



# Psychological violence in intimate relationships: stressor interactions and psychological outcomes

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## Abstract

This study aimed to develop the Psychological Abuse in Intimate Relationships Scale (PAIRS), a psychometrically sound measure capturing the multifaceted nature of psychological abuse, and to examine its dimensions and associations with trauma-related psychological outcomes. An initial item pool was created by reviewing 16 existing scales in the psychological abuse literature. Seventy-one items were generated and tested in a pilot study ( $n=337$ ). In the second phase, data were collected online from 1,012 ever-partnered women. Exploratory factor analysis (EFA) with Promax rotation examined the dimensional structure of PAIRS. ANOVAs compared women exposed to psychological abuse alone versus those also exposed to physical and/or sexual violence. Hierarchical regressions examined the associations between psychological abuse and peri-trauma distress and PTSD. The PAIRS demonstrated excellent internal consistency (Cronbach's  $\alpha=0.98$ ), and its subscales showed high reliability (Cronbach's  $\alpha=0.80-0.95$ ). EFA revealed a dominant unrotated factor, indicating a coherent psychological abuse construct. The rotated solution yielded eight interrelated factors, reflecting its multifaceted structure. Psychological abuse explained the largest proportion of variance in peri-trauma distress and PTSD. While psychological abuse alone was significantly associated with peri- and post-trauma outcomes, the severity of impairment was substantially amplified when it co-occurred with physical and/or sexual violence, consistent with cumulative and multiplicative effects. The PAIRS is a reliable and valid tool for capturing the multidimensional nature of psychological abuse. It offers important clinical and research utility by identifying specific abusive behavior patterns. Future research should validate the PAIRS in more diverse populations.

**Keywords** Psychological violence · Intimate partner violence · Trauma-related variables

## Introduction

Intimate partner violence (IPV) is a global concern associated with significant physical and mental health consequences. Although IPV can affect individuals of any gender, research consistently shows that women are disproportionately affected (Oram et al., 2022). A meta-analysis of studies conducted across 81 countries reported that 30.0% of all ever-partnered women experienced physical or sexual IPV during their lifetime (Devries et al., 2013). Messinger (2011) found that people with a history of same-sex relationships experience nearly twice the rate of IPV, suggesting that IPV prevalence might be higher among gay men and lesbians compared to heterosexual individuals (Walters et al., 2013).

Among the various forms of IPV, psychological abuse (also called psychological violence, emotional abuse, or mental abuse) is particularly prevalent. Psychological abuse

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frequently co-occurs with physical and sexual violence and, in some instances, it constitutes the sole form of abuse in intimate relationships (Salcioglu & Basoglu, 2017). A World Health Organization study involving over 24,000 women in 10 countries found that 20–75% of women experienced at least one emotionally abusive act from a partner (Garcia-Moreno et al., 2005). A subsequent review of 204 studies conducted in English-speaking countries showed that the prevalence rates of psychological abuse average around 80% (Carney & Barner, 2012). Another meta-analysis of 62 studies identified emotional violence as the most prevalent form of partner abuse (Williams et al., 2008).

Despite its prevalence and clinical significance, psychological abuse remains under-assessed, largely due to the absence of comprehensive, psychometrically validated measurement tools that capture its multifaceted nature. This difficulty stems from the lack of consensus on the definition of psychological abuse in the literature (Dokkedahl et al., 2019; O’Leary & Maiuro, 2001). For example, the World Health Organization (2012) defines psychological violence as a form of emotional abuse that includes behaviors such as humiliation and threats, differentiating it from controlling behaviors. In contrast, the European Institute for Gender Equality (2017) offers a broader definition, describing psychological violence as acts and behaviors causing harm to a current or former partner, including coercion, denigration, insults, and harassment. Similarly, in Denmark, psychological violence is defined as “repeated acts that demean, humiliate, violate, manipulate, threaten, or isolate” with actions potentially occurring in affect or as planned efforts to control or limit the victim’s self-expression (Lev Uden Vold, 2018). Additionally, some definitions emphasize the effects on the victim (Council of Europe, 2011, Article 33), while others focus on the perpetrator’s intent (Campbell et al., 1994; O’Leary, 1999). These definitional inconsistencies may have impeded efforts to delineate its impact relative to other forms of partner violence.

Varied conceptualizations have led to differences in operationalizing psychological abuse (Dokkedahl et al., 2019; O’Leary & Maiuro, 2001; Williams et al., 2008). In a systematic literature search conducted in the Web of Science in 2016 we identified 16 psychological abuse scales conceptualizing the construct across a range of behaviors including verbal abuse, humiliation, ridicule, insults, threats, denigration, hostile withdrawal, dominance, jealous control, criticisms, intimidation, gaslighting, ignoring, lying, controlling behaviors, isolation, and stalking (Supplementary Table 1). These scales often fail to fully capture the lived experiences of survivors due to differential emphasis on dimensions of abuse, the absence of established thresholds for identification, the need for context to differentiate psychological abuse from couple conflict, and inconsistencies in assessing intent

and motivation (Dokkedahl et al., 2019; O’Leary & Maiuro, 2001). Additionally, many existing scales employed gendered language, assumed heterosexual marital or cohabiting status, or included items referencing children, which limited their inclusivity. Furthermore, many existing measures have not been validated against key peri-trauma and post-trauma psychological outcomes, raising concerns regarding their predictive validity (Dokkedahl et al., 2019). These gaps underscore the need for a more comprehensive and psychometrically sound measure of psychological abuse.

Accurate measurement of psychological abuse is essential for elucidating its mental health effects. Psychological abuse has been independently linked to PTSD, depression, and anxiety (Follingstad, 2009; Spencer et al., 2022). Several studies found that psychological abuse remains the only significant predictor of PTSD after controlling for the effects of physical violence (Dokkedahl et al., 2022; Mechanic et al., 2008; Pico-Alfonso et al., 2006; Street & Arias, 2001; Taft et al., 2005). In some cases, psychological abuse was more strongly associated with PTSD than physical abuse (Kocot & Goodman, 2003). Taken together, these findings suggest that psychological abuse significantly contributes to the mental health burden associated with IPV.

Beyond the measurement challenges, there is also a broader theoretical gap in understanding the mechanisms through which psychological abuse exerts its effects. Without a consistent and comprehensive theoretical framework, assessment tools risk being incomplete or insufficiently sensitive. Conceptual parallels between torture and domestic violence provide a promising foundation for understanding the psychological impact of abuse. Both involve exposure to multiple stressors used either simultaneously or sequentially, with the overarching objective of establishing comprehensive control over the individual (Salcioglu & Basoglu, 2017). This sustained assault on autonomy gives rise to cumulative psychological consequences, notably persistent fear responses and a sense of helplessness.

Empirical evidence from studies of torture survivors indicates that psychological stressors such as humiliation, threats, and deprivation are capable of inducing trauma responses comparable in severity to those associated with physical torture (Basoglu et al., 2007). Principal component analyses of torture-related stressors have consistently identified coherent clusters of psychological stressors, which, in several instances, have demonstrated stronger associations with PTSD and depression than physical violence (Basoglu, 2009). These studies emphasize that it is the cumulative and interactional properties of multiple stressors, rather than their physical nature, that principally drive trauma severity.

Psychological abuse can independently inflict significant psychological distress, and its effects are magnified when combined with physical and/or sexual violence. Concurrent

exposure to multiple stressors is expected to exert a cumulative effect, amplifying both immediate psychological distress and long-term psychopathology compared to when stressors are experienced in isolation (Potter et al., 2020). Empirical comparisons between domestic violence and torture survivors have demonstrated that both groups exhibit comparable levels of trauma severity, mental health problems, and the psychological processes implicated in the development of PTSD and depression (Salcioglu & Basoglu, 2017).

