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## RESEARCH ON ASSESSMENT AND INTERVENTION

# The Psychological Maltreatment Review (PMR): Initial Reliability and Association with Insecure Attachment in Adults

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*A new instrument, the Psychological Maltreatment Review (PMR), is introduced and its psychometrics are described. The PMR examines adult retrospective reports of child psychological abuse, psychological neglect, and psychological support, measured separately for maternal and paternal figures. Male and female participants (N = 1,051) completed the PMR and a measure of adult attachment, the Revised Experiences in Close Relationships scale (Fraley, Waller, & Brennan, 2000). The three scales of the PMR demonstrated very good internal consistency. The structural validity of the PMR was supported by both exploratory and confirmatory factor analyses, as was the notion of an independent parental support/nonsupport variable. Indicative of the construct validity of this measure, all PMR scales were significantly correlated with anxious and avoidant attachment in close relationships. Hierarchical multiple regression analyses indicated that paternal neglect and maternal psychological abuse predicted participants'*

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*anxious attachment, whereas less paternal and maternal support was associated with avoidant attachment.*

*KEYWORDS adult survivors, assessment, child abuse, child maltreatment, child neglect, psychological trauma*

Psychological abuse, psychological neglect, and lack of parental psychological support have been associated with a range of later psychological difficulties, including poor self-esteem, depression, anxiety, interpersonal and relationship problems, dissociation, and aggressive behavior (Briere & Runtz, 1990; Ferguson & Dacey, 1997; Gross & Keller, 1992; Lyons-Ruth & Block, 1996; Sengsouvanh & Runtz, 2004; Spaccarelli & Kim, 1995). In fact, childhood psychological maltreatment is at least as associated with negative psychological outcomes as some instances of sexual or physical abuse (Bifulco, Moran, Baines, Bunn, & Stanford, 2002), and part of the injurious aspects of physical or sexual abuse may be the psychological maltreatment that usually accompanies it (Claussen & Crittenden, 1991; Hart, Brassard, Binggeli, & Davidson, 2002). Yet, despite the emerging data in this area, research on psychological forms of maltreatment lags behind that of other types of child victimization.

*Psychological abuse* is characterized by a repeated pattern of caregiver behavior that conveys to children that they are worthless, flawed, unloved, unwanted, only of value in meeting another's needs, or endangered (American Professional Society on the Abuse of Children [APSAC], 1995; Brassard, Hart, & Hardy, 1991). Typical psychologically abusive behaviors include excessive and continuing criticism, denigration, repeated blaming, insults, and threats against children by their caretakers (APSAC, 1995; Briere & Runtz, 1990; Hart et al., 2002). Some degree of psychologically abusive behaviors is common in the general population; several studies indicate that 45% to 86% of parents report engaging in behaviors toward their children that can be considered psychological maltreatment (e.g., yelling, insulting, threatening; Daro & Gelles, 1992; Straus, Hamby, Finkelhor, Moore, & Runyan, 1998).

*Psychological neglect* refers to "inadequate nurturance/affection" that causes or increases the risk of "mental, emotional, or developmental problems" (Trocmé et al., 2005, p. 43). In a study of Canadian university students that examined retrospectively recalled parental psychological neglect, rates were found to be 38% for women and 45% for men (Paivio & Cramer, 2004). Research indicates that early psychological neglect may be an especially potent source of immediate and later psychosocial difficulties (Erickson & Egeland, 2002; Sroufe, Egeland, Carlson, & Collins, 2005).

A less studied construct, parental *psychological support* refers to "gestures or acts of caring, acceptance, and assistance that are expressed by a

parent toward a child” (Shaw, Krause, Chatters, Connell, & Ingersoll-Dayton, 2004). Such behavior is not merely the absence of abuse or neglect, but rather the active process of positive parental involvement and nurturance with respect to the child. Although difficult to enumerate in terms of epidemiology, lack of parental support has significant psychological implications, because early relationships with parents serve as a context within which important psychosocial development takes place (Bowlby, 1980). Parental support appears to be related to academic achievement (Kristjánsson & Sigfúsdóttir, 2009), enhanced psychological and physical health (Wickrama, Lorenz, & Conger, 1997), fewer posttraumatic stress disorder symptoms after a natural disaster (Bokszczanin, 2008), and increased social skills in sexual-romantic interactions during adolescence (Graaf et al., 2010). In addition, longitudinal data from general population samples suggest that a lack of parental support during childhood is associated with persistent externalizing problems and depressive symptoms across the life span (McCarty, Zimmerman, Digiuseppe, & Christakis, 2004; Shaw et al., 2004). Despite these studies, however, there is much less known about psychological support and its impact relative to psychological abuse or neglect, and no studies have examined the effects of parental psychological support while examining (or controlling for) child psychological maltreatment.

