

Do Psychological Features Distinguish Those Who Sexually Offend Against Different Age Groups From Those Who Are Stable in Victim Age?

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Sexual Offending: Theory, Research, and Prevention, 2020, Vol. 15(1), Article e4429,
<https://doi.org/10.5964/sotrap.4429>

Received: 2020-02-17 • **Accepted:** 2020-09-17 • **Published (VoR):** 2020-12-17

Handling Editor: Martin Rettenberger, Centre for Criminology (Kriminologische Zentralstelle – KrimZ), Wiesbaden, Germany

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Abstract

Aim/Background: Victim age polymorphism occurs when someone offends against victims that span multiple age groups (e.g., child and adult victims). There is a need to better understand the correlates of age polymorphism, as clinicians are often asked about risk of offending against victims who may differ from the index offence victim as part of their risk formulation. The present study examines several potential correlates of age polymorphism: psychopathy, sexual preoccupation, multiple paraphilias, psychosis, and substance use disorders.

Materials/Method: Analyses were conducted using secondary clinical assessment data from a provincial forensic sexual behaviour program. The sample included 387 men with two or more contact sexual offence victims. The assessment data in the archival database included comprehensive information about victim age, as well as standardized assessment measures and diagnostic/clinical impressions.

Results: There were no significant associations between age polymorphism and psychopathy, multiple paraphilias, sexual preoccupation, psychosis, and substance use disorders. The only significant difference that emerged was that men who offended against victims 16 or older had a higher mean score on a measure of drug misuse than those who offended against victims 6 to 11. Most of the analyses produced small effects.

Conclusion: Our findings did not identify significant correlates of age polymorphism when restricting analyses to those men who offended against two or more victims. We consider key methodological differences that may have impacted our findings, as well as the need for rigorously designed research to develop a comprehensive model of age polymorphism.



Keywords

victim age polymorphism, victim age crossover, psychopathy, atypical sexual interests, mental health, substance misuse

Highlights

- Victim age polymorphism refers to sexual offending against victims from different age groups.
- We studied proposed correlates of victim age polymorphism in men with multiple victims.
- None of the proposed correlates were significantly associated with polymorphism.
- Our findings may be driven by methodological differences in our sample compared with past samples.

Men who commit multiple sexual offences are not always consistent in their victim selection, with victim age being the least stable victim characteristic (e.g., [Guay et al., 2001](#); [Stephens et al., 2018b](#)). Victim age polymorphism refers to inconsistency in victim-age across a series of sexual offences (e.g., having a child and adult victim). There has been increased attention to victim age polymorphism, herein referred to as age polymorphism, and its correlates due to its high prevalence and a limited understanding of this offending pattern (e.g., [Guay et al., 2001](#); [Rice & Knight, 2019](#); [Saramago et al., 2020](#); [Stephens et al., 2017](#); [Stephens et al., 2018b](#)).

Operationalizing Age Polymorphism

A challenge in research on victim age and age polymorphism is the banding of different age groups. There are differences across studies on the age ranges used to classify child and adult victims. Further compounding this issue is that researchers are often most interested in victim age as a proxy of sexual development (e.g., [Stephens et al., 2018a](#)). For example, researchers are often interested in whether a child victim physically resembles someone who is prepubescent due to its relevance to the diagnosis of pedophilic disorder. Fortunately, researchers have proposed age bands that roughly correspond to different stages of sexual development that could increase consistency across studies (e.g., [Hames & Blanchard, 2012](#); [Seto, 2017](#)).

Most notably, [Seto \(2017\)](#) provided age ranges that roughly correspond to different stages of sexual development and sexual age interest: infants and toddlers (up to age 2), prepubescent children (3-10), pubescent children (11-14), postpubescent teenagers (15-16), young adults (18 to late 30s), middle aged adults (40s to late 50s), and older adults (60+). These age groups could be used in studies on age polymorphism; however, one must consider that the number of age groups could inflate the prevalence of age

polymorphism. For example, if two age groups (child and adult) are included there is only one possibility for age polymorphism, whereas if three age groups (child, teen, and adult) are included there are two possibilities for age polymorphism. To date, most research has included two (child and adult) or three (child, teen, and adult) victim age groups and operationalized age polymorphism as crossover between any of these different age groups (e.g., [Brown et al., 2015](#); [Kleban et al., 2013](#); [Porter et al., 2000](#)).

The way previous studies have classified age polymorphism means that someone who offends against adjacent age groups, such as a prepubescent and pubescent child, and non-adjacent age groups, such as a prepubescent child and a young adult, would both be considered polymorphic. This is potentially problematic, as age polymorphism between adjacent age groups is expected for two reasons. First, there is greater similarity between adjacent than nonadjacent age groups. It is possible that men are offending against victims in adjacent age groups who physically resemble each other, even if they are classified in different age groups because age is an imperfect proxy of sexual development.

Furthermore, researchers can expect someone to have sexual interest in age groups that slightly deviate from one's preferred target ([Seto, 2017](#)), which is largely ignored in research on age polymorphism with one exception (e.g., [Saramago et al., 2020](#)). We argue that nonadjacent age polymorphism is likely of greatest interest to researchers and clinicians because it increases the likelihood that victims are truly distinct in physical appearance and that the offending pattern is more erratic. Unsurprisingly, nonadjacent age polymorphism is relatively rare (25% of cases of polymorphism) compared with adjacent age polymorphism (75%; [Saramago et al., 2020](#)).