Given the complex, multifaceted, and cumulative nature of psychological abuse — and its central role in exerting coercive control within abusive relationships — there is a critical need for a comprehensive, psychometrically sound measure that captures the full spectrum of psychological abuse as it is experienced across different types of intimate partnerships. The primary aim of this study was, therefore, to develop a comprehensive scale of psychological abuse and to examine the complex nature of stressor interactions in the context of intimate partner violence. It was hypothesized that psychological abuse constitutes an overarching construct composed of interrelated domains, each capturing specific behavioral patterns that cumulatively exert a deleterious impact on psychological functioning. By delineating these dimensions and examining their associations with established trauma-related outcomes, the present study seeks to address a critical gap in the assessment of psychological abuse.

## Method

### Participants

The study was conducted in two phases. Phase I was a pilot study that examined the comprehension and functioning of the items included in the new scale. Phase II was the main study that examined the psychometric properties of the scale. The inclusion criteria for both studies were a minimum age of 18 and an experience of a current or past intimate relationship of at least one month in duration.

In Phase I, convenience sampling was used to recruit participants. A formal sample size calculation was not conducted, since this phase aimed at item generation and refinement, but not complex statistical analyses. However, efforts were made to secure adequate representation for the initial evaluation. Participants consisted of 337 academic and administrative personnel and masters or doctoral students of one University in Istanbul (85% response rate). Sample characteristics are reported in Table 1.

At the outset of the Phase II study, particular attention was paid to securing an adequate sample size to ensure the

**Table 1** Sample characteristics of phase I and phase II studies

	Phase I	Phase II
	<i>n</i> (%)/ Mean (SD)	<i>n</i> (%)/ Mean (SD)
Gender (Female)	259 (76.8%)	1012 (100%)
Age	30.9 (SD=8.9)	32 (9.8)
Education		
Literate (no schooling)	--	2 (0.2%)
Primary/secondary school	7 (2.1%)	18 (1.8%)
High school	19 (5.6%)	107 (10.6%)
Undergraduate degree	169 (50.1%)	704 (69.6%)
Graduate degree	142 (42.1%)	181 (17.5%)
Marital status (Married)	118 (35%)	303 (29.9%)
Employed	337 (100%)	536 (53.0%)
History of past psychiatric illness	43 (12.8%)	303 (29.9%)
History of past trauma experience	83 (24.6%)	236 (23.3%)
Perpetrator <sup>1</sup> :		
Current partner	199 (59.1%)	552 (54.5%)
Ex-partner	117 (34.7%)	411 (40.6%)
Multiple partners	17 (5.0%)	49 (4.8%)
Mean time since exposure to violence (months)	29.2 (SD=31.8)	12.5 (SD=27.6)

<sup>1</sup>Data missing in 4 cases in Phase I

stability and interpretability of the factor analytic results. MacCallum et al. (1999) suggest that optimal sample size should be determined by factors such as the level of communalities among items, the number of items per factor (overdetermination), and the complexity of the factor structure. Additionally, following common guidelines suggesting 5 to 10 participants per item (Tabachnick & Fidell, 2013), and given the 71 items in the psychological abuse scale, an estimated sample size between 355 and 710 participants was considered appropriate. Based on these recommendations, we aimed to exceed both recommendations and more nuanced criteria related to communalities and factor complexity. This approach was aimed at ensuring sufficient overdetermination of factors and enhancing the likelihood of obtaining stable and replicable factor solutions.

Participants of Phase II were recruited through the social networking site Facebook. At the time when the study was conducted in 2018, there were 37.54 million Facebook users, representing approximately 46.5% of the total Turkish population. A banner was prepared containing an invitation to “the study of psychological violence in intimate relationships” and a link to the online survey. Using the Facebook Ads Tool, the banner was shown to 154,920 people above 18 years of age living in the entire Turkey in 64 days. Of those shown the ad, 11,528 clicked the link, and a total of 1,416 participants completed the questionnaire, representing 12.3% of those approached. As no identifiable or demographic information was collected before obtaining

informed consent, comparisons between respondents and nonrespondents were not possible. It is assumed that those who did not continue with the survey discontinued at or before the consent stage.

A total of 348 participants who reported no experience of an intimate relationship and 5 participants who reported being under 18 years of age (although the study was accessible to participants aged 18 and older) were excluded from the dataset. A final sample of 1,063 participants remained with relevant experience. Among these, only 55 were men. For a better analysis, it was decided that male participants were removed from the dataset, which resulted in the final sample being 1,012 female participants. Sample characteristics are reported in Table 1.

The final sample of 1,012 participants exceeded the thresholds for stable factor recovery even under challenging conditions and provided a strong empirical foundation for the validity of the results. Moreover, the observed communalities were above 0.50 for 67 of 71 new psychological abuse scale items, further reinforcing the adequacy of the sample size in accordance with established guidelines for factor analytic studies.

## Measures

**Demographic and personal history characteristics** Information was obtained on sex, age, education level, marital status, history of romantic relationship(s), employment status, history of psychiatric illness and treatment, and past trauma.

**Trauma characteristics** Four questions were asked to identify an experience of physical violence (e.g., slapping, punching, beating with an object, injuring with sharp objects, pulling hair, asphyxiation, etc.), sexual violence (e.g. rape, sexual advances, forced sexual acts, etc.), deprivation (e.g. deprivation of medical care, denial of privacy, isolation, restriction of movement, deprivation of food or water, etc.) and economic violence (e.g. deprivation of economic comfort, deprivation of control over personal finances, property or other economic means, etc.). The frequency of exposure to these stressor clusters was rated on a 5-point Likert scale (0=never – 4=always).

**Psychological abuse** Psychological abuse stressors were assessed with the Psychological Abuse in Intimate Relationships Scale (PAIRS), which was developed for this study. We conducted a systematic literature search in the Web of Science database in 2016 and identified 16 scales designed to measure psychological abuse or its components. Prominent examples included the Psychological Maltreatment of

Women Inventory (Tolman, 1999), the Partner Abuse Scale–Non-Physical (Hudson, 1990), and the Composite Abuse Scale (Hegarty et al., 2005), all widely cited in the literature. In a more recent study, Dokkedahl et al. (2019) identified 21 scales, but our review applied more stringent inclusion criteria — excluding short versions of longer instruments and measures assessing emotional abuse across the lifespan (e.g., both childhood and adulthood) (The NorVold Abuse Questionnaire; Swahnberg & Wijma, 2003) — to maintain consistency with the conceptual focus of the present study on adult romantic relationships.

An item pool was constructed using 468 items from 16 scales (Supplementary Table 1). After eliminating overlapping items, the content of 129 items was analyzed to identify the stressor categories they assessed. As the new scale was meant to be applicable irrespective of marital and co-habiting status, items that were applicable only to these couples were ignored (e.g., taking care of children, doing housework, etc.). A total of 67 items were developed out of the information derived from the existing scales. Four additional items were also included to tap stressors that the authors considered important. Thus, the first version of PAIRS consisted of 71 items. The PAIRS items were deliberately worded in a non-gendered manner to ensure applicability to all types of intimate relationships, including same-sex partnerships. Similarly, the instructions directed participants to consider any adult romantic relationship of at least one month in duration, without specifying the gender or formal status of the partner (e.g., spouse, fiancé, lover). This approach was intended to foster inclusivity and capture experiences across a broad range of intimate relationship types. Items were rated in a 6-point Likert scale that assessed the frequency with which the participant was exposed to stressors (0=never, 1=one or two times, 2=one or two times a month, 3=one or two times a week, 4=three or four times a week, 5=almost every day). The items in the scale were arranged in a random order. Sum scoring was used to calculate the total score on PAIRS. Higher total scores indicated exposure to more severe psychological abuse.

