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Title: Assessing positive emotional memories with peers: The Early Memories of Warmth and Safeness with Peers Scale for Adolescents

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Abstract: Research on the association between early positive relational experiences and later psychosocial adjustment is growing. The quality of peer relationships may have a particularly important effect on adolescents' wellbeing and mental health. The current study aimed at examining a measure of personal emotional memories of peer relationships characterized by warmth, safeness and affection, which occurred in childhood and adolescence (EMWSSPeers-A).

Distinct samples (N=584) of adolescents aged between 12 and 18 were used to assess the EMWSSPeers-A' factorial structure through a Principal Component Analysis and a Confirmatory Factor analysis, and to analyse the scale's psychometric properties.

Results indicated a one-dimensional structure with 12 items with very good internal consistency, and construct, convergent, divergent and incremental validities.

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Dear Doctor Sandra Leanne Bosacki,

We would like to start by acknowledging that some grammatical issues were still not correctly addressed in the previous revision, and by expressing our gratitude for the indeed pertinent comments.

In order to comply with the suggestion that the manuscript still required some grammatical and language corrections, the authors have fully revised the entire manuscript and tried to amend all grammatical concerns. Specifically, verb tenses in the Introduction and Discussion sections were carefully revised and corrected, and language was also improved throughout the manuscript.

A newly revised manuscript (with all the phrases that suffered changes marked in yellow) was attached to the present revision, which we hope will fit the requirements for publication of your Journal. We have also attached the same new version of the revised manuscript but without any annotations. Nevertheless, the authors will be pleased to answer any questions that merit further revision.

Yours sincerely,

Marina Cunha, Cláudia Ferreira, Cristiana Duarte, Diogo Andrade, Joana Marta-Simões, and José Pinto-Gouveia.

**Assessing positive emotional memories with peers:  
The Early Memories of Warmth and Safeness with Peers Scale for Adolescents**

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## Assessing positive emotional memories with peers:

### The Early Memories of Warmth and Safeness with Peers Scale for Adolescents

#### Abstract

Research on the association between early positive relational experiences and later psychosocial adjustment is growing. The quality of peer relationships may have a particularly important effect on adolescents' wellbeing and mental health. The current study aimed at examining a measure of personal emotional memories of peer relationships characterized by warmth, safeness and affection, which occurred in childhood and adolescence (EMWSS<sub>Peers-A</sub>).

Distinct samples ( $N=584$ ) of adolescents aged between 12 and 18 were used to assess the EMWSS<sub>Peers-A</sub>' factorial structure through a Principal Component Analysis and a Confirmatory Factor analysis, and to analyse the scale's psychometric properties.

Results indicated a one-dimensional structure with 12 items with very good internal consistency, and construct, convergent, divergent and incremental validities.

By allowing the examination of the role played by memories of positive peer relationships on adolescents' psychological adjustment, the EMWSS<sub>Peers-A</sub> may be potentially useful for future model testing and for the assessment of interventions.

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## Introduction

The quality of early childhood experiences has been shown to have a significant impact on later physiological, psychological and social development and functioning (Baumeister & Leary, 1995; Bowlby, 1969, 1973; Buss, 2003; Gerhardt, 2004; Panksepp, 2010; Schore, 1994). In particular, early adverse experiences, i.e., of neglect, abuse or rejection, have been associated with a series of indicators of psychosocial maladjustment (Baccus, & Palmer, 2006; Bifulco & Moran, 1998; Irons, Gilbert, Baldwin, Baccus, & Palmer, 2006; Perris & Gilbert, 2000; Rohner, 2004). On the contrary, early relationships and social experiences related to feelings of safeness, warmth and nurturance are associated with increased self-esteem, happiness, quality of life, and with decreased vulnerability to psychopathology (Berscheid, 1985; Bifulco & Moran, 1998; Cacioppo et al., 2000; Gilbert & Irons, 2008; Parker, 1983; Rohner, 2004). Extant knowledge on the effect of early experiences, which mostly relies on data from research on early rearing experiences with parents or other family members, consistently demonstrates that parental behaviour (e.g., interactions characterized by low affection, neglect, emotional or physical abuse; Parker, 1983; Perris, 1994; Teicher, Samson, Polcaru, & McGreenery, 2006), and also emotional memories of such child-parent interactions (e.g., personal recollections of a sense of threat, subordination or feeling unvalued as a child; Gilbert, Cheung, Grandfield, Campney, & Irons, 2003), are linked with higher vulnerability to psychopathology later in life (Xavier; Cunha, & Pinto-Gouveia, 2015). In contrast, emotional memories of feeling safe and cared for (Richter, Gilbert, & McEwan, 2009) have been associated with positive emotional regulation (Baldwin & Dandeneau, 2005, Cunha, Martinho, Xavier, & Espírito-Santo, 2013), resilience towards adverse life events (Cacioppo, Berston, Sheridan, &

McClintock, 2000; Gilbert et al., 2009; Masten, 2001; Matos, Pinto-Gouveia, & Duarte, 2015; Richter et al., 2009), and well-being (Martin, 2006; Richter et al., 2009).

There is increasing evidence on the relevance of other social agents (i.e., beyond family members) on a series of indicators of psychological adjustment (Matos, Pinto-Gouveia, & Costa, 2013; Ferreira, Matos, Duarte, & Pinto-Gouveia, 2014). In particular, peer relationships have been identified as particularly important for one's sense of well-being and social belonging (Allen & Land, 1999, Oberle, Schonert-Reichl, & Thomson, 2010). Adolescence is a decisive life period when peers become a particularly relevant source of social support, reassurance, and approval (Allen & Land, 1999; Buhrmester, 1996; Freeman & Bradford, 2001; Gilbert & Irons, 2009; Wolfe & Mash, 2006; Wolfe, Lennox, & Cutler, 1986). During this developmental stage, adolescents become more aware of how they are evaluated by peers, and particularly sensitive to the images and emotions created by them in their peers' minds (Gilbert & Irons, 2009; Wolfe & Mash, 2006; Wolfe, Lennox, & Cutler, 1986). In this context, experiences of being rejected, excluded, and physically or verbally victimized by peers have been consistently associated with indicators of poorer mental health and social functioning in adolescence (Gazelle & Ladd, 2003; Goodman, Stormshak, & Dishion, 2001; Hawker & Boulton, 2000), with enduring effects throughout adulthood (Hawker & Boulton, 2000; Hock & Lutz, 2001; Parker, 1983). On the contrary, the role of early positive interactions with peers remains less investigated (Hay, Payne, & Chadwick, 2004).