Although discussion of victim age classification may appear esoteric, it is important because it can influence findings on age polymorphism and its correlates. Overall, there is a need to better understand correlates of age polymorphism, as clinicians can be asked about the risk a person poses to someone that does not resemble previous victims. For example, child protection services may explicitly ask if someone with a young adult victim poses a risk to their young teenage daughter. Additionally, clinicians are often required to consider victimology as part of their risk formulation. Research on correlates of age polymorphism may result in increased confidence in these formulations. Lastly, it is possible that research on age polymorphism correlates may aid in the creation of a tool that identifies the likelihood of polymorphism. The present study examines correlates of age polymorphism and whether these correlates differ depending on the operationalization of polymorphism.

Correlates of Age Polymorphism

Psychopathy

Psychopathy has been one of the most frequently studied correlates of age polymorphism. In one of the first studies to examine this association, [Porter and colleagues \(2000\)](#)

found that 64.0% of men who exhibited age polymorphism met the cut-off score for psychopathy, compared with lower rates of psychopathy in men who solely offended against adults (35.9%) or children (23.4%). The association between psychopathy and polymorphism has been replicated across multiple studies (e.g., [Brown et al., 2015](#); [Olver & Wong; 2006](#); [Skovran et al., 2010](#)).

Despite these consistent findings, there are discrepancies on whether these differences are driven by Factor 1 (Interpersonal-Affective Deficits) or Factor 2 (Antisociality). Some researchers have found that men who were age polymorphic scored higher on Factor 1 compared with men who offended against children, adults, and those who committed nonsexual offences (e.g., [Brown et al., 2015](#); [Skovran et al., 2010](#)). Others have found significantly higher mean Factor 2 scores in their polymorphic group compared with men who offended against children (e.g., [Olver & Wong, 2006](#)). Regardless of these differences, age polymorphism has been framed as opportunistic offending that is driven by sexual sensation seeking, impulsivity, and antisociality, which are all key features of psychopathy (e.g., [Skovran et al., 2010](#); [Stephens et al., 2017](#)).

Atypical Sexual Interests

[Lussier and colleagues \(2007\)](#) proposed that a high degree of sexualization (reflected by sexual preoccupation and difficulty managing sexual urges) may prompt men to engage in a wide range of illegal sexual behavior. Despite this hypothesis, high sexualization was not associated with age polymorphism in one study ([Lussier et al., 2007](#)); however, this finding has not been replicated.

Similarly, it has been argued that men who exhibit age polymorphism may have less specific paraphilic interests and are more opportunistic in their offending ([Sjöstedt et al., 2004](#)). Men who exhibit age polymorphism have been found to be less likely to select victims based on victim characteristics and more likely to select victims based on their vulnerability, compared with those who are stable in victim age selection ([Stephens et al., 2017](#)). Further, men who were age polymorphic were more likely to show sexual arousal to a wide range of stimuli during phallometric testing ([Michaud & Proulx, 2009](#)). These findings suggest that we might expect higher rates of multiple paraphilias in men who are age polymorphic, which has not been examined in previous research.

Psychosis and Substance Use Disorders

There is also preliminary evidence that psychotic spectrum disorders may be associated with age polymorphism. [Simmons and Stephens \(2017\)](#) built on a study by [Frost and Chapman \(1987\)](#) who found a positive association between polymorphism, which they defined as diverse sexual arousal, fantasy, and past sexual behavior, and psychosis and schizotypal symptoms; however, the study was conducted with an undergraduate sample. In their sample of men who had sexually offended, [Simmons and Stephens \(2017\)](#) found an association between psychosis and age polymorphism among those who victimized

children, teens, and adults. Given that acute symptoms of psychosis can result in significant dysregulation, it is possible that this finding may extend to erratic sexual behavior among those who have offended (Simmons & Stephens, 2017). A limitation to this finding was the sole reliance on clinical diagnosis, of which few men in their sample had a diagnosis of a psychotic spectrum disorder.

Additionally, research has suggested an association between age polymorphism and substance misuse. More specifically, Saramago and colleagues (2020) found a higher prevalence of alcohol abuse (25.9%) in their polymorphic group compared with men who were stable in victim age (7.9%). Similar to the above described findings, this has not been replicated.

Present Study

The present study examines the association between age polymorphism and the following correlates: psychopathy, sexual preoccupation, multiple paraphilias, psychosis, and substance use disorders in a provincial sample of men who sexually offended. The study adds to the literature in several ways: First, we considered methodological issues that may have impacted previous findings on correlates of polymorphism by examining the impact of different operationalizations of age polymorphism (adjacent versus nonadjacent age polymorphism). It is possible that previous findings might be more evident using a stricter definition of age polymorphism that considers nonadjacent polymorphism. Second, many previous studies have not restricted their sample to men with two or more victims. This is important as differences between groups could be driven by the fact that men who are polymorphic have a greater number of victims (e.g., Stephens et al., 2018b). Lastly, we utilized a range of clinical data to examine several hypotheses of polymorphism in a single study to provide a more holistic examination, whereas previous studies have often examined correlates in isolation.