**Peri-trauma distress** This was assessed using a fourteen-item scale which measured the intensity of emotional reactions to stressor events at the time of exposure to them (e.g., fear, anxiety, disgust, shame, anger, sadness, helplessness, guilt, distress, etc.). A 5-point Likert scale was used to rate the severity/frequency of these emotional reactions (0=none/never – 4=extremely/all the time). The Cronbach's  $\alpha$  internal consistency coefficient value of the scale was 0.93. No item omission resulted in a significant increase in the alpha value. Item-total correlations ranged between 0.49 and 0.77, and inter-item correlations ranged between

0.30 and 0.73. A factor analysis extracted a general factor with positive loadings on all items (0.51–0.80), which explained 54.5% of the scale variance. These findings supported the internal consistency of the scale. Total scores were calculated using sum scoring. Higher scores indicate a higher level of peri-trauma distress.

**Peri-trauma sense of control** Three questions assessed the participants' ability to prevent the occurrence of stressor events, to manage peri-trauma physical or psychological pain or distress, and to end stressor events (0=completely in control, no helpless at all; 4=no control at all, totally helpless). These ratings were found to have predictive power in previous studies involving survivors of torture (Basoglu et al., 2007) and domestic violence (Salcioglu et al., 2017). In the Phase II sample of the current study, the Cronbach's  $\alpha$  internal consistency coefficient value of the scale was calculated as 0.83. Total scores were summed, with higher scores indicating lower perceived control during trauma.

**Fear and helplessness after trauma exposure** The 10-item Fear and Sense of Helplessness Scale assessed the cumulative impact of traumatic stressors on participants' anticipatory fear and sense of helplessness in life. The scale was first used in a previous study of 220 domestic violence survivors (Salcioglu et al., 2017) and was based on a similar scale devised for assessment of mass trauma survivors (Basoglu & Salcioglu, 2011). Items are rated on a 5-point Likert scale (0=not at all true–4=very true). In the first study, an exploratory factor analysis extracted two factors that represented fear due to a sense of ongoing threat to safety and a sense of helplessness in life (Salcioglu et al., 2017). The Cronbach's  $\alpha$  internal consistency coefficient value of the scale was 0.87, and each subscale based on two extracted factors was 0.81. In a study of 604 women with sexual trauma the Cronbach's  $\alpha$  value of the overall scale was 0.90 and those of subscales were both 0.85 (Salcioglu et al., 2024). In the Phase II sample of the current study ( $n=1,012$ ), the Cronbach's  $\alpha$  of the overall scale was 0.94, while those of fear due to a sense of ongoing threat to safety and sense of helplessness in life subscales were 0.83 and 0.86, respectively. Total scores were calculated using sum scoring. Higher scores indicate higher levels of fear and helplessness after trauma exposure.

**Trauma-related shame** Participants assessed shame related to their trauma experience using the Trauma-Related Shame Inventory (TRSI; Oktodalen et al., 2014), a 24-item measure rated on a 5-point Likert scale (1=not true of me; 5=completely true of me). The TRSI evaluates two dimensions of shame (internal and external) across two aspects (self-condemnation

and affective-behavioral). In the original validation study with 50 inpatients, the TRSI demonstrated strong generalizability, with generalizability and dependability coefficients of 0.874 and 0.868, respectively. The Turkish adaptation of the TRSI was conducted in a sample of 604 women with a history of sexual trauma (Bayram-Kuzgun & Salcioglu, 2023), yielding a Cronbach's  $\alpha$  of 0.97 for the total scale, and subscale  $\alpha$  coefficients of 0.92 for internal condemnation, 0.90 for internal affective-behavioral, 0.84 for external condemnation, and 0.90 for external affective-behavioral. In the present study, the TRSI demonstrated excellent internal consistency, with a Cronbach's  $\alpha$  of 0.98 for the total scale and subscale  $\alpha$  coefficients of 0.92, 0.93, 0.91, and 0.93, respectively. Sum scoring was used to calculate total scores. Higher scores indicate higher levels of trauma-related shame.

**Anger responses** The State-Trait Anger Scale (Spielberger, 1988) consists of two 10-item subscales assessing state anger and trait anger. Items are rated on a 4-point Likert scale (1=almost never, 2=sometimes, 3=often, 4=almost always). The scale has demonstrated good internal consistency across diverse populations (Ozer, 1994; Westberry, 1980; Spielberger, 1988). In a study involving 578 women who experienced physical and sexual abuse in Turkey, Cronbach's  $\alpha$  of the Turkish version of the scale was 0.94, the split-half reliability coefficient was 0.89 (Cankardas & Salcioglu, 2021). The total scores on the state anger explained 22% of the variance in traumatic stress symptoms in regression analysis. In the present study, conducted with women who had experienced various types of violence, the Cronbach's  $\alpha$  was 0.87 for the trait anger subscale and 0.94 for the state anger subscale. Sum scoring was used to calculate total scores. Higher scores indicate higher levels of anger.

**Symptoms of PTSD** Participants indicated their level of distress in association with PTSD symptoms within the last week using the Traumatic Stress Symptom Checklist – 5 (TSSC-5). The original 17-item TSSC was based on DSM-IV and showed high internal consistency in studies involving earthquake (Cronbach's  $\alpha=0.92$ ; Basoglu et al., 2001), war (Cronbach's  $\alpha=0.96$ , Basoglu & Salcioglu, 2011), and domestic violence survivors (Cronbach's  $\alpha=0.88$ , Salcioglu et al., 2017). In two studies involving earthquake (Basoglu et al., 2001) and war (Basoglu & Salcioglu, 2011) survivors, the scale showed sensitivity, specificity, and a correct classification rate of over 80% for PTSD diagnosis. The TSSC was revised by the first author by including new items and re-wording some items for clarity following the revision of the diagnostic criteria for PTSD in DSM-5. In a study of 604 women with a history of sexual trauma, Cronbach's  $\alpha$  internal consistency coefficient for the scale was 0.94 (Salcioglu et al., 2024). In the current study, it was 0.95. Total scores were

calculated using sum scoring. A higher total score reflected higher levels of PTSD symptoms.

## Procedure

Phase I data were collected using a paper-and-pencil method in the spring term of the 2017–2018 academic year. Phase II data were collected online over 65 days in 2018. Participation in both phases was voluntary, and no incentives were provided. In Phase II, study measures were administered via an online survey platform ([www.surveeey.com](http://www.surveeey.com)). This is a secure Turkish survey platform that enables anonymous data collection and prevents data storage on external servers. The platform supports item randomization, mandatory responses to minimize missing data, and secure data exportation for analysis. Participants who provided informed consent and reported a current or past intimate relationship of at least one month in duration completed the measures consecutively in a fixed order. No adaptive questioning was used, except for the initial relationship screening. To minimize missing data, respondents were required to answer each item to proceed; however, they were free to exit the survey at any point if they chose to withdraw. The survey did not include a review step, allowing participants to modify their responses after submission. Due to limitations of the survey platform, the multiple entries were only prevented by IP checks. The final page of the survey included contact information of the research team, and participants requesting support were offered eight sessions of free behavioral therapy to address trauma-related problems. All data were collected anonymously and stored on password-protected servers and computers to ensure confidentiality. The reporting of survey procedures and participant flow follows the online survey reporting guidelines proposed by Turk et al. (2018).

