



Contents lists available at ScienceDirect

Personality and Individual Differences

journal homepage: www.elsevier.com/locate/paid

Review

Testing the distinction between sadism and psychopathy: A metanalysis

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ARTICLE INFO

Keywords

Dark tetrad
Dark traits
Individual differences
Personality
Psychopathology

ABSTRACT

The relationships among the Dark Triad (DT) traits—Machiavellianism, narcissism, and psychopathy—are well-established in psychological literature. However, with the inclusion of everyday sadism in the proposed Dark Tetrad, it is important to determine whether sadism adds significant explanatory power beyond psychopathy, especially given its high correlation. In this study, we examined whether sadism contributed unique variance over psychopathy in studies where both traits were assessed. A review of PubMed, Google Scholar, and ScienceDirect yielded 185 studies meeting our inclusion criteria, comprising 104,452 participants. We analyzed sample characteristics, including type, size, gender distribution, age, and key correlates such as narcissism, Machiavellianism, the Big Five, and Honesty-Humility. Our results indicate a substantial overlap between sadism and psychopathy, with both traits being strongly related to the other DT traits and showing no correlation with Openness. These findings highlight the need for future research to account for this overlap when interpreting the relationships between sadism, psychopathy, and related psychological constructs.

1. Introduction

Publications about so-called dark traits are on an exponential trajectory. Since the proposal of the Dark Triad traits (Paulhus & Williams, 2002), there have been many studies focusing on consequences, interrelations, and measurement issues associated with these traits (for more details see Dinić & Jevremov, 2021; Koehn et al., 2019 and Miller et al., 2019). Sadism has been offered as a fourth trait to study alongside the Dark Triad traits to constitute a Dark Tetrad (Paulhus, 2014). However, with such high correlations between psychopathy and sadism (i.e., $r = 0.58$, $d = 0.58$ respectively, Bonfá-Araujo et al., 2022; Kowalski et al., 2024) and the limited (< 5 %) additional variance accounted for by sadism above psychopathy (e.g., Jonason & Zeigler-Hill, 2018; Jonason et al., 2017), the addition of sadism might be unnecessary if not superfluous. Based on the principle of Ockham's razor, only those traits that provide valuable contributions to explaining various attitudes, behaviors, and cognitions beyond that which is explained by psychopathy should serve as potential additions to the Dark Triad traits no matter how appealing, interesting, or provocative.

On the one hand, sadism is defined in two broad groups: sexual sadism and everyday sadism. The first describes a paraphilic disorder, associated with people who enjoy others suffering in unconsensual relationships (Mokros et al., 2019); the second describes people who experience enjoyment when cruel to others, physically or psychologically, not in sexual settings (Foulkes, 2019; Plouffe et al., 2022). Thus, everyday sadism—the latter—represents a subclinical description of the broader concept and is mainly associated with aggressive behaviors and dysfunctional consequences (Bonfá-Araujo et al., 2022; Thomas & Egan, 2022). On the other hand, subclinical psychopathy refers to an expression of psychopathic traits that fall below the diagnostic threshold for a clinical diagnosis (i.e., with behaviors such as manipulateness, callousness, and decreased empathy). Also, people who display subclinical psychopathy exhibit superficial charm, affective shallowness, and a diminished ability to experience guilt or remorse (Paulhus & Williams, 2002).

Sadism and psychopathy share common features, such as callousness, and overlap in their associations with broader personality models, with both having negative correlations with agreeableness and honesty-

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<https://doi.org/10.1016/j.paid.2024.112973>

Received 30 January 2024; Received in revised form 18 November 2024; Accepted 21 November 2024

Available online 29 November 2024

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humility (Feher & Vernon, 2021; Scholz et al., 2022). Previous research has mainly focused on the similarities between sexual sadism and psychopathy, indicating their positive correlation and proposing new interpretations of their association [e.g., the sadistic-psychopath (DeLisi, 2019; Murphy & Vess, 2003; O’Connell & Marcus, 2019)]. Regarding everyday sadism, it can overlap with behaviors of psychopathy, displaying an even auxiliary explanation of psychopathic behavior (Lobbestael et al., 2020; Pink et al., 2022). Furthermore, preliminary evidence suggests that despite having callousness in common, sadism measures mostly assess pleasure derived from others’ suffering, while psychopathy measures do not cover this behavior, focusing mainly on aggressive tendencies (Anderson & Marcus, 2019). It is essential to recognize that subclinical psychopathy and everyday sadism can be tangled, as people with subclinical psychopathy may possess a predisposition for sadistic tendencies. This relationship suggests that the presence of psychopathic traits may increase the tendency toward deriving pleasure from causing pain or distress to others. Thus, they might be describing the same underlying factor.