We hypothesized that men who were age polymorphic would have a higher mean psychopathy score compared with men who were stable in victim age. We also examined differences in PCL-R factor scores between groups but did not have a pre-specified hypothesis about what we would find. We also expected mean elevated scores on relevant personality measures in the age polymorphism group compared with those who were stable in victim age. It was also hypothesized that sexual preoccupation and multiple paraphilias would be more common in those who were age polymorphic compared with those who were stable in victim age. Lastly, we hypothesized that psychosis and substance use disorders would be more prevalent in those who were age polymorphic compared with those who were stable in victim age and that they would show elevations on relevant personality measure subscales. Across all analyses, we expected that these differences would be particularly pronounced in the nonadjacent polymorphism group compared with the adjacent polymorphism group.

Method

Sample

The study was conducted using an archival database of adults whose sexual behavior crossed legal boundaries. All the men in the sample were referred to the Forensic Sexual Behaviour Program in Nova Scotia, Canada. The clinic provides assessment and treatment services to adults across the province. Adults were referred to the clinic for a variety of reasons including for the purposes of receiving an assessment prior to sentencing or as part of their probation or conditional sentencing order to determine risk and eligibility for an outpatient treatment program.

The archival database consisted of 1,359 adults over the age of 18 who sexually offended and were assessed between 1998 and 2018. The sample in the present study was reduced to 387 adult men who had sexually offended against two or more victims and were included in analyses. We excluded women, those with only one victim, and/or those with child pornography offences only. Sample characteristics can be found in [Table 1](#).

Table 1

Sample Characteristics (n = 387 unless otherwise specified)

Characteristic	% (n)	M (SD)
Age at assessment		42.8 (14.6)
Ethnicity		
Caucasian	87.9 (340)	
Black	4.7 (18)	
Aboriginal	3.6 (14)	
Asian	0.5 (2)	
Other	2.3 (9)	
Mixed descent	1.0 (4)	
Employment status (n = 250)		
Unemployed	26.4 (66)	
Employed	64.4 (161)	
Retired	9.2 (23)	
Educational attainment		
Elementary (K-6)	10.9 (42)	
Secondary (7-11)	42.9 (166)	
High School	24.8 (96)	
College	12.4 (48)	
University	9.0 (35)	
Single at time of assessment	61.2 (237)	
Previous Mental Health Contact	72.6 (281)	
History of violent non-sexual offences (n = 383)		0.61 (1.54)
History of non-violent offences (n = 382)		3.44 (6.92)

Measures

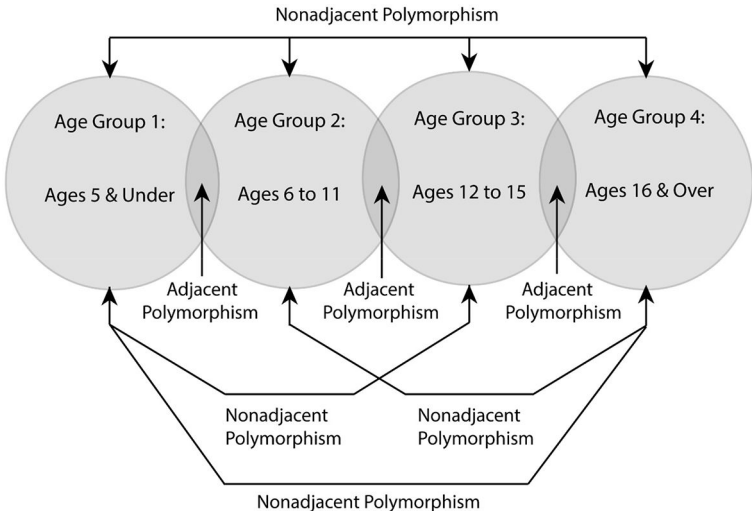
Victim Age Polymorphism

Victim age was recorded for past sexual offences using pre-specified age bands and the exact victim age for the index offence. Victim age data was only included in the archival database for offences that resulted in charges or convictions (i.e., 39.5% of men admitted to additional sexual offences during their assessment that were not included in the entry of victim age data into the database).

Because the archival database did not include the exact ages for past sexual offences, we were unable to create our own victim age bands to match those proposed in the literature. We attempted to utilize age bands that most closely matched the recommendation of *Seto (2017)*. All men who were classified as stable in victim age selection if they had two or more victims in the following age groups: 5 and under, 6-11 years, 12-15 years, and 16 or older. Some of the victim age groups are slightly higher than recommended. For example, the 12-15 age band is slightly higher than the 11-14 age band proposed for pubescent children (*Seto, 2017*).

Men were classified as age polymorphic if they had victims in at least two different age groups. The adjacent age polymorphism group consisted of men who offended against victims in adjacent age groups (e.g., 6-11 and 12-15). The nonadjacent polymorphism group was comprised of men whose victims were in nonadjacent age bands (e.g., 6-11 and 16 or older). A visual depiction of the victim age classification system is included in *Figure 1*.

Figure 1
Operationalization of Adjacent and Nonadjacent Age Polymorphism



Note. The adjacent age polymorphism group was operationalized as any crossover between adjacent victim age group (e.g., offending against victims 5 and under and victims 6-11), whereas the nonadjacent polymorphism group was operationalized as crossover between nonadjacent victim age group (e.g., offending against victims 5 and under and victims 12-15). All examples of adjacent age polymorphism are depicted in the figure as the overlap between the circles. Examples of nonadjacent age polymorphism are also depicted in the figure, but the examples are not exhaustive.

