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Unveiling the Uniqueness of Parental Burnout and Parenthood Regret: Impact on Parents and Children

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Abstract

Recent research has uncovered significant associations between Parental Burnout (PB) and Parenthood Regret (PR), challenging their historical isolation in studies. This pre-registered, multi-method, multi-sample investigation aimed to explore the distinctiveness of PB and PR, as well as their impacts on escape ideation, parental neglect, and violence. The study involved 973 Polish-speaking parents (Study 1) and 1,429 French- and English-speaking parents (Study 2). Analyses identified four profiles based on levels of PB and PR. Confirmatory factor analyses supported a two-factor latent model (PB and PR) over a one-factor model (Parental Distress). PB, rather than PR, showed cross-sectional and prospective associations with escape ideation, parental neglect, and violence. No exacerbating effect of PR on the relationship between PB and its consequences was found. These findings were consistent across studies and samples, establishing PB and PR as distinct constructs, with further research needed to understand the consequences of PR.

Keywords: parental burnout, parenthood regret, suicide, neglect, violence

It is increasingly recognized that being a parent is not only associated with positive emotions such as joy (Nelson et al., 2013), but also with negative emotions such as stress, worry or guilt, to name but a few (Deater-Deckard, 2014; Haslam et al., 2020; Koning et al., 2013). Two areas of research have recently widened our knowledge about parenthood distress: parental burnout (PB) and parenthood regret (PR). The concepts are not new (DeVries et al., 2007; Procaccini & Kiefaver, 1983), but these two fields expanded rapidly and unprecedentedly at almost the same time, after 2015. Although they both refer to distress in the parental role and address taboo phenomena, these two fields of research developed independently of each other until very recently. The preliminary encounter between the two fields revealed higher levels of PB among parents who expressed PR (Piotrowski, 2021), and a significant association between PB and PR, with *r* coefficients ranging from .35 to .55 (Piotrowski, Mikolajczak, et al., 2023). These correlations make it important to clarify the concepts of PB and PR and their distinctiveness, including that of their consequences.

Parental Burnout: Definition, Risk Factors, and Consequences

PB is a stress spectrum disorder that occurs when demands in the parenting domain exceed available coping resources (Mikolajczak & Roskam, 2018). It is expressed through four symptoms, exhaustion, emotional distancing, saturation and contrast (Roskam et al., 2018). Firstly, exhaustion in the parental role can be physical and/or emotional and is expressed by the fact that parents no longer have the energy to take care of their children. Sleeping does not allow them to recover; they feel completely exhausted in their parental role, which drains all their resources. Emotional distancing then occurs: parents are no longer able to show their children that they love them, and can no longer be emotionally involved in the relationship with them. Parents feel overwhelmed by their role as mother or father, and they no longer enjoy being with their children. Moreover, burnt-out parents feel that they are no longer the parents they once were, or the parents they once wanted to be.

The empirical study of PB began in the field of psychology, using qualitative (Hubert & Aujoulat, 2018) and quantitative methods (Roskam et al., 2017) that led to the development of the Parental Burnout Assessment (PBA, Roskam et al., 2018). Prevalence studies on PB led to the conclusion that the distress associated with being a parent is a common experience that concerns both mothers and fathers. Based on clinical cut-offs established for the PBA, the prevalence of PB has been estimated at between 5% and 8% in Western countries (Brianda, Mikolajczak, et al., 2020; Roskam et al., 2021). However, cross-country differences in prevalence suggest a potential cultural influence.

Scholars initially considered PB as an experience linked to enduring situations before recognizing it as an experience that can affect all parents. The first studies were devoted to parents of severely ill children (Lindhal-Norberg, 2007; Lindhal-Norberg et al., 2014; Lindström et al., 2011) or children with special needs (Tunçel et al., 2018; Weiss, 2002). It is only since 2017 that publications have focused on parents in community samples (Mikolajczak, Raes, et al., 2018; Roskam et al., 2017).

A quantitative approach has mainly been used to identify the risk factors associated with PB. At the individual level, the correlates of PB have been summarized in a recent meta-analytic review (Mikolajczak et al., 2023). The association of PB with socio-demographic factors like the number of children, their age, having children with special needs, or single parenthood, is weak. PB is more strongly related to parental characteristics such as perfectionism, agreeableness, and neuroticism, as well as to environmental factors like coparenting, family disorganization, and social support. However, the true nature of the correlates—whether they are antecedents, consequences or both—remains largely unknown, as most studies are correlational and cross-sectional, making it impossible to determine the direction of the effects observed. Longitudinal studies and RCTs have shown, however, that

escape ideation, neglect and parental violence are specific consequences of PB (Brianda, Roskam, et al., 2020; Mikolajczak et al., 2019; Mikolajczak et al., 2020).

Parenthood Regret: Definition, Risk Factors, and Consequences

Donath (2015) defined motherhood regret as the feeling of regret experienced by some women regarding their decision to become mothers. This concept explores the complexities and emotional nuances surrounding motherhood, acknowledging that women may encounter societal pressures and expectations that influence their feelings about parenthood. In her work, Donath emphasizes that motherhood regret is part of a broader spectrum of experiences, which can include ambivalence, fulfillment, and the recognition of one's desires and choices (Donath, 2015). In line with Donath's seminal work, parenthood regret (PR) is defined as a negative self-conscious emotion that arises from a past decision (i.e., to have a child or children), which has led to the current situation (i.e., parenthood) in which the individual feels unfulfilled. The individual realizes that their situation would be better had they made a different decision (i.e., not to have a child or children, Camille et al., 2004; Moore & Abetz, 2019; Piotrowski, 2021; Zeelenberg, 1999) . PR thus depends on personal choices involving responsibilities whose many implications may not have been fully appreciated by the parent (Hintz & Scharp, 2023). The emotion of regret is considered natural, and is present universally from childhood (Landman, 1987). It also naturally appears in other areas of life, such as professional careers (Dyrbye et al., 2018). But it may have a special significance and particular seriousness in the parental sphere because of the importance of the object of regret, i.e. the child(ren) (Hintz & Scharp, 2023), and because of the irreversible nature of that which is regretted (Ogrizek et al., 2023). Piotrowski, Naude, et al. (2023) showed that regretful parents experience a sense of loss of their true identity, leading psychiatrists to call for recognition of the existence of this minority group of parents (Ogrizek et al., 2023).

The study of PR, meanwhile, was initiated in the field of sociology (Donath, 2015), using qualitative (*ibid.*) methods, and then in the area of psychology using quantitative methods (Piotrowski, 2021) that led to the development of the Parenthood Regret Scale (Piotrowski, Mikolajczak, et al., 2023). Prevalence studies on PR showed that the distress associated with being a parent is a common experience for both mothers and fathers. The percentage of parents with regrets has been estimated at between 5% and nearly 14% in Western countries (Thurm & Venohr, 2016). As for PB, variations in prevalence across countries have been noted.

