl & Hoffman, 2011), and are characterized by a higher recidivism rate (Walters, 2003). Additionally, compared to non-psychopaths, psychopaths engage in higher rates of both violent and non-violent criminal activity for most of their life (e.g., from adolescence into late adulthood; Porter et al., 2001). However, later in life, psychopaths and non-psychopaths engage in comparable rates of violent and non-violent criminal activity. For example, around age 30, psychopaths and non-psychopaths engage in similar rates of non-violent criminal activity, whereas similar rates of violent criminal activity are observed for psychopaths and non-psychopaths around age 40 (Porter et al., 2001). This reduction in criminal activity later in life may reflect certain psychopathic traits varying with age. For example, Harpur and Hare (1994) performed a cross-sectional study, investigating whether psychopathic traits varied with age in a sample of incarcerated males ranging from 16 to 70 years of age. The authors observed that PCL-R Factor 1 scores, assessing core personality traits relating to interpersonal and affective dysfunction, were consistent across different age categories, whereas PCL-R Factor 2 scores, assessing impulsive-antisocial behavior, varied with age. Specifically, younger participants scored higher on PCL-R Factor 2 compared to older participants. Subsequent studies have reported similar results, where lifestyle/behavioral and antisocial/developmental psychopathic traits vary with age, with younger participants scoring higher compared to older participants, whereas interpersonal and affective psychopathic traits remain relatively stable across different age categories (Huchzermeier et al., 2006; Huchzermeier et al., 2008). As such, as psychopathic individuals age, they may engage in less frequent violent and non-violent criminal activity, consistent with the notion that lifestyle/behavioral and antisocial/developmental psychopathic traits, specifically, vary with age. However, throughout life, these individuals may continue to present with interpersonal and affective deficits associated with psychopathy, as these traits do not appear to vary with age.

Importantly, most research regarding the conceptualization of psychopathy comes from studies performed with men, including those which have investigated the association between psychopathic traits and age (Harpur and Hare, 1994; Huchzermeier et al., 2006; Huchzermeier et al., 2008). In addition to exhibiting high rates of criminal activity, men scoring high on psychopathy are characterized by deficits across multiple domains, including problematic substance use (Taylor & Lang, 2007), attentional deficits (Newman & Baskin-Sommers, 2011), and affective processing deficits (Blair, 2003). The rate of female psychopathy is lower compared to the rate of male psychopathy (e.g., around 6 – 17% of incarcerated women meet the criteria for psychopathy compared to 15 – 25% of incarcerated men) (Hare, 2003; Verona & Vitale, 2018). However, accumulating evidence suggests that women scoring high on psychopathy can be characterized by similar deficits as men scoring high on psychopathy. For example, like men scoring high on psychopathy, women scoring high on psychopathy are characterized by high rates of incarceration and recidivism (Verona & Vitale, 2018), problematic substance use (Edwards et al., 2021), attentional deficits (Vitale et al., 2007), and affective processing deficits (Harenski et al., 2014; Yoder et al., 2021). Furthermore, the PCL-R has been validated for use among incarcerated women (Vitale et al., 2001), and the same two-factor and four-facet structure of the PCL-R can be applied across gender (Eisenbarth et al., 2018; Kennealy et al., 2007).

While men and women scoring high on psychopathy exhibit similar deficits across multiple domains, it is still not clear whether psychopathy scores similarly vary with age in women, as mixed findings have been reported. For example, studies that have examined this association in women are either of limited age range (i.e., 17 – 24; Blonigen et al., 2006) or have included both men and women (Coid et al., 2009; Gill & Crino, 2012). Furthermore, studies that have been predominantly composed of women (Coid et al., 2009) or have included a significant proportion of women (Gill & Crino, 2012) suggest that in addition to lifestyle/behavioral and antisocial/developmental psychopathic traits, interpersonal and affective psychopathic traits may vary with age in women. In fact, previously published studies suggest that with mixed-gender samples, younger participants score higher on both interpersonal (Gill & Crino, 2012) and affective (Coid et al., 2009; Gill & Crino, 2012) psychopathic traits compared to older participants. Given this, more research is needed in samples composed only of women to better understand associations between age and distinct psychopathic traits, and whether these associations are similar or different to those previously observed in men.

This preliminary study investigated the association between psychopathic traits (assessed via the PCL-R; Hare, 2003) and age in a large sample of incarcerated women. Specifically, a cross-sectional design was used to explore whether PCL-R scores significantly differed across different age categories in a sample of incarcerated women, like a previous study performed by Harpur and Hare (1994). Consistent with previous studies with men scoring high on psychopathy (Harpur & Hare, 1994; Huchzermeier et al., 2006; Huchzermeier et al., 2008), it was hypothesized that PCL-R Factor 2 scores would vary with age, with younger participants scoring higher on these psychopathy scores compared to older participants. Additionally, it was hypothesized that PCL-R Factor 1 scores would not vary with age, with younger and older participants scoring comparably on these psychopathy scores. In addition to PCL-R factor scores, relationships between age and PCL-R total and facet

scores were also tested among incarcerated women. Given that research on associations between psychopathic traits and age has yielded mixed results in women, this study helps to inform the nature of these associations in a population worthy of more empirical attention (Braithwaite et al., 2005). This work also holds important theoretical implications for the construct of psychopathy more generally, particularly for women. For example, if as hypothesized, PCL-R Factor 1 and Factor 2 scores show different relationships with age, this would offer additional support for the conceptualization of psychopathy as a heterogeneous construct in women (Falkenbach et al., 2017), with dimensions that can be meaningfully distinguished by unique etiological and developmental processes.

Method

Participants

Participants included 501 incarcerated women recruited from correctional facilities in the states of New Mexico and Wisconsin. At the time of data collection, participants ranged from 19.17 to 57.02 years of age (M = 34.75 years, SD = 8.08 years). Participants self-identified their race as either American Indian or Alaskan Native (n = 43), Asian (n = 1), Black or African American (n = 49), Native Hawaiian or other Pacific Islander (n = 3), White (n = 387), or more than one race (n = 6). Twelve participants chose not to self-disclose their race. Additionally, participants self-identified their ethnicity as either Hispanic/Latina (n = 225) or non-Hispanic/Latina (n = 276). Volunteer research participants provided written informed consent, were informed of their right to terminate participation at any point without consequence, and that their participation would not affect their facility or parole status. Participants were compensated at a rate consistent with the hourly labor wage of the correctional facility at which they were housed. This research was approved by multiple IRBs, including the Ethical and Independent Review Services and the University of Wisconsin-Madison, and divisions of the Corrections Department in Wisconsin and New Mexico Corrections Department, and the Office for Human Research Protections.