Recently, Ferreira and colleagues (2016) developed a new self-report measure to specifically evaluate emotional memories of feeling content, cared for, and safe within peer relationships, i.e., with friends and colleagues (EMWSS<sub>Peers</sub>). This scale was based

on the Early Memories of Warmth and Safeness Scale (EMWSS; Richter et al., 2009), which was originally designed to assess personal emotional memories of feeling safe, cared for, and valued with family and close figures. Its development was based on the growing recognition of the key role that early interactions play on the physiological, psychological and social maturation and functioning of individuals. The EMWSS, in contrast to existing measures focused on parental behaviour, aimed at assessing the recall of positive emotional memories with parents or other close figures in early life. The EMWSS comprises 21 items, and proved to be a psychometrically sound global measure of early emotional memories, which showed a single factor solution with a Cronbach's alpha of .97. Portuguese validation studies, using both adult (Matos, Pinto-Gouveia, & Duarte, 2014) and adolescent community populations (Cunha, Xavier, Martinho, & Matos, 2014), corroborated the unidimensional structure and robust psychometric qualities of this scale.

The new and specific measure focused on peers – Early Memories of Warmth and Safeness with Peers Scale (EMWSS<sub>Peers</sub>) – also comprised 21 items and was developed and primarily tested in the Portuguese adult population. Results revealed a single factor structure and the pertinence of a shorter version of 12 items. This shorter solution of the EMWSS<sub>Peers</sub> showed a nearly perfect association with the 21-item EMWSS<sub>Peers</sub>, and was obtained taking into consideration theoretical and psychometric criteria. The 12-item EMWSS<sub>Peers</sub> showed to be an instrument with high reliability to assess peer-related positive memories, revealing significant associations with positive indicators of psychological adjustment, and with lower emotion regulation difficulties and psychopathological symptoms (Ferreira et al., 2016).



Given the potential role that the quality of peer relationships plays in the development of self-identity of adolescents, adaptive emotion regulation and mental health, the development and assessment of a measure of personal recollections of feelings and experiences of safeness, contentment, support, and warmth within peer relationships seems particularly relevant to this developmental stage. The current study aimed therefore at developing and examining the psychometric properties and correlates of a new measure for the examination of Early Memories of Warmth and Safeness within peer relationships in adolescence – EMWSS<sub>Peers-A</sub>.

In the present study, it was hypothesized that the EMWSS<sub>Peers-A</sub> presents a psychometrically sound one-factor structure, similar to the one found in the adult population (Ferreira et al., 2016). Moreover, consistent with findings of prior research (Cunha et al., 2013; Ferreira et al., 2016; Richter et al., 2009), we expected scores on the EMWSS<sub>Peers-A</sub> to correlate positively with positive emotional memories with family and self-compassion. On the contrary, we expected negative correlations with external shame, self-judgment and depression, anxiety, and stress symptoms.

## **Method**

### *Participants*

Participants in this study comprised distinct convenience samples collected in public schools of the centre region of Portugal.

The factorial structure of the scale and its psychometric properties were initially examined in a total of 230 adolescents (121 females and 109 males) at a public secondary school in an urban area of the district of Coimbra, placed in the centre region of Portugal. Age of participants ranged between 12 and 18 years, with an average of

15.87 years ( $SD = 1.98$ ). These adolescents consisted of 7th through 12th-grade students ( $M_{(\text{years of education})} = 9.83$ ,  $SD_{(\text{years of education})} = 1.58$ ).

A Confirmatory Factor Analysis was computed and validity estimates were examined in a distinct sample. This sample comprised 354 adolescents, 152 boys (42.9%) and 202 girls (57.1%), with a mean age of 15.81 ( $SD = 1.58$ ), ranging between 12 and 18 years old. These adolescents attended the 7th through the 12th grades (years of education,  $M = 10.29$ ,  $SD = 1.55$ ) at two public schools in an urban area of Coimbra. Gender differences were not found for age ( $t(344,66) = 1.93$ ,  $p = .055$ ) and years of education,  $t(347,13) = 0.91$ ,  $p = .365$ . Comparing with the first sample ( $N = 230$ ), participants in this sample presented an higher mean of years of education ( $t(582) = 3.51$ ,  $p < .001$ ). The two samples did not present statistically significant differences regarding age ( $t(408,207) = 0.46$ ,  $p = .643$ ) and gender distribution ( $\chi^2 = 0.29$ ,  $p = .307$ ).

In order to assess test-retest reliability, a subgroup of the sample of 354 participants ( $n = 122$ ) was asked to engage in test-retest. A total of 89 (44 boys and 45 girls) participants accepted to complete the EMWSS<sub>Peers-A</sub> a second time, with a 3 weeks' interval. Their mean age was 16.31 ( $SD = 0.98$ ) and the mean of years of education was 10.04 ( $SD = 0.71$ ).

### *Measures*

Early Memories of Warmth and Safeness Scale in peer relationships for adolescence (EMWSS<sub>Peers-A</sub>) was developed based on the original EMWSS (Richter et al., 2009) and on its adaptation for adolescents, previously examined in the Portuguese population (Cunha et al., 2014). Approval from the authors of the original and adolescents versions of the EMWSS to conduct this adaptation was obtained. EMWSS's

instructions ask respondents to focus on feelings associated with peer interactions. The EMWSS's 21 items were modified to focus on feelings of being cared for, valued, and safe within peer relationships which occurred from childhood to early adolescence (e.g., *"I felt safe and protected in my group of friends"*; *"I felt comfortable turning to my friends for help and advice when feelings worried or unhappy"*). Respondents are prompted to reflect about their feelings and emotions throughout childhood and adolescence regarding their peer/friends group: *"This scale explores some of your emotional memories of your childhood and adolescence. Below is a set of questions that tap various feelings you may have experienced with your peer group/group of friends. Please read each item carefully and circle the number to the right of the statement that best describes your feelings during childhood and adolescence"*. Each item is answered using a 5-point scale (ranging from 0 = *"No, never"* to 4 = *"Yes, most of the time"*) to indicate the frequency to which the participant experienced positive feelings (of warmth, support, affection) in peer relationships.

Early Memories of Warmth and Safeness Scale (EMWSS; Richter et al., 2009; Portuguese version for Adolescents by Cunha et al., 2014) is a self-report questionnaire that measures the recall of feeling warm, safe and cared for in childhood (e.g., *"I felt that I was a cherished member of my family"*). The EMWSS is a 21-item scale rated on a 5-point Likert scale (0 = *"No, never"*; 4 = *"Yes, most of the time"*). Richter and colleagues (2009) found a single factor solution with a Cronbach's alpha of .97. In the Portuguese version (Cunha et al., 2014), similar results were found in a Portuguese adolescent population, with the scale presenting an excellent internal consistency ( $\alpha = .95$ ).

Depression, Anxiety and Stress Scale (DASS-21; Lovibond & Lovibond, 1995; Portuguese version by Pais-Ribeiro, Honrado & Leal, 2004) is a 21-item self-report measure that assesses three dimensions of psychopathological symptoms: depression, anxiety, and stress. Items are rated on a 4-point scale (ranging from 0 to 3). The three subscale were found to have high internal consistency (Depression Cronbach's  $\alpha = .91$ ; Anxiety Cronbach's  $\alpha = .84$ ; Stress Cronbach's  $\alpha = .90$ ; Lovibond & Lovibond, 1995).-

Others as Shamer – short version (OAS2; Matos, Pinto-Gouveia, Gilbert, Duarte & Figueiredo, 2015; Portuguese version for Adolescents by Portuguese version for Adolescents by Cunha, Xavier, Cherpe & Pinto-Gouveia, 2014). This 8-item scale measures external shame (evaluations about how others view and evaluate the self negatively). Respondents rate on a 5-point Likert scale (ranging from 0 to 4) the frequency of their feelings and experiences (e.g., "*I think that other people look down on me*"). In the validation study of the original version, the authors found this scale to have a Cronbach's alpha of .82 (Matos et al, 2015), and in the Portuguese version for adolescents a Cronbach's alpha of .92 was reported (Cunha, Xavier, Cherpe, & Pinto-Gouveia, 2014).