As for PB also, researchers initially viewed parenthood regret as an experience tied to specific long-lasting circumstances but later acknowledged it as an experience that can impact all parents. Studies were first carried out on decisional regret among parents of severely ill children (Lorenzo et al., 2014; Mack et al., 2016), extremely preterm children (Geurtzen et al., 2017; Thivierge et al., 2023), after antenatal diagnosis (Schaubroeck & Hens, 2017), and among adolescent mothers (Donnelly & Voydanoff, 1996; East et al., 2012). It is only since 2015 that studies on PR have used community samples (e.g., Bodin, 2023; Hintz & Scharp, 2023; Moore & Abetz, 2019; Piotrowski, Mikolajczak, et al., 2023).

A quantitative approach has predominantly been employed to identify the correlates of parenthood regret. However, the available findings remain limited. A weak association with sociodemographic factors like parents' age, incomes, or single parenthood has been identified (Nolsoe, 2021; Piotrowski, 2021). Associations between PR and parent characteristics such as agreeableness, having experienced adverse childhood experiences, and experiencing a parental identity crisis, have also been found (Piotrowski, Naude, et al., 2023). East et al. (2012) also reported a correlation of $r = .23$ between PR and harsh parenting (i.e., a parenting style which involves violent behavior toward children). Hintz and Scharp (2023) have suggested, although they have no empirical data to support this yet, that PR expressed by

parents who had not realized the extent of the responsibilities associated with the parental role has consequences for children, in particular neglect and estrangement (i.e., emotional and/or physical distancing between parent and child). But the true nature of the correlates—whether they serve as antecedents, consequences, or both—remains largely unclear. This uncertainty arises because most studies are correlational and cross-sectional, which prevents the direction of the observed effects from being determined.

The Present Research: Objectives and Hypotheses

The research was designed to first test the relations between PB and PR in order to determine to what extent PB and PR evoke distinct experiences. Second, it was designed to test the common or specific characteristics of PB and PR, and the consequences for parents (i.e., escape ideation) and children (i.e., parental neglect and violence). To achieve our two main goals, the research was based on person- and variable-oriented approaches. It consisted of two studies that allowed for replication, using a cross-sectional design in Study 1 and a longitudinal design in Study 2, and conducted with Polish-speaking parents in Study 1 and French- and English-speaking parents in Study 2.

For the first objective, we based our assumptions on the bivariate associations ranging from .35 to .55, which suggest that PB and PR are distinct experiences (Piotrowski, Mikolajczak, et al., 2023). For the preregistered Hypothesis 1, we expected to identify four profiles of parents: those who experience low levels of both PB and PR (1), high PB and low PR (2), low PB and high PR (3), and high levels of both PB and PR (4). We hypothesized that the first profile was more frequent than the second and third ones, which were in turn expected to be more frequent than the fourth profile. For the preregistered Hypothesis 2, as the person-oriented approach is exploratory and inductive, we also expected to replicate the four profiles in two independent samples of parents. Then for the preregistered Hypothesis 3, using a variable-oriented approach, we expected to find medium associations between the

levels of PB and PR across studies, waves, and samples. In addition to the preregistered hypotheses, we expected that the items of the PB and PR scales form two latent factors, i.e., Parental Burnout and Parenthood Regret, rather than one single latent factor, i.e., Parental Distress.

For the second objective concerning the consequences of PB and PR, we based our assumptions on the effect sizes reported by Mikolajczak et al. (2023) for PB, namely $r_{aggregated}$ = .53 for escape ideation, $r_{aggregated}$ = .49 for parental neglect, and $r_{aggregated}$ = .49 for parental violence, and the correlation found between regret and harsh parenting, namely r = .23, by (East et al., 2012). For the preregistered Hypothesis 4 and Hypothesis 5, as based on the effect sizes above, we expected that escape ideation, parental neglect and violence would be higher among parents experiencing high levels of both PB and PR (4) than among parents experiencing higher PB than PR (3), than among parents experiencing lower PB than PR (2), and than among parents experiencing low levels of both PB and PR (1). In other words, although escape ideation, parental neglect and violence may be consequences more specifically associated with PB than with PR, it was expected that experiencing high levels of both PR and PB would have an aggravating effect on them. If this was found to be true, following the preregistered Hypothesis 6-Hypothesis 9, it was also expected that the variable-oriented approach might also show higher cross-sectional and prospective associations between PB and escape ideations, parental neglect, and violence than between PR and these three outcomes. For the preregistered Hypothesis 10, we further postulated that PR moderated (i.e., exacerbated) the relationship between PB and the three outcomes. In other words, we hypothesized that the presence of PR amplified the impact of PB on the risk of suicidal ideation, neglect, and violence toward children.

All the hypotheses tested in this multi-method research were pre-registered (https://osf.io/8rw29) except for the factorial issue.

Study 1

Transparency and openness

Preregistration

Study 1 was preregistered on OSF prior to analysis of the data (https://osf.io/8rw29). There was no deviation from the protocol, except for the fact that we added confirmatory factor analyses (CFAs) to test the distinctiveness of PB and PR.

Data, materials, code, and online resources

All data and syntax are available on OSF.

Reporting

We adhered to the APA reporting standards (APA, 2020) to ensure transparency and rigor in the presentation of our findings. We report how we determined our sample size, all data exclusions, all manipulations, and all measures in the study. This research aimed to test the relationships between PR, PB, perfectionism, and borderline personality symptoms.

Ethical approval

The data used in Study 1 came from a larger cross-sectional research project approved by the Ethics Committee at SWPS University in Poznan, Poland (decision number KE2022117), and conducted in 2022 and 2023 in accordance with the provisions of the World Medical Association Declaration of Helsinki.

Method

Participants

Data were collected in Poland from a sample of 973 parents whose characteristics are provided in Table 1.

Insert Table 1 about here

Procedure

The participants were recruited through the nationwide research panel service in order to reach a representative sample. The two inclusion criteria were being at least 18 years old and having at least one child living at home for at least 50% of the time. To avoid biases related to the topic of the study, including self-selection bias, the presentation of the study did not include the terms “parental burnout” and “parenthood regret”. It was presented as a study on factors possibly associated with difficulties or support for contemporary parents.

The study was conducted on the Ariadna Polish research panel (similar to Prolific or MTurk), whose participants receive points in exchange for taking part in the study. The points can then be exchanged for certain products, bonuses, or prizes. Participants were not directly remunerated by the research team. All participants were provided with information about the main purpose of the study, their voluntary participation, the benefits and risks, the protection of anonymity, and the ethics committee's approval of the study. In particular, they were informed that they could withdraw at any time and were assured that data would remain anonymous. After reading the information, they gave informed consent and were then redirected to a questionnaire. The study took about 20-25 minutes. Since the answer to each question was mandatory (forced choice), the dataset contained no missing data except for single values that were incorrectly entered by the participant (such as the value 3 in the parent’s age field). The questionnaire contained two attention check items ("This is an attention check item. Select 2 as the answer"). Participants who did not answer both these items correctly were removed from the analyses.