In this study, we tested a) the overlap between sadism and psychopathy and b) whether sadism provides a meaningful contribution to explaining the variance of other DT traits and healthy personality dimensions over and above psychopathy. By controlling for the shared variance among the two traits and comparing across different aspects of personality, we can get an empirical test of the broadband usefulness of adding sadism to the larger research tradition of the Dark Triad traits.

2. Method

2.1. Identification of studies

We conducted a systematized literature review (Grant & Booth, 2009) searching for relevant articles in June 2024 across online databases and websites, including PubMed, Google Scholar, and ScienceDirect. Search terms included “Dark Tetrad” OR sadism AND psychopathy OR “sadist psychopath.” We selected 185 articles from the initial search results across the databases, as they were empirical. We also browsed through the references section of the articles obtained from the literature search to look for other relevant articles missed in the initial search. The inclusion criteria for articles were as follows: (i) the

article reported correlation(s) between sadism and psychopathy; (ii) the article reported correlations(s) of each sadism and psychopathy with some other variable; (iii) the coefficients reported were either Pearson’s or Spearman’s correlations. See supplementary material for details (https://osf.io/eq54p/?view_only=50360c2939364cdc9f3527b178ad7203). Fig. 1 presents the flow diagram of the inclusion process.

2.2. Data extraction and coding

Correlations between psychopathy and sadism and correlations of psychopathy and sadism with other variables (hereafter referred to as the “outcome” variable) were extracted from the articles. These outcome variables were the primary variables under investigation. In exploratory articles reporting the development of scales (Plouffe et al., 2017) or comparison of different scales (Min et al., 2019), the outcome variables were taken to be all variables explored in the development/comparison. Furthermore, we extracted information about the articles’ DOI, title, authors, year of publication, journal, sample type, sample size, percentage of female participants, the average age of the sample, outcome variables, measures of outcome variables, and measures of sadism and psychopathy.

As for the basic psychometric properties of the articles, most of the articles reported Pearson’s *r* correlations, either in the published paper or in the supplementary data. In articles where correlations with only subscales of sadism and/or psychopathy measures were given (i.e., without a composite correlation), the correlations were averaged across subscales to obtain the (overall) correlation. Similarly, in line with previous meta-analyses (Muris et al., 2017; O’Connell & Marcus, 2019), correlations were also pooled or averaged across different measures of a construct in the same study or sample. However, correlations were not averaged across different studies or samples unless the article’s authors already did so.

2.3. Data analysis

We computed the meta-analytic correlation between sadism and psychopathy and between the two constructs with the following outcome variables: narcissism, Machiavellianism, agreeableness, conscientiousness, neuroticism, extraversion, neuroticism, and honesty-