Self-Compassion Scale (SCS; Neff, 2003; Portuguese version for adolescents by Cunha, Xavier & Castilho, 2015) is a 26-item self-report questionnaire which comprises 6 subscales: Self-Kindness; Self-Judgement; Common Humanity; Isolation; Mindfulness; Over-identification. Each item is rated on a 5-point scale (1 = never; 5 = always). In the original version, the total score showed an excellent internal consistency ( $\alpha = .92$ ) and the six subscales revealed adequate coefficients of internal consistency, ranging between .75 and .81 (Neff, 2013). In the current study, both the composite of positive valence named self-compassion (i.e., corresponding to the sum of the subscales

Self-kindness, Common Humanity, Mindfulness);, and the negative valence components, titled self-judgement (i.e., corresponding to the sum of Self-judgement, Isolation, Over-identification) were analysed (Costa, Marôco, Pinto-Gouveia, Ferreira, & Castilho, 2015).

### *Procedure*

Prior to the administration of questionnaires, ethical approvals were obtained from the Portuguese Ministry of Education and from the National Commission for Data Protection. The Boards of schools in the district of Coimbra were contacted, and those who agreed to take part in the study were selected. The Head Teacher of each school which agreed to participate advertised the study to all students and respective parents / legal guardians, due to the fact that all these students were legally minor. All adolescents and respective parents / legal guardians were informed about the goals of the research, the purpose of the study, and aspects of confidentiality. The majority of the students agreed to take part, and the respective parents / legal guardians provided their informed consent. Data collection was conducted in small groups (5 to 15 students) in different dates, according to the day and class period defined as convenient by the Board of each school. Students filled out the instruments in the classroom, and in the presence of the researcher who clarified any doubts and ensured independent response. Respondents took approximately 20 minutes to complete the set of self-report measures and revealed no difficulties in understanding the instructions and items of the measure. To examine the scale's temporal stability, students were invited to answer the EMWSS<sub>Peers</sub>-A a second time after a one-month period. A total of 126 students agreed

to collaborate and answered the retest in a period scheduled by the school, providing a personal code to match the test and retest administrations.

### *Data Analyses*

We first examined the factor structure and psychometric properties of the Early Memories of Warmth and Safeness Scale within peer relationships adapted to adolescence – EMWSS<sub>Peers</sub>-A, a measure that assesses the recall of warm, safe, affect and care in early peer relationships.

A Principal Component Analysis (PCA) was conducted to analyse the factorial structure of the EMWSS<sub>Peers</sub>-A. The sample size ( $N = 230$ ) was adequate to conduct the analysis (Bryant & Arnold, 1995; DeVellis, 2011). This analysis followed the procedures previously adopted in the analysis of the original EMWSS (Richter et al., 2009), and the validation procedures of the measure were adapted to focus on peer relationships examined in an adult community sample (Ferreira et al., 2016). The internal consistency of the scale was analysed by computing Cronbach's alpha coefficients.

The adequacy of the previously found one-factor solution of the EMWSS<sub>Peers</sub>-A was further examined in a distinct sample ( $N = 354$ ). Furthermore, we aimed at testing the suitability of a 12-item version of the scale. This solution replicated the solution formerly identified in the EMWSS<sub>Peers</sub> version tested in adults (Ferreira et al., 2016), and this procedure was supported by current recommendations to use brief self-report measures in the adolescent population to assure engagement and accurate responding (Shaw, Brady, & Davey, 2011).

A Confirmatory Factor Analysis (CFA) was performed to further corroborate the stability of the factor structure, using a significance level of 0.05. The sample used for this analysis ( $N = 354$ ) had an adequate size to test model fit indices and the validity of the scale (Tabachnick & Fidell, 2007). The method of estimation used was Maximum Likelihood. Goodness of fit was verified by the following fit indices: Comparative Fit Index (CFI) and Root Mean Square Error of Approximation (RMSEA; 90 % confidence interval [CI]). According to Byrne (2010), these models are considered to have an acceptable fit when CFI and TLI  $\geq 0.90$  and RMSEA  $\leq 0.08$ . Additionally, we examined the  $\chi^2$  statistic, which indicates whether the covariation pattern in the data can be explained by the postulated factor structure. We also examined the  $\chi^2$ /degrees of freedom ratio ( $\chi^2/df$ ), which decreases and approaches zero as the fit of the model improves. Generally, values between 2 and 5 indicate an acceptable fit (Byrne, 2010).

Items' descriptive statistics (i.e., means, standard deviations, minima and maxima) and distributions (skewness and kurtosis) were computed to examine items' metric characteristics (Carretero-Dios & Pérez, 2005). Assessment of corrected item-total correlations and Cronbach's alpha was carried out to determine each item's discriminant validity and internal consistency (DeVellis, 2011). The construct reliability and convergent validity of the scale were examined through the calculation of the Composite Reliability (CR) and of the Average Variance Extracted (AVE; Fornell & Larcker, 1981).

Test-retest reliability (Pearson's  $r$ ) was calculated for a subsample of participants who completed the EMWSS<sub>Peers-A</sub> a second time after a 3-week period.

Additionally, Pearson product-moment correlations were computed between the EMWSS<sub>Peers-A</sub> and measures of other relevant constructs (positive emotional memories

with family, self-compassion, external shame, self-judgment and psychopathology symptoms). To determine the scale's incremental validity, partial correlations were computed controlling for the related construct of positive emotional memories with family (measured by the EMWSS). These latter analyses examined whether the EMWSS<sub>Peers-A</sub> accounts for significant variance in relevant variables after controlling for the effects of a closely related construct.

Data analyses were conducted using PASW Software (Predictive Analytics Software, version 20, SPSS, Chicago, IL, USA) and AMOS software (Analysis of Moment Structures) version 22 (Amos Development Corporation, Crawfordville, FL, USA) (Arbuckle, 2009).

## Results

### *Dimensionality of the EMWSS<sub>Peers-A</sub>*

#### *Preliminary Data Analysis*

Univariate and multivariate normalities were screened and no severe violation of normal distribution was found. Skewness values ranged from -.15 to -.57 in the first sample, and from -1.53 to -.62 in the second sample, and kurtosis values ranged from -.09 to 1.81 and .00 to 2.69 in both samples, respectively (Tabachnick & Fidell, 2007). Single imputation method through mean substitution was used to account for missing data completely at random (occurring in less than 5% of the sample), replacing a missing value with the overall sample's mean (Tabachnick & Fidell, 2007). Analyses were conducted with the completed data.