Assessments—Trained research staff, all of whom had a bachelor's degree or higher education level, administered the PCL-R (Hare, 2003) to assess psychopathic traits via a semi-structured interview and review of collateral information, including institutional files. The PCL-R includes twenty items assessing psychopathic traits, with each item scored based on the following criteria: a score of *zero* indicates the item does not apply to the individual, a score of *one* means the item somewhat applies to the individual, and a score of *two* reflects that the item definitely applies to the individual. PCL-R total scores can range from 0 to 40. The mean PCL-R total score in the sample was 19.83 (SD = 6.95, range: 2.2 – 37.9, α = .82). Trained research staff completed independent double ratings on 9% (n = 46) of the sample and inter-rater reliability was high for PCL-R total score (ICC = .95, p < .001), reflecting excellent rater agreement.

In addition to PCL-R total scores, relationships between age and PCL-R factor and facet scores were also investigated. PCL-R Factor 1 assesses interpersonal and affective psychopathic traits, whereas PCL-R Factor 2 measures lifestyle/behavioral and antisocial/ developmental psychopathic traits. The mean PCL-R Factor 1 score in the full sample was

5.72 (SD = 3.60, range: 0 – 16, α = .79) and the mean PCL-R Factor 2 score was 12.10 (SD = 4.05, range: 0 – 20, α = .72). PCL-R factor scores were significantly positively correlated with each other (r = .37, p < .001). Additionally, the mean PCL-R Facet 1 score, assessing interpersonal psychopathic traits, was 2.06 (SD = 1.81, range: 0 – 8, α = .64) and the mean Facet 2 score, assessing affective psychopathic traits, was 3.66 (SD = 2.33, range: 0 – 8, α = .78). The mean Facet 3 score, assessing lifestyle/behavioral psychopathic traits, was 5.96 (SD = 2.28, range: 0 – 10, α = .65) and the mean Facet 4 score, assessing antisocial/developmental psychopathic traits, was 6.10 (SD = 2.46, range: 0 – 10, α = .63).

Data Analysis—First, zero-order correlations between participant's age and PCL-R total, factor, and facet scores were investigated. Significant correlations reflect those which survived a modified Bonferroni multiple comparison correction (i.e., .05/7, or p < .007). Next, a multivariate analysis of variance (MANOVA) analysis, like that included in Harpur and Hare (1994), was performed. Similar to this previous report, participants were split into seven different age categories depending on how old they were at the administration of the PCL-R. *Age Category #1* included participants 19 – 23 years of age (n = 36), *Age Category #2* included participants 24 – 28 years of age (n = 92), *Age Category #3* included participants 29 – 33 years of age (n = 138), *Age Category #4* included participants 34 – 38 years of age (n = 98), *Age Category #5* included participants 39 – 43 years of age (n = 63), *Age Category #6* included participants 44 – 48 years of age (n = 41), and *Age Category #7* included participants older than 49 years of age (i.e., 49 – 57 years of age, n = 33). In this MANOVA analysis performed, the seven different age categories were entered as the fixed factor, whereas PCL-R total, factor, and facet scores were entered as the dependent variables (i.e., a 7×7 MANOVA). Subsequent univariate ANOVA analyses were performed to observe which specific psychopathic traits varied with age.

Results

Descriptive Statistics

The mean PCL-R total, factor, and facet scores for participants included in each age category are displayed in Table #1. As observed in this table (as well as Figures #1, #2, and #4), PCL-R total, Factor 2 (lifestyle/behavioral and antisocial/developmental psychopathic traits), Facet 3 (lifestyle/behavioral psychopathic traits), and Facet 4 (antisocial/developmental psychopathic traits) scores varied with age, with younger participants scoring higher on these specific psychopathic traits compared to older participants. Alternatively, PCL-R Factor 1 (interpersonal and affective psychopathic traits), Facet 1 (interpersonal psychopathic traits), and Facet 2 (affective psychopathic traits) scores did not appear to vary with age, with similar scores observed across different age categories (see Figures #2 and #3).

Correlation Analyses

Participant's age was significantly negatively correlated with PCL-R total (r = −.23, p < .001), Factor 2 (r = −.30, p < .001), Facet 3 (r = −.25, p < .001), and Facet 4 (r = −.27, p < .001) scores. Additionally, participant's age was negatively correlated with PCL-R Facet 2 scores (r = −.10, p = .020), though this did not survive multiple comparison correction.

Participant's age was not significantly correlated with PCL-R Factor 1 ($r = -.09$, $p = .059$) or Facet 1 ($r = -.03$, $p = .442$) scores.

MANOVA and ANOVA Analyses

The MANOVA analysis indicated that the overall difference regarding psychopathy scores was significant across the different age categories [$F(42,2250) = 2.82$, $p < .001$, partial $\eta^2 = .039$, Wilks' $\lambda = 0.786$). Subsequent univariate ANOVA analyses indicated that the overall difference across age categories was significant for PCL-R total ($F(6,491) = 5.45$, $p < .001$, partial $\eta^2 = .063$), Factor 2 ($F(6,491) = 10.69$, $p < .001$, partial $\eta^2 = .117$), Facet 3 ($F(6,491) = 6.42$, $p < .001$, partial $\eta^2 = .074$), and Facet 4 ($F(6,491) = 8.90$, $p < .001$, partial $\eta^2 = .099$) scores. There was not a significant difference across age categories for PCL-R Factor 1 ($F(6,491) = 1.19$, $p = .313$, partial $\eta^2 = .013$), Facet 1 ($F(6,491) = 0.96$, $p = .453$, partial $\eta^2 = .012$), or Facet 2 ($F(6,491) = 1.17$, $p = .324$, partial $\eta^2 = .014$) scores.