Measures

Sociodemographic Characteristics

The sociodemographic characteristics of the participants were collected, i.e., age in years, gender of parent [(1) female, (2) male, (3) non-binary, (4) prefer not to specify], education level [(1) primary, (2) basic vocational, (3) secondary, (4) higher], place of

residence [(1) rural, (2) city of less than 100,000 inhabitants, (3) city from 100,000 to 500,000 inhabitants, (4) city of over 500,000 inhabitants], working status [(1) I am in paid work, (2) I am not currently in paid work], household financial situation [(1) I have/we have no financial problems, my/our financial situation is good, (2) Sometimes I have/we have slight financial difficulties, but my/our financial situation is rather average, (3) I have/we have great financial difficulties, my/our financial situation is rather bad or bad], marital status [(1) married, (2) in an informal relationship, (3) single], number of children, and age of all children.

Parental Burnout (PB)

PB was measured using the Polish version of the Parental Burnout Assessment (PBA, Roskam et al., 2018; Szczygieł et al., 2020). The PBA is a 23-item questionnaire assessing the four core symptoms of PB: emotional exhaustion (9 items) (e.g., "I feel completely run down by my role as a parent"), contrast with previous parental self (6 items) (e.g., "I tell myself I'm no longer the parent I used to be"), feelings of being fed up of one's parental role (5 items) (e.g., "I don't enjoy being with my children"), and emotional distancing from one's children (3 items) (e.g., "I am no longer able to show my children that I love them"). The items were rated on a 7-point Likert scale from 0 to 6 (never, a few times a year or less, once a month or less, a few times a month, once a week, a few times a week, every day).

Parenthood Regret (PR)

PR was measured using the Polish version of the Parenthood Regret Scale (PRS, Piotrowski, Mikolajczak, et al., 2023), a 12-item questionnaire (e.g., "Having a child/children was a bad decision"; "If I could decide again whether or not to have a child/children, I would choose differently"; "Without a child/children, my life would be better"), rated on a 5-point Likert scale (strongly disagree to strongly agree).

Statistical Analyses

Information about the sample size rationale is detailed in the preregistration (https://osf.io/8rw29). Preliminary analyses were computed using SPSS (IBM, 2022), and Stata (StataCorp, 2021). As preregistered, we checked for univariate outliers using the boxplots method in SPSS. We then checked for distributions based on skewness and kurtosis values considering the threshold values of |2| and |9|, at which the results of parametric tests remain robust (Schmider et al. (2010).

For Hypothesis 1, to distinguish subgroups of parents with different levels of PB and PR, we conducted latent profile analysis (LPA) using Mplus 8.8 (Muthén & Muthén, 2017). LPA is an analytical method that is used to separate subgroups of participants within a larger population who are similar in terms of the levels of the variables studied (Tein et al., 2013).

To enable easier interpretation of the profiles, the variables were standardized (M=0, SD=1) before conducting the analyses. We then conducted a series of analyses in which we distinguished two, three, four or five latent classes respectively, and then compared the different solutions with each other, choosing the optimal solution based on both quantitative and qualitative criteria. We used four quantitative criteria: (1) the Bayesian information criterion (BIC), which should be as low as possible, with the addition of another class leading to a minimum 10-point decrease in BIC for the change to be interpreted as significant; (2) the Lo-Mendell-Rubin adjusted likelihood ratio test (LMR), whose significant result indicates that a given solution represents a better fit than one with one less class; (3) the bootstrapped likelihood ratio test (BLRT), whose significant value ($p < .05$) indicates that adding another class produces an improved fit; and (4) entropy, which is a general indicator of classification accuracy and whose higher value indicates greater model validity (Jung & Wickrama, 2008).

We also used two qualitative criteria: (1) parsimony – we assessed whether the addition of another class led to the formation of a new, specific subgroup of participants, especially one with a different configuration of dimensions; in a situation where the new class

had similar levels of variables as the existing class, we considered stopping at a solution with a lower number of classes; (2) interpretability and theoretical justification – for each solution, we assessed whether it was theoretically sound and interpretable. Since the analyses were conducted on standardized data in which group mean $M = 0$, it was possible to assess the deviation of each variable in each class from the group mean. Negative results indicated that the level of a variable in a particular class was below, and positive results indicated that the level was above the group mean.

To complement the person-oriented analyses, we performed non preregistered CFA analyses to compare two competing models, the first where the PBA and the PRS items formed a single latent factor of Parental Distress, and the second where the PBA and the PRS items formed two latent factors, i.e. Parental Burnout and Parenthood Regret. We used several goodness-of-fit indices to determine which of these two models offered the best fit with the data: the comparative fit index (CFI), the root mean square error of approximation (RMSEA), and the standardized root mean square residual (SRMR). For CFI, values close to 0.90 or greater are acceptable to good. RMSEA and SRMR should preferably be less than or equal to 0.08 (Hu & Bentler, 1999). Note that the CFAs were not planned in the preregistration, but were carried out in order to document the specificity of PB and PR. Finally, for Hypothesis 2, we estimated the Spearman correlations between PB and PR. The magnitude of the coefficients has been interpreted according to empirical guidelines by Hemphill (2003): r values < .20 are considered to be low, r values from .20 to .30 are considered to be medium, and r values > .30 are considered to be large.

Results

Preliminary Analyses

We found 22 univariate outliers which we removed for the subsequent analyses. For normality, neither skewness nor kurtosis values of the study variables were outside the

threshold values of |2| and |9|. Cronbach's alphas were high: .96 for the PBA and .96 for the PRS.

Main Analyses

Table 2 shows the statistics for the four solutions we compared in the LPA, in which we distinguished two, three, four, and five classes respectively. Although the BIC and BLRT values decreased with each additional class, indicating that the more classes there were, the better they described variation, the LMR value suggested that large changes ($p < .001$) occurred when moving from two to three classes, but adding further classes no longer led to such significant improvements in fit ($p < .05$). This might have suggested the selection of three classes, especially as entropy values were highest in the three-class solution. However, taking the qualitative criteria into account prompted the adoption of the four-class solution since a new and specific subgroup was revealed. In the case of the four-class solution, the largest group, 69.1% of parents, had low scores on both dimensions (No PB & No PR), followed by 18.6% of parents characterized by high scores on PR but average scores on PB (PR), 8.5% of parents with high scores on both dimensions (PB & PR), and 3.8% characterized by high PB but low PR (PB). These results confirmed our Hypothesis 1.

Insert Table 2 about here

Compared to the CFA models where the PBA and the PRS items formed a single latent variable (Parental Distress) (CFI = .698; RMSEA = .134; SRMR = .172), the CFA models where the PBA and the PRS items formed two latent factors (Parental Burnout and Parenthood Regret) showed a better fit to the data (CFI = .904; RMSEA = .052; SRMR = .076). The full results of the CFAs are presented in supplemental material (Table S1). Lastly, we found a high correlation of $r = .43$ ($p < .000$), between PB and PR in the Polish sample which support our expectations (Hypothesis 3).