## Statistical analyses

Data were analyzed with IBM SPSS 24 for Mac OS. There was no missing data. The distribution of the study variables was examined using skewness and kurtosis values. Post-trauma fear (skewness=1.319, kurtosis=1.453) and trauma-related shame (skewness=1.383, kurtosis=1.051) were both positively skewed, indicating that most participants reported low levels of these symptoms. PTSD scores showed low skewness (0.359) and negative kurtosis (−0.693), suggesting a relatively symmetric distribution with a flatter shape than the normal curve. This reflects a broader spread of PTSD symptom severity, with most participants having moderate symptoms and fewer exhibiting

extremely high levels. Given that PTSD is a clinical construct, its distribution is expected to be less skewed compared to variables like fear and shame, which tend to show more polarized patterns. Furthermore, due to the large sample size ( $n=1012$ ), the Central Limit Theorem (Kwak & Kim, 2017) supports the use of parametric tests, ensuring that the sampling distribution of the mean approximates normality despite minor deviations.

Associations among variables were examined by calculating Pearson  $r$  and Spearman  $\rho$  correlation coefficients for continuous and ordinal (or non-normally distributed data) variables, respectively. Following Cohen's (1988) guidelines, correlations of 0.10, 0.30, and 0.50 are interpreted as small, medium, and large effect sizes, respectively.

The reliability of PAIRS was examined by calculating Cronbach's  $\alpha$  internal consistency coefficient and Guttman split-half reliability coefficient. A factor analysis (principal axis factoring) was conducted to examine the factorial structure of PAIRS. The Kaiser-Meier-Olkin measure of sampling adequacy was 0.98, the Bartlett's test of sphericity was significant ( $\chi^2=56597.72$ ,  $df=2346$ ,  $p<.001$ ), and the communalities were all above 0.30 (range 0.31–0.84). These findings supported the factorability of the PAIRS items. Items with factor loadings below 0.32 or cross-loadings  $\geq 0.20$  on more than two factors were removed. Two items ("*S/he told me that s/he harmed me for my own good,*" "*S/he threatened to leave me if I did not do what s/he asked*") did not load on any factor; therefore, the analysis was repeated by omitting these items.

The unrotated factor solution was examined, followed by a Promax rotation ( $Kappa=4$ ) to achieve a more interpretable factor structure. Promax is an oblique rotation technique in which an orthogonally rotated solution is rotated again to allow correlation among factors (Tabachnick & Fidell, 2013). Oblique rotation was chosen because it is more likely that factors are correlated in real-world data than uncorrelated (Tabachnick & Fidell, 2013). For example, threatening behaviors would be expected to correlate with behaviors reflecting restriction of freedom and blaming because psychological abuse tactics often co-occur and reinforce one another within coercive dynamics. Threats may function to instill fear and compliance, while restrictions on autonomy and blaming further undermine the victim's sense of agency and self-worth. Such tactics are not isolated but are part of a broader pattern of control and manipulation, suggesting an underlying latent structure where factors are inherently interrelated. Therefore, an oblique rotation method like Promax, which permits correlations among factors, provides a more realistic and theoretically sound representation of the expected factor structure.

Beyond theoretical fit, Promax rotation offers practical advantages. Although factors are allowed to correlate,

Promax maximizes the simple structure by clarifying which variables load specifically on each factor. It is computationally efficient and well-suited for large datasets. The pattern matrix, reflecting the unique relationships between each factor and observed variable, was reported. The number of factors to retain was determined using several criteria, such as the eigenvalue-greater-than-one rule and Velicer's Minimum Average Partial (MAP) test (O'Connor, 2000). Only factor loadings above 0.32 corresponding to at least 10% shared variance were interpreted (Tabachnick & Fidell, 2013). Factor scores were saved for use in subsequent analyses.

To examine the differential impact of exposure to different types of trauma events, the sample was divided into 4 groups considering the violent events that study participants had experienced in their intimate relationships. Group I consisted of 434 women who did not report any experience of physical or sexual violence but experienced solely psychological abuse. Group II included 163 women with sexual violence experience. Group III included 223 women with physical violence experience. Group IV consisted of 192 women with experience of both sexual and physical violence. All groups experienced psychological abuse. One-way ANOVA tests were conducted to examine the differences between trauma groups on PAIRS, peri-trauma distress and loss of control, and post-trauma anticipatory fear due to sense of threat to safety, helplessness in life, trauma-related shame, anger and PTSD symptoms. In interpreting ANOVA results, homogeneity of variances was checked and Brown-Forsythe robust test of equality of means was reported when distributions were not homogeneous. Bonferroni and Games Howell post hoc tests were conducted to examine between-groups differences. Given the multiple comparisons across study measures ( $n=8$ ), a Bonferroni correction was applied, resulting in an adjusted significance threshold of  $p<.006$ . All significant group differences reported remained below this corrected threshold.

A series of hierarchical regression analyses were conducted to examine the proportion of variance explained by different types of violence in peri-trauma distress and PTSD symptoms. For peri-trauma distress, severity of physical violence was entered at Step 1, sexual violence at Step 2, and psychological abuse (PAIRS total scores) at Step 3. For PTSD symptoms (TSSC-5 total scores), two hierarchical regressions were performed: in the first, frequency of physical and sexual violence were entered at Steps 1 and 2, followed by psychological abuse at Step 3; in the second, psychological abuse was entered first, followed by physical and sexual violence. The primary focus in these analyses was on evaluating the incremental variance explained ( $\Delta R^2$ ) by psychological abuse over and above physical and sexual violence. Because group membership was defined by exposure to physical and sexual violence, these variables were statistically controlled only in the regression analyses.

## Results

### Phase I: pilot study findings

A frequency analysis was conducted to examine the performance of items in the initial item pool. Fewer than 5% of participants reported experiencing 25 stressors less frequently (e.g. less than once a week). Examples included being threatened with a knife, gun, or other weapon; threats to harm family or friends; intimidation of close others; or behaviors attacking the individual's identity, such as belittling intelligence or appearance, or name-calling. The low frequency of these behaviors could be attributed to the fact that the sample had not been drawn from a population with a known history of violence exposure. Therefore, it was anticipated that these items might perform differently in a population with direct experiences of violence. For this reason, the items were not removed, and construct validity was tested in Phase II without excluding them from the scale.

The items showed meaningful associations with peri-trauma variables and post-trauma psychological distress. PAIRS scores showed significant correlations with peri-trauma distress ( $r=.64, p<.001$ ) and fear ( $r=.46, p<.001$ ) as well as post-trauma helplessness ( $r=.45, p<.001$ ), PTSD ( $r=.52, p<.001$ ) and depression ( $r=.52, p<.001$ ). These findings suggested that the scale was comprehensible and functioned well.

### Phase II: main study findings

#### Trauma characteristics

41% ( $n=415$ ) of the participants reported past experience of physical violence from intimate partners, which occurred almost always in 1.2% ( $n=5$ ), often in 10.4% ( $n=43$ ), sometimes in 32.8% ( $n=136$ ), and rarely in 55.7% ( $n=231$ ). 35% ( $n=355$ ) reported past experience of sexual violence from intimate partners, which occurred almost always in 3.1% ( $n=11$ ), often in 14.4% ( $n=51$ ), sometimes in 30.1% ( $n=107$ ), and rarely in 52.4% ( $n=186$ ). The frequency of physical and sexual violence was significantly correlated (Spearman  $\rho=0.23, p<.001$ ). About a third of the participants (33.9%) reported economic abuse, which occurred almost always in 4.4% ( $n=45$ ), often in 6.4 ( $n=65$ ), sometimes, 10.4% ( $n=105$ ) and rarely in 12.6 ( $n=128$ ). Only two women in the entire sample reported no experience of any psychological violence stressors during their intimate relationship with their partners and only 11 cases reported exposure to less than 5 stressors. Participants reported exposure to at least one psychological violence stressor at least once or twice during their relationship ranged from 12.8%

to 86.2%, while those who reported such exposure more often than one or two times a month ranged from 5.7% to 64.5%. The median ratings of the items are shown in Supplementary Table 2.