#### PSYCHOLOGICAL MALTREATMENT AND ATTACHMENT INSECURITY

When psychological abuse, neglect, or nonsupport occurs early in life, it may interfere with a child’s development of a healthy, secure attachment to caretakers (Baer & Martinez, 2006; Morton & Browne, 1998), resulting in difficulties in forming positive relationships with others (Davila & Bradbury, 2001; Weinfield, Sroufe, & Egeland, 2000). Those with supportive, non-maltreating parents are likely to experience consistent availability and high levels of comfort from their caregivers. As the child matures into adulthood, these positive experiences increase the chance of developing secure attachments to others as an adult (Hazan & Shaver, 1987; Roisman, Collins, Sroufe, & Egeland, 2005). In contrast, psychological maltreatment in childhood has been linked in various studies to later adult problems in maintaining and sustaining intimate relationships (see reviews by Allen, 2001; Pearlman & Courtois, 2005).

The extensive existing research literature on adult attachment has confirmed the utility of two attachment dimensions—*anxiety* (or model of self) and *avoidance* (or model of others)—for organizing and understanding attachment behaviors (for a comprehensive review, see Mikulincer & Shaver, 2007). In brief, the anxiety dimension represents the level of the person’s fear of relational rejection or abandonment (e.g., vigilance for signals of

threats, separations, and betrayals), combined with his or her internalized sense of self-worth. The avoidance dimension represents the degree of the person's emotional suppression, self-reliance, and comfort with closeness and interdependence, based on his or her expectations that the partner will be available, supportive, and trustworthy.

### Measurement of Psychological Maltreatment

Despite the importance of childhood psychological maltreatment in the genesis of later psychological difficulties, there are relatively few empirically validated and reliable measures of these constructs available to researchers. Although several measures examine retrospective reports of childhood psychological abuse (e.g., Bernstein et al., 1994; Briere & Runtz, 1988; Demaré, 1993; Elliott, 1992), and to a lesser extent neglect (e.g., Bernstein et al., 1994), there are almost no measures that formally evaluate parental psychological support, other than the unpublished Parental Psychological Support subscale of the Traumatic Events Scale (TES; Elliott, 1992) and a four-item unnamed measure by Czapinski (1998, cited by Bokszczanin, 2008). Further, no measure evaluates all three domains (parental psychological abuse, neglect, and support) simultaneously, and only one (the TES) assesses psychological maltreatment separately for experiences with each parent. Yet, the gender of the psychologically maltreating caretaker is probably relevant to later outcomes (Briere & Rickards, 2007; Schore, 1999).

In response to these measurement gaps, the Psychological Maltreatment Review (PMR) was developed. The PMR is a self-report measure of adults' childhood experiences of psychological abuse, psychological neglect, and parental psychological support, rated separately for the most significant male and female parental figures in the respondent's life. This measure is specifically intended to enable researchers—and, eventually, clinicians—to assess three major issues untapped by currently available instruments: (a) the relative and differential presence of childhood psychological abuse, neglect, and nonsupport, considered simultaneously; (b) the role and prevalence of maternal versus paternal psychological maltreatment, given research and theory suggesting that caretaker gender is an important predictor of maltreatment effects; and (c) the specific validity of psychological support as an independent predictor of clinical outcomes, as parental support or nonsupport has been implicated in later psychological disturbance, and is not well represented merely by low scores on psychological abuse or neglect scales.

This study examined the psychometric characteristics of the PMR, as well as its relationship to participants' self-reported attachment in close adult relationships. Specifically, based on attachment theory and research, we hypothesized that the PMR psychological abuse and neglect scales would be positively related to both attachment anxiety and avoidance,

and that the PMR parental support scale would be negatively associated with attachment anxiety and attachment avoidance. Further, based on the work of Bowlby (1969) and others (e.g., Schore, 1999), we hypothesized that maternal psychological abuse, neglect, and nonsupport would predict attachment insecurity more than would equivalent paternal maltreatment.

## METHOD

### Participants and Procedures

A total of 1,051 participants were recruited through two online psychology Web sites (48%) and through the introductory psychology subject pool of a midsized North American university (52%). The introductory psychology participants signed up to participate in the study via an online research participation system (SONA) used by the university's psychology department; only 5 of the participants who initially signed up did not go on to participate in the study. Participants completed the questionnaires as presented in a computerized format at a small computer lab on campus.

For the online participants, a link to the study was posted on Web sites of (a) the Social Psychology Network Web site (hosted by Wesleyan University: <http://www.socialpsychology.org/expts.htm>) and (b) the American Psychology Society, sponsored by the Hanover College Psychology Department (<http://psych.hanover.edu/Research/exponnet.html>). The online participants indicated that they learned of the study through the Social Psychology Network Web site (53%), the American Psychology Society Web site (16%), their college or university professors who directed them to one of these two Web sites (19%), or from other sources (12%; e.g., "Google search"). Online participants accessed the computerized questionnaire on our Web site and completed the study from their own remote locations.

In return for their participation, online participants were offered the chance to be entered into a drawing for \$100. Introductory psychology participants were offered bonus points toward their introductory psychology course grade. Informed consent was obtained from all participants, and the study was approved by the university's Human Research Ethics Board.

### PARTICIPANT CHARACTERISTICS

The mean age of the participants was 25 years ( $SD = 8.35$ ,  $Mdn = 21$  years) with a range of 16 to 72 years of age. The majority (74%) of participants were female. Most identified themselves as Caucasian (77%), with the remainder identifying as Asian (11%); Hispanic (4%); mixed race (4%); Black, African American, or African Canadian (3%); or American, Canadian Indian, Aboriginal, or First Nations (1%). The majority of participants had

some college or university-level education (83%) and 62.5% of the sample came from a family of origin whose income was equal to or higher than \$40,000 when the participant was 17 years old.