Discussion

Previously published studies with men indicate that while PCL-R Factor 1 scores are consistent across younger and older participants, PCL-R Factor 2 scores appear to vary with age. Specifically, younger men score higher on PCL-R Factor 2 scores compared to older men (Harpur & Hare, 1994; Huchzermeier et al., 2006; Huchzermeier et al., 2008). To date, the association between psychopathic traits and age among women is not well-understood. Previous studies with mixed-gender samples suggest that in addition to lifestyle/behavioral and antisocial/developmental psychopathic traits, interpersonal (Gill & Crino, 2012) and affective (Coid et al., 2009; Gill & Crino, 2012) psychopathic traits vary with age. However, no study to date has investigated the association between psychopathic traits and age in a sample composed entirely of women. Here, in a large sample of 501 incarcerated women ranging from 19 to 57 years of age, similar results as those previously reported in men were observed. Specifically, while interpersonal and affective psychopathic traits (i.e., PCL-R Factor 1, Facet 1, and Facet 2 scores) were consistent across different age categories, lifestyle/behavioral and antisocial/developmental psychopathic traits (i.e., PCL-R Factor 2, Facet 3, and Facet 4 scores) varied with age, with younger women scoring higher compared to older women. Therefore, these preliminary results suggest that the life course trajectory of psychopathic traits may be invariant across gender. PCL-R Factor 1 scores, representing core personality traits, remain stable throughout the life course, whereas PCL-R Factor 2 scores, representing impulsive-antisocial behavior, may be more likely to vary with age among both men and women.

The results obtained in the current study support the notion that psychopathy can be considered a heterogeneous construct in women (Falkenbach et al., 2017), as age was only significantly associated with one of the PCL-R factors (i.e., Factor 2). While PCL-R factor scores are significantly correlated with one another (Harpur et al., 1989), they represent different dimensions reflecting unique psychopathic traits and behaviors. Specifically, while PCL-R Factor 1 reflects core personality traits, including interpersonal and affective dysfunction, PCL-R Factor 2 measures impulsive-antisocial behavior. Past research has suggested that the two PCL-R factors appear to be associated with unique etiological and

developmental processes. For example, traits included within PCL-R Factor 1 have been shown to help distinguish a subgroup of conduct-disordered youth early in development, who are more likely to engage in life-course persistent antisocial behavior compared to youth scoring low on these traits (Frick & White, 2008). Such traits in youth are referred to as callous-unemotional (CU) traits; youth scoring high on CU traits are characterized by interpersonal and affective deficits, including a lack of empathy, guilt, and remorse (Frick et al., 2014), and CU traits show relatively high stability from childhood to early adulthood (Blonigen et al., 2006; Loney et al., 2007). As similar PCL-R Factor 1 scores were observed between different age categories in the current study, these results suggest that among women, interpersonal (e.g., pathological lying, manipulativeness) and affective (e.g., a lack of empathy, guilt, and remorse) deficits associated with psychopathy may appear early in development and remain stable across the lifespan. Compared to the stability of PCL-R Factor 1 scores, PCL-R Factor 2 scores appear to vary throughout life. Specifically, while youth often score higher on traits included within PCL-R Factor 2, including impulsivity, sensation seeking, and irresponsible behavior (Hammond et al., 2012; Steinberg et al., 2008), individuals scoring high on such traits often "age out" of them by adulthood (Steinberg et al., 2008). Furthermore, compared to older individuals, younger individuals are more likely to meet criteria for various externalizing disorders characterized by higher PCL-R Factor 2 scores (e.g., impulsivity), including substance use disorders (Schulte & Hser, 2013; Vasilenko et al., 2017) and APD (Harpur & Hare, 1994). Therefore, PCL-R Factor 2 traits, measuring impulsive-antisocial behavior, appear to vary as a function of age, with younger individuals scoring higher on these specific psychopathic traits compared to older individuals.

The instability of PCL-R Factor 2 traits observed in the current study is consistent with the well-established *age-crime curve* (Farrington, 1986). According to the age-crime curve, individuals begin engaging in criminal activity during adolescence, engage in peak levels of criminal activity in late adolescence and early adulthood, and exhibit declining rates of criminal activity throughout late adulthood (Farrington, 1986). Therefore, the age-crime curve follows an inverted U-shaped curve (Gottfredson & Hirschi, 1990), with criminal activity declining throughout adulthood. The transition from adolescence to adulthood is associated with changes across multiple domains, which may contribute to this decline in criminal activity. For example, relative to adolescence, adulthood is often associated with increased pressure related to job performance, more significant romantic relationships, including cohabitating with a romantic partner, and parental responsibilities (e.g., childbearing, raising children, etc.) (Steinberg & Morris, 2001). Furthermore, improved brain maturation occurring throughout life is associated with improved decision-making and reduced risk-taking (Farrington et al., 2012), reduced impulsivity (Hammond et al., 2012), and improved self-control (Geldhof et al., 2010), which may further contribute to declining rates of criminal activity observed in adulthood. As PCL-R Factor 2 scores, measuring impulsive-antisocial behavior, varied with age in the current study, with younger women scoring higher on these specific psychopathic traits compared to older women, these results align with the age-crime curve. Furthermore, as PCL-R Factor 2 encompasses aspects of self-control (e.g., impulsivity and stimulation seeking), increases within self-control may

help to account for declines in PCL-R Factor 2 scores and antisocial behavior among women later in life.

Consistent with previous studies performed with men (Harpur & Hare, 1994; Huchzermeier et al., 2006; Huchzermeier et al., 2008), interpersonal and affective psychopathic traits did not vary with age in women. While no study to date has investigated the association between psychopathic traits and age in a sample composed entirely of women, some of the current results are inconsistent with those obtained from mixed-gender samples (Coid et al., 2009; Gill & Crino, 2012). Specifically, these mixed-gender studies observed that younger individuals scored higher on interpersonal and affective psychopathic traits compared to older individuals. However, distinct sample characteristics may help explain observed differences between studies. Specifically, while the current study recruited incarcerated women, the previously published studies described above recruited men and women from the general community (Coid et al., 2009; Gill & Crino, 2012). Compared to participants recruited from incarcerated settings, those recruited from community samples tend to score significantly lower on measures of psychopathy (Neumann & Hare, 2008). While interpersonal and affective psychopathic traits may have varied with age in community participants characterized by low levels of psychopathic traits, similar results were not observed in incarcerated women displaying a wider range of psychopathy scores. Clearly, more research is needed to determine whether the current results replicate in independent samples of incarcerated women.

Overall, results obtained in the current study indicate that psychopathic traits measuring core personality traits, including interpersonal and affective dysfunction, do not appear to vary with age, whereas psychopathic traits measuring impulsive-antisocial behavior, appear to vary with age, among women. These findings contribute to better inform risk prediction efforts in women. Specifically, results suggest that Factor 1 and Factor 2 scores may differentially inform risk among women in different age categories. For example, it is possible that Factor 2 may be less informative in predicting risk (e.g., for recidivism) among older women compared to younger women, as women may be less likely to engage in antisocial and criminal behavior later in life. Supporting this notion, while studies composed of younger women have observed that PCL-R Factor 2 scores predict future outcomes, including recidivism (Eisenbarth et al., 2012; Hemphälä & Hodgins, 2014), studies with older participants have observed that PCL-R Factor 1 scores predict recidivism (Richards et al., 2003; Salekin et al., 1997). That said, research on psychopathy and recidivism in women has produced mixed results, with other studies suggesting that both Factor 1 and Factor 2 may be important in predicting recidivism (Gray & Snowden, 2016). Therefore, it remains unclear the extent to which Factor 1 predicts recidivism in women. However, results of the current study suggest that assessment of psychopathic traits via the PCL-R, particularly Factor 2 traits, may differentially inform risk in women of different ages.