Psychopathy

Psychopathy was measured using the Psychopathy Checklist-Revised (PCL-R; [Hare, 2003](#)). The PCL-R interview was conducted as part of the assessment. Clinicians scored the items as per instructions contained in the manual. The PCL-R contains 20 items that are scored on a three-point scale (0 = absent, 1 = possibly/partially present, and 2 = present). The PCL-R includes a total score with higher scores indicative of a greater number of psychopathic traits. Factor 1 and Factor 2 scores were also examined. The PCL-R is the gold standard measure of psychopathy and has strong psychometric properties (e.g., [Hare, 2003](#)). [Brown et al. \(2015\)](#) tested the reliability of the PCL-R among convicted individuals, including those who were age polymorphic, and reported inter-rater reliability rating of .92. The literature also supports the generalizability and discriminant validity of the PCL-R scores (e.g., [Hare, 2003](#); [Kennealy et al., 2007](#)).

In addition to the PCL-R, the current study included the Psychopathic Deviate scale (social maladjustment and lack of pleasant experiences) from the Minnesota Multiphasic Personality Inventory-2 (MMPI-2; [Butcher et al., 2001](#)) and the Antisocial subscale (impulsivity, antisocial behavior, difficulty taking responsibility) from the Millon Clinical Multiaxial Inventory-III (MCMI-III; [Millon et al., 2009](#)). These subscales were included as additional measures as they assessed components of the construct of psychopathy. Overall, there is strong evidence for the validity and reliability of the MMPI-2 and MCMI-III in general clinical and forensic settings (e.g., [Blackburn et al., 2004](#); [Hiller et al., 1999](#)).

Sexual Preoccupation

Sexual preoccupation was determined by the clinician and based on a clinical interview and review of file information. Based on the information collected during the assessment, clinicians reported whether the client had sexual preoccupation by answering 'yes', 'no', or 'unknown' based on the entirety of the assessment data.

Multiple Paraphilic Interests

Paraphilias were assessed by the clinician and all diagnostic decisions were based on the entirety of the information collected during the assessment. Paraphilias were determined by official diagnosis or diagnostic queries (e.g., rule outs), which conformed to the *Diagnostic and Statistical Manual of Mental Disorders*. The DSM version that was

in use at the time of the assessment was used to render the clinical diagnosis (i.e., DSM-IV, DSM-IV-TR, or DSM-5, all of which came into effect at the clinic when they first became available to clinicians). The multiple paraphilic interests item was based on the following paraphilias: exhibitionism (15.2%), fetishism (0.5%), sadism (1.3%), frotteurism (0.5%), transvestic fetishism (0%), masochism (0%), pedophilia (26.4%), voyeurism (4.4%), and other specified paraphilic disorder (21.4%). We created a multiple paraphilia variable with a score of zero representing no paraphilia diagnosis, a score of one representing the presence of one paraphilia diagnosis, and a score of two or higher representing multiple paraphilia diagnoses.

Psychosis and Substance Use Disorders

Psychosis and substance use disorder diagnoses were made based on the *Diagnostic and Statistical Manual of Mental Disorders* (DSM-IV, DSM-IV-TR, or DSM-5) that was in use at the time of the assessment. For psychosis, we considered all psychotic spectrum disorder diagnoses. The variable was coded dichotomously as absent or present. We also included scores from the MMPI-2 Schizophrenia scale (bizarre thoughts, perceptual oddities, alienation, and relationship problem) as a supplementary measure of psychotic symptoms (Butcher et al., 2001).

For substance use disorders, we collapsed all alcohol and drug use disorder diagnoses and queries into one variable. In addition to official diagnosis, we supplemented these analyses using the MCMI-III Alcohol and Drug Dependence subscales, which measured maladaptive alcohol and drug use, respectively.

Procedure

All men attended a two-day comprehensive assessment with a registered psychologist or psychology trainee who was under the supervision of a registered psychologist. The assessment consisted of a semi-structured interview (PCL-R interview supplemented with additional questions), pencil-and-paper testing (e.g., MCMI-III, MMPI-2), and a three-hour penile plethysmography assessment. As part of the assessment, men were scored on several sexual and violent risk assessment tools. The archival database also included clinician judgement based on the entirety of the information (e.g., mental health diagnoses, recommendations). All men underwent the same assessment procedure, which is standardized at the clinic. In the present study, we have only used the variables that are included in the database that are relevant to our hypotheses.

Information collected during the assessment was entered by psychologists on a data entry sheet, which was subsequently entered into the archival database by an assessment technician who maintained the database. The archival database used in the present study has predominantly been used for quality-control initiatives and to understand the needs of the population to adjust clinical practice where necessary. The archival database has not been previously included in published research studies. We received approval from

the research ethics board at the hospital to use the archival database for the present study.

Planned Analyses

To examine the difference in mean PCL-R, MMPI-2, and MCMI-III scores, we utilized univariate ANOVAs with post hoc Bonferroni tests. To examine the frequencies of sexual preoccupation, multiple paraphilias, and substance use disorders, we utilized chi square tests. Effect sizes are reported for all analyses.