A comparison of the socio-demographic characteristics of the two subgroups of participants (online vs. university sample) revealed that the majority of online participants (81%) were from the United States (with representation from 40 different states), whereas the participants in the university sample were primarily Canadians (91%). In addition, the online participants were older ( $M = 28$  years,  $SD = 9.6$ ) than the university participants ( $M = 20.4$  years,  $SD = 2.6$ ). Similarly, online participants were more likely than the university participants to be currently engaged in a romantic relationship (66% vs. 46%) or married (28% vs. 2%). Family of origin income of \$80,000 or more was reported by 45% of the university participants versus 18% of the online participants. In both groups, the majority were female (69% vs. 79%, for the online and university participants, respectively) and had attained some college or university-level education (82% vs. 86%). Most identified themselves as Caucasian (77% of each subgroup), with the remainder identifying as Asian (5% vs. 17%), Hispanic (7% vs. 1%), mixed race (4% vs. 3%), Black or African American (5% vs. 1%), and American Indian, Aboriginal, or First Nations (1% in each), among the online and university participants, respectively. Given these group differences, some statistical analyses were performed separately in the two samples (exploratory and confirmatory factor analyses, reliability, and correlations), and other analyses were performed controlling for sample (multivariate analysis of variance [MANOVA] and regression analyses).

## Measures

Measures were presented to the participants on a computer screen and responses were submitted directly into the computer. The measures included socio-demographic questions, the PMR, and the Revised Experiences in Close Relationships questionnaire (ECR-R; Fraley, Waller, & Brennan, 2000).

### EXPERIENCES IN CLOSE RELATIONSHIPS—REVISED

The 36-item ECR-R (Fraley et al., 2000) was used to assess two dimensions of attachment in close adult relationships: anxiety (model of self) and avoidance (model of other). This well-known and broadly used self-report measure uses a 7-point Likert-type scale to assess how participants generally experience current and previous intimate relationships. Scores on the two scales are continuously measured, and represent the participant's average response to 18 anxiety items (e.g., "I often worry that my partner will not want to stay with me") and 18 avoidance items (e.g., "I find it difficult to allow myself to depend on romantic partners"). The anxiety dimension

reflects preoccupation with and vigilance regarding rejection and abandonment. The avoidance dimension reflects discomfort with closeness and dependency in relationships or a reluctance to be intimate with others. The ECR-R has demonstrated good psychometric qualities in numerous studies, with alphas of .90 or higher, high test-retest reliability, as well as good structural and discriminant validity (see Fraley et al., 2000; Sibley & Liu, 2004). In this sample, internal consistency reliability was strong, with Cronbach's alphas of .94 for both the avoidance and anxiety dimensions.

#### PSYCHOLOGICAL MALTREATMENT REVIEW

The PMR is a 30-item scale that includes three subscales with 10 items each that assess parental psychological abuse, psychological neglect, and psychological support prior to age 18 (see Table 4 for specific items). Participants are asked, "When you were 17 or younger, how often did the following things happen to you in the average year?" They responded on a scale ranging from 0 (*never*) to 6 (*over 20 times a year*). Items on each of the three subscales (abuse, neglect, and support) are answered separately for each parent (i.e., the individual's most important maternal and paternal figure) during childhood. The PMR was initially referred to as the Psychological Abuse and Neglect Scales (PANS; Briere, 2006; Godbout, Runtz, Van Bruggen, & Briere, 2008); the name has been changed to reflect the measurement of emotional nonsupport in addition to abuse and neglect. There are no item or format differences between the former PANS and current PMR.

#### TREATMENT OF MISSING DATA

When any scale of the PMR had over 20% missing responses (i.e., more than two missing items on any of the three 10-item scales), participants' responses on that scale were eliminated from the study. For the remaining PMR data, missing scores (of two items or less per scale) were replaced by the mean value of that scale calculated without the missing items. This resulted in 970 and 936 participants with complete data on the PMR, for the mother- and father-related scales, respectively. The same cutoff level was used for the ECR-R scales (scored only if the participant completed more than 80% of the items), resulting in 907 participants with usable PMR and ECR-R scales. When individual items (as opposed to scales) were being analyzed (i.e., in the reliability and factor analyses), mean replacement was not used. Based on this conservative approach, the rate of participants who were not included in a given analysis due to missing data ranged from 8% to 14%. No significant differences were observed in the socio-demographic characteristics of participants who adequately completed all questionnaires and participants who were removed due to missing data.



## RESULTS

## Descriptive Statistics

Means and standard deviations for the PMR are presented in Table 1. A 2 (sample)  $\times$  2 (gender) MANOVA was performed on the six scales of the PMR to examine potential gender differences in experiences of psychological abuse, neglect, and support. Using Wilks's criterion, multivariate effects were observed for sample,  $F(6, 922) = 18.94, p < .001, \eta^2 = .11$ , and gender,  $F(6, 922) = 7.39, p < .001, \eta^2 = .05$ , but not for a Gender  $\times$  Sample interaction. Post-hoc univariate analyses indicated that university participants reported lower levels of maternal and paternal neglect and abuse, and higher levels of maternal and paternal support than the online participants (see Table 1); women reported higher levels of maternal and paternal neglect, maternal abuse, and maternal and paternal support than men (see Table 2).