Study 2

Transparency and openness

Preregistration

The study was preregistered on OSF prior to accessing the data (https://osf.io/8rw29). There was no deviation from the protocol, except for the fact that we added CFAs to test the distinctiveness of PB and PR. All data and syntax are available on OSF.

Data, materials, code, and online resources

All data and syntax are available on OSF.

Reporting

We adhered to the APA reporting standards (APA, 2020) to ensure transparency and rigor in the presentation of our findings. We report how we determined our sample size, all data exclusions, all manipulations, and all measures in the study.

Ethical approval

The data used in Study 2 were extracted from Time 1 and Time 2 (5 months apart) of a larger research project conducted between 2021 and 2023, which received the approval of the Ethics Committee (i.e. Comité d'Ethique Biomédicale des Cliniques universitaires saint Luc, Brussel, Belgium, 2022/073). It was carried out in accordance with the provisions of the World Medical Association Declaration of Helsinki.

Method

Participants

Data were collected from a sample of 1,429 French- and English-speaking parents whose characteristics are detailed in Table 3.

Insert Table 3 about here

Procedure

Study 2 was conducted online using Qualtrics. All participants were provided with information regarding the main objectives of the research, their voluntary participation, the

benefits and risks involved, data protection, and the ethics committee's approval. Specifically, they were informed that they could withdraw from the study at any point and that their data would remain anonymous. After reviewing this information, participants provided their informed consent. The completion of the questionnaire took approximately 30 minutes. We used the forced choice option to ensure a dataset with no missing values, except for participants who pulled out before the end of the survey. Three attention check questions in the form of "It is important that you pay attention to this study. Please tick Disagree", were randomly inserted in the survey. Participants who failed to select the right answer to any of the three attention check questions were removed from the analyses.

French-speaking participants were informed through social networks, websites, schools, or by word of mouth. Parents could participate in the study only if they were at least 18 years old, and if they had at least one child still living at home for at least 50% of the time. English-speaking parents were recruited via Prolific, a subject-recruitment platform located in the UK. Participants who met the pre-screening criteria were invited via Prolific to complete the survey online on Qualtrics (matching across times was done using prolific ID). Participants who completed the questionnaire were paid £3 ($4) for their participation. The same amount was paid at each wave. We used the forced choice option in Qualtrics to ensure a dataset with no missing values, except for participants who stopped their participation before the end of the survey.

To avoid biases related to the topic of the study, including self-selection bias, the study was presented without using the terms "parental burnout" and "parenthood regret". Study 2 was presented as a survey aiming to understand how parental exhaustion or fulfillment influences the behavior of the child and vice versa.

Measures

Sociodemographic Characteristics

The descriptive data collected in Study 2 were sex of the parent, age, country of residence, the number of children (including stepchildren and/or foster-children), age of each child and whether he/she lived in the household at least 50% of the time, marital status [(1) married (2) in legal or legal cohabitation (3) single parenthood (single, separated, divorced or widowed)], education level [(1) primary education or no degree (2) lower secondary education (3) upper secondary education (4) bachelor's degree (5) master's degree (6) doctoral (Ph.D., MBA, etc.)], working status [(1) full-time (2) half-time (3) part-time (4) unemployed (5) retired (6) unable to work (invalidity) (7) welfare benefits (8) unpaid leave (9) parental leave (10) housewife or house husband (11) social integration income], and net monthly incomes [(1) €/$/£ 0-1000 (2) €/$/£1001-2500 (3) €/$/£2501-4000 (4) €/$/£4001-5500 (5) €/$/£5501-7000 (6) >€/$/£7000].

Parental Burnout (PB) and Parenthood Regret (PR)

PB and PR were measured in the two waves using the same instruments as in Study 1, except that we used the French and English versions of the PRS and the PBA (Roskam et al., 2018). Measurement invariance across languages (i.e., Polish, English, French) was tested and confirmed for both the PRS (Piotrowski, Mikolajczak, et al., 2023) and the PBA (Roskam et al., 2021).

Escape Ideation

Escape ideation was assessed in both waves using the French and English versions of the following three items : "I want to give up everything and leave without leaving any address"; "I want to leave everything and start a new life"; "I have suicidal thoughts" (Mikolajczak, Brianda, et al., 2018). Items were rated on an 8-point Likert scale (never or less than once a year, less than once a month, about once a month, a few times a month, about once a week, a few times a week, about once a day, a few times a day).

Parental Neglect

Parental neglect was measured in both two waves using the shortened 3-item French and English versions of the Parental Neglect Scale (Mikolajczak, Brianda, et al., 2018). The items covered physical neglect ("I don't care about my children when I know I should (meals, hygiene, etc.)"), educational neglect ("I don't help my children when they really need it (for their homework, to make a decision, to resolve a conflict, etc.)") and emotional neglect ("I don't comfort my children when they are sad, frightened, or distraught"). Items were rated on an 8-point Likert scale (never or less than once a year, less than once a month, about once a month, a few times a month, about once a week, a few times a week, about once a day, a few times a day).

Parental Violence

Parental violence was measured in both two waves using the shortened 3-item French and English versions of the Parental Violence Scale (Mikolajczak, Brianda, et al., 2018). The items covered verbal violence ("I say things to my children that I then regret (threats, insults, ridiculous nicknames, etc.)"), physical violence ("I spank or slap my children"), and psychological violence ("I tell my children that I will abandon them if they are not good"). Items were rated on an 8-point Likert scale (never or less than once a year, less than once a month, about once a month, a few times a month, about once a week, a few times a week, about once a day, a few times a day).

Statistical Analyses

Information about the sample size rationale is detailed in the preregistration (https://osf.io/8rw29). Preliminary analyses were computed using SPSS (IBM, 2022), and Stata (StataCorp, 2021). As preregistered, we checked for outliers using the boxplots method in SPSS. We also checked for variables' skewness and kurtosis and applied square root transformations when values were outside the window of |2| and |9| recommended by Schmider et al. (2010). We then analyzed drop-outs with the MCAR test, and we estimated

the difference between participants who dropped out and those who completed the study using *t*-tests and chi-square. We tested the comparability between French-speaking and English-speaking participants using *t*-tests to determine whether certain variables needed to be controlled for in the main analyses, should any significant differences between the groups be found.

For the main analyses, we replicated the LPA computed in Study 1 on the data collected at Time 1 in Study 2 (Hypothesis 2). We then tested the mean differences using ANOVAs in each of the dependent variables (i.e., escape ideation, neglect, violence) at Time 1 and Time 2, according to the profiles identified in LPAs. For Hypothesis 4 and Hypothesis 5, we computed multiple comparisons between profiles with Scheffe post-hoc tests for any significant difference found in ANOVAs.