Limitations

Limitations associated with the current study need to be acknowledged. First, this study employed a cross-sectional design, with participants included within different age categories, depending on how old they were at the time of PCL-R administration. With this

cross-sectional design, the current study cannot make any claims suggesting that specific psychopathic traits *decrease* with increased age. More research is needed, with both men and women scoring high on psychopathy, to see how the same individual scores on measures of psychopathic traits throughout their life. Second, associations between psychopathic traits and age were investigated among incarcerated women, which may have influenced PCL-R Factor 2 scores. For example, compared to participants in the community, incarcerated individuals are more limited in crime they can commit. As such, while incarcerated, these individuals are not afforded the same opportunity to potentially increase their score on PCL-R Factor 2 items, including criminal versatility or revocation of conditional release, by engaging in new forms of criminal activity. Instead, while these individuals are incarcerated, scores on these items are primarily influenced by historical incidence of antisocial behavior, rather than new occurrences of criminal behavior. Therefore, while the current findings suggest that specific psychopathic traits appear to vary with age among incarcerated women, additional studies need to be performed in non-incarcerated, community samples of women scoring high on psychopathy, to see if PCL-R Factor 2 scores similarly vary with age. Finally, while the relationships between psychopathic traits and age were investigated in women ranging from 19 to 57 years of age, previously published studies have investigated this relationship in older participants, including those up to 70 years of age (Coid et al., 2009; Harpur & Hare, 1994). Therefore, it is not known whether consistent results would be obtained among incarcerated women characterized by a wider age range.

Conclusions

In a sample composed entirely of incarcerated women, PCL-R Factor 2 scores, measuring impulsive-antisocial behavior, varied with age, with younger participants scoring higher on these psychopathy scores compared to older participants. PCL-R Factor 1 scores, assessing core personality traits reflective of interpersonal and affective dysfunction, did not vary with age, and instead, were consistent across different age categories. These results are consistent with previous studies performed with samples composed entirely of men, suggesting that the variation and stability of specific psychopathic traits across the lifespan appear to be invariant across gender.

Acknowledgements

References

Blair RJR (2003). Neurological basis of psychopathy. The British Journal of Psychiatry, 182(1), 5–7. [PubMed: 12509310]

Blonigen DM, Hicks BM, Krueger RF, Patrick CJ, & Iacono WG (2006). Continuity and hangein psychopathic traits as measured via normal-range personality: A longitudinal-biometric study. Journal of Abnormal Psychology, 115(1), 85–95. [PubMed: 16492099]

Braithwaite RL, Treadwell TM, & Arriola KRJ (2005). Health disparities and incarcerated women:A population ignored. American Journal of Public Health, 98(Supp 1), S173–S175.

Coid J, Yang M, Ullrich S, Roberts A, & Hare RD (2009). Prevalence and correlates of psychopathic traits in the household population of Great Britain. International Journal of Law and Psychiatry, 32(2), 65–73. [PubMed: 19243821]

Eisenbarth H, Krammer S, Edwards BG, Kiehl KA, & Neumann CS (2018). Structural analyses of the PCL-R and relationship to BIG FIVE personality traits and parenting characteristics in an Hispanic female offender sample. Personality and Individual Differences, 129, 59–65. [PubMed: 30333675]

Eisenbarth H, Osterheider M, Nedopil N, & Stadtland C (2012). Recidivism in female offenders: PCL-R lifestyle factor and VRAG show predictive validity in a German sample. Behavioral Sciences & the Law, 30, 575–584. [PubMed: 22718134]

Edwards BG, Maurer JM, Harenski CL, & Kiehl KA (2021). Psychopathy, borderline personality disorder, and substance use in incarcerated females. Criminal Justice and Behavior, 48(12), 1732–1748.

Falkenbach DM, Reinhard EE, & Roelofs Larson FR (2017). Theory based gender differences in psychopathy subtypes. Personality and Individual Differences, 105, 1–6.

Farrington DP (1986). Age and crime. In Tonry M & Morris N (Eds.), Crime and Justice: An Annual Review of Research (Vol. 7, pp. 189–250). Chicago: University of Chicago Press.

Farrington DP, Loeber R, & Howell JC (2012). Young adult offenders: The need for more effective legislative options and justice processing. Criminology & Public Policy, 11(4), 729–750.

Frick PJ, Ray JV, Thornton LC, & Kahn RE (2014). Annual research review: A developmental psychopathology approach to understanding callous-unemotional traits in children and adolescents with serious conduct problems. The Journal of Child Psychology and Psychiatry, 55(6), 532–548. [PubMed: 24117854]

Frick PJ, & White SF (2008). Research review: The importance of callous-unemotional traits for developmental models of aggressive and antisocial behavior. The Journal of Child Psychology and Psychiatry, 49(4), 359–375. [PubMed: 18221345]

Geldhof G, Little TD, & Colombo J (2010). Self-regulation across the life span. In Lamb ME, Freund AM, & Lerner RM (Eds.), The Handbook of Life-Span Development, Vol. 2. Social and Emotional Development (pp. 116–157). John Wiley & Sons, Inc.

Gill DJ & Crino RD (2011). The relationship between psychopathy and age in a non-clinical community convenience sample. Psychiatry, Psychology and Law, 19(4), 547–557.

Gottdredson M, & Hirschi T (1990). A general theory of crime. Stanford, CA: Stanford University Press.

Gray NS, & Snowden RJ (2016). Psychopathy in women: Prediction of criminality and violence in UK and USA psychiatric patients resident in the community. Psychiatry Research, 237, 339–343. [PubMed: 26833281]

Hammond C, Potenza M, & Mayes L (2012). Development of impulse control, inhibition, and self-regulatory behaviors in normative populations across the lifespan. In Grant JE & Potenza MN (Eds.), The Oxford Handbook of Impulse Control Disorders (pp. 233–244). New York, NY: Oxford University Press.

Hare RD (2003). The Hare Psychopathy Checklist – Revised (2nd Ed.). Toronto, Ontario: Multi-Health Systems.