**TABLE 1** Means and Standard Deviations for the Psychological Maltreatment Review Scales

Psychological Maltreatment Review Scales	Online Participants		University Participants		<i>df</i>	<i>F</i>	$\eta$
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>			
Paternal psychological abuse	19.3	17.0	13.2	12.1	1	22.5	.02
Maternal psychological abuse	20.1	17.0	14.6	12.6	1	15.1	.02
Paternal psychological neglect	20.8	18.8	9.8	12.6	1	74.5	.07
Maternal psychological neglect	16.9	17.6	8.0	10.8	1	50.4	.05
Paternal psychological support	32.7	17.4	42.6	13.6	1	69.3	.07
Maternal psychological support	39.4	16.4	47.6	11.4	1	57.7	.06

Note. *N* ranged from 428 to 523. All group comparisons were significant at  $p < .001$ .

**TABLE 2** Gender Differences on the Psychological Maltreatment Review Scales

Psychological Maltreatment Review Scales	Women		Men		<i>df</i>	<i>F</i>	$\eta$
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>			
Paternal psychological abuse	16.3	15.1	14.8	13.7	1	0.5	.001
Maternal psychological abuse	17.7	15.4	14.4	13.1	1	5.7*	.006
Paternal psychological neglect	16.1	17.3	11.3	14.3	1	8.7**	.009
Maternal psychological neglect	13.1	15.6	8.5	11.8	1	11.6***	.012
Paternal psychological support	38.5	16.7	36.9	14.8	1	6.3**	.007
Maternal psychological support	44.5	14.8	42.3	13.3	1	9.4**	.010

Note. Only participants with complete data for mothers and fathers were entered in this analysis ( $N = 930$ :  $n = 246$  men,  $n = 684$  women).

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

**TABLE 3** Internal Consistency Reliability (Cronbach's Alpha) of the Psychological Maltreatment Review Scales

Psychological Maltreatment Review Scales	Online Participants	University Participants
Paternal psychological abuse	.94	.89
Maternal psychological abuse	.94	.90
Paternal psychological neglect	.94	.93
Maternal psychological neglect	.95	.92
Paternal psychological support	.92	.92
Maternal psychological support	.92	.92

*Note.* *n* ranged from 413 to 437 for online participants and from 485 to 517 for university participants.

### Reliability of the PMR

Internal consistency reliability analyses were performed separately for the online and university samples for each of the PMR scales. As shown in Table 3, all of the scales had very good internal consistency in both samples, with Cronbach's alphas greater than or equal to .89. Item-total correlations also indicated that each item was a good indicator of its' relevant scale (item-total correlations averaged across the two samples are presented in Table 4).

### Structural Validity of the PMR

Exploratory factor analyses (EFAs) were performed on the subsample of university participants, and confirmatory factor analyses (CFAs) were performed using the online participants.

#### EXPLORATORY FACTOR ANALYSES

An EFA, using exploratory principal axis factoring, was performed on the data, separately for paternal and maternal scales, followed by an oblique (direct promax) rotation and scree testing (Costello & Osborne, 2005; Fabrigar, Wegener, MacCallum, & Strahan, 1999). EFA is primarily a data-driven approach, used to identify the best-fitting factorial structure. Examination of the scree plot indicated three factors for both mother- and father-related analyses. These factors were associated with substantial eigenvalues (10.3, 4.0, and 2.5 for paternal maltreatment, and 11.0, 3.6, and 1.9 for maternal maltreatment), explaining 55% and 56% of the variance, respectively. As shown in Table 4, the psychological abuse items loaded on the first factor, the items related to psychological neglect loaded on the second factor, and the psychological support items loaded onto the third factor. Each item clearly and primarily loaded on its relevant factor.

**TABLE 4** Exploratory Factor Analysis of the Psychological Maltreatment Review: Item-Total Correlations and Factor Loadings