### *Principal Component Analysis*

The 21 EMWSS<sub>Peers</sub>' items were subjected to a principal components' analysis (PCA). A single-factor solution emerged with good matrices indicators (Kaiser-Meyer-Olkin - KMO = .955; Bartlett' sphericity  $\chi^2_{(210)} = 3929.395$ ,  $p < .001$ ). Only one factor revealed an eigenvalue above 1 (eigenvalue: 12.81) and the scree plot supported the existence of one factor. This factor accounted for 61% of the total variance. All items revealed communality values higher than .394 and factor loadings between .63 and .84 (Table 1).

The analysis of the internal consistency of the scale indicated a Cronbach's alpha value of .97, and the deletion of any item was found to not improve the scale's reliability.

### *Confirmatory Factor Analysis (CFA)*

A CFA exploring the plausibility of the 21-item model was examined. Results indicated an adequate model fit to the data (CMIN = 587.30; CMIN/df = 3.11; CFI = .93; TLI = .92; RMSEA = .08 [.07- .08]). The analysis of local adjustment indices revealed that all items presented Standardized Regression Weights (SRW) above the recommended cut-off point of .40, and squared multiple correlation (SMC) values above .25; Tabachnick & Fidell, 2007). The analysis of modification indices (MI) indicated the pertinence of correlating the errors of the items 15 and 16 (MI = 26.68), 10 and 12 (MI = 20.200), 7 and 17 (MI = 27.01), 7 and 10 (MI = 28.01), and 6 and 9 (MI = 19.31), which resulted in an improvement of the model fit (CMIN = 476.46; CMIN/df = 2.59; CFI = .95, TLI = .94; RMSEA = .07 [.06-.08]). This indicated the presence of shared method error variance which could be attributed to a possible replication of

content of the items, and supported the decision of reducing the scale (Tabachnick & Fidell, 2007).

In order to develop a briefer and more robust measure, and also taking into account prior investigation with the adult version of the scale (Ferreira et al., 2016), a second CFA was conducted testing the factorial structure of the measure when removing the items that revealed shared method error variance attributed to measurement method. A 12-item structure, which paralleled the structure examined in an adult population, was examined. Results revealed a very good model fit (CMIN = 127.06; CMIN/df = 2.44; CFI = .97; TLI = .96; RMSEA = .06 [.05-.08]. Regarding local adjustment indices, the SRW ranged from .65 (item 21) to .83 (item 3). Moreover, SMC values ranged from .43 (item 31) to .69 (item 132), corroborating the individual items' reliability.

The analysis of the correlation between the 21-item version of the EMWSS<sub>Peers-A</sub> and the 12-item scale revealed a correlation coefficient of .99 ( $p < .001$ ). Following recommendations to use brief measures when conducting research in the adolescent population (Shaw, Brady, & Davey, 2011), the following analyses of the measure were conducted on the 12-item version to ascertain the scale's robustness and reliability.

#### *Item Reliability Analysis*

The 12-item EMWSS<sub>Peers-A</sub> had an excellent internal consistency, with  $\alpha = .93$ . Corrected item-total correlations ranged from  $r = .63$  to  $r = .79$ . All items contributed positively to the internal consistency of the Portuguese version of the EMWSS<sub>Peers-A</sub> for adolescents, since the reliability would not improve if any item was deleted.

The construct validity of the measure was further confirmed with results revealing a CR value of .96. Moreover, the  $EMWSS_{Peers-A}$  presented an AVE of .66 corroborating the items' convergent validity (Hair, Black, Babin, & Anderson, 2010).

#### *Data Concerning Sex, Age and Years of Schooling*

The correlation between  $EMWSS_{Peers-A}$ 's total score and age ( $r = -.03, p = .625$ ), and years of schooling ( $r = -.02, p = .741$ ) were nonsignificant. Mean differences for sex were also not significant ( $t_{(352)} = -0.43, p = .666$ ).

#### *Test-retest Reliability*

$EMWSS_{Peers-A}$ ' test-retest reliability was studied in a subsample of 89 participants who completed this measure a second time, with an interval between 15 and 21 days ( $M = 18.00$ ) after the first administration. Pearson product moment correlation coefficient between test and retest was  $r = .86$  ( $p < .001$ ), indicating a good temporal stability of the time.

#### *The relationship between the $EMWSS_{Peers-A}$ and measures of emotion regulation and psychological adjustment*

Correlations were computed between the  $EMWSS_{Peers-A}$  and measures of other relevant constructs. Before any further analysis, the internal consistency of the used measures for the present sample ( $N = 354$ ) was verified and was revealed to be similar to previous studies ( $\alpha_{EMWSS-A} = .97$ ;  $\alpha_{DASS21\_Depression} = .84$ ;  $\alpha_{DASS21\_Anxiety} = .79$ ;  $\alpha_{DASS21\_Stress} = .88$ ;  $\alpha_{OAS2} = .91$ ;  $\alpha_{SCS\_Self-compassion} = .86$ ;  $\alpha_{SCS\_Self-judgment} = .91$ ). The  $EMWSS_{Peers-A}$  was revealed to be negatively correlated with external shame, self-

judgment, and psychopathological symptoms (depression, anxiety and stress), and positively linked to warm and safe memories of early family interactions, and self-compassion. These relationships were of small to moderate magnitudes according to Cohen's (1992) standards, suggesting (as expected) that the EMWSS<sub>Peers-A</sub> is related to but not redundant with these variables. To assess the scale's incremental validity, partial correlations were computed controlling for the related construct of emotional memories, as measured by the EMWSS. When controlling for early positive memories within the family, most of the correlations were small but significant, suggesting that the EMWSS<sub>Peers-A</sub> accounts for important variance in many aspects of psychological functioning after accounting for the related global construct of family-focused emotional memories (see Table 2).

## Discussion

The role of peer relationships has been receiving accruing interest in the scientific literature. In fact, peer relationships play a particularly important role in adolescents' mental health (Gilbert & Irons, 2009; Wolfe & Mash, 2006; Wolfe, et al., 1986; Allen & Land 1999; Buhrmester, 1996; Freeman & Bradford, 2001). The impact of negative peer experiences, including bullying, rejection or exclusion, on adolescents' psychosocial adjustment has been demonstrated in several studies (Gazelle & Ladd, 2003; Goodman et al., 2001; Hawker & Boulton, 2000). Nonetheless, the impact of positive peer relationships and feelings of being valued, cared for, accepted by the peer group remained unexplored. The interest in positive emotional memories within early relationships, namely those related to parental interactions, has been growing (Richter et al., 2009; Baldwin & Dandeneau, 2005, Cunha et al., 2013; Cacioppo et al., 2000;

Gilbert et al., 2009; Masten, 2001; Matos et al., 2015; Martin, 2006; Richter et al., 2009). Nonetheless, the study of the recall of feelings of warmth and safeness within peer relationships was only recently stimulated by the adaptation of the EMWSS (Richter et al., 2009) to a focus on peer relationships. The current study aimed to analyse the EMWSS<sub>Peers</sub> in the adolescent population.