Hare RD, Hart SD, & Harpur TJ (1991). Psychopathy and the DSM-IV criteria for antisocial personality disorder. Journal of Abnormal Psychology, 100(3), 391–398. [PubMed: 1918618]

Harenski CL, Edwards BG, Harenski KA, & Kiehl KA (2014). Neural correlates of moral and non moral emotion in female psychopathy. Frontiers in Human Neuroscience, 8, 741. [PubMed: 25309400]

Harpur TJ, & Hare RD (1994). Assessment of psychopathy as a function of age. Journal of Abnormal Psychology, 103(4), 604–609. [PubMed: 7822561]

Harpur TJ, Hare RD, & Hakstian AR (1989). Two-factor conceptualization of psychopathy: Construct validity and assessment implications. Psychological Assessment: A Journal of Consulting and Clinical Psychology, 1(1), 6–17.

Hemphälä M. & Hodgins S. (2014). Do psychopathic traits assessed in mid-adolescence predict mental health, psychosocial, and antisocial, including criminal outcomes, over the subsequent 5 years? The Canadian Journal of Psychiatry, 59(1), 40–49. [PubMed: 24444323]

Huchzermeier C, BruB E, Geiger F, Godt N, von Nettelbladt F, & Aldenhoff J (2006). Psychopathy Checklist scores predicts negative events during the sentences of prisoners with Hare Psychopathy: A prospective study at a German prison. The Canadian Journal of Psychiatry, 51(11), 692–697. [PubMed: 17121167]

Huchzermeier C, Geiger F, Kohler D, BruB E, Godt N, … &Aldenhoff JB. (2008). Are there age-related effects in antisocial personality disorders and psychopathy? Journal of Forensic and Legal Medicine, 15(4), 213–218. [PubMed: 18423352]

Kennealy PJ, Hicks BM, & Patrick CJ (2007). Validity of factors of the Psychopathy Checklist - Revised in female prisoners: Discriminant relations with antisocial behavior, substance abuse, and personality. Assessment, 14(4), 323–340. [PubMed: 17986651]

Kiehl KA, & Hoffman MB (2011). The criminal psychopath: History, neuroscience, treatment, and economics. Jurimetrics, 51, 355–397. [PubMed: 24944437]

Loney BR, Taylor J, Butler MA, & Iacono WG (2007). Adolescent psychopathy features: 6-year temporal stability and the prediction of externalizing symptoms during the transition to adulthood. Aggressive Behavior, 33(3), 242–252. [PubMed: 17444530]

Neumann CS, & Hare RD (2008). Psychopathic traits in a large community sample: Links to violence, alcohol use, and intelligence. Journal of Consulting and Clinical Psychology, 76(5), 893–899. [PubMed: 18837606]

Newman JP, & Baskin-Sommers A (2011). Early selective attention abnormalities in psychopathy: Implications for self-regulation. In Posner M (Ed.), Cognitive Neuroscience of Attention, (pp.421–440). New York, NY: Guilford Press.

Porter S, Birt AR, & Boer DP (2001). Investigation of the criminal and conditional release profiles of Canadian federal offenders as a function of psychopathy and age. Law and Human Behavior, 25, 647–661. [PubMed: 11771639]

Richards HJ, Casey JO, & Lucente SW (2003). Psychopathy and treatment response in incarcerated female substance abusers. Criminal Justice and Behavior, 30(2), 251–276.

Salekin RT, Rogers R, Ustad KL, & Sewell KW (1998). Psychopathy and recidivism among female inmates. Law and Human Behavior, 22(1), 109–128. [PubMed: 9487793]

Schulte MT & Hser Y-I (2013). Substance use and associated health conditions throughout the lifespan. Public Health Reviews, 35(2), 1–27.

Steinberg L, Albert D, Cauffman E, Banich M, Graham S, & Woolard J (2008). Age differences in sensation seeking and impulsivity as indexed by behavior and self-report: Evidence from a dual systems model. Developmental Psychology, 44(6), 1764–1778. [PubMed: 18999337]

Steinberg L, & Morris AS (2001). Adolescent development. Annual Review of Psychology, 52, 83–110.

Taylor J, & Lang AR (2006). Psychopathy and substance use disorders. In Patrick CJ (Ed.), Handbook of Psychopathy (pp. 495–511). New York: Guilford Press.

Vasilenko SA, Evans-Polce RJ, & Lanza ST (2017). Age trends in rates of substance use disorders across age 18–90: Differences by gender and race/ethnicity. Drug and Alcohol Dependence, 180, 260–264. [PubMed: 28938183]

Verona E, & Vitale J (2018). Psychopathy in women: Assessment, manifestations, and etiology. In Patrick CJ (Ed.), Handbook of Psychopathy (2nd ed.; pp. 509–528). New York, NY: Guilford Press.

Vitacco MJ, Rogers R, Neumann CS, Harrison KS, & Vincent G (2005). A comparison of factor models on the PCL-R with mentally disordered offenders: The development of a four-factor model. Criminal Justice and Behavior, 32(5), 526–545.

Vitale JE, Brinkley CA, Hiatt KD, & Newman JP (2007). Abnormal selective attention in psychopathic female offenders. Neuropsychology, 21(3), 301–312. [PubMed: 17484593]

Vitale JE, & Newman JP (2001). Using the Psychopathy Checklist – Revised with female samples: Reliability, validity, and implications for clinical utility. Clinical Psychology: Science and Practice, 8(1), 117–132.

Walters GD (2003). Predicting institutional adjustment and recidivism with the Psychopathy Checklist factor scores: A meta-analysis. Law and Human Behavior, 27, 541–558. [PubMed: 14593797]