At Time 1 and Time 2 separately, we replicated the CFA analyses as performed in Study 1 to compare the model with a single latent variable (i.e., Parental Distress) and the model with two latent factors (i.e., Parental Burnout and Parenthood Regret). We used the same goodness-of-fit indices (i.e., CFI, RMSEA, SRMR) to determine the model that fitted the data best. Then, for Hypothesis 3, and Hypothesis 6-Hypothesis 9, we estimated the cross-sectional and prospective Spearman correlations between PB, PR, escape ideation, neglect, and violence. The magnitude of the coefficients was interpreted according to the same empirical guidelines as in Study 1 (Hemphill, 2003). In order to test Hypothesis 10, we also computed prospective regressions with PB and PR as predictors, as well as their interaction term at Time 1, and each of the dependent variables (i.e., escape ideation, neglect, violence) at Time 2.

To go a step forward into the relations between the variables over time and to test the direction of the effects Hypothesis 3, Hypothesis 6-Hypothesis 9), we third ran a structural equation model (SEM) in which the same set of variables (i.e., PB, PR, escape ideation,

neglect, and violence) were included at both Time 1 and Time 2, with their Time 1 values predicting their corresponding Time 2 values. Autoregressive paths were controlled for, the variables were allowed to covary in each wave, and cross-lagged paths were all estimated. We used maximum likelihood estimation with robust standard errors and mean- and variance-adjusted test statistics (MLMV) as the method of estimation, which enabled us to use all the information available in the presence of missing values on one or more variables. We then tested the equality of coefficients to see (1) whether PB better predicted later PR or whether PR better predicted later PB, and (2) which of the two predictors (PB or PR) best explained later escape ideation, neglect, and violence. To determine the acceptability of the SEM models, we used the same goodness-of-fit indices as for the CFAs.

Results

Preliminary Analyses

We found 51 univariate outliers, which we removed for the subsequent analyses. Missingness analyses revealed that MCAR tests were significant for PR, PR, escape ideation, neglect, and violence (i.e., data were not missing completely at random). The parents who dropped out (n = 644) were younger (t = -6.68, p < .001), and they scored higher on educational level (t(1427) = 6.40, p < .001), income (t(1427) = 2.98, p < .001), regret (t(1427) = 3.00, p = .001), escape ideation (t(1427) = 2.19, p = .028), neglect (t(1427) = 3.41, p = .001), and violence (t(1427) = 7.43, p < .001), than those who completed the survey at both Time 1 and Time 2 (n = 785). They were mostly fathers ($\chi^2(1) = 47.12$, p < .001), and in a couple relationship ($\chi^2(2) = 48.50$, p < .001).

Analyses of variables' skewness and kurtosis showed that PB, escape ideation, neglect, and violence revealed values outside the recommended threshold of |2| and |9| at Time 1. At Time 2, escape ideation, neglect, and violence also revealed values outside these thresholds. Square root transformations were applied. The analyses were then performed

twice, namely on the raw data and on the transformed data. Because the two analyses led to the same results, only the results found on the raw data are presented here for the sake of readability.

We found some differences between the two subsamples. Due to the recruitment procedure, the French sample was less well gender-balanced than the English one ($\chi^2(1) = 132.51$, $p < .001$). The French-speaking parents were younger ($t(1427) = -6.36$, $p < .001$). At Time 1, they also scored higher in terms of educational level ($t(1427) = 13.93$, $p < .001$), number of children ($t(1427) = 2.37$, $p = .018$), income ($t(1427) = 3.73$, $p = .000$), PR ($t(1427) = 2.10$, $p = .036$), PB ($t(1427) = 3.25$, $p = .001$), neglect ($t(1427) = 2.10$, $p = .036$), and violence ($t(1427) = 2.19$, $p = .028$), than the English-speaking parents. At Time 2, the French-speaking parents still scored higher in terms of violence ($t(783) = 3.06$, $p = .002$). The analyses were performed twice, i.e. with and without subsample as control variable. Because the two analyses led to the same results, only the results found without controlling for subsample are presented here.

Main Analyses

The fit statistics of the two-, three-, four- and five-class solutions in LPAs are shown in Table 2. The BIC and BLRT values suggested a large number of classes, but the LMR and entropy values suggested a three-class solution. However, when we analyzed the respective solutions, we found that from a theoretical point of view, the addition of a fourth class which was distinct from the others was justified. Adding a fifth class did not reveal a new and specific subgroup. As a result, on the basis of statistical and theoretical approaches, a four-class solution was selected as optimal. This solution is shown in Figure 1.

The vast majority (78.9%) of parents in Study 2 were characterized by low PB and PR (No PB & No PR), followed by 11% of parents who had high PR but average PB (PR), 6.1% with high PB but average PR (PB), and 3.9% of parents who scored high on both dimensions

(PB & PR). These results replicated the four profiles found in Study 1 and supported Hypothesis 2.

The descriptive statistics for PB, PR, escape ideation, neglect, and violence, according to the four profiles, are presented in Table 4. By comparing the profiles, we found that parents in the "PB & PR" or in the "PB" profiles scored higher than the "PR" and "No PR & No PB" profiles in the two waves for escape ideation ($F(3,1425) = 105.10$, $p < .000$, $\eta^2 = .181$; $F(3,1424) = 21.65$, $p < .000$, $\eta^2 = .042$), neglect ($F(3,1424) = 40.32$, $\eta^2 = .078$, $p < .000$; $F(3,1424) = 6.29$, $p < .000$, $\eta^2 = .076$), and violence ($F(3,1425) = 50.82$, $p < .000$, $\eta^2 = .068$; $F(3,1424) = 13.09$, $p < .000$, $\eta^2 = .021$). The results partially supported our expectations (Hypothesis 4-Hypothesis 5): while escape ideation, neglect, and violence toward children were more specifically associated with PB than PR, they did not confirm that experiencing high levels of both PB and PR would be linked to even greater escape ideation, neglect, and violence.

Insert Table 4 about here

Compared to the CFA models where the PBA and the PRS items formed a single latent variable (i.e. Parental Distress; $CFI_{Time\ 1} = .752$; $RMSEA_{Time\ 1} = .112$; $SRMR_{Time\ 1} = .132$; $CFI_{Time\ 2} = .710$; $RMSEA_{Time\ 2} = .127$; $SRMR_{Time\ 2} = .155$), the CFA models where the PBA and the PRS items formed two latent factors (i.e. Parental Burnout and Parenthood Regret), had a better fit to the data ($CFI_{Time\ 1} = .910$; $RMSEA_{Time\ 1} = .067$; $SRMR_{Time\ 1} = .063$; $CFI_{Time\ 2} = .900$; $RMSEA_{Time\ 2} = .075$; $SRMR_{Time\ 2} = .078$). The full results of the CFAs are presented in the supplemental material (Table S1).