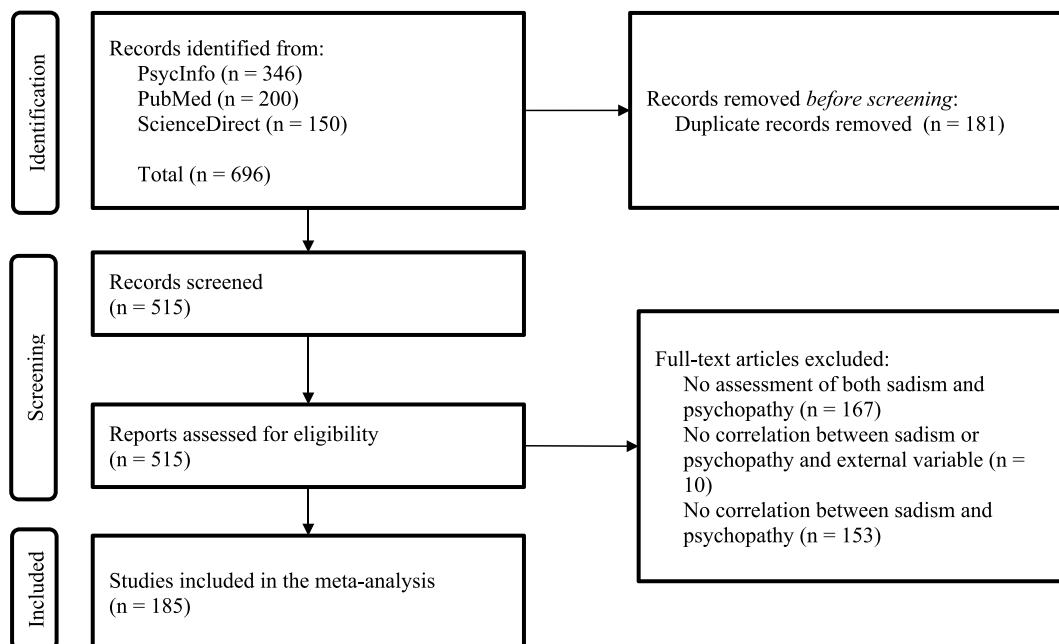


Fig. 1. Flow diagram of the study selection process.

humility. We also computed meta-analytical correlations for the same variables, but only for studies that assessed both psychopathy and Machiavellianism using the Short Dark Tetrad (SD4). We chose to include this additional information, as the SD4 is the only measure that jointly assesses the Dark Tetrad. For all cases, we checked for publication biases using the funnel plot of effect size (Hedger's g) by standard error and Egger's Regression Test of funnel asymmetry. Funnels considered asymmetric (i.e., visual asymmetric and Egger's test significant p -value) represent important publication biases. For the cases where publication bias was identified, we identified outliers, removed them, and reported the meta-analytical effect after its removal. All the analyses were performed in R. The meta-analytical correlations, the funnel plots, and the Egger's test were estimated using the *meta*-R package (Balduzzi et al., 2019). In the cases where publication biases were identified, and we needed to find outliers and remove them, we used the *metafor* R package (Viechtbauer, 2010). The meta-analytical correlations of sadism and psychopathy with other variables, both using all studies and using only SD4 studies, were compared by using Fisher's r -to- z transformation.

3. Results

The final analysis was based on 185 studies. The total sample consisted of 104,452 participants ($M_{age} = 28.97$), with an average of 57 % female participants. Moreover, the sample comprised three different sample types, including college or university ($n = 57$ studies), community ($n = 120$ studies), and forensic ($n = 7$ studies). The correlated variables are presented in the supplementary materials. Table 1 presents the measures used to assess sadism and psychopathy from the extracted studies. The most used sadism measure was the Short Sadistic Impulse Scale (SSIS) and Short Dark Tetrad (SD4), while for psychopathy, the most used measures were the Short Dark Triad (SD3), Self-Report of Psychopathy (SRP-III, SRP-4, SRP-SF), and Short Dark Tetrad (SD4).

The meta-analytic correlation between sadism and psychopathy was 0.56 [95 % CI: 0.54; 0.58], indicating a substantial overlap. Nonetheless, this value might be moderated by the instrument used to assess these constructs. The meta-analytic correlations between both sadism and psychopathy with the other dark tetrad components (i.e., narcissism and Machiavellianism) and with normal range personality dimensions (i.e., agreeableness, conscientiousness, neuroticism, extraversion, neuroticism, and honesty-humility) are presented in Table 2. We found more studies reporting associations between sadism and psychopathy with narcissism ($n = 184$) and Machiavellianism ($n = 181$), with both having a stronger correlation with Machiavellianism. Regarding the other correlated variables, a meta-analytical comparison revealed differences in the relationship between sadism and psychopathy with general personality traits with similar patterns; however, the differences are relatively small, with both traits showing a non-significant correlation with openness. Psychopathy showed a stronger meta-analytic with narcissism (positive), Machiavellianism (positive), agreeableness (negative), conscientiousness (negative), and honesty-humility (negative). Sadism showed stronger meta-analytic correlations with neuroticism (negative) and extraversion (negative). Egger's regression test for funnel plot asymmetry indicated no asymmetry in most analyses, except for the meta-analytical correlations between sadism and psychopathy with conscientiousness and sadism with openness. The biased studies were identified and removed, and the analyses were rerun without them. The detailed results regarding publication bias can be found in the supplementary material.