Yoder KJ, Harenski C, Kiehl KA, & Decety J (2021). Neural responses to morally laden interactions in female inmates with psychopathy. NeuroImage: Clinical, 30, 102645. [PubMed: 33838544]
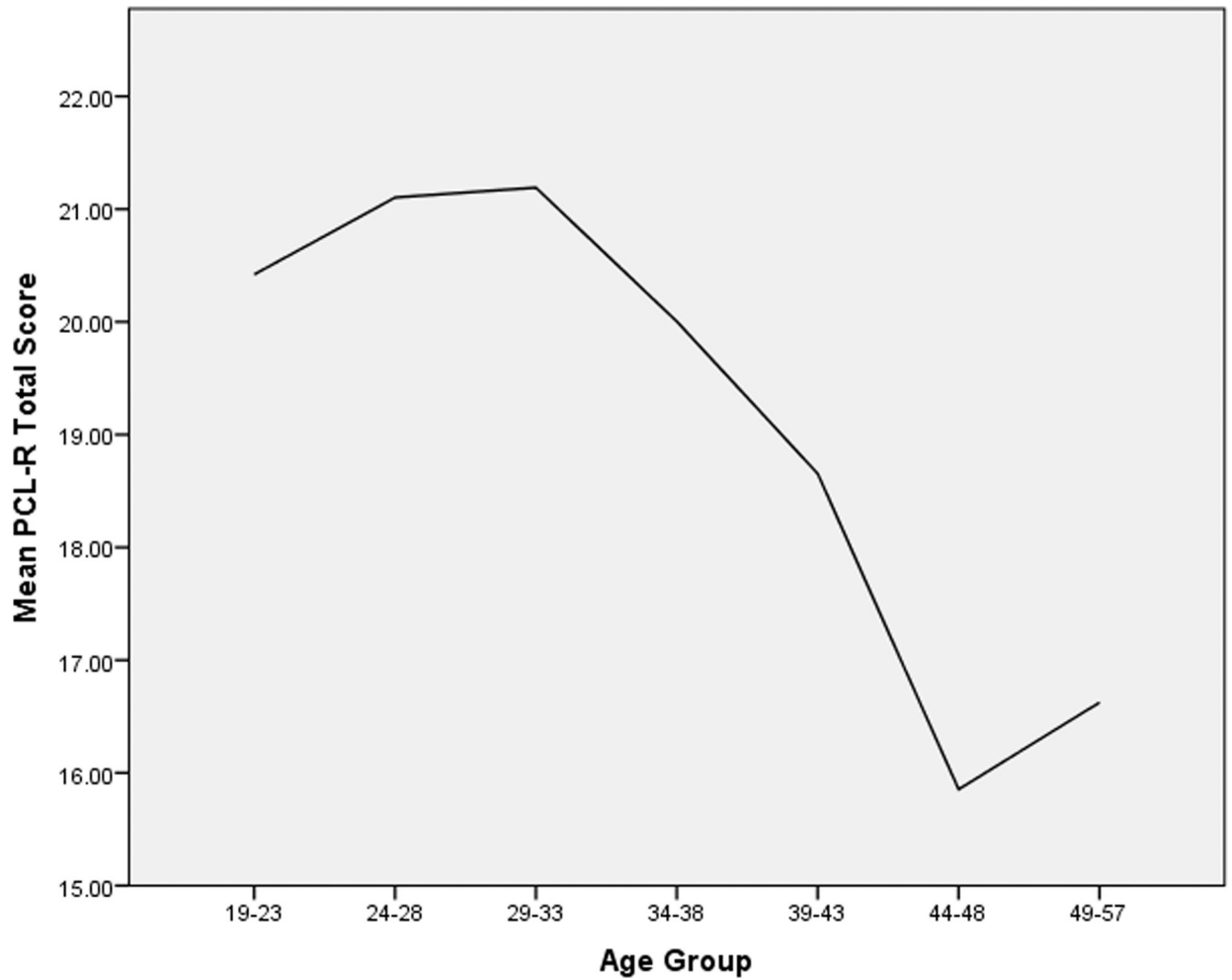
Figure #1. Graphical Representation of Mean PCL-R Total Scores Across Different Age Categories