The correlations between the study variables are displayed in Table 5. We found medium correlations between PB and PR, ranging from $r = .35$ to $r = .43$, which supported our expectations (Hypothesis 3). As expected (Hypothesis 6-Hypothesis 9), we replicated the medium correlations previously found between PB and escape ideation, neglect, and violence,

both cross-sectionally (r = .35 to 45) and prospectively (r = .32 to 41), and we found low associations between PR and both neglect and violence (r = .13 to 18), whereas the correlation between PR and escape ideation was cross-sectionally r = .33, and prospectively r = .23.

Insert Table 5 about here

In the three regression models dedicated to test Hypothesis 10, where escape ideation, neglect, and violence at Time 2 were the three outcomes, PB at Time 1 was the predictor, and PR was the moderator, we first found a significant main effect of both PB (b^* = .305, p = .001) and PR (b^* = .127, p < .034) on later escape ideation, but no moderating effect of PR on the relation between PB and escape ideation. Second, we found a marginal main effect of PB on later neglect (b^* = .18, p = .059), but no main effect of PR and no moderating effect of PR on the relation between PB and neglect. Third, we found a significant main effect of PB on later violence (b^* = .554, p < .000), and no main effect of PR but a moderating effect of PR on the relation between PB and violence (b^* = -.246, p = .032). In particular, PR increased the risk of violence for parents displaying low PB whereas with high PB, PR did not aggravate the risk of violence against children. The interaction is displayed in the supplemental material (Figure S1). These results thus invalidated our preregistered Hypothesis 10.

The significant paths found in the SEM analyses are displayed in Figure 2. As we explored the bidirectional relations between PR and PB (Hypothesis 3), we found that PB was an antecedent of PR (p < .000), but that the reverse was not true (p = .705). As hypothesized (Hypothesis 6-Hypothesis 9), escape ideation, neglect, and violence were specific consequences (but not antecedents) of PB, as they were not predicted by PR (p = .386, p = .506, p = .907 for escape ideation, neglect, and violence respectively). Note that we found the same results with the normalized variables, except that the path from violence at Time 1 to regret at Time 2 was no longer significant. Lastly, the comparisons between the path

coefficients showed that PB predicted PR better than PR predicted PB, ($\chi^2(1) = 12.32$, $p <$ .001) (Hypothesis 3), and confirmed that escape ideation ($\chi^2(1) = 7.20$, $p = .007$) was better predicted by PB than by PR, that neglect tended to be better predicted by PB than by PR (Hypothesis 6-Hypothesis 7), ($\chi^2(1) = 3.72$, $p = .054$), and that violence ($\chi^2(1) = 10.09$, $p =$ .001) was better predicted by PB than by PR (Hypothesis 8-Hypothesis 9).

Discussion

The main conclusion that arises from this research is that PB and PR are two distinct constructs. All our results support this general conclusion.

The first set of analyses was designed to test the relationship between PB and PR. We found the four profiles we expected, namely a group of parents with low levels of both PB and PR, another group of parents with a high level of PB and a lower level of PR, a third group with a high level of PR and a lower level of PB, and a final group with high levels of both PB and PR. These four profiles were replicated in the two independent samples, where the four-class solution was the best according to the pre-registered criteria. In addition, we found the expected frequencies. The largest group was that of parents with low levels of PB and PR, containing 69.1% of parents in Study 1 and 78.9% in Study 2. The second largest group was that of parents with high PR but lower PB, with 18.6% and 11% in Studies 1 and 2 respectively. The third largest group was that of parents with a high level of PB and a lower level of PR, with 8.5% and 6.1% respectively. Finally, the group of parents with high levels of PB and PR was the smallest in both studies, with 3.8% and 3.9% respectively. The prevalence of parents with high PB and/or PR in our study is in line with previous reports (Brianda, Mikolajczak, et al., 2020; Piotrowski, 2021; Roskam et al., 2021) and confirms that in Western countries, up to 10-15% of parents experience significant distress in their parenting role.

The results of the CFAs also support the view that PB and PR are distinct constructs: In both studies, the results confirm the existence of two latent factors, i.e. PB and PR, rather than the existence of a single latent factor. It is therefore essential to assess PB and PR as specific and distinct experiences, as current instruments do.

Finally, the bidirectional and prospective paths between PB and PR provide a further argument for the distinctiveness of the two constructs. The correlations between PB and PR in both studies were within the range found by Piotrowski et al. (2023). This gives us greater confidence in the results, as well as confirming that these two constructs share a common but limited variance. The estimation of cross-lagged effects further indicated that PB and PR were not reciprocally related. However, considering other variables such as parental neglect, violence and escape ideation in the model may have influenced the pattern of results between PB and PR. The issue of the directionality of the relationships between PB and PR goes beyond the main objective (i.e., distinctiveness) of the present study, and should be the subject of specific investigations in the future.

The second set of analyses aimed to test the relationship between PB and PR on the one hand, and the consequences for the parent (i.e., escape ideation) and for the children (i.e., parental neglect and violence) on the other. Our results showed that the three consequences investigated here (i.e., escape ideation, parental neglect and parental violence) seem to be much more specific to PB than to PR. Firstly, the average level of escape ideation, parental neglect and parental violence was different in the four profiles. The level of the three outcomes was significantly higher in the two groups of parents with a high level of PB. Secondly, the correlations between PB and the three outcomes were high, while they were low between PR and parental neglect and violence. Only the cross-sectional association between PR and escape ideation was as high as that between PB and this outcome, but it was medium in the prospective analysis. However, our cross-lagged analysis showed that when

both PB and PR were considered in the same model, escape ideation, parental neglect and parental violence were all specific consequences of PB. In particular, the prospective relationship between PR and escape ideation, which was moderate in the correlation analyses, was no longer significant, i.e., only the relationship between PB and this outcome remained. Insofar as the correlations we have shown between PB and the three outcomes perfectly replicated those found previously (Mikolajczak et al., 2023), and we also replicated previous results showing that escape ideation, parental neglect and parental violence are consequences of PB (Brianda, Roskam, et al., 2020; Mikolajczak et al., 2019), we can be confident in the current results. In contrast, the lack of longitudinal relationships between PR and escape ideation, child neglect, and violence warrants further exploration of the specific consequences of PR, especially when controlling for PB.

Finally, the only pre-registered hypothesis that was not confirmed was the aggravating effect of PR on PB. We assumed that the combination of the two experiences would increase the consequences of PB. But this aggravating effect was not found in relation to these three consequences. This unexpected result implies that the variance in escape ideation, parental neglect, and parental violence is largely accounted for by PB. Whether one feels regret or not appears to add little explanatory value to the consequences of PB. However, and importantly, the fact that we did not find an aggravating effect of PR on PB here does not mean that experiencing PR in addition to PB would not have an aggravating effect on other consequences that we did not consider here. Much remains to be discovered in the field of PB, and the three outcomes we have measured here are certainly not the only ones (Chen et al., 2022; Mikolajczak et al., 2023).