Psychological Maltreatment Review Items	Item-total Correlations						Factor Loadings						
	F		M		F		M		F		M		
	F	M	F	M	F	M	F	M	F	M	F	M	
Psychological abuse													
1. Yelled at you	.58	.56	<b>.50</b>	<b>.59</b>	.04	-.05	.11	.03					
4. Insulted you	.83	.83	<b>.86</b>	<b>.86</b>	-.04	-.02	.01	.02					
7. Criticized you	.73	.71	<b>.73</b>	<b>.70</b>	-.04	-.03	.02	.09					
10. Said mean things about you	.85	.84	<b>.77</b>	<b>.79</b>	.15	-.10	-.03	-.05					
13. Called you names	.72	.73	<b>.67</b>	<b>.70</b>	-.10	-.09	-.14	-.11					
16. Said you were stupid	.72	.75	<b>.73</b>	<b>.79</b>	-.14	-.08	-.12	-.07					
19. Made fun of you	.65	.66	<b>.70</b>	<b>.66</b>	-.12	-.11	-.01	-.04					
22. Tried to make you feel guilty	.66	.69	<b>.51</b>	<b>.55</b>	.28	.18	.06	.06					
25. Ridiculed or humiliated you	.77	.81	<b>.73</b>	<b>.79</b>	.04	.06	.06	.00					
28. Embarrassed you in front of people	.59	.62	<b>.49</b>	<b>.59</b>	.13	.05	.21	.18					
Psychological neglect													
2. Left you alone for long periods of time when they shouldn't have	.59	.60	-.06	-.18	<b>.64</b>	<b>.70</b>	.03	-.02					
5. Acted like they didn't seem to care about you	.78	.78	.22	.38	<b>.60</b>	<b>.44</b>	-.12	-.07					
8. Ignored you	.82	.78	.17	.16	<b>.71</b>	<b>.65</b>	-.01	.02					
11. Didn't do things for you that they should have	.82	.81	.04	.07	<b>.77</b>	<b>.70</b>	.01	-.02					
14. Acted like you weren't there, even though you were	.75	.76	.21	.17	<b>.53</b>	<b>.58</b>	-.04	-.01					
17. Weren't around when you needed them	.79	.77	-.08	-.10	<b>.82</b>	<b>.76</b>	-.06	-.05					
20. Didn't do things they said they would do for you	.66	.70	.02	.11	<b>.66</b>	<b>.64</b>	.09	.11					
23. Let you down	.81	.82	-.01	.18	<b>.87</b>	<b>.67</b>	-.06	.07					
26. Didn't seem to love you	.77	.78	.20	.29	<b>.58</b>	<b>.52</b>	-.19	-.12					
29. Didn't take care of you when they should have	.83	.83	-.21	-.10	<b>.93</b>	<b>.87</b>	-.02	-.05					
Psychological support													
3. Were on your side when things were bad	.63	.58	.01	-.10	-.06	.01	<b>.55</b>	<b>.51</b>					
6. Praised you when you did something good	.75	.74	-.06	.06	-.00	-.09	<b>.69</b>	<b>.68</b>					
9. Said they loved you	.66	.67	.21	-.10	-.10	.20	<b>.76</b>	<b>.77</b>					
12. Did things that let you know they loved you	.76	.74	-.16	.02	-.12	.03	<b>.73</b>	<b>.70</b>					
15. Hugged you	.74	.74	.18	-.16	-.10	.20	<b>.84</b>	<b>.77</b>					
18. Took you places or did things with you	.69	.67	-.15	.19	.15	.10	<b>.63</b>	<b>.65</b>					
21. Encouraged you to have friends	.60	.57	.04	.03	.05	.02	<b>.56</b>	<b>.49</b>					
24. Tried to make you feel better when you were upset or hurt	.75	.75	.04	.01	-.04	-.06	<b>.74</b>	<b>.69</b>					
27. Talked to you	.65	.59	-.32	.20	.15	-.29	<b>.47</b>	<b>.56</b>					
30. Helped you with homework or other things you had to do	.62	.56	-.12	.00	.08	-.12	<b>.44</b>	<b>.49</b>					

Note. Item correlation is the average item correlations observed in the two samples (N ranged from 898 to 954). F = father (n = 506); M = mother (n = 521). Bold values represent items theoretically related to each factor.

## CONFIRMATORY FACTOR ANALYSES

Confirmatory factor analyses of PMR items were performed on the online sample, separately for paternal and maternal scales, using EQS 6.1 Multivariate Software (Bentler, 1995). CFA formally tests how well the data fit a hypothesized factor structure. Because abuse and neglect variables are naturally nonnormally distributed, the Robust Estimation Method was used with Satorra and Bentler's (1994) scaling corrections, allowing for the calculation of the Satorra–Bentler scaled chi-square value and corrected fit indexes. The fit of each estimated model to the observed data was evaluated with several indexes of adjustment. Bentler's (1990) comparative fit index (CFI) and Bentler–Bonett's nonnormed fit index (NNFI) were calculated. These values range from 0 to 1, where values above .90 indicate a good fit and values greater than .95 are ideal (Hu & Bentler, 1999). A chi-square test for goodness of fit was computed. Because this statistic is sensitive to sample size, the ratio of chi-square to degrees of freedom ( $\chi^2/df$ ) was also employed (Kline, 1998). Values between 1 and 5 indicate a satisfactory fit between the theoretical model and empirical data (Jöreskog & Sörbom, 1993). Finally, Steiger and Lind's (1980) root mean square error of approximation (RMSEA) was used to determine the error of approximation in the population and estimates the difference between model-implied and actual variances and covariances. Values less than .08 represent reasonable errors of approximation (Hu & Bentler, 1999), and narrow confidence intervals indicate good precision of the RMSEA value in reflecting model fit in the population (MacCallum, Brown, & Sugawara, 1996).