### Internal consistency and dimensions of PAIRS

The Cronbach's  $\alpha$  internal consistency of PAIRS was 0.98. No item omission resulted in a change in the Cronbach's  $\alpha$  coefficient. Although this value was high, this reflects the multifaceted yet interrelated nature of psychological abuse rather than redundancy among items, consistent with evidence that high  $\alpha$  values are common in large, multidimensional scales due to the cumulative effect of inter-item correlations (Cortina, 1993; Tavakol & Dennick, 2011). The lowest corrected item-total correlation was 0.33 for the item 'Threatened me to commit suicide if I did not do what s/he wanted.' The corrected item-total correlations for the remaining items ranged between 0.43 and 0.80 (mean=0.64). Inter-item correlations ranged between 0.05 and 0.87 (mean=0.42, range=0.82). Although a few items exhibited relatively lower item-total correlations, all items exceeded the acceptable threshold of 0.30 and were retained to ensure comprehensive coverage of the diverse experiences encompassed by psychological abuse, in line with best practices in scale development (DeVellis, 2017). The Guttman split-half coefficient was 0.96. Overall, these findings support the internal consistency of the scale.

In the factors analysis of PAIRS all items showed positive high loadings on the first factor of the unrotated solution and explained 60.5% of the total variance. Loadings in this first unrotated factor ranged between 0.34 and 0.81, with 60 of 69 items accounting for at least 30% of the overlapping variance and a further 7 accounting for 20% to 29% of the overlapping variance (factor loadings were all below the absolute value of 0.46 in the remaining 7 unrotated factors, i.e., explaining less than 20% overlapping variance). These findings suggested that all items tapped a single construct that could be called "psychological abuse."

Exploratory factor analysis using Promax rotation, supported by Velicer's MAP test (minimum value=0.0001;

O'Connor, 2000), extracted eight factors (Supplementary Table 2). There was good separation between factors with only minimal overlap (0.32–0.47) on 11 items. The highest amount of variance was explained by the first factor (42.9%), which showed high loadings on items measuring "neglect and denial of opinions, emotions and physical needs" (17 items). The second factor explained 6.6% of the variance and showed high loadings on "fear-inducing threats of harm" (11 items). The third factor's items tapped "restriction of freedom" and explained 3.3% of the variance (9 items). The fourth and fifth factors explained 2.5% and 1.9% of the variance, respectively, tapping "degrading treatment" (12 items) and "fear-inducing threatening behaviors during a conflict" (6 items). The items of the sixth factor tapped "acts destroying trust" (1.5%), but they also overlapped with the first factor (3 items). The seventh and eighth factors explained about 1% of the variance and loaded on items measuring "blaming" and "gaslighting" (7 and 3 items, respectively).

Table 2 shows Pearson correlation coefficients among factor scores of PAIRS dimensions. The factor scores on acts destroying trust showed the lowest correlations with the other factors (range 0.13–0.31). Inter-correlations among the remaining factors ranged between 0.47 and 0.75. The Cronbach's  $\alpha$  internal consistency coefficients of PAIRS dimensions are also shown in Supplementary Table 2. All dimensions achieved excellent internal consistency scores, except for 'gaslighting' the internal consistency of which was good.

### Correlations among PAIRS and Peri and post-trauma psychological outcomes

The correlations among PAIRS total scores, scores on individual PAIRS factors, and peri and post-trauma psychological outcomes are shown in Table 3. PAIRS total scores showed large correlations with peri-trauma distress, anticipatory fear due to a sense of current threat to safety, and PTSD symptoms, and moderate correlations with peri-trauma loss of control, current sense of helplessness in life, trauma-related shame, and state anger. Peri-trauma sense

**Table 2** Pearson correlation coefficients among factor scores of PAIRS

	1	2	3	4	5	6	7	8
1. Neglect and denial of opinions, emotions and physical needs	-							
2. Fear inducing threats of harm (general)	0.46	-						
3. Restriction of freedom	0.48	0.69	-					
4. Degrading treatment	0.68	0.69	0.53	-				
5. Fear inducing threatening behaviors during a conflict	0.60	0.70	0.55	0.73	-			
6. Acts destroying trust	0.30	0.26	0.13	0.15	0.31	-		
7. Blaming	0.72	0.58	0.64	0.75	0.71	0.29	-	
8. Gaslighting	0.58	0.62	0.47	0.64	0.64	0.28	0.59	-

All coefficients are significant at  $p < .001$

**Table 3** Correlations between PAIRS total and factor scores and peri- and post-trauma psychological outcomes

	Distress	Control	Fear	Helplessness	Shame	State anger	Trait anger	PTSD
1. Neglect and denial of opinions, emotions and physical needs	0.64	0.44	0.45	0.41	0.40	0.37	0.11	0.50
2. Fear inducing threats of harm (general)	0.42	0.27	0.43	0.19	0.31	0.20	0.04	0.31
3. Restriction of freedom	0.45	0.27	0.39	0.23	0.32	0.25	0.13	0.37
4. Degrading treatment	0.52	0.39	0.43	0.31	0.40	0.28	0.11	0.39
5. Fear inducing threatening behaviors during a conflict	0.57	0.33	0.45	0.31	0.37	0.32	0.11	0.40
6. Acts destroying trust	0.31	0.18	0.23	0.17	0.22	0.21	0.07	0.22
7. Blaming	0.69	0.43	0.48	0.38	0.45	0.36	0.15	0.49
8. Gaslighting	0.45	0.24	0.39	0.28	0.31	0.28	0.12	0.38
PAIRS total scores	0.68	0.44	0.53	0.39	0.46	0.38	0.14	0.52

All  $p$ 's < 0.001

of control and distress were strongly associated ( $r=.51$ ,  $p<.001$ ), reflecting a large effect size and suggesting that individuals who were able to maintain some degree of control over stressors experienced less distress. Among PAIRS factors, *blaming* and *neglect and denial of opinions, emotions, and physical needs* showed large correlations with peri-trauma distress and PTSD symptoms. *Degrading treatment* and *fear-inducing threatening behaviors during conflict* also demonstrated large effects on peri-trauma distress. The remaining factors generally exhibited moderate correlations with peri and post-trauma psychological outcomes. *Acts destroying trust* showed small correlations across most outcomes. Both state anger and trait anger were weakly to moderately correlated with PAIRS factors, with trait anger showing consistently small associations. PTSD symptoms were strongly associated with *neglect and denial*

and *blaming* (large effects) and moderately associated with the other factors.

**Differences between trauma groups**

Table 4 displays mean scores on study measures according to trauma type. The severity of psychological violence increased incrementally and significantly with further exposure to sexual violence, physical violence, and both types of violence. Women with an experience of both sexual and physical violence (Group IV) reported the highest severity of psychological abuse stressors than women in the other groups. Generally, they reported higher levels of distress and loss of control during trauma exposure, PTSD symptoms, and post-trauma shame, anger, fear, and helplessness than did other groups. They were not different from those