Results

The breakdown for the age polymorphism variable was as follows: 8.0% ($n = 31$) of men solely offended against victims 5 years old and younger; 20.5% ($n = 79$) solely offended against victims between 6 to 11 years of age, 19.2% ($n = 74$) solely offended against victims 12 to 15 years of age, 25.1% ($n = 97$) solely offended against victims 16 or older, 18.4% ($n = 71$) were in the adjacent age polymorphism group, and 8.8% ($n = 34$) were in the nonadjacent age polymorphism group. There was one individual who was missing victim information and was excluded from subsequent analyses. Information about the dependent variables for the total sample is provided in [Table 2](#).

Table 2

Descriptive Information for Correlates for the Total Sample ($n = 387$)

Dependent variables	(%) n	M (SD)
PCL-R total score ($n = 237$)		14.39 (7.83)
PCL-R Factor 1 ($n = 313$)		6.00 (3.84)
PCL-R Factor 2 ($n = 242$)		6.80 (4.87)
MMPI-2 Psychopathic Deviate scale ($n = 292$)		64.34 (13.37)
MCMI-III Antisocial subscale ($n = 286$)		49.78 (22.06)
MMPI-2 Schizophrenia scale ($n = 292$)		61.45 (16.17)
MCMI-III Alcohol Dependence subscale ($n = 284$)		49.40 (26.57)
MCMI-III Drug Dependence subscale ($n = 286$)		49.85 (22.39)
Sexual preoccupation ($n = 310$)	36.1 (112)	
Multiple paraphilias ($n = 387$)		
No paraphilias	48.8 (189)	
One paraphilia	35.9 (139)	
Two or more paraphilias	15.2 (59)	
Psychotic spectrum disorder ($n = 387$)	0.8 (3)	
Substance use disorder ($n = 387$)	40.8 (158)	

Psychopathy

Despite our hypothesis, there was no significant mean group difference on the PCL-R total score, $F(5, 230) = 0.73$, $p = .604$, $\eta_p^2 = .02$ (see Table 3 for mean PCL-R total, Factor 1, and Factor 2 scores). The effect sizes were negligible to small when the adjacent age polymorphism group was compared with those who solely offended against victims 5 and under ($d = 0.32$), 6-11 ($d = 0.02$), 12-15 ($d = 0.22$), 16 or older ($d = 0.11$), and the nonadjacent age polymorphism group ($d = 0.35$). As expected, the nonadjacent age polymorphism group had the highest mean PCL-R score; however, effect sizes were negligible when compared with those who solely offended against victims 5 and under ($d = 0.04$) and 12-15 ($d = 0.13$). The effect sizes were small for the comparison of the nonadjacent age polymorphism group with those who solely offended against victims 6-11 ($d = 0.34$) and 16 or older ($d = 0.24$).

There were no significant group mean differences for Factor 1 PCL-R scores, $F(5, 306) = 2.15$, $p = .060$, $\eta_p^2 = .03$. Despite this finding, there was a medium effect size when comparing the adjacent age polymorphism group with those who solely offended against victims 5 and under ($d = 0.59$). Remaining effect sizes were negligible to small when the adjacent polymorphism group was compared with men who solely offended against victims 6-11 ($d = 0.05$), 12-15 ($d = 0.28$), 16 or older ($d = 0.03$), and the nonadjacent age polymorphism group ($d = 0.24$). Similarly, effect sizes were negligible or small for the comparison of the nonadjacent age polymorphism group with those who solely offended against victims 5 and under ($d = 0.35$), 6-11 ($d = 0.29$), 12-15 ($d = 0.05$), and 16 or older ($d = 0.29$).

There were no significant mean group differences on Factor 2 PCL-R scores, $F(5, 235) = 0.54$, $p = .748$, $\eta_p^2 = .01$. Effect sizes were negligible or small when comparing the adjacent polymorphism group with those who solely offended against victims 5 and under ($d = 0.26$), 6-11 ($d = 0.002$), 12-15 ($d = 0.20$), 16 or older ($d = 0.18$), and the nonadjacent age polymorphism group ($d = 0.23$). The effect sizes were in the negligible or small range for the comparison of the nonadjacent age polymorphism group with those who offended against victims 5 and under ($d = 0.01$), 6-11 ($d = 0.24$), 12-15 ($d = 0.04$), and 16 or older ($d = 0.06$).

We also conducted supplementary analyses with relevant personality measure subscales (see Table 3). There were no group differences on the MMPI-2 Psychopathic Deviate scale, $F(5, 285) = 1.60$, $p = .161$, $\eta_p^2 = .03$. Effect sizes were negligible to small when comparing the adjacent age polymorphism group with those who solely offended against victims 5 and under ($d = 0.47$), 6-11 ($d = 0.09$), 12-15 ($d = 0.02$), 16 or older ($d = 0.20$), and the nonadjacent age polymorphism group ($d = 0.09$). The effect sizes were negligible or small for the comparison of the nonadjacent age polymorphism group with those who solely offended against victims 5 and under ($d = 0.43$), 6-11 ($d = 0.002$), 12-15 ($d = 0.08$), and 16 or older ($d = 0.08$).