The hypothesized three-factor solution, in which the 10 items assessing psychological abuse loaded on one factor, the 10 items assessing psychological neglect loaded on a second factor, and the 10 items assessing psychological support loaded on a third factor, provided a good fit to the data, both for the paternal scales,  $\chi^2/df$  (1284.78, 402) = 3.20, NNFI = .93, CFI = .93, RMSEA = .08 with 90% CI = .07, .08; and the maternal scales,  $\chi^2/df$  (1088.38, 402) = 2.71, NNFI = .94, CFI = .95, RMSEA = .06 with 90% CI = .06, .07. Standardized coefficients ranged from .65 to .93, and loaded significantly on their related factors at  $p < .001$ . (The first author can be contacted for specific factor loadings.)

Potential post-hoc modifications were examined and tested based on the Lagrange test, the Wald test, and theoretical relevance. The modifications (i.e., addition of three covariance between-error terms) provided slightly improved fit to the data (e.g., improvements of .01 to .02 for NNFI and CFI, and reductions of .01 on RMSEA values), but were not meaningful enough to support revision of the initial model. Hence, the three-factor model without error covariance was retained.

## TEST OF AN ALTERNATIVE MODEL

As suggested by Thompson (2000), to further confirm the appropriateness of a multifactorial model, we also tested a rival single-factor model, wherein psychological abuse, neglect, and nonsupport were all hypothesized to load on the same dimension. As expected, the single-factor solution provided a poor fit to the data for maltreatment by fathers,  $\chi^2/df$  (2919.42, 405) = 7.21, NNFI = .67, CFI = .70, RMSEA = .13 with 90% CI = .12, .13; and for maltreatment by mothers:  $\chi^2/df$  (3054.23, 405) = 7.54, NNFI = .63, CFI = .68, RMSEA = .13 with 90% CI = .12, .13.

## PMR and Attachment

## UNIVARIATE RELATIONSHIPS BETWEEN ATTACHMENT AND THE PMR

As predicted, significant correlations were observed between both anxious and avoidant attachment and all types of psychological maltreatment by both fathers and mothers (see Table 5).

## MULTIVARIATE RELATIONSHIPS BETWEEN ATTACHMENT AND THE PMR

Hierarchical multiple regression analyses, using the PMR scales to predict anxious and avoidant attachment on the ECR-R, were performed. These analyses were conducted on the merged data set ( $N = 907$ ), controlling for sample of origin (online vs. university participants) by entering this variable at Step 1. Because men and women responded differently to the PMR scales, participant gender was entered at Step 2 to control for its potential contribution. The six scales of the PMR were then entered as a block at Step 3. Finally, all two-way interactions between the scales of the PMR (e.g., Paternal Psychological Abuse  $\times$  Maternal Neglect, etc.), and between gender

**TABLE 5** Bivariate Correlations between the Psychological Maltreatment Review Subscales and the Revised Experiences in Close Relationships Questionnaire Attachment Dimensions

Variables	1	2	3	4	5	6	7	8
1. Paternal psychological abuse	—	<b>.62</b>	<b>.53</b>	<b>.42</b>	-.26	-.16	<b>.23</b>	<b>.30</b>
2. Maternal psychological abuse	<b>.43</b>	—	<b>.38</b>	<b>.56</b>	-.20	-.30	<b>.16</b>	<b>.27</b>
3. Paternal psychological neglect	<b>.62</b>	<b>.40</b>	—	<b>.75</b>	-.42	-.20	<b>.21</b>	<b>.26</b>
4. Maternal psychological neglect	<b>.39</b>	<b>.70</b>	<b>.64</b>	—	-.27	-.34	<b>.20</b>	<b>.29</b>
5. Paternal psychological support	-.30	-.09	-.55	-.26	—	<b>.69</b>	-.24	-.14
6. Maternal psychological support	-.08	-.31	-.21	-.44	-.58	—	-.28	-.15
7. Attachment avoidance	.10	.10	<b>.23</b>	<b>.17</b>	-.23	-.17	—	<b>.36</b>
8. Attachment anxiety	<b>.21</b>	<b>.25</b>	<b>.29</b>	<b>.22</b>	-.15	-.09	<b>.37</b>	—

*Note.* All correlations shown in bold are significant at  $p < .01$ . Correlations for university participants ( $n$  ranged from 485 to 517) are presented above the diagonal, and correlations for online participants ( $n$  ranged from 413 to 437) are presented below the diagonal.

**TABLE 6** Summary of Regression Analysis for Variables Predicting Anxious Attachment

Variables	<i>B</i>	<i>SE B</i>	$\beta$	<i>R</i> <sup>2</sup> ( <i>R</i> <sup>2</sup> Change)
Step 1				.024
Sample <sup>a</sup>	.424	.091	.154**	
Step 2				.034 (.010*)
Gender <sup>b</sup>	-.365	.103	-.117**	
Step 3				.126 (.092**)
Maternal abuse	.016	.004	.176**	
Maternal neglect	-.006	.006	-.069	
Maternal support	-.004	.005	-.037	
Paternal abuse	.007	.004	.078	
Paternal neglect	.014	.005	.174*	
Paternal support	-.001	.005	-.010	
Block 4 (Interactions)				.160 (.034)

Note. *N* = 907.

<sup>a</sup>University sample = 1, online sample = 2. <sup>b</sup>Female = 1, male = 2.

\**p* < .01. \*\**p* < .001.

and the PMR scales (e.g., Gender × Maternal Support, etc.) were entered as a block at Step 4.