**Table 4** Comparisons between types of trauma

	I	II	III	IV			
	No sexual or physical violence	Sexual Violence	Physical Violence	Sexual and Physical Violence			
	( $n=434$ )	( $n=163$ )	( $n=223$ )	( $n=192$ )			
Study measures	M (SD)	M (SD)	M (SD)	M (SD)	F	df	p
Severity of psychological violence	68.2 (56.7)	92.8 (62.2)	124.1 (67.0)	161.5 (82.5)	92.1	3, 691.6	.001 <sup>a</sup>
Peri-trauma distress	28.2 (13.4)	32.5 (11.8)	36.8 (11.2)	40.2 (11.4)	54.6	3, 850.2	.001 <sup>b</sup>
Peri-trauma loss of control	4.9 (3.0)	5.7 (3.0)	6.4 (2.8)	6.6 (2.9)	20.3	3, 1008	.001 <sup>c</sup>
Fear due to sense of ongoing threat to safety	10.4 (4.4)	11.1 (4.5)	12.2 (5.4)	14.2 (6.0)	21.0	3, 736.8	.001 <sup>d</sup>
Sense of helplessness in life	7.9 (4.2)	8.6 (4.2)	8.9 (4.6)	9.3 (4.4)	7.6	3, 779.7	.001 <sup>e</sup>
Trauma-related shame	11.0 (15.4)	17.2 (17.9)	17.8 (18.7)	23.6 (21.3)	21.7	3, 712.4	.001 <sup>f</sup>
State anger	17.1 (7.3)	18.1 (7.2)	19.0 (7.7)	21.2 (8.9)	13.1	3, 790.1	.001 <sup>g</sup>
PTSD	19.6 (15.0)	23.1 (15.0)	24.4 (13.8)	30.1 (15.0)	22.9	3, 1008	.001 <sup>h</sup>

Note. Bonferroni-adjusted significance threshold is  $p<.006$

- <sup>a</sup> IV > III > II > I
- <sup>b</sup> IV > III > II > I
- <sup>c</sup> IV, III > II > I
- <sup>d</sup> IV > III, II, I; III > I
- <sup>e</sup> IV, III > I
- <sup>f</sup> IV > III, II > I
- <sup>g</sup> IV > III, II, I; III > I
- <sup>h</sup> IV > III, II, I; III > I

who were exposed to physical violence on loss of control during trauma and a sense of helplessness in life. Generally, women who were not exposed to either sexual or physical violence (Group I) reported lower scores on study measures than other trauma groups. They were not significantly different from sexual violence (Group II) survivors in terms of fear due to a sense of ongoing threat to safety a sense of helplessness in life, anger, and PTSD. There was no significant difference between physical (Group III) and sexual (Group II) violence in terms of fear due to a sense of ongoing threat to safety, a sense of helplessness in life, trauma-related shame, anger, and PTSD severity. Women who experienced physical violence reported higher levels of psychological violence stressors, peri-trauma distress, and peri-trauma loss of control than did sexual violence survivors.

### Variance explained by types of violence in peri-trauma distress and PTSD

The regression model using peri-trauma distress as the dependent variable explained 45.7% of the total variance ( $F=285.1$ ,  $df=3$ , 1008,  $p<.001$ ). At their respective point of entry, physical violence explained 12.9% ( $F=149.0$ ,  $df=1$ , 1010,  $p<.001$ ) and sexual violence 2% ( $F=23.9$ ,  $df=1$ , 1009,  $p<.001$ ) of the variance in peri-trauma distress intensity and were significant predictors. At the final step, psychological abuse accounted for 31.0% of the total variance ( $F=578.1$ ,  $df=1$ , 1008,  $p<.001$ ) and was the only significant predictor of peri-trauma distress ( $\beta=0.68$ ,  $p<.001$ ).

The regression models explained 26.9% of the variance in PTSD symptoms. PAIRS total scores explained the largest amount of variance in both models. In the first regression model, physical violence explained 5.4% of the variance at Step 1 ( $F=57.7$ ,  $df=1$ , 1010,  $p<.001$ ), sexual violence explained an additional 2.7 of the variance at Step 2 ( $F=29.3$ ,  $df=1$ , 1009,  $p<.001$ ) and psychological abuse explained 19.1 of the variance at Step 3 ( $F=263.8$ ,  $df=1$ , 1008,  $p<.001$ ). When the order of entry reversed, psychological abuse explained 26.7 of the variance at Step 1 ( $F=367.7$ ,  $df=1$ , 1010,  $p<.001$ ) and physical and sexual violence stressors did not explain a significant amount of variance at their respective steps of entry (0.3%,  $F=3.5$ ,  $df=1$ , 1009,  $p=.062$  and 0.2%,  $F=2.8$ ,  $df=1$ , 1008,  $p=.097$ , respectively).

In the final model psychological violence was the strongest predictor of PTSD ( $\beta=0.53$ ,  $p<.001$ ), physical violence showed a small inverse relationship ( $\beta=-0.07$ ,  $p=.043$ ), while sexual violence was not a significant predictor ( $\beta=0.05$ ,  $p=.097$ ). The VIF values ranged between 1.153 and 1.496, indicating moderate intercorrelations that were not large enough to raise concerns about multicollinearity. Notably, physical violence was positively and significantly

associate with PTSD at Step 1 ( $\beta=0.23$ ,  $p<.001$ ) and Step 2 ( $\beta=0.19$ ,  $p<.001$ ). The small negative  $\beta$  weight of physical violence in the final model likely reflects a suppression effect due to shared variance among the predictors. Suppression is common in models with correlated predictors and does not negate the overall positive association between physical violence and PTSD severity observed at earlier stages of the analysis. Importantly, the primary focus of this analysis was to evaluate the amount of variance explained rather than the direction or strength of individual predictors.

## Discussion

This study developed and validated the Psychological Abuse in Intimate Relationships Scale (PAIRS), offering a comprehensive tool to address longstanding gaps in the conceptualization and measurement of psychological abuse. The findings demonstrate that PAIRS reliably captures the multifaceted, cumulative, and often covert nature of psychological abuse, operationalizing it as a unified yet multidimensional construct. By combining sound psychometric properties with theoretical coherence, PAIRS provides an important contribution to advancing research and informing clinical practice in the field of interpersonal violence.

The PAIRS demonstrated very high internal consistency. Consequently, potential item redundancy was evaluated both statistically and conceptually. While a few items showed moderate inter-item correlations, each captured a distinct behavioral or emotional manifestation of psychological abuse identified in the literature and survivor accounts. Item reduction was therefore considered but not implemented at this stage to preserve the comprehensive representation of the construct's multifaceted nature. Future validation studies in different populations will allow for confirmatory analyses and potential refinement of item composition if necessary.

All PAIRS items showed positive high loadings on a single factor in the unrotated solution, supporting the conceptualization of psychological abuse as a unified construct. This finding aligns with prior research characterizing psychological abuse as coercive and controlling behaviors designed to instill fear, restrict autonomy, and undermine the survivor's agency (Lohmann et al., 2024; Mechanic et al., 2008). The observed correlations between PAIRS scores and peri and post-trauma psychological outcomes were generally moderate to large, indicating robust and clinically meaningful associations. These findings support the predictive validity of the PAIRS in capturing the psychological impact of abuse across multiple domains, including distress, anticipatory fear, sense of helplessness, shame, anger, and PTSD symptoms.

The Promax rotation extracted eight factors, corresponding to distinct domains of abusive behaviors that reflected meaningful groupings based on stressor interactions and abuser intent. This solution provided a more nuanced and theoretically coherent view of the multidimensional nature of psychological abuse, illustrating how it manifests through different but interrelated behavioral domains. Consistent with recent qualitative research highlighting the interconnected nature of coercive control strategies — including psychological, economic, and technological forms of abuse — our factor analytic results underscore the multifaceted structure of psychological abuse (Kassing & Collins, 2025). Such a structure with the conceptualization of psychological abuse as a system of behaviors that collectively undermine the survivor's autonomy, instill fear, and erode agency, rather than isolated incidents or discrete behaviors.