Note. The seven different age categories are included on the X-axis, with mean PCL-R total scores for each age category included on the Y-axis. As shown in Figure 1, PCL-R total scores appear to vary with age, with younger participants scoring higher compared to older participants.
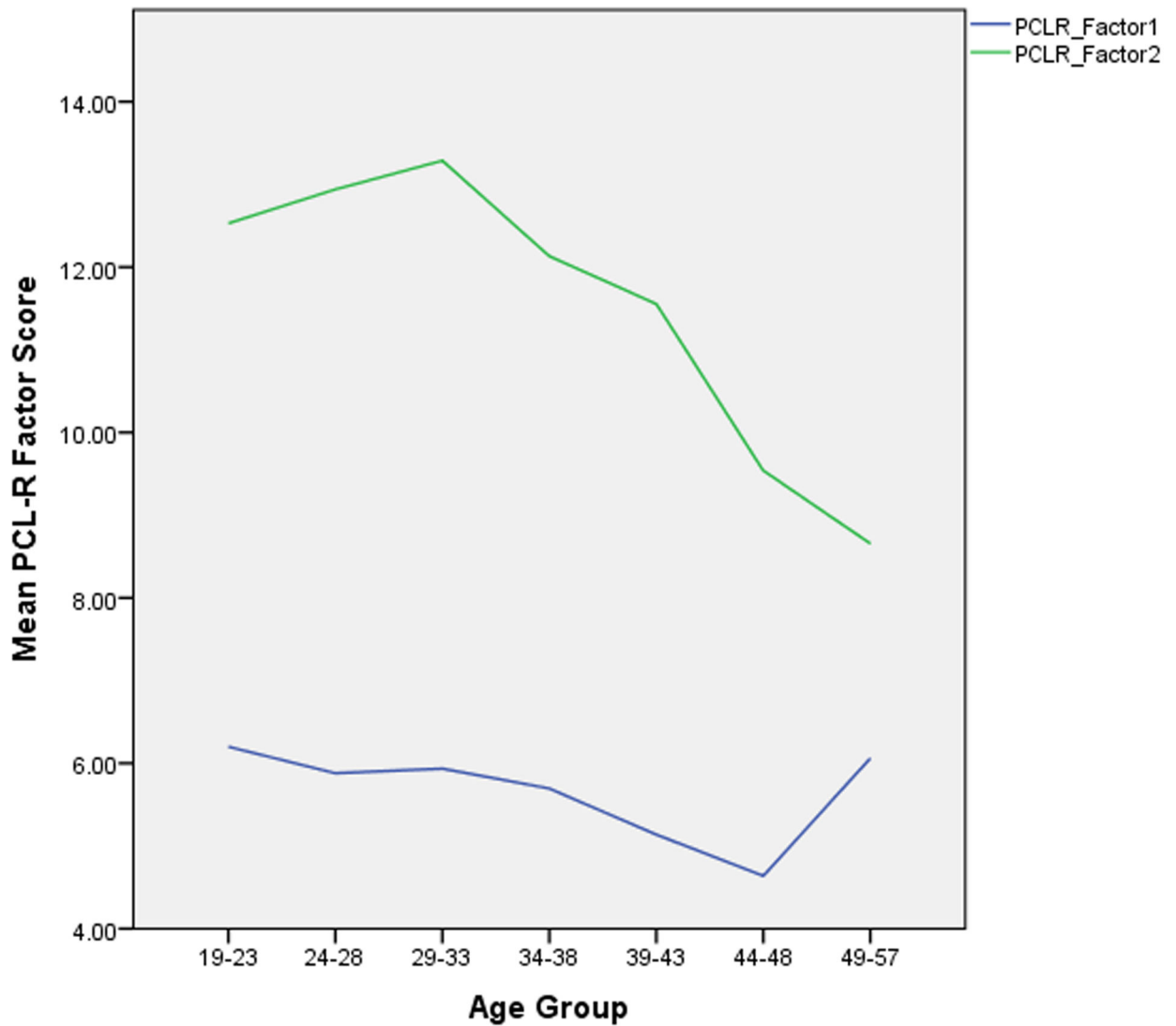
Figure #2. Graphical Representation of Mean PCL-R Factor Scores Across Different Age Categories
Note. The seven different age categories are included on the X-axis, with mean PCL-R Factor 1 and 2 scores for each age category included on the Y-axis. As shown in Figure 2, while PCL-R Factor 1 scores (outlined in blue) were rather consistent across the different age categories, PCL-R Factor 2 scores (outlined in green) varied with age. Specifically, older participants scored lower on PCL-R Factor 2 compared to younger participants.
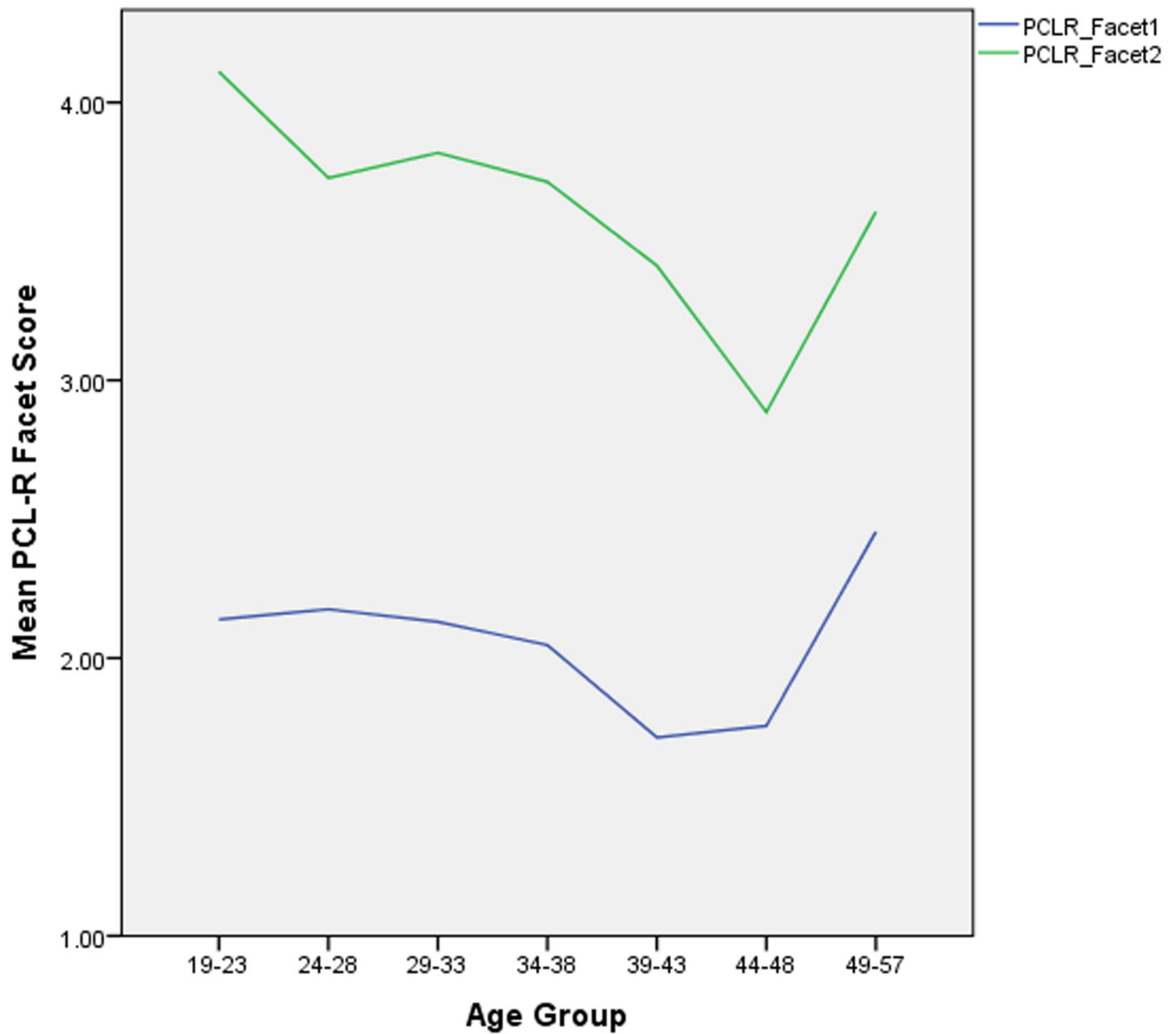
Figure #3. Graphical Representation of Mean PCL-R Facet 1 and 2 Scores Across Different Age Categories