The meta-analytic correlation between sadism and psychopathy, based only on studies that assessed both constructs using the SD4 ($n_{studies} = 44$; $n_{sample} = 27,521$), was 0.57 [95 % CI: 0.54; 0.60], also indicating a substantial overlap between these traits. Meta-analytic correlations between SD4-assessed sadism and psychopathy and the other variables of interest in this study are presented in Table 3. The meta-analytic correlations between SD4 sadism and honesty-humility and between SD4

Table 1
Instruments used to assess sadism and psychopathy.

Construct	Instrument	Reference	%	
Sadism	Short Sadistic Impulse Scale (SSIS)	O'Meara et al., 2011	29,5 %	
	Short Dark Tetrad Scale (SD4)	Paulhus et al., 2020	22 %	
	Varieties of Sadistic Tendencies (VAST)	Paulhus et al., 2011	10 %	
	Assessment of Sadistic Personality (ASP)	Plouffe et al., 2017	19 %	
	Comprehensive Assessment of Sadistic Tendencies (CAST)	Buckels & Paulhus, 2014	13 %	
	Dark Tetrad at Work Scale (DTW)	Thibault & Kelloway, 2020	3,5 %	
	Subscale of Amoralism Inventory	Knežević, 2003	1 %	
	Severe Sexual Sadism Scale (SESAS)	Marshall et al., 2002	1 %	
	Millon Clinical Multiaxial Inventory II	Millon, 1992	0,5 %	
	Psychopathy	Short Dark Triad Scale (SD3)	Jones & Paulhus, 2014	38,5 %
		Self-Report of Psychopathy (SRP-III, SRP-4, SRP-SF)	Paulhus et al., in press; Paulhus et al., 2016; Paulhus et al., 2009	29,2 %
		Short Dark Tetrad Scale (SD4)	Paulhus et al., 2020	23 %
		Dirty Dozen (DD)	Jonason & Webster, 2010	10,3 %
		Levenson Self-Report Psychopathy Scale (LSRP)	Levenson et al., 1995	8,2 %
Dark Tetrad at Work Scale (DTW)		Thibault & Kelloway, 2020	3,6 %	
Triarchic Psychopathy Measure (TriPM)		Patrick, 2010	3,6 %	
Personality Psychopathy Inventory-Revised (PPI-R)		Lilienfeld & Widows, 2005	3,6 %	
Psychopathy Checklist-Revised		Hare, 1991	2 %	
Youth Psychopathy Traits Inventory—Short Version (YPI-S)		van Baardewijk et al., 2010	1,5 %	
Psychopathic Processing and Personality Assessment (PAPA)		Lewis et al., 2021	0,5 %	
Psychopathic Personality Trait Scale (PPTS)		Boduszek et al., 2018	0,5 %	
Inventory of Callous Unemotional Traits (ICU)		Frick, 2004	0,5 %	

psychopathy and honesty-humility were not estimated, as only three studies reported these associations and a minimum of five studies are required to consistently achieve sufficient power in random-effects meta-analyses (Jackson & Turner, 2017; Myung, 2023). Egger's regression test for funnel plot asymmetry was performed for all the estimated meta-analytic effects. The results, presented in the supplementary material, indicated no bias in any cases. Psychopathy showed significantly higher correlations than sadism with narcissism (positive), conscientiousness (negative), and openness (positive). Conversely, sadism showed significantly higher meta-analytic correlations than psychopathy with Machiavellianism (positive), neuroticism (negative), and extraversion (negative).

4. Discussion

We aimed to provide an empirical assessment of the overlap between sadism and psychopathy and of the unique contribution of sadism and psychopathy to the relationship with other personality traits. Previous studies were limited by mainly considering sexual sadism or how both traits were correlated, not comparing the correlations with each other or controlling for the overlap between sadism and psychopathy. To address

Table 2
Meta-analytic correlations of sadism and psychopathy with outcome variables.