The highest amount of variance was explained by the first factor, which included acts of *neglect and denial of opinions, emotions, and physical needs*. Although this factor accounted for a larger proportion of variance compared to the subsequent factors, this reflects the relative salience and prevalence of certain types of abusive behaviors rather than an imbalance undermining the multidimensional structure of the scale. Such variance patterns are typical in multifaceted constructs where some dimensions are naturally more dominant due to their behavioral or psychological significance (Fabrigar et al., 1999; Reise, 2012). Disregarding, silencing, and disparaging a person's opinions, concerns, emotions, and physical and sexual needs can diminish their sense of individuality and belonging. Such experiences may be deeply upsetting, particularly when they occur repeatedly or within close relationships, as reflected in the strong correlations between the scores on this first factor and peri-trauma distress intensity. The stressor items loading on this factor also had enduring effects as indicated by the 16 to 20% variance it explained in post-trauma fear due to a sense of threat to safety, helplessness in life, and trauma-related shame. These findings are consistent with a meta-analysis of laboratory stressor studies, which showed that threats to social self are associated with substantial changes in cortisol levels — the body's main stress hormone (Dickerson & Kemeny, 2004).

A further attack on one's self-concept comes from *degrading treatment*, characterized by behaviors that load on the fourth factor of the PAIRS, which erodes one's sense of worth as an individual. Exposure to degrading treatment is also a highly distressing experience, as evidenced by the strong association between this factor and peri-trauma distress intensity. It could be argued that the experience of neglect and denial of one's individuality and degrading treatment is similar to the experience of social defeat and expulsion from one's social group, which leads to social pain and

shame (Björkqvist, 2001, 2017). Research shows that social defeat is related to anxiety symptoms, depression, and PTSD (Björkqvist, 2017). Consistent with these arguments, the scores on the neglect and degrading treatment factors showed moderate correlations with post-trauma shame. In addition, neglect factor showed strong and degrading treatment showed moderate correlations with PTSD.

*Fear-inducing threats of physical and social harm* was the second factor that explained 6.6% of the variance. Such threats operate to obtain submission and compliance on the part of the victim. Such threats induce fear and helplessness, particularly in women who also endure physical and sexual violence, thereby leading them to remain in the relationship to prevent harm to self and their close ones. More situational fear-inducing threatening behaviors occurred in conflicts, in the form of displays of verbal and physical aggression. These behaviors formed a separate factor and explained 1.9% of the variance. Although not highly prevalent in the sample, as would be expected in community-based studies, such behaviors are critical in clinical contexts due to their strong associations with heightened distress and perceptions of threat to safety. Their inclusion in the PAIRS reflects the scale's dual purpose: to capture not only the epidemiological features of psychological abuse but also to provide a clinically useful tool for identifying stressors that contribute to PTSD symptoms and guide clinical assessment and intervention.

The distressing nature of both types of threats is evident in their significant correlations with peri-trauma distress intensity. Fear-inducing threats may have long-lasting effects even after the end of the relationship, as evidenced by moderate correlations between both types of threats and post-trauma fear due to a sense of threat to safety and PTSD. The enduring effects of threats was also supported by a previous study that examined the associations among various types of stressors and post-trauma fear, helplessness, and PTSD using path analysis (Salcioglu & Basoglu, 2017), where fear inducing threats emerged as the strongest predictor of post-trauma fear and helplessness, mediating their relationship with PTSD.

Although these factors explained relatively small proportions of variance (6.6% and 1.9%, respectively), such findings are expected in complex, multifaceted constructs such as psychological abuse, where diverse behaviors exert overlapping yet incremental effects. This pattern reflects the diffuse and pervasive nature of abuse tactics within intimate relationships. While lower variance percentages may limit the strength of individual factors, they do not necessarily diminish the robustness or clinical significance of these dimensions. Nonetheless, caution should be exercised when generalizing these findings, and future studies should further validate these subdimensions in diverse populations.

The third factor, *restriction of freedom*, consisted of controlling behaviors that limited the survivor's autonomy – such as whom to see, what to wear, where to go, what not to do—and included acts that invaded their privacy. Such restrictions likely served to control the survivor and to monitor or seek evidence of infidelity. These limitations on personal freedom can undermine a person's sense of control over their life and, when combined with threats of harm, may lead to fear and submissive behavior. Consistent with this view, scores on the *restriction of freedom* factor were moderately associated with peri-trauma distress, post-trauma fear, and PTSD symptoms. Additionally, although smaller in magnitude, statistically significant associations also were found with peri-trauma sense of control and post-trauma sense of helplessness. While these associations were modest, they are clinically meaningful, suggesting that even subtle, non-physical forms of coercive behaviors can lead to psychological harm.

Restriction of freedom may not provoke an immediate perception of powerlessness in the same way that physical or sexual violence might, but, over time, it can gradually erode autonomy and self-efficacy, contributing to a generalized sense of helplessness and disempowerment. These findings align with the Duluth Model (Domestic Abuse Intervention Project, 2011), which conceptualizes gender-based violence as a systematic pattern of behaviors grounded in power and control. The observed associations between psychological partner violence, diminished control, and trauma-related distress highlight the central role of control loss and power dynamics in the psychological impact of abuse.

Moreover, in some cases, individuals may comply with such restrictions as a strategy to prevent conflict or to maintain emotional proximity, which can create an illusion of control. This perceived control may further obscure the restrictive nature of the behaviors until their cumulative psychological cost becomes apparent. In clinical practice, even chronic, low-intensity infringements on personal freedom can accumulate and undermine long-term resilience. Therefore, these findings underscore the importance of assessing seemingly less overt controlling behaviors within the broader framework of coercive control and cumulative trauma. A further support for the long-lasting impact of restriction of freedom comes from a study of domestic violence survivors where acts restricting control over one's life, which involved similar behaviors assessed in the current study, was a strong predictor of PTSD and this relationship was mediated by post-trauma fear and sense of helplessness (Salcioglu & Basoglu, 2017).

The sixth factor, *acts destroying trust*, had only three items and explained a small amount of variance. The items also shared almost modest overlapping variance with the first factor, suggesting that they partially tapped neglect and

denial of opinions, emotions, and physical needs. This overlap is not unexpected, as undermining emotional needs and violating trust are interrelated processes in abusive relationships. However, trust violations represent a conceptually distinct dimension of psychological abuse. Trust is regarded as a core psychological need and foundation for a sense of security (Janoff-Bulman, 1992; McCann & Pearlman, 1990; Resick, 1987). While neglect undermines emotional validation and autonomy, trust-destroying acts, such as lying, secrecy, and betrayal, directly erode relational security and predictability, increasing sense of vulnerability to harm and hence anxiety. Although such acts may seem less overtly abusive in isolation, within the context of prolonged abusive relationships, they can contribute independently to the cumulative erosion of the survivor's psychological integrity. Research shows that violations of trust in close relationships can have profound psychological consequences, including increased vulnerability to anxiety, depression, PTSD symptoms, and difficulties with future relational functioning (Freyd, 1996; McCann & Pearlman, 1990; Mikulincer & Shaver, 2007). Betrayal trauma theory, for instance, emphasizes that harm inflicted by a trusted individual creates a unique form of relational trauma, undermining basic assumptions about safety and reliability in interpersonal contexts (Freyd, 1996). This interpretation is supported by the moderate correlations observed between this factor and peri-trauma distress, as well as its small but significant associations with post-trauma fear, shame, helplessness and PTSD. Acts destroying trust may also affect negatively interpersonal relationships, including future romantic relationships. Therefore, although some overlap exists, the emergence of a separate factor on acts destroying trust reflects its unique contribution to the multifaceted structure of psychological abuse and its relevance for clinical assessment.