This study was conducted in distinct samples comprising a total of 584 adolescents from the Portuguese population. First, the EMWSS<sub>Peers</sub>-A, adapted to target adolescents' feelings in relation to their peer relationships, was examined through a PCA. The 21-item version of the scale revealed a one-dimensional structure with all items presenting high factorial loadings. Moreover, findings indicated that this structure presented a good model fit. This measure was also found to have high internal reliability. Nonetheless, the analysis of the items and results of the CFA revealed the presence of shared method error between certain items. Taking this into account, and also scholars recommendations to develop and use brief self-report measures in this population (Shaw, Brady, & Davey, 2011), a second analysis was conducted with the goal of testing the adequacy of a shorter version of the EMWSS<sub>Peers</sub>-A with 12 items, a structure which already identified and examined in an adult population (Ferreira et al., 2016). Results revealed that the 12-item EMWSS<sub>Peers</sub>-A presented a very good model fit. Moreover, local adjustment indices revealed that all items presented high factorial loadings and individual item reliability. In addition, the 12-item scale presented high composite reliability and temporal stability. Also, this version was found to be almost perfectly associated with the 21-item version of the EMWSS<sub>Peers</sub>-A, which further supported the construct reliability of the short version of the measure.

Findings further demonstrated that the  $EMWSS_{Peers-A}$  is associated in the expected direction with related constructs and with measures of psychological adjustment. In particular, results revealed a moderate association between a generic measure of positive memories of being valued and cared for within family relationships and the  $EMWSS_{Peers-A}$ , which indicates that these are related but distinct constructs. Furthermore, adolescents' feelings of connectedness, warmth, and safeness within peer relationships were found to be associated with an increased compassionate capacity to direct warmth and kindness towards the self, to view one's inadequacies and setbacks as common experiences, with a balanced perspective (as measured by the Self Compassion dimension of the SCS; Neff, 2003). On the contrary, this measure of positive memories within peer relationships was found to be negatively associated with a tendency to judge and criticize the self when facing failures, feeling isolated and overidentifying with one's thoughts and feelings (assessed by the self-judgment dimension of the SCS; Neff, 2003). Moreover, findings indicated that perceiving that one's memories of peer relationships are characterized by a warm and accepting context was negatively associated with perceptions of existing negatively in the mind of others, i.e., as an inadequate, inferior, defective person (measured by the OAS2; Allan & Goss, 2009), and with decreased reported symptoms of depression, anxiety, and stress (assessed by DASS; Lovibond & Lovibond, 1995). These findings are in line with prior evidence demonstrating the role that peer relationships play on psychological adjustment (Allen & Land 1999; Buhrmester, 1996; Freeman & Bradford, 2001; Gilbert & Irons, 2009; Wolfe & Mash, 2006; Wolfe et al., 1986). In particular, the current study extends current knowledge by demonstrating that positive emotional memories of peer relationships are significantly associated with individuals' sense of self, emotion

regulation capabilities and mental health, especially in adolescence. These associations were significant even when accounting for the EMWSS-A, which supports the scale incremental validity. Specifically, results indicated that the EMWSS<sub>Peers</sub>-A accounted for an additional amount of variance of the examined constructs, namely external shame, depression and anxiety symptoms, above the overall EMWSS-A. These results are particularly informative for researchers interested in exploring the specific effect of interpersonal emotional experiences on indicators of psychological adjustment, such as shame, in adolescence. Furthermore, results indicated that sex, age and years of education have no significant effect on perceptions of positive peer relationships, which is in accordance with prior research that did not find significant associations between these demographic variables and positive emotional memories within family relationships assessed by the EMWSS-A (Cunha et al., 2014).

In summary, the EMWSS<sub>Peers</sub>-A was found to be a reliable measure that allows for a brief and easy assessment of a construct that seems to be significantly linked with adolescents' self-evaluation, emotion regulation, and psychological distress symptoms. Thus, the EMWSS<sub>Peers</sub>-A is a measure with potential utility for future model testing investigating the role of emotional memories related to peer relationships on adolescents' psychological adjustment. The use of this measure is particularly useful to clinicians and researchers in order to understand how the recollection of peer relationships can affect the development of self-identity and the quality of current and future interpersonal relationships. The use of this specific measure is therefore particularly relevant given the salience that peer relationships have in this developmental stage and its enduring effects.

The current study needs to be analysed taking into consideration some limitations. Although the sample of the current study was large and comprised male and female adolescents presenting an ample age range, this sample can not be considered to be representative sample of this population. Thus, future studies should examine the structure and psychometric properties of the scale in other samples. Further examination could also be conducted in clinical samples (e.g., externalizing disorders) and in adolescents with psychosocial difficulties (e.g., low income, violent backgrounds), which could inform future research and intervention approaches in these areas. As the current study was conducted in the Portuguese population, future studies should also analyse the scale in different adolescent populations and languages (e.g., English). Moreover, although retrospective recall data has been found to be relatively reliable and stable, current emotional state may impact the recollection and current perceptions of the quality of interpersonal relationships (Brewin, Andrews, & Gotlib, 1993), and thus future studies should further validate the current findings by using other sources (e.g., parents, teachers, peers) and assessment methodologies (e.g., behavioural observation, interviews).

Nonetheless, the current study presents the development of a new measure for adolescents that targets the perception of the quality of peer relationships, with potential applicability for research and intervention purposes.

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**Table 1**

EMWSS<sub>peers-A</sub>'s factor items' means (*M*), standard deviations (*SD*), factor loadings, communalities (*h*<sup>2</sup>), Cronbach's alpha if item deleted, standardized regression weights (*SRW*), squared multiple correlations (*SMC*) for 21-item version of the EMWSS<sub>Peers-A</sub>; standardized regression weights, squared multiple correlations and Cronbach's alpha if item deleted for 12-item version of the EMWSS<sub>Peers-A</sub>.

Items	<i>M</i> ( <i>SD</i> )	PCA-21 ( <i>N</i> = 230)			CFA-21 ( <i>N</i> = 354)		CFA-12 ( <i>N</i> = 354)		
		Factor loading	<i>h</i> <sup>2</sup>	<i>α</i> if deleted	<i>SRW</i>	<i>SMC</i>	<i>SRW</i>	<i>SMC</i>	<i>α</i> if deleted
<b>1. I felt secure and safe with my group of friends.</b>	<b>3.18</b> <b>(0.92)</b>	.73	.54	.97	.72	.52	.73	.53	.92
<b>2. I felt my friends appreciated the way I was.</b>	<b>3.11</b> <b>(0.88)</b>	.71	.51	.97	.72	.52	.73	.54	.92
3. I felt understood by my group of friends.	2.97 (0.83)	.72	.52	.97	.69	.48	-	-	-
4. I felt a sense of warmth with my group of friends.	3.17 (0.81)	.77	.59	.97	.75	.56	-	-	-
<b>5. I felt comfortable sharing my feelings and thoughts with my friends.</b>	<b>2.67</b> <b>(1.06)</b>	.63	.39	.97	.69	.48	.66	.44	.93
<b>6. I felt my friends enjoyed my company.</b>	<b>3.19</b> <b>(0.77)</b>	.81	.66	.97	.80	.53	.80	.64	.92
7. I knew that I could count on empathy and understanding from my friends when I was unhappy.	3.17 (0.80)	.76	.58	.97	.68	.47	-	-	-
<b>8. I felt peaceful and calm when I was with my friends.</b>	<b>3.13</b> <b>(0.82)</b>	.82	.67	.97	.64	.41	.65	.42	.93
9. I felt that I was a cherished member of my group of friends.	3.00 (0.92)	.80	.65	.97	.75	.56	-	-	-
<b>10. I could easily be soothed by my friends when I was unhappy.</b>	<b>3.04</b> <b>(0.89)</b>	.75	.57	.97	.72	.51	.67	.44	.92
11. I felt loved by my friends.	2.99 (0.85)	.83	.70	.96	.84	.70	-	-	-
<b>12. I felt comfortable turning to my friends for help and advice.</b>	<b>2.98</b> <b>(0.95)</b>	.83	.68	.96	.78	.61	.74	.55	.92