Table 3
Mean Differences by Victim Age

Dependent variables	5 and under	6-11	12-15	16 or older	Adjacent age polymorphism	Nonadjacent age polymorphism
PCL-R total score	15.86 (7.41)	13.54 (7.65)	15.16 (8.00)	14.27 (7.72)	13.38 (7.93)	16.17 (7.99)
PCL-R Factor 1	7.89 (4.00)	5.43 (3.79)	6.71 (4.19)	5.51 (3.35)	5.61 (3.74)	6.52 (3.87)
PCL-R Factor 2	7.47 (4.37)	6.20 (4.67)	7.19 (4.97)	7.11 (4.85)	6.21 (4.85)	7.40 (5.54)
MMPI-2 Psychopathic Deviate	71.13 (16.33)	65.46 (13.74)	64.47 (12.32)	61.57 (13.03)	64.24 (14.19)	65.44 (10.88)
MCMPI-III Antisocial	52.13 (24.49)	47.57 (24.34)	46.81 (24.82)	54.77 (19.49)	47.11 (19.87)	52.24 (19.92)
MMPI-2 Schizophrenia	68.75 (17.75)	62.35 (15.57)	58.09 (11.41)	60.26 (16.15)	61.19 (17.65)	66.04 (20.73)
MCMPI-III Alcohol	52.81 (27.53)	48.90 (30.36)	46.06 (28.12)	52.72 (24.86)	45.10 (23.52)	56.48 (24.57)
MCMPI-III Drug	53.38 (23.22)	44.22 (25.65)	46.87 (23.33)	56.99 (18.73)	46.49 (21.03)	55.41 (19.48)

Note. Values represent means and the values in brackets represent the standard deviation. The victim age groups are based on prior and index victim ages. Men in the 5 and under, 6-11, 12-15, and 16 or older groups only offended against two or more victims in that specific age group. The adjacent age polymorphism group was operationalized as any crossover between adjacent victim age groups (e.g., offending against victims 5 and under and victims 6-11), whereas the nonadjacent polymorphism group was operationalized as crossover between non-adjacent victim age groups (e.g., offending against victims 5 and under and victims 12-15).

Similarly, there were no group differences on the MCMI-III Antisocial subscale, $F(5, 279) = 1.28$, $p = .273$, $\eta_p^2 = .02$ (see Table 3). The effect sizes were negligible or small for the comparison of the men in the adjacent age polymorphism group with those who solely offended against victims 5 and under ($d = 0.01$), 6-11 ($d = 0.29$), 12-15 ($d = 0.23$), 16 or older ($d = 0.13$), and the nonadjacent age polymorphism group ($d = 0.26$). Effect sizes were similar when comparing men in the nonadjacent age polymorphism group with those who solely offended against victims 5 and under ($d = 0.24$), 6-11 ($d = 0.02$), 12-15 ($d = 0.01$), and 16 or older ($d = 0.39$).

Atypical Sexual Interests

Despite our hypotheses, the results were not significant for sexual preoccupation, $\chi^2(5) = 5.11$, $p = .403$, $V = .13$, or multiple paraphilias, $\chi^2(10) = 3.25$, $p = .975$, $V = .07$. The percentages and standardized residuals are depicted in Table 4.

Psychosis and Substance Use Disorders

Due to the small number of individuals in the sample ($n = 3$) with a psychotic spectrum disorder, we were unable to examine this variable as originally planned. As such, we relied on the MMPI-2 Schizophrenia scale to examine the association between age polymorphism and psychosis, $F(5, 285) = 1.67$, $p = .143$, $\eta_p^2 = .03$. Effect sizes were negligible or small when comparing the adjacent age polymorphism group with those who solely offended against victims 5 and under ($d = 0.43$), 6-11 ($d = 0.13$), 12-15 ($d = 0.21$), 16 or older ($d = 0.06$), and the nonadjacent age polymorphism group ($d = 0.26$). Effect sizes were negligible or small for the comparison of the nonadjacent age polymorphism group with those who solely offended against victims 5 and under ($d = 0.14$), 6-11 ($d = 0.16$), 16 or older ($d = 0.33$), except for the comparison to those who solely offended against victims 12-15 ($d = 0.53$).

We next examined the presence of substance use disorders, $\chi^2(5) = 10.04$, $p = .074$, $V = .16$ (see Table 4). We supplemented these analyses by examining the mean difference on the MCMI-III Alcohol and Drug subscales. For the Alcohol subscale, there were no significant group differences, $F(5, 277) = 1.16$, $p = .329$, $\eta_p^2 = .02$ (see Table 3). The effect sizes were negligible or small when comparing the adjacent age polymorphism group with those who solely offended against victims 5 and under ($d = 0.32$), 6-11 ($d = 0.14$), 12-15 ($d = 0.04$), 16 or older ($d = 0.32$), and the nonadjacent age polymorphism group ($d = 0.48$). The nonadjacent age polymorphism group had the highest mean score on the Alcohol subscale, but the effect sizes were negligible when compared with the mean score for those who solely offended against victims 5 and under ($d = 0.14$) and 16 or older ($d = 0.15$). The effect sizes were small for the comparison of the nonadjacent age polymorphism group with those who solely offended against victims 6-11 ($d = 0.27$) and 12-15 ($d = 0.39$).