Note. The seven different age categories are included on the X-axis, with mean PCL-R Facet 1 and 2 scores for each age category included on the Y-axis. PCL-R Facet 1 scores are outlined in blue and PCL-R Facet 2 scores are outlined in green. As shown in Figure 3, scores on PCL-R Facet 1 and 2 were comparable across the different age categories.
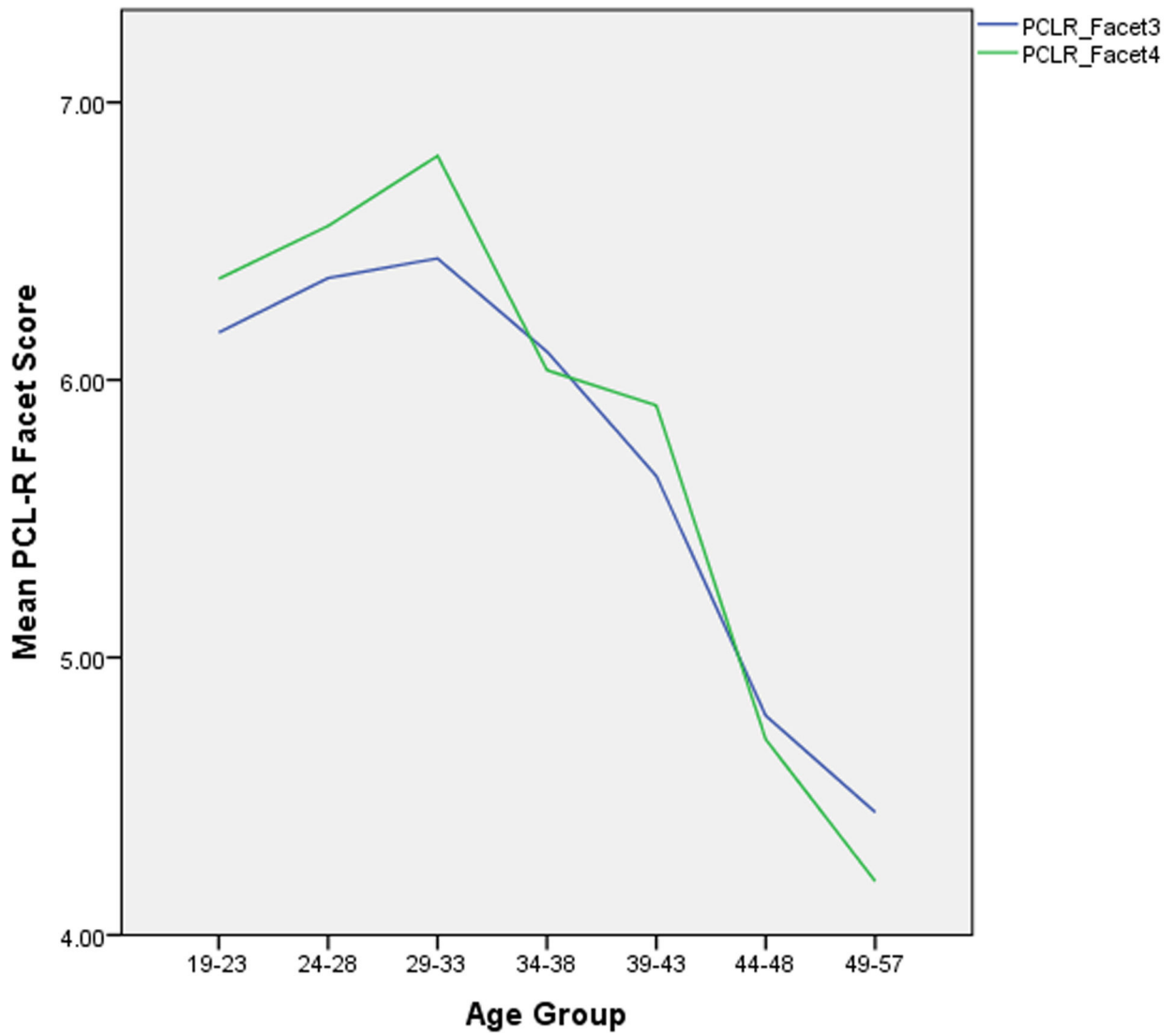
Figure #4. Graphical Representation of Mean PCL-R Facet 3 and 4 Scores Across Different Age Categories
Note. The seven different age categories are included on the X-axis, with mean PCL-R Facet 3 and 4 scores for each age category included on the Y-axis. PCL-R Facet 3 scores are outlined in blue and PCL-R Facet 4 scores are outlined in green. As shown in Figure 3, scores on PCL-R Facet 3 and 4 varied with age, with older participants scoring lower on these facets compared to younger participants.

Table #1

Mean PCL-R Total, Factor, and Facet scores for Participants Included in Different Age Categories

Group	PCL-R Total	PCL-R Factor 1	PCL-R Factor 2	PCL-R Facet 1	PCL-R Facet 2	PCL-R Facet 3	PCL-R Facet 4
19 – 23 years old	20.49 ($SD =$ 6.85)	6.29 ($SD =$ 3.96)	12.49 ($SD =$ 3.48)	2.19 ($SD =$ 1.97)	4.10 ($SD =$ 2.47)	6.17 ($SD =$ 2.24)	6.36 ($SD =$ 2.17)
24 – 28 years old	21.11 ($SD =$ 6.87)	5.88 ($SD =$ 3.83)	12.94 ($SD =$ 3.65)	2.18 ($SD =$ 1.86)	3.70 ($SD =$ 2.49)	6.35 ($SD =$ 2.21)	6.58 ($SD =$ 2.21)
29 – 33 years old	21.22 ($SD =$ 6.36)	5.93 ($SD =$ 3.44)	13.29 ($SD =$ 3.37)	2.12 ($SD =$ 1.87)	3.82 ($SD =$ 2.47)	6.44 ($SD =$ 2.02)	6.81 ($SD =$ 2.29)
34 – 38 years old	19.95 ($SD =$ 6.22)	5.69 ($SD =$ 3.59)	12.13 ($SD =$ 3.37)	2.02 ($SD =$ 1.69)	3.68 ($SD =$ 2.47)	6.10 ($SD =$ 2.08)	6.04 ($SD =$ 1.98)
39 – 43 years old	18.65 ($SD =$ 7.77)	5.14 ($SD =$ 3.45)	11.55 ($SD =$ 4.59)	1.71 ($SD =$ 1.69)	3.41 ($SD =$ 2.25)	5.65 ($SD =$ 2.42)	5.91 ($SD =$ 2.60)
44 – 48 years old	15.85 ($SD =$ 6.99)	4.64 ($SD =$ 3.22)	9.54 ($SD =$ 4.57)	1.76 ($SD =$ 1.59)	2.89 ($SD =$ 2.40)	4.79 ($SD =$ 2.32)	4.70 ($SD =$ 2.84)
49+ years old	16.62 ($SD =$ 7.46)	6.06 ($SD =$ 3.87)	8.65 ($SD =$ 4.98)	2.45 ($SD =$ 2.08)	3.61 ($SD =$ 2.09)	4.44 ($SD =$ 2.59)	4.19 ($SD =$ 2.86)

Note. PCL-R total refers to the total score derived from the Hare Psychopathy Checklist – Revised (PCL-R; Hare 2003). PCL-R Factor 1 refers to interpersonal and affective psychopathic traits, PCL-R Factor refers to lifestyle/behavioral and antisocial psychopathic traits, PCL-R Facet 1 refers to interpersonal psychopathic scores PCL-R Facet 2 refers to affective psychopathic traits, Facet 3 refers to lifestyle/behavioral psychopathic traits, and Facet 4 refers to antisocial/developmental psychopathic traits.