The remaining two factors, *blaming and gas-lighting*, explained only 1% of the variance. Although the gaslighting and blaming dimensions showed lower internal consistency compared to other subdimensions, this is not uncommon for subscales with a small number of items (DeVellis, 2017; Tavakol & Dennick, 2011). Moreover, gaslighting is a complex, multifaceted behavior that may require further item development to capture its nuances fully. Future revisions of the PAIRS could aim to expand these dimensions to improve their psychometric properties. Seven items that loaded on the blaming factor showed strong correlations with peri-trauma distress and moderate correlations with other post-trauma psychological outcomes. This finding suggests that being blamed is a distressing experience with lasting effects. Research has shown that blame, particularly self-blame induced by abusive partners, is associated with increased PTSD and depression among survivors (Hamrick

& Owens, 2019; Reich et al., 2015). Similarly, gaslighting represents a complex form of psychological manipulation that undermines the survivor's sense of reality and self-esteem, contributing to anxiety, fear, depression, and post-traumatic stress (Darke et al., 2025; Sweet, 2019). Women subjected to blame and gaslighting often attempt to adjust their behaviors in hopes of preventing further abuse and maintaining relational stability – an effort to regain a sense of control that can paradoxically entrench feelings of helplessness over time. These findings underscore the clinical importance of assessing blame and gaslighting within the broader framework of psychological abuse.

Differences in trauma groups suggested that while psychological abuse alone had a significant impact on peri and post-trauma outcomes, its severity and effects were magnified when it co-occurred with physical or sexual violence stressors. The cumulative impact of the concurrent administration of psychological, physical, and sexual violence stressors likely exerts a multiplicative, rather than additive, effect – amplifying both the immediate psychological impact and long-term psychological sequelae compared to when stressors are experienced in isolation. For example, physical aggression, such as beating, when accompanied by insults or death threats, increases not only the immediate distress but also the threat value of beating. Similarly, acts restricting a woman's freedom, such as controlling her movements or relationships, become more threatening when failure to comply with imposed rules is punished with threats of harm or acts of aggression. Our argument is consistent with prior research on cruel, inhuman, and degrading treatment, where cumulative exposure to multiple psychological and physical stressors has been proposed to exert a multiplicative — rather than merely additive — impact on trauma severity (Basoglu, 2009). The progressively greater psychological impairment observed across trauma groups in our study similarly suggests that the co-occurrence of psychological, physical, and sexual violence compounds the severity of trauma-related outcomes.

Consistent with this framework, women exposed to psychological abuse alongside additional violence (physical, sexual, or both) reported higher levels of peri-trauma loss of control and emotional distress, as well as greater post-trauma anticipatory fear, helplessness, shame, anger, and PTSD symptoms compared to those exposed to psychological violence alone. Psychological abuse severity increased incrementally with exposure to additional types of violence, reinforcing the view that these stressors interact to exacerbate psychological harm.

Importantly, hierarchical regression analyses demonstrated that psychological abuse explained a noticeably larger amount of variance in peri-trauma emotional distress and PTSD severity than did physical and sexual stressors

and was the strongest predictor of these outcomes. This pattern aligns with previous research showing that psychological abuse is often more strongly associated with PTSD than physical abuse (Dokkedahl, 2022; Kocot & Goodman, 2003; Mechanic et al., 2008; Pica-Alfonso et al., 2006; Street & Arias, 2001; Taft et al., 2005). Our findings do not suggest that psychological abuse is inherently a more severe form of trauma; rather, they underscore that psychological abuse is highly distressing and traumatizing in its own right. More importantly, psychological abuse may play a critical role in amplifying the psychological impact of physical and sexual violence stressors when they co-occur, acting as a catalyst that heightens trauma severity and complicates the recovery process. By integrating findings from torture literature, our results highlight the central role of psychological abuse in understanding the cumulative and interactional nature of trauma exposure within intimate partner violence contexts.

These findings have important social and psychological implications. Unlike physical violence, the impact of psychological abuse often remains hidden, leading to delays in help-seeking, under-recognition by professionals, and prolonged suffering. Psychological abuse is often a precursor to physical violence, with escalating patterns of control and degradation frequently preceding overt acts of physical aggression. Early recognition of psychological stressors and labeling them as abuse is therefore critical, empowering survivors to take protective actions before violence escalates. On a broader societal level, raising public awareness about the severity, distinctiveness, and warning signs of psychological abuse is crucial for enhancing early detection of violence and ensuring that survivors receive interventions tailored to this insidious form of trauma. Trauma-focused intervention strategies that go beyond symptom management and address the core mechanisms, such as loss of control and agency may be particularly effective for survivors of psychological abuse (Salcioglu et al., 2017).

In summary, multiple lines of evidence from this study affirm that the stressor events assessed by PAIRS constitute psychological abuse. The factor analysis produced conceptually coherent dimensions that captured distinct patterns of abusive behaviors and underlying intent. Exposure to these stressors was associated with peri-trauma loss of control and emotional distress, as well as post-trauma outcomes including fear, helplessness, shame, anger, and PTSD. Comparisons between trauma groups further demonstrated that survivors exposed to psychological abuse alone experienced significant psychological impairment, which intensified when combined with physical or sexual violence. Moreover, psychological abuse explained the largest proportion of variance in peri-trauma distress and PTSD severity. Taken together these findings suggest that verbal and non-verbal behaviors assessed are not only

conceptually but also empirically indicative of psychological abuse with lasting traumatic effects.

Despite its strengths, this study has several limitations. While social media recruitment is validated for reaching hidden populations, caution is warranted in interpreting the findings. The use of Facebook-based recruitment facilitated access to women with diverse violence experiences but resulted in a sample with higher education and employment levels than the general population, limiting generalizability. Additionally, women with more severe trauma histories may have been more motivated to participate. Although recruitment was open to all adults regardless of gender, participation from men was too limited to allow meaningful analysis; as such, the findings primarily reflect the experiences of women and may not generalize to male survivors. However, because the PAIRS was developed with non-gendered wording and the study did not restrict participation based on the gender of the partner, the sample likely includes women from both heterosexual and same-sex relationships. Future research should aim to validate the PAIRS in more gender-diverse and male samples. While existing scales were systematically reviewed to inform item development, a detailed comparative analysis with prior instruments was not conducted as it was beyond the scope of this study. Some factors in the PAIRS scale explained relatively small proportions of variance, a common issue in multifaceted constructs, but this suggests the need for replication. The reliance on self-report measures may have introduced reporting biases, though anonymity and voluntary participation were intended to mitigate these effects. The cross-sectional design precludes causal inferences. Future research should replicate these findings in more diverse samples, use longitudinal designs to examine temporal dynamics, and further refine subscales like gaslighting and blaming to improve their psychometric properties. Despite these limitations, the present study makes a significant contribution to advancing the understanding and assessment of psychological abuse.

In conclusion, this study highlights that psychological abuse is not a secondary or lesser form of violence, but a central mechanism of trauma within intimate relationships. By capturing its multifaceted and cumulative nature, the PAIRS provides a promising framework for clinicians and researchers to better understand the hidden architecture of psychological abuse. Recognizing and assessing psychological abuse in its full complexity is essential for advancing scientific knowledge and informing more effective prevention, intervention and support strategies for survivors. While further validation across diverse populations and study designs is warranted, the present findings provide an important foundation for the continued development of comprehensive assessment tools.

**Supplementary Information** The online version contains supplementary material available at <https://doi.org/10.1007/s12144-025-08676-0>.

**Author contributions** SC and ES conceptualized and designed the study. SC collected and analyzed the data and drafted the Methods and Results sections. ES, as supervisor, provided conceptual guidance and drafted the Introduction and Discussion sections. Both authors contributed to reviewing and editing the final manuscript.

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**Data Availability** The data supporting the findings of this study are not publicly available as we are currently conducting additional analyses for a forthcoming study based on the same dataset. Data may be made available upon reasonable request and subject to restrictions, following the completion of ongoing projects.

## Declarations

**Ethics approval** The questionnaire and methodology for this study were approved by the Human Research Ethics Committee of Istanbul Arel University (Ethics approval number: 693966709-300.00.00.661).

**Consent to participate** Informed consent was obtained from all individual participants included in the study.

**Conflict of interest** On behalf of all authors, the corresponding author states that there is no conflict of interest.

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