The unstandardized regression coefficients (*B*), standardized regression coefficients ( $\beta$ ), and changes in explained variance (*R*<sup>2</sup>) are presented in Table 6 (anxious attachment) and Table 7 (avoidant attachment). Examination of scatterplots of residuals indicated that assumptions of normality, linearity, and homoscedasticity were met. To reduce the experiment-wise error rate (Cohen & Cohen, 1983), a step was considered significant if the alpha for the associated *R*<sup>2</sup> change was less than or equal to .01. Only when the step was significant at this level were the  $\beta$ s associated with that step examined for significance, at *p* < .05.

**TABLE 7** Summary of Regression Analysis for Variables Predicting Avoidant Attachment

Variables	<i>B</i>	<i>SE B</i>	$\beta$	<i>R</i> <sup>2</sup> ( <i>R</i> <sup>2</sup> Change)
Step 1				.012
Sample <sup>a</sup>	.279	.084	.110**	
Step 2				.013 (.001)
Gender <sup>b</sup>	-.098	.095	-.034	
Step 3				.090 (.077**)
Maternal abuse	.001	.004	.017	
Maternal neglect	.003	.005	.038	
Maternal support	-.010	.005	-.118*	
Paternal abuse	.004	.004	.048	
Paternal neglect	.005	.005	.063	
Paternal support	-.009	.005	-.117*	
Block 4 (Interactions)				.117 (.027)

Note. *N* = 907.

<sup>a</sup>University sample = 1, online sample = 2. <sup>b</sup>Female = 1, male = 2.

\**p* < .05 ( $\beta$ s only). \*\**p* < .001.

Results revealed that women had significantly higher levels of attachment anxiety, but not attachment avoidance. Paternal neglect and maternal abuse specifically predicted attachment anxiety, explaining 13% of the variance, whereas lack of paternal and maternal support was associated with attachment avoidance, explaining 9% of the variance. Interactions among the PMR scales and between participant gender and the PMR scales were nonsignificant.

## DISCUSSION

The results of this study provide psychometric evidence of the utility of the PMR as a retrospective measure of childhood psychological maltreatment. The psychological abuse, psychological neglect, and psychological support scales of this instrument are internally consistent for ratings of both maternal and paternal caretakers, with an average alpha coefficient of .92. The PMR appears to have structural validity: Both EFAs and CFAs replicate the a priori scale composition of the three PMR scales, for both maternal and paternal caretaker ratings. In addition to supporting the factorial validity of the PMR, these analyses suggest that psychological support is a valid construct, dimensionally separate from psychological abuse and neglect. Evidence of construct validity also was found, in that the PMR psychological abuse, psychological neglect, and parental support scales correlated in the expected directions with each other and with a measure of adult attachment insecurity.

Analyses indicated significant gender differences on the PMR. Although there were no differences between male and female participants' ratings of paternal psychological abuse, women reported higher levels of maternal psychological abuse and neglect, paternal neglect, and both maternal and paternal support. Because of the absence of measurement systems for maternal versus paternal psychological maltreatment, there is almost no existing research from which to compare these findings. Irrespective of gender of the maltreating parent, however, there is some evidence in the literature that females are slightly more likely than males to report psychological maltreatment by their parents (Trocmé et al., 2005), whereas boys may be at greater risk of emotional neglect than girls (Sedlak & Broadhurst, 1996). However, other retrospective studies of adults (e.g., Godbout, Dutton, Lussier, & Sabourin, 2009; Sengsouvanh & Runtz, 2004) have not found gender differences in rates of psychological maltreatment.

It is possible that the gender differences found in this study partially reflect female participants' greater expressivity regarding childhood maltreatment and support, possibly as a result of gender roles that encourage women to more openly discuss psychological issues relative to men. In this regard, women reported not only more abuse and neglect from their

parents on the PMR, but also, somewhat paradoxically, more psychological support from them. Alternatively, given that psychological support is an independent construct, not just the absence of abuse or neglect, it may be that girls are actually both more maltreated and more supported by their parents than are boys. Clearly, more research is needed in this area.

Multiple regression analyses revealed a significant relationship between female gender and anxious (but not avoidant) attachment. This finding is partially consistent with previous studies documenting differences between men and women in self-descriptions of attachment behaviors, where women are often found to be more anxiously attached or anxiously preoccupied with attachment, whereas men report more avoidant attachment (e.g., Bartholomew & Horowitz 1991; Brassard, Shaver, & Lussier, 2007). Other studies, however, do not find systematic and method-independent gender differences in adult attachment (see a review by Bakermans-Kranenburg & Van IJzendoorn, 2009). To the extent that these findings are replicated in other studies using the PMR, they may reflect gender roles that encourage women to be more invested in maintaining interpersonal relationships than males.

Above and beyond any gender effects, anxious attachment was predicted by maternal psychological abuse and paternal neglect, whereas avoidant attachment was specifically related to low paternal and maternal support. The different forms of psychological maltreatment associated with anxious, as opposed to avoidant, attachment in this study are congruent with theories by Bowlby (1969) and others that adult attachment style arises in response to early relationships with parental figures. It may be that maternal abuse as well as paternal neglect creates anxiety in the child regarding the motives and judgments of attachment figures, leading to fear of future abuse (and lack of protection) in important interpersonal relationships. Maternal and paternal nonsupport, on the other hand, may encourage relational avoidance behaviors on the part of the child, who may need to “defensively exclude” (Bowlby, 1969) figures who have been proven unavailable for support or nurturance.