We still know nothing about the consequences of PR. Knowing that it is an experience distinct from PB, we should conduct new studies investigating the specific consequences of PR. And we should also consider the possibility that PB and PR share other common

consequences, but with distinct mediating processes. This could be the case for child internalized or externalized behavior, for instance. Both PB and PR could have an effect on this outcome, but this effect could be mediated, for example, by parental neglect and violence in the case of PB, and by another mediator, such as the sense of closeness (Dibble et al., 2011; Gächter et al., 2015) in the case of PR.

Limitations and Future Prospects

Despite its rigor and the conclusions that can be drawn, our study is not without limitations. First, mothers represented a large percentage of our samples (63% in Study 1 and 74% in Study 2), suggesting the need for better control of gender equality and the potential gender effect in PB and PR studies.

Secondly, we replicated the results in independent samples from different countries. The decision to utilize two independent studies conducted in distinct cultural contexts serves to strengthen the validity and generalizability of our findings. By replicating our analyses across different populations, we can assess the robustness of the identified constructs of parental burnout and parenthood regret while accounting for potential cultural influences. Although the results obtained were very similar, we also identified slight variations in the percentage of parents within each LPA group. In particular, PR appears to be more prevalent among Polish parents than among English-speaking parents, which was also observed in another study (Piotrowski, Cohen-Malayev, et al., 2023). Future studies should consider cross-cultural differences in greater depth. It is essential to recognize that cultural practices surrounding child-rearing can vary significantly from one culture to another. These cultural differences may influence parenting experiences, including the perceptions of parental well-being and fulfillment. The variations in the percentages of parents within each profile group may reflect cultural differences that influence levels of PB and PR. The higher prevalence of PR among Polish parents compared to English-speaking parents observed in our studies may

indicate differing cultural expectations regarding the parenting role, highlighting the need for a culturally informed approach. Comparing data from different populations, both culturally and geographically, would provide a valuable opportunity to better understand the underlying mechanisms of PB and PR. Such comparisons may also help identify culturally specific risk or protective factors that influence these experiences, as well as culturally specific consequences, thereby enriching our understanding of parenting in a global framework. In the future, it would be beneficial to include culturally diverse samples and conduct in-depth cross-cultural comparative studies. Such studies could contribute to a broader understanding of PB and PR.

Third, participants in Study 1 and English-speaking participants in Study 2 were compensated for their participation in the research. In Study 1, the amount of incentives was determined by the Ariadna research panel based on the estimated length and complexity of the survey. In Study 2, the amount of incentives was determined by Prolific according to the duration of survey. As these were longitudinal studies, offering compensation is a way to retain participants across different measurement points. Although the compensation provided was limited, we cannot exclude the possibility that it may have biased the recruitment of participants. This could particularly explain the differences between the sub-samples in Study 2. Non-compensated French-speaking participants had, in particular, higher levels of education and income than the English-speaking participants who received compensation. However, these differences were controlled for without any effect on the results.

Finally, in this pre-registered research, we only considered the three most documented consequences of PB (none were known for PR). Future studies need to increase our knowledge of the consequences of PR for parents, children and partners. In addition to identifying the common and specific consequences of PB and PR, we also need to consider the mediating processes, which may be different even for common consequences.

Conclusion

In conclusion, this study advances our understanding of parental well-being (PB) and parenthood regret (PR) by confirming that these constructs are distinct and differentially related to various outcomes for parents and children. Our findings highlight the importance of assessing PB and PR separately, as well as considering the broader cultural contexts in which these experiences occur. By recognizing the unique consequences associated with high levels of PB and the necessity for further investigation into PR, our research lays the groundwork for future studies aimed at exploring these dynamics across diverse populations. Ultimately, addressing both PB and PR in a comprehensive manner will contribute to more effective support for parents, enhancing their parental experiences and outcomes for their children.

From a clinical perspective, distinguishing PB from PR is crucial for developing targeted interventions for parents experiencing distress. PB, characterized by chronic exhaustion and emotional detachment, has been linked to increased risks of neglect and violence toward children, highlighting the need for early identification and intervention strategies, such as psychoeducation, stress management programs, and tailored psychological support. In contrast, PR, which involves deep-seated feelings of regret about becoming a parent, may require different therapeutic approaches, such as cognitive restructuring, acceptance-based interventions, or existential therapies aimed at helping parents find meaning and coping strategies. Understanding these constructs as distinct yet potentially interacting experiences allows clinicians to better assess parental distress and adapt interventions accordingly. Our findings emphasize the importance of incorporating PB and PR assessments into clinical practice to provide more nuanced and effective support for struggling parents, ultimately benefiting both parents and children.

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Table 1. *Characteristics of the Participants in Study 1*

Sociodemographic information	Study 1
Participants	*n* = 973
Gender	63% mothers
Age	
Mean age	36.75 years (*SD* = 7.10)
Age range	20-64 years
Number of Children	
Mean number of children	1.71 (*SD* = 0.82)
Range	1-6
Children's Age	
Mean age of children	8.21 years (*SD* = 6.12)
Range	1-33 years
Relationship Status	
Marital relationship	70.30%
Informal relationship	20.25%
Single parents	9.46%
Location	
Villages	27.13%
Cities < 100,000 inhabitants	33.92%
Cities 100,000 - 500,000	22.10%
Cities > 500,000 inhabitants	16.86%
Education Level	
Primary school	3%
Basic vocational education	28%
Secondary school	36%
Higher education	33%
Employment Status	77.18% working
Financial Difficulties	
Minor difficulties	56.94%
Moderate difficulties	36.38%
Significant difficulties	6.68%

Table 2. Latent profile analysis in Study 1 and Study 2

	BIC	BLRT	LMR	Entropy	Group prevalence (%)				
Study 1					C1	C2	C3	C4	C5
2-class	4816.287	-2760.254***	717.618***	.945	88	12			
3-class	4130.756	-2384.062***	673.541***	.983	8	72	19		
4-class	4058.955	-2030.976***	88.170*	.962	69	9	19	4	
5-class	3865.512	-1956.740***	150.751*	.960	67	17	5	7	4
Study 2					C1	C2	C3	C4	C5
2-class	7041.935	-4087.481***	1132.055***	.970	88	12			
3-class	6422.921	-3495.512***	612.750***	.977	84	4	12		
4-class	6279.567	-3175.095***	157.935	.935	11	6	4	79	
5-class	6051.479	-3034.094***	127.247	.938	9	4	76	3	8

* $p < .05$, ** $p < .01$, *** $p < .001$

Note. BIC - Bayesian information criterion, BLRT - bootstrapped likelihood ratio test, LMR - Lo-Mendell-Rubin adjusted likelihood ratio test