	Sadism (<i>r</i> [95 % CI])	<i>N</i> studies	<i>N</i> sample	Psychopathy (<i>r</i> [95 % CI])	<i>N</i> studies	<i>N</i> sample	Fisher's <i>z</i>
Narcissism	0.29 [0.27; 0.31]	184	105,439	0.36 [0.34; 0.38]	184	105,439	-27.10*
Machiavellianism	0.41 [0.39; 0.43]	181	103,726	0.47 [0.45; 0.49]	181	103,726	-24.02*
Agreeableness	-0.32 [-0.36; -0.29]	39	25,317	-0.40 [-0.43; -0.36]	39	25,317	13.51*
Conscientiousness	-0.22 [-0.24; -0.20] ^a	29	18,604	-0.28 [-0.31; -0.25] ^a	27	17,575	-5.79*
Neuroticism	-0.03 [-0.10; 0.03]	32	22,955	0.01 [-0.07; 0.09]	32	22,955	-6.30*
Extraversion	-0.07 [-0.11; -0.03]	34	23,618	-0.03 [-0.08; 0.02]	34	23,618	-6.23*
Openness	-0.05 [-0.09; -0.00] ^a	23	15,556	-0.04 [-0.08; -0.00]	32	22,955	-0.39
Honesty-Humility	-0.36 [-0.41; -0.32]	17	10,738	-0.43 [-0.49; -0.36]	17	10,738	8.36*

^a Studies where publication biases were identified. On the table are displayed results after the removal of outliers for those cases. Detailed information on publication bias inspection can be found in the Supplementary material. Sadism (*r*[95 % CI]) with conscientiousness before outliers' removal: -0.230 [-0.253; -0.203]; *N* studies = 36, *N* sample = 24,597; Psychopathy (*r*[95 % CI]) with conscientiousness before outliers' removal: -0.283 [-0.322; -0.242]; *N* studies = 36, *N* sample = 24,597; Sadism (*r*[95 % CI]) with openness before outliers' removal: -0.048 [-0.086; -0.001]; *N* studies = 32, *N* sample = 22,955.

* *p* < .001.

Table 3
Meta-analytic correlations of SD4-sadism and SD4-psychopathy with outcome variables.

	Sadism (<i>r</i> [95 % CI])	<i>N</i> studies	<i>N</i> sample	Psychopathy (<i>r</i> [95 % CI])	<i>N</i> studies	<i>N</i> sample	Fisher's <i>z</i>
Narcissism	0.31 [0.28; 0.35]	43	26,927	0.39 [0.36; 0.43]	43	26,927	-15.81*
Machiavellianism	0.39 [0.36; 0.42]	42	26,259	0.33 [0.29; 0.37]	42	26,259	11.27*
Agreeableness	-0.36 [-0.42; -0.30]	7	4113	-0.36 [-0.41; -0.31]	7	4113	0.00
Conscientiousness	-0.22 [-0.26; -0.18]	8	4560	-0.27 [-0.35; -0.18]	8	4560	3.49*
Neuroticism	-0.07 [-0.23; 0.10]	6	3613	-0.03 [-0.18; 0.12]	6	3613	-2.41*
Extraversion	-0.05 [-0.08; -0.01]	6	3584	0.03 [-0.07; 0.13]	6	3584	-4.92*
Openness	0.02 [-0.08; 0.12]	6	3613	0.06 [-0.03; 0.15]	6	3613	-2.40*

The meta-analytic effects between sadism and honesty-humility and between psychopathy and honesty-humility were not estimated because we had only three studies, and the recommendation is to estimate effects with a minimum of five studies.

* *p* < .001.

these issues, we tested whether sadism accounted for more variance in outcomes than psychopathy when adjusting for the sadism-psychopathy correlation.

Altogether, our study has two main findings. First, there is an overlapping between psychopathy and everyday sadism. The moderate value might be moderated by the instrument used to assess these constructs. While there is relative consensus about the descriptive behaviors, emotions, and thoughts that define psychopathy and sadism, different instruments tend to emphasize distinct aspects of these traits, potentially leading to variation in the observed correlations. For instance, some measures of psychopathy might place greater emphasis on antisocial behaviors, while others focus more on affective deficits, which may not capture the nuances of sadistic tendencies.