Our hypothesis that maternal maltreatment would have more symptomatic consequences for participants than paternal maltreatment was not supported. Paternal psychological neglect and low psychological support predicted insecure attachment at least as much as maternal abuse and nonsupport. These findings are in agreement with other recent research (Grossmann et al., 2002; van IJzendoorn & DeWolff, 1997), suggesting that attachment responses do not arise solely in the context of maternal behaviors, but also reflect the amount of paternal neglect and support the child experiences. Further research is indicated in this area, including greater specification of the child’s age at the time of maternal and paternal maltreatment, as it may be that maternal nonavailability or maltreatment is more injurious in the earlier years of life when the mother is more likely



to be the primary caregiver and attachment figure, whereas paternal attachment behaviors may be of greater consequence in later childhood (Schore, 1999).

Because there have been few self-report measures (and therefore few studies) separately examining maternal and paternal psychological maltreatment, there are few data available from which to evaluate the findings reported here. In one of the only studies examining the effects of paternal versus maternal psychological abuse and psychological support on seemingly attachment-related symptoms (e.g., interpersonal problems, abandonment concerns, identity issues), Briere and Rickards (2007) also identified maternal psychological abuse and low paternal psychological support as significant predictors. That study did not examine psychological neglect, however, nor did it specifically investigate insecure attachment, *per se*. Clearly, additional research is needed to explicate the specific relationships between exposure to various forms of paternal and maternal maltreatment and eventual attachment-related outcomes. Based on this study, such research will require the use of self-report instruments that evaluate psychological abuse, neglect, and nonsupport separately for maternal and paternal attachment figures.

### Strengths and Limitations

The sampling strategy used in this study is notable for two reasons. First, psychological assessment studies frequently rely solely on student samples. Our inclusion of the online sample allowed recruitment of nonstudent participants, in addition to university students, for broader socio-demographic diversity and potentially greater generalizability. Second, this study included more than 900 individuals. Researchers such as McCrae, Zonderman, Costa, Bond, and Paunonen (1996) noted the importance of sample size in covariance structure modeling, stating that “increasing sample size is likely to give increasingly precise estimates of the population factor structure” (p. 563). Third, this study utilized two separate statistical evaluations of the structure of the PMR in two separate samples: EFA and CFA. EFA allowed us to determine whether an atheoretically derived dimension reduction analysis revealed the same factor structure predicted theoretically, whereas CFA provided a formal test of the fit between the observed and hypothesized PMR item variance–covariance matrix. The convergence of these two approaches, in different samples, supports the factorial validity of the PMR.

There are several limitations of this study. First, both samples excluded individuals who did not have access to the Internet. Although the majority of North Americans now have online access, Internet users are more likely than non-users to be White, to be young, and to have children (U.S. Department of Commerce, 2002). Further, participants were recruited either by their university or via two Web sites focused on psychological issues. In the latter

case, online participants may have been interested in psychology in general, or were researching the Internet on topics related to our study (e.g., trauma, well-being, parent–child attachment). As a result, online participants may have been biased in unknown ways toward psychological issues (including possible psychological difficulties) and may have been self-selected in terms of their own child maltreatment history, as indicated by the higher levels of abuse, neglect, and parental nonsupport observed in the online sample. Finally, women and individuals with relatively high incomes were overrepresented in both samples. In combination, the student nature of the first sample, and the differing demographics and selection parameters of the second one may reduce the generalizability of this study. Although these results shed light on the psychometric characteristics of the PMR, and the potential relationship between psychological maltreatment and attachment security, epidemiological inferences about the prevalence of adverse childhood experiences should not be made strictly on the basis of the current data.

A final set of limitations involve the PMR itself. This measure inquires about behaviors engaged in by participants' primary or most important maternal or paternal figures. A significant proportion of individuals have had multiple parental figures in their lives (e.g., as a result of parental divorce or separation), and therefore not all early parental figure influences are necessarily evaluated by this measure. As well, the PMR is a retrospective, self-report instrument, and thus memory bias and distortions cannot be ruled out.

## Summary

This article outlines the psychometric characteristics of a new, retrospective self-report measure, and presents data that support its construct validity in the study of attachment security in adults. The scales of the PMR appear to (a) tap independent constructs, (b) be internally consistent, and (c) demonstrate structural and factorial validity. Further, PMR scales, rated separately for mother versus father figures, differentially predict anxious versus avoidant attachment insecurity, indicating the benefit of a measure that examines different forms of psychological maltreatment as they occur in the context of maternal versus paternal behavior.

Together, these results suggest that the PMR may advance research on psychological maltreatment by providing a more fine-grained and detailed analysis of this construct than previously has been possible. Additionally, although the samples in this study are insufficient to permit normative comparisons for clinically presenting individuals, future standardization studies of the PMR might allow clinicians to better probe the role of childhood psychological maltreatment in the symptomatology of their adult clients, including those involving attachment-related difficulties.

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