Table 3. *Characteristics of the Participants in Study 2*

Sociodemographic information	Study 2
Participants	*n* = 1,429
Gender	73.62% mothers
Age	
Mean age	39.28 years (*SD* = 7.26)
Age range	19-67 years
Number of Children	
Mean number of children	2.14 (*SD* = 0.97)
Range	1-8
Children's Age	
Mean age of children	9.29 years (*SD* = 5.21)
Range	1-45 years
Relationship Status	
Marital relationship	57.28%
Legal cohabitation	26.33%
Single parents	16.39%
Location	
French-speaking part of Belgium	39.71%
English-speaking countries	
United Kingdom	43.73%
United States	15.81%
Other English-speaking countries	<1%
Education Level	
Primary school	<3%
Lower secondary education	4.69%
Upper secondary education	27.31%
Bachelor's degree	36.69%
Master's degree	24.86%
PhD or MBA	3.85%
Employment Status	
Full-time work	57.78%
Part-time professional work	27.91%
Unemployed	14.31%
Net Monthly Household Income	
Less than €1000	2.59%
€1000 - €2499	23.86%
€2500 - €3999	38.63%
€4000 - €5499	21.90%
€5500 - €6999	7.63%

€7000 or higher	5.39%

Table 4. Means and standard deviations of Parental Burnout (PB), Parenthood Regret (PR), neglect, violence, and escape ideation, in the total sample, and according to profiles (Study 2)

	Total sample *n* = 1,429		NoPB&NoPR *n* = 1,137		PB *n* = 86		PR *n* = 156		PB&PR *n* = 50	
	m	*sd*	*m*	*sd*	*m*	*sd*	*m*	*sd*	*m*	*sd*
Time 1										
PB	27.33	25.35	19.90	16.36	81.16	18.28	39.62	27.61	65.28	35.00
PR	1.23	0.43	1.07	0.12	1.26	0.20	1.93	0.22	2.85	0.30
Neglect	1.21	2.22	0.92	1.76	2.97	3.81	1.87	2.69	2.80	3.61
Violence	1.42	1.87	1.19	1.58	3.43	2.83	1.70	1.94	2.52	2.90
Escape ideation	0.64	1.59	0.33	0.97	2.01	2.55	1.45	2.36	2.98	3.03
Time 2										
PB	23.95	23.33	19.56	19.72	62.49	23.37	33.73	24.26	39.53	30.61
PR	1.24	0.44	1.13	0.29	1.45	0.55	1.75	0.61	2.27	0.46
Neglect	0.93	2.16	0.78	1.99	1.89	3.00	1.45	2.60	1.65	2.37
Violence	1.01	1.46	0.88	1.36	2.20	2.13	1.22	1.51	1.41	1.46
Escape ideation	0.54	1.40	0.39	1.15	1.78	2.36	0.78	1.46	1.88	3.29

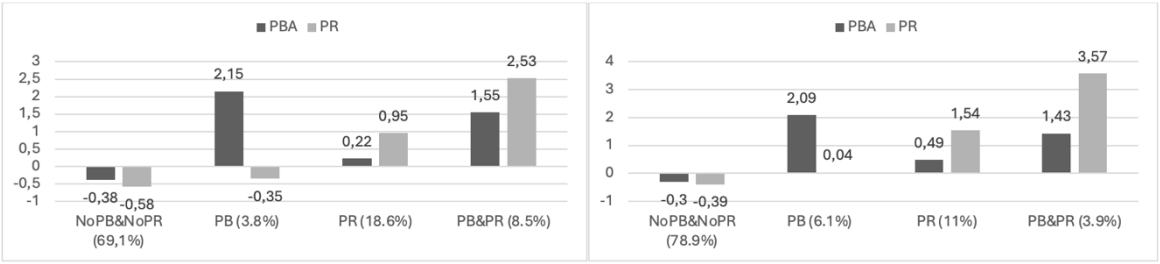
Table 5. Spearman correlations between the study variables in Study 2

	Time 1					Time 2				
	PB	PR	Neglect	Violence	Escape ideation	PB	PR	Neglect	Violence	Escape ideation
Time 1										
PB	-									
PR	.39	-								
Neglect	.35	.18	-							
Violence	.42	.14	.31	-						
Escape ideation	.45	.33	.24	.28	-					
Time 2										
PB	.77	.35	.29	.39	.40	-				
PR	.37	.65	.13	.12	.33	.43	-			
Neglect	.33	.13	.49	.29	.21	41	.17	-		
Violence	.41	.18	.24	.58	.26	.46	.22	.33	-	
Escape ideation	.32	.23	.16	.16	.55	.42	.37	.27	.28	-

Note. All coefficients are significant at $p < .001$

Figure 1.

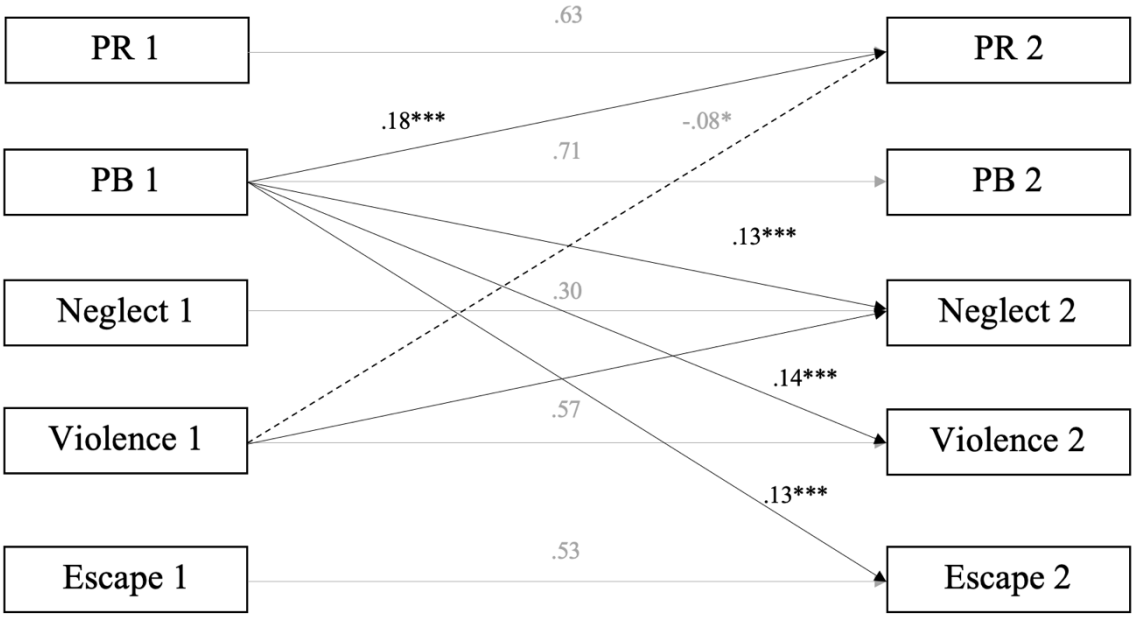
Four-class solution presenting the variation of severity of PB and PR in Study 1 (a) and Study 2 (b)



a b

Figure 2.

Cross-lagged significant associations between PB, PR, neglect, violence, and escape ideation (Study 2)



Note. Standardized coefficients are displayed.