Similarly, specific sadism scales may prioritize overt cruelty, while others highlight the enjoyment of others' suffering. This variability in measurement tools may affect the strength and nature of the relationship between these constructs, for instance, when analyzing the singular effect of the Short Dark Tetrad (i.e., SD4), that was developed to address such overlap, our results show a slight change in the magnitude of the relationship between the four personality traits, particularly with Machiavellianism that shows less overlapping with sadism and psychopathy than when we consider all measures. Additionally, agreeableness has the same magnitude of relationship with both traits, emphasizing their antagonistic nature. Also, our result does not conform to previous findings, that suggested that both constructs are distinct (O'Connell & Marcus, 2019). Nonetheless, their study was performed with forensic samples and considered sexual sadism primarily. Thus, the overlap between these traits implies they share a single underlying factor, and a bifactor model may better explain the relationship between them, with psychopathy representing antisocial traits and sadism associated with the enjoyment of cruelty (Anderson & Marcus, 2019).

A second important finding is that psychopathy is more strongly related to the outcome variables than sadism. For over a decade, there

has been a growing movement to add sadism to the Dark Triad to create a Dark Tetrad (Chabrol et al., 2009). Several studies have tried to show that sadism accounts for unique variance above psychopathy (Buckels & Paulhus, 2014; Paulhus et al., 2021), but there have been no meta-analytic attempts to understand if sadism provides a contribution writ large. In this paper, we have attempted to provide evidence for the incremental contribution of sadism over psychopathy in relation to others' personality traits (i.e., narcissism, Machiavellianism, the Big Five, and Honesty-Humility). In summary, we provided evidence that sadism may provide a small contribution over psychopathy, thus suggesting that both constructs may represent the same underlying core, calling into question the utility of moving from a Triad to a Tetrad. However, recent findings by Kowalski et al. (2024) indicate that narrowband outcomes, such as reactive aggression, hostility, and risk-taking, may be more effective in capturing distinctions between sadism and psychopathy. Nonetheless, in the present study, the facets evaluated within the Big Five framework were frequently observed using a variety of instruments, leading us to consider these traits in broader terms. This indicates a limitation in capturing more subtle behavioral distinctions between sadism and psychopathy.

Despite testing whether sadism provides a substantive improvement over psychopathy in accounting for variance in various aspects of personality and social psychology, our study was nonetheless limited. First, we opted to perform a systematized review (Grant & Booth, 2009), which lacks the intent to maximize the data included and may suffer from bias because of the non-quality assessment in the included materials. Also, we may have inappropriately created a biased result by performing an analysis with stand-alone and composite measures. However, we aimed to ensure the inclusion of data primarily focused on the Dark Tetrad, also being more parsimonious with the quality of said included materials. Furthermore, we created a more comprehensive dataset to perform our analyses. Thus, despite being flawed, the methodology used here made it possible to answer our initial question of how

sadism contributes to understanding various outcomes over psychopathy. Second, we made no efforts to gather unpublished data nor to get the relevant characteristics we needed for tests that may have been excluded by the authors of the studies. However, opting for peer-reviewed materials is a more parsimonious way of analyzing studies, given that unpublished data may suffer from different types of bias and have diminished quality.

In conclusion, while our study sheds light on the nuanced relationship between psychopathy and sadism, it highlights the need for further research to refine our understanding of their overlap and distinctiveness, especially when drawing conclusions about their relationship with other variables. Because these traits are understood as dimensions, this implies a wide range of possible behaviors can stem from a specific personality trait. Therefore, the observed differences between psychopathy and sadism may reflect different profiles along the same dimension. In the same way that individuals with the same psychiatric diagnosis (e.g., depression) can exhibit different symptoms (e.g., Person A experiences more helplessness and insomnia, while Person B exhibits more depressive mood and changes in sleep and appetite patterns), psychopathy and sadism may manifest through varying behavioral profiles within the same spectrum.

CRedit authorship contribution statement

Bruno Bonfá-Araujo: Writing – review & editing, Writing – original draft, Project administration, Methodology. **Gisele Magarotto Machado:** Writing – review & editing, Methodology, Data curation. **Ariela Raissa Lima-Costa:** Writing – review & editing, Methodology, Data curation. **Fernanda Otoni:** Writing – review & editing, Methodology, Data curation. **Mahnoor Nadeem:** Writing – original draft, Formal analysis, Conceptualization. **Peter K. Jonason:** Writing – review & editing, Supervision, Conceptualization.

Declaration of competing interest

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

Appendix A. Supplementary data

Supplementary data to this article can be found online at <https://doi.org/10.1016/j.paid.2024.112973>.

Data availability

see supplementary material for details https://osf.io/eq54p/?view_only=50360c2939364cdc9f3527b178ad7203

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