<b>13. I felt part of the group of friends that I valued.</b>	<b>3.17 (0.84)</b>	<b>.81</b>	<b>.65</b>	<b>.97</b>	<b>.82</b>	<b>.67</b>	<b>.83</b>	<b>.69</b>	<b>.92</b>
<b>14. I felt loved even when my friends were upset about something I had done.-</b>	<b>2.69 (0.99)</b>	<b>.69</b>	<b>.47</b>	<b>.97</b>	<b>.69</b>	<b>.47</b>	<b>.68</b>	<b>.46</b>	<b>.93</b>
<b>15. I felt happy when I was with my friends.</b>	<b>3.34 (0.74)</b>	<b>.80</b>	<b>.63</b>	<b>.97</b>	<b>.73</b>	<b>.54</b>	<b>.74</b>	<b>.55</b>	<b>.92</b>
16. I had feelings of connectedness with my friends.	3.10 (0.89)	.80	.64	.97	.74	.54	-	-	-
17. I knew I could rely on my friends to console me when I was upset.	3.04 (0.87)	.84	.71	.96	.82	.68	-	-	-
<b>18. I felt my friends cared about me.</b>	<b>3.15 (0.86)</b>	<b>.84</b>	<b>.70</b>	<b>.96</b>	<b>.82</b>	<b>.68</b>	<b>.81</b>	<b>.66</b>	<b>.92</b>
19. I had a sense of belonging to my group of friends	3.10 (0.90)	.84	.71	.96	.82	.67	-	-	-
20. I knew that I could count on help from my friends when I was unhappy.	3.19 (0.82)	.83	.69	.96	.78	.62	-	-	-
<b>21. I felt at ease when I was with my friends.</b>	<b>3.22 (0.86)</b>	<b>.76</b>	<b>.60</b>	<b>.97</b>	<b>.63</b>	<b>.40</b>	<b>.65</b>	<b>.43</b>	<b>.93</b>

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*Note.* Items in bold were retained in the final 12-item version.

**Table 2**

Zero-order and partial correlations between the Early Memories of Warmth and Safeness Scale with Peers (EMWSS<sub>Peers</sub>-A) and other variables ( $N = 354$ ).

Measures	EMWSS <sub>Peers</sub> -A	
	Zero-order correlation	Partial correlation (controlling for EMWSS-A)
EMWSS-A	.56**	-
OAS2	-.55**	-.32**
SCS-Self-judgment	-.28**	-.11*
SCS-Self-compassion	.23**	.13*
DASS21_Depression	-.40**	-.22**
DASS21_Anxiety	-.32**	-.17**
DASS21_ Stress	-.26**	-.11*

*Note.* EMWSS-A= Early Memories of Warmth and Safeness Scale for adolescents; OAS2 = Other as Shamer (brief version); SCS = Self-Compassion Scale; DASS-21 = Depression, Anxiety and Stress Scales

\*\* $p \leq .001$ ; \*\* $p < .05$ .

## Assessing positive emotional memories with peers:

### The Early Memories of Warmth and Safeness with Peers Scale for Adolescents

#### Abstract

Research on the association between early positive relational experiences and later psychosocial adjustment is growing. The quality of peer relationships may have a particularly important effect on adolescents' wellbeing and mental health. The current study aimed at examining a measure of personal emotional memories of peer relationships characterized by warmth, safeness and affection, which occurred in childhood and adolescence (EMWSS<sub>Peers-A</sub>).

Distinct samples ( $N=584$ ) of adolescents aged between 12 and 18 were used to assess the EMWSS<sub>Peers-A</sub>' factorial structure through a Principal Component Analysis and a Confirmatory Factor analysis, and to analyse the scale's psychometric properties.

Results indicated a one-dimensional structure with 12 items with very good internal consistency, and construct, convergent, divergent and incremental validities.

By allowing the examination of the role played by memories of positive peer relationships on adolescents' psychological adjustment, the EMWSS<sub>Peers-A</sub> may be potentially useful for future model testing and for the assessment of interventions.

*Keywords:* Adolescence; Positive peer relationships; Soothing social experiences; Factor Analysis; Psychometric properties.

## **Introduction**

The quality of early childhood experiences has been shown to have a significant impact on later physiological, psychological and social development and functioning (Baumeister & Leary, 1995; Bowlby, 1969, 1973; Buss, 2003; Gerhardt, 2004; Panksepp, 2010; Schore, 1994). In particular, early adverse experiences, i.e., of neglect, abuse or rejection, have been associated with a series of indicators of psychosocial maladjustment (Baccus, & Palmer, 2006; Bifulco & Moran, 1998; Irons, Gilbert, Baldwin, Baccus, & Palmer, 2006; Perris & Gilbert, 2000; Rohner, 2004). On the contrary, early relationships and social experiences related to feelings of safeness, warmth and nurturance are associated with increased self-esteem, happiness, quality of life, and with decreased vulnerability to psychopathology (Berscheid, 1985; Bifulco & Moran, 1998; Cacioppo et al., 2000; Gilbert & Irons, 2008; Parker, 1983; Rohner, 2004). Extant knowledge on the effect of early experiences, which mostly relies on data from research on early rearing experiences with parents or other family members, consistently demonstrates that parental behaviour (e.g., interactions characterized by low affection, neglect, emotional or physical abuse; Parker, 1983; Perris, 1994; Teicher, Samson, Polcaru, & McGreenery, 2006), and also emotional memories of such child-parent interactions (e.g., personal recollections of a sense of threat, subordination or feeling unvalued as a child; Gilbert, Cheung, Grandfield, Campney, & Irons, 2003), are linked with higher vulnerability to psychopathology later in life (Xavier; Cunha, & Pinto-Gouveia, 2015). In contrast, emotional memories of feeling safe and cared for (Richter, Gilbert, & McEwan, 2009) have been associated with positive emotional regulation (Baldwin & Dandeneau, 2005, Cunha, Martinho, Xavier, & Espírito-Santo, 2013), resilience towards adverse life events (Cacioppo, Berston, Sheridan, &

McClintock, 2000; Gilbert et al., 2009; Masten, 2001; Matos, Pinto-Gouveia, & Duarte, 2015; Richter et al., 2009), and well-being (Martin, 2006; Richter et al., 2009).