Table 4
Frequency of Atypical Sexual Interests and Mental Health Diagnoses by Victim Age

Dependent variables	0-5	6-11	12-15	16+	Adjacent age polymorphism	Nonadjacent age polymorphism
Presence of sexual preoccupation	44.8 (13) [0.8]	38.2 (26) [0.3]	33.3 (19) [-0.4]	39.8 (33) [0.6]	23.4 (11) [-1.5]	38.5 (10) [0.2]
Multiple paraphilias						
No paraphilias	48.4 (15) [0.0]	53.2 (42) [0.5]	47.3 (35) [-0.2]	49.5 (48) [0.1]	50.7 (36) [0.2]	38.2 (13) [-0.9]
One paraphilia	35.5 (11) [0.0]	34.2 (27) [-0.3]	36.5 (27) [0.1]	36.1 (35) [0.0]	32.4 (23) [-0.5]	47.1 (16) [1.1]
Two or more paraphilias	16.1 (5) [0.2]	12.7 (10) [-0.5]	16.2 (12) [0.3]	14.4 (14) [-0.2]	16.9 (12) [0.4]	14.7 (5) [0.0]
Presence of substance use disorder	45.2 (14) [0.4]	38.0 (30) [-0.4]	37.8 (28) [-0.4]	52.6 (51) [1.8]	29.6 (21) [-1.5]	41.2 (14) [0.0]

Note. Values represent % (*n*) [standardized residual]. The victim age groups are based on prior and index victim ages. Men in the 5 and under, 6-11, 12-15, and 16 or older groups, only offended against two or more victims in that specific age group. The adjacent polymorphism group was operationalized as any crossover between adjacent victim age groups (e.g., offending against victims 5 and under and victims 6-11), whereas the nonadjacent polymorphism group was operationalized as crossover between nonadjacent victim age groups (e.g., offending against victims 5 and under and victims 12-15).

For the MCMI III - Drug subscale, there was a significant group difference, $F(5, 279) = 3.10$, $p = .010$, $\eta_p^2 = .05$ (see Table 3). Bonferroni post hoc analyses indicated a significant mean difference such that those who solely offended against victims 16 or older had higher mean scores than those who solely offended against victims 6-11 ($p = .019$, $d = 0.57$). None of the other post hoc comparisons were significant. Effect sizes were negligible or small when comparing the adjacent age polymorphism group with those who only offended against victims 5 and under ($d = 0.32$), 6-11 ($d = 0.10$), 12-15 ($d = 0.02$), and the men in the nonadjacent age polymorphism group ($d = 0.43$). There was a medium sized effect when comparing the adjacent age polymorphism group to those who solely offended against victims 16 or older ($d = 0.53$). The effect sizes were negligible or small when the non-adjacent age polymorphism group was compared with those who solely offended against victims 5 and under ($d = 0.10$), 6-11 ($d = 0.47$), 12-15 ($d = 0.39$), and 16 or older ($d = 0.08$).

Discussion

There were no significant associations between age polymorphism and any of the proposed correlates in a sample of men with two or more victims. The results were particularly surprising for psychopathy, given previous findings that those who are polymorphic had higher psychopathy scores than those who offended against children (Brown et al., 2015; Olver & Wong, 2006; Porter et al., 2000). Although we found that men who were in the nonadjacent age polymorphism group had the highest PCL-R total score, there were no significant group differences and most of the effect sizes were small.

An important consideration when interpreting these findings may be the low average psychopathy score in our sample ($M = 14.39$, $SD = 7.83$), which was unsurprising given that many of the men were on probation and serving provincial sentences (sentences that are two years less a day). This average PCL-R score indicates that individuals in the present sample were in the low range of psychopathic traits (Hare, 2003). Past research that has examined the association between psychopathy and polymorphism has often been conducted using samples of federally sentenced men (serving a sentence of two years or more) where the PCL-R scores would be expected to be higher (see mean PCL-R scores in Brown et al., 2015; Olver & Wong, 2006; Porter et al., 2000). This may explain the present findings, as it is possible, that we might find significant differences using a sample that is more comparable to past research.

Similar to past findings, the sexualization hypothesis proposed by Lussier and colleagues (2007) was not supported in the present study, as men in both age polymorphic groups were no more likely than expected to present with sexual preoccupation or multiple paraphilic interests. Future research should examine if men who are age polymorphic are more likely to exhibit high levels of sexualization utilizing additional measures of sexual preoccupation that do not solely rely on clinician judgement (e.g.,

the Hypersexual Behavior Inventory [HBI]; Reid et al., 2011). Furthermore, it is possible that only certain paraphilic interests would be more common in those who are age polymorphic. In particular, there might be a higher number of activity paraphilias (e.g., exhibitionism, voyeurism) than target paraphilias (e.g., pedophilia) in men who are polymorphic, given past findings that suggest men who are polymorphic are less likely to select victims based on physical characteristics (Stephens et al., 2017). Unfortunately, we were unable to examine this in the present study due to the low base rate of activity paraphilias in our sample.

Lastly and contrary to past findings (Saramago et al., 2020; Simmons & Stephens, 2017), we did not find that men who were polymorphic were more likely to have certain mental health problems. Nonetheless, our findings on psychosis are consistent with Eher and colleagues (2019) who found no difference in the prevalence of psychotic disorders among those who offended against adults and children, though they did not examine age polymorphism.