There is increasing evidence on the relevance of other social agents (i.e., beyond family members) on a series of indicators of psychological adjustment (Matos, Pinto-Gouveia, & Costa, 2013; Ferreira, Matos, Duarte, & Pinto-Gouveia, 2014). In particular, peer relationships have been identified as particularly important for one's sense of well-being and social belonging (Allen & Land, 1999, Oberle, Schonert-Reichl, & Thomson, 2010). Adolescence is a decisive life period when peers become a particularly relevant source of social support, reassurance, and approval (Allen & Land, 1999; Buhrmester, 1996; Freeman & Bradford, 2001; Gilbert & Irons, 2009; Wolfe & Mash, 2006; Wolfe, Lennox, & Cutler, 1986). During this developmental stage, adolescents become more aware of how they are evaluated by peers, and particularly sensitive to the images and emotions created by them in their peers' minds (Gilbert & Irons, 2009; Wolfe & Mash, 2006; Wolfe, Lennox, & Cutler, 1986). In this context, experiences of being rejected, excluded, and physically or verbally victimized by peers have been consistently associated with indicators of poorer mental health and social functioning in adolescence (Gazelle & Ladd, 2003; Goodman, Stormshak, & Dishion, 2001; Hawker & Boulton, 2000), with enduring effects throughout adulthood (Hawker & Boulton, 2000; Hock & Lutz, 2001; Parker, 1983). On the contrary, the role of early positive interactions with peers remains less investigated (Hay, Payne, & Chadwick, 2004).

Recently, Ferreira and colleagues (2016) developed a new self-report measure to specifically evaluate emotional memories of feeling content, cared for, and safe within peer relationships, i.e., with friends and colleagues (EMWSS<sub>Peers</sub>). This scale was based

on the Early Memories of Warmth and Safeness Scale (EMWSS; Richter et al., 2009), which was originally designed to assess personal emotional memories of feeling safe, cared for, and valued with family and close figures. Its development was based on the growing recognition of the key role that early interactions play on the physiological, psychological and social maturation and functioning of individuals. The EMWSS, in contrast to existing measures focused on parental behaviour, aimed at assessing the recall of positive emotional memories with parents or other close figures in early life. The EMWSS comprises 21 items, and proved to be a psychometrically sound global measure of early emotional memories, which showed a single factor solution with a Cronbach's alpha of .97. Portuguese validation studies, using both adult (Matos, Pinto-Gouveia, & Duarte, 2014) and adolescent community populations (Cunha, Xavier, Martinho, & Matos, 2014), corroborated the unidimensional structure and robust psychometric qualities of this scale.

The new and specific measure focused on peers – Early Memories of Warmth and Safeness with Peers Scale (EMWSS<sub>Peers</sub>) – also comprised 21 items and was developed and primarily tested in the Portuguese adult population. Results revealed a single factor structure and the pertinence of a shorter version of 12 items. This shorter solution of the EMWSS<sub>Peers</sub> showed a nearly perfect association with the 21-item EMWSS<sub>Peers</sub>, and was obtained taking into consideration theoretical and psychometric criteria. The 12-item EMWSS<sub>Peers</sub> showed to be an instrument with high reliability to assess peer-related positive memories, revealing significant associations with positive indicators of psychological adjustment, and with lower emotion regulation difficulties and psychopathological symptoms (Ferreira et al., 2016).

Given the potential role that the quality of peer relationships plays in the development of self-identity of adolescents, adaptive emotion regulation and mental health, the development and assessment of a measure of personal recollections of feelings and experiences of safeness, contentment, support, and warmth within peer relationships seems particularly relevant to this developmental stage. The current study aimed therefore at developing and examining the psychometric properties and correlates of a new measure for the examination of Early Memories of Warmth and Safeness within peer relationships in adolescence – EMWSS<sub>Peers-A</sub>.

In the present study, it was hypothesized that the EMWSS<sub>Peers-A</sub> presents a psychometrically sound one-factor structure, similar to the one found in the adult population (Ferreira et al., 2016). Moreover, consistent with findings of prior research (Cunha et al., 2013; Ferreira et al., 2016; Richter et al., 2009), we expected scores on the EMWSS<sub>Peers-A</sub> to correlate positively with positive emotional memories with family and self-compassion. On the contrary, we expected negative correlations with external shame, self-judgment and depression, anxiety, and stress symptoms.

## **Method**

### *Participants*

Participants in this study comprised distinct convenience samples collected in public schools of the centre region of Portugal.

The factorial structure of the scale and its psychometric properties were initially examined in a total of 230 adolescents (121 females and 109 males) at a public secondary school in an urban area of the district of Coimbra, placed in the centre region of Portugal. Age of participants ranged between 12 and 18 years, with an average of



15.87 years ( $SD = 1.98$ ). These adolescents consisted of 7th through 12th-grade students ( $M_{(\text{years of education})} = 9.83$ ,  $SD_{(\text{years of education})} = 1.58$ ).

A Confirmatory Factor Analysis was computed and validity estimates were examined in a distinct sample. This sample comprised 354 adolescents, 152 boys (42.9%) and 202 girls (57.1%), with a mean age of 15.81 ( $SD = 1.58$ ), ranging between 12 and 18 years old. These adolescents attended the 7th through the 12th grades (years of education,  $M = 10.29$ ,  $SD = 1.55$ ) at two public schools in an urban area of Coimbra. Gender differences were not found for age ( $t(344,66) = 1.93$ ,  $p = .055$ ) and years of education,  $t(347,13) = 0.91$ ,  $p = .365$ . Comparing with the first sample ( $N = 230$ ), participants in this sample presented an higher mean of years of education ( $t(582) = 3.51$ ,  $p < .001$ ). The two samples did not present statistically significant differences regarding age ( $t(408,207) = 0.46$ ,  $p = .643$ ) and gender distribution ( $\chi^2 = 0.29$ ,  $p = .307$ ).

In order to assess test-retest reliability, a subgroup of the sample of 354 participants ( $n = 122$ ) was asked to engage in test-retest. A total of 89 (44 boys and 45 girls) participants accepted to complete the EMWSS<sub>Peers-A</sub> a second time, with a 3 weeks' interval. Their mean age was 16.31 ( $SD = 0.98$ ) and the mean of years of education was 10.04 ( $SD = 0.71$ ).