Explanations for Present Findings

There are several possible reasons for our present findings. The first set of considerations involve methodological differences compared with previous studies. The present study limited the sample to those with two or more victims, because men who are polymorphic have two or more victims by definition and tend to have a higher number of victims than those who are stable in victim age selection (e.g., Parent et al., 2011; Stephens et al., 2017; Stephens et al., 2018b). Many of the previous studies have not limited their examination to an equivalent comparison group of men with two or more victims (e.g., Guay et al., 2001; Kleban et al., 2013; Olver & Wong, 2006), despite this potential confound (Stephens et al., 2018b). This may be of relevance to the present findings because it is plausible that some of these correlates may be elevated in men with two or more victims. For example, men with multiple paraphilic interests are more prolific in their sexual offending and would be expected to have a greater number of victims (Laws, 1994). As a result, it is possible that differences among those who are polymorphic could be accounted for by the number of victims, as opposed to differences in victim age selection.

Another methodological consideration is that the victim age bands used in the present study differ from past studies. Most of the research on age polymorphism and psychopathy has grouped men into those who offended against children and adults (age polymorphism defined as crossover between children and adults; e.g., Brown et al., 2015; Olver & Wong, 2006; Porter et al., 2000). We attempted to use the age bands that most closely matched those provided by Seto (2017), which resulted in a greater number of victim age groups than previous studies (e.g., Olver & Wong, 2006; Porter et al., 2000; Stephens et al., 2018b).

Additionally, researchers have started to consider the difference between adjacent and nonadjacent age polymorphism, which has not been widely considered apart from

a recent study that found nonadjacent polymorphism is less common than adjacent polymorphism (Saramago et al., 2020). It is possible that the way we operationalized polymorphism impacted our results.

An alternative possibility is that there may not be differences between men who are age polymorphic and those who are stable in victim age selection, though future studies are needed before reaching a definitive conclusion. If the body of evidence suggests no differences when confounds are controlled for, the implications of this are significant, given that clinicians are often asked to opine on risk to victims that differ from the index offence as part of their risk formulation. Nonetheless, it is possible that there are other correlates that would distinguish men who are polymorphic from those who are stable in victim age selection that have not been identified. For example, men who are polymorphic may have less exclusive age interests (i.e., sexual interest spanning multiple age groups), which translates into their offending. Additionally, past offending history may be stronger predictors of polymorphism than psychological features. For example, those who are polymorphic had a greater number of victims (e.g., Parent et al., 2011; Stephens et al., 2017) and adolescent victims (e.g., Guay et al., 2001; Lussier et al., 2007; Stephens et al., 2017). Thus, specific features of men's offending history may be of greater value than psychological factors when clinicians need to determine the risk men pose to victims that differ from their index offence.

Limitations and Strengths

A significant limitation in the present study is that we may not have had a complete picture of the offending history for those in our sample. Although we considered previous and index victims, whereas some previous studies have only considered index offence information (e.g., Cann et al., 2007; Saramago et al., 2020), this did not provide a fulsome picture of their offending history. In our sample, 39.5% of men admitted to additional sexual offences that were undetected; however, the age of these victims were not included in the archival database. Further, it is possible that evaluators were unaware of some victim information or that men did not disclose their complete offending history. These issues are not unique to our study and are present in other studies that have examined victim age in sexual offending.

Additionally, our sample size for some of the groups were relatively small. This is most notable for the men in our main group of interest, the nonadjacent age polymorphism group, as well as those who offended against victims 5 and under. Furthermore, we were unable to conduct analyses for psychotic spectrum disorders due to the small number of men in the sample who were diagnosed with such a disorder. Lastly, we did not have interrater reliability for our variables of interest.

Despite these limitations, there are several strengths in the present study. More specifically, this is the first study to examine various correlates of age polymorphism in a single provincial sample using a comprehensive clinical database. The archival database

in the present study was optimal in that it included fulsome assessment information that considered clinician diagnoses and several well-established measures including the PCL-R, MMPI-2, and MCMI-III. For many of our correlates, we were able to include multiple measures that spanned the range from clinician judgement to more standardized measures.

Future Research Directions

There is a need for future research that synthesizes past results to establish the prevalence of age polymorphism and how different methodological considerations impact prevalence estimates. Second, there is a need for prospective research on age polymorphism to better understand its correlates. Optimally these studies would use a large and diverse sample and collect data from a carefully matched group of men who exhibit age polymorphism with men who are stable in victim age. The researcher could utilize a comprehensive battery to assess different correlates that they have selected based on a review of the literature. Further, these men could be followed over time in a study on recidivism to examine any subsequent age polymorphism. This type of research may enable us to develop a model to predict subsequent age polymorphism, which would have significant implications for clinicians who must consider risk to victims that differ from the index offence as part of their risk formulation.

Funding: The authors have no funding to report.

Competing Interests: The authors have declared that no competing interests exist.

Previously Presented: Portions of this manuscript were presented at the Fourth North American Correctional and Criminal Justice Psychology Conference in Halifax, Nova Scotia, in 2019.

Acknowledgments: The authors have no support to report.

Data Availability: The data and study materials belong to Nova Scotia Health Authority and we are not permitted to share them.

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Sexual Offending: Theory, Research, and Prevention is the official journal of the International Association for the Treatment of Sexual Offenders (IATSO).



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