### *Measures*

Early Memories of Warmth and Safeness Scale in peer relationships for adolescence (EMWSS<sub>Peers-A</sub>) was developed based on the original EMWSS (Richter et al., 2009) and on its adaptation for adolescents, previously examined in the Portuguese population (Cunha et al., 2014). Approval from the authors of the original and adolescents versions of the EMWSS to conduct this adaptation was obtained. EMWSS's

instructions ask respondents to focus on feelings associated with peer interactions. The EMWSS's 21 items were modified to focus on feelings of being cared for, valued, and safe within peer relationships which occurred from childhood to early adolescence (e.g., *"I felt safe and protected in my group of friends"*; *"I felt comfortable turning to my friends for help and advice when feelings worried or unhappy"*). Respondents are prompted to reflect about their feelings and emotions throughout childhood and adolescence regarding their peer/friends group: *"This scale explores some of your emotional memories of your childhood and adolescence. Below is a set of questions that tap various feelings you may have experienced with your peer group/group of friends. Please read each item carefully and circle the number to the right of the statement that best describes your feelings during childhood and adolescence"*. Each item is answered using a 5-point scale (ranging from 0 = *"No, never"* to 4 = *"Yes, most of the time"*) to indicate the frequency to which the participant experienced positive feelings (of warmth, support, affection) in peer relationships.

Early Memories of Warmth and Safeness Scale (EMWSS; Richter et al., 2009; Portuguese version for Adolescents by Cunha et al., 2014) is a self-report questionnaire that measures the recall of feeling warm, safe and cared for in childhood (e.g., *"I felt that I was a cherished member of my family"*). The EMWSS is a 21-item scale rated on a 5-point Likert scale (0 = *"No, never"*; 4 = *"Yes, most of the time"*). Richter and colleagues (2009) found a single factor solution with a Cronbach's alpha of .97. In the Portuguese version (Cunha et al., 2014), similar results were found in a Portuguese adolescent population, with the scale presenting an excellent internal consistency ( $\alpha = .95$ ).

Depression, Anxiety and Stress Scale (DASS-21; Lovibond & Lovibond, 1995; Portuguese version by Pais-Ribeiro, Honrado & Leal, 2004) is a 21-item self-report measure that assesses three dimensions of psychopathological symptoms: depression, anxiety, and stress. Items are rated on a 4-point scale (ranging from 0 to 3). The three subscale were found to have high internal consistency (Depression Cronbach's  $\alpha = .91$ ; Anxiety Cronbach's  $\alpha = .84$ ; Stress Cronbach's  $\alpha = .90$ ; Lovibond & Lovibond, 1995).-

Others as Shamer – short version (OAS2; Matos, Pinto-Gouveia, Gilbert, Duarte & Figueiredo, 2015; Portuguese version for Adolescents by Portuguese version for Adolescents by Cunha, Xavier, Cherpe & Pinto-Gouveia, 2014). This 8-item scale measures external shame (evaluations about how others view and evaluate the self negatively). Respondents rate on a 5-point Likert scale (ranging from 0 to 4) the frequency of their feelings and experiences (e.g., *"I think that other people look down on me"*). In the validation study of the original version, the authors found this scale to have a Cronbach's alpha of .82 (Matos et al, 2015), and in the Portuguese version for adolescents a Cronbach's alpha of .92 was reported (Cunha, Xavier, Cherpe, & Pinto-Gouveia, 2014).

Self-Compassion Scale (SCS; Neff, 2003; Portuguese version for adolescents by Cunha, Xavier & Castilho, 2015) is a 26-item self-report questionnaire which comprises 6 subscales: Self-Kindness; Self-Judgement; Common Humanity; Isolation; Mindfulness; Over-identification. Each item is rated on a 5-point scale (1 = never; 5 = always). In the original version, the total score showed an excellent internal consistency ( $\alpha = .92$ ) and the six subscales revealed adequate coefficients of internal consistency, ranging between .75 and .81 (Neff, 2013). In the current study, both the composite of positive valence named self-compassion (i.e., corresponding to the sum of the subscales

Self-kindness, Common Humanity, Mindfulness);, and the negative valence components, titled self-judgement (i.e., corresponding to the sum of Self-judgement, Isolation, Over-identification) were analysed (Costa, Marôco, Pinto-Gouveia, Ferreira, & Castilho, 2015).

### *Procedure*

Prior to the administration of questionnaires, ethical approvals were obtained from the Portuguese Ministry of Education and from the National Commission for Data Protection. The Boards of schools in the district of Coimbra were contacted, and those who agreed to take part in the study were selected. The Head Teacher of each school which agreed to participate advertised the study to all students and respective parents / legal guardians, due to the fact that all these students were legally minor. All adolescents and respective parents / legal guardians were informed about the goals of the research, the purpose of the study, and aspects of confidentiality. The majority of the students agreed to take part, and the respective parents / legal guardians provided their informed consent. Data collection was conducted in small groups (5 to 15 students) in different dates, according to the day and class period defined as convenient by the Board of each school. Students filled out the instruments in the classroom, and in the presence of the researcher who clarified any doubts and ensured independent response. Respondents took approximately 20 minutes to complete the set of self-report measures and revealed no difficulties in understanding the instructions and items of the measure. To examine the scale's temporal stability, students were invited to answer the EMWSS<sub>Peers</sub>-A a second time after a one-month period. A total of 126 students agreed

to collaborate and answered the retest in a period scheduled by the school, providing a personal code to match the test and retest administrations.

### *Data Analyses*

We first examined the factor structure and psychometric properties of the Early Memories of Warmth and Safeness Scale within peer relationships adapted to adolescence – EMWSS<sub>Peers</sub>-A, a measure that assesses the recall of warm, safe, affect and care in early peer relationships.

A Principal Component Analysis (PCA) was conducted to analyse the factorial structure of the EMWSS<sub>Peers</sub>-A. The sample size ( $N = 230$ ) was adequate to conduct the analysis (Bryant & Arnold, 1995; DeVellis, 2011). This analysis followed the procedures previously adopted in the analysis of the original EMWSS (Richter et al., 2009), and the validation procedures of the measure were adapted to focus on peer relationships examined in an adult community sample (Ferreira et al., 2016). The internal consistency of the scale was analysed by computing Cronbach's alpha coefficients.

The adequacy of the previously found one-factor solution of the EMWSS<sub>Peers</sub>-A was further examined in a distinct sample ( $N = 354$ ). Furthermore, we aimed at testing the suitability of a 12-item version of the scale. This solution replicated the solution formerly identified in the EMWSS<sub>Peers</sub> version tested in adults (Ferreira et al., 2016), and this procedure was supported by current recommendations to use brief self-report measures in the adolescent population to assure engagement and accurate responding (Shaw, Brady, & Davey, 2011).

A Confirmatory Factor Analysis (CFA) was performed to further corroborate the stability of the factor structure, using a significance level of 0.05. The sample used for this analysis ( $N = 354$ ) had an adequate size to test model fit indices and the validity of the scale (Tabachnick & Fidell, 2007). The method of estimation used was Maximum Likelihood. Goodness of fit was verified by the following fit indices: Comparative Fit Index (CFI) and Root Mean Square Error of Approximation (RMSEA; 90 % confidence interval [CI]). According to Byrne (2010), these models are considered to have an acceptable fit when CFI and TLI  $\geq 0.90$  and RMSEA  $\leq 0.08$ . Additionally, we examined the  $\chi^2$  statistic, which indicates whether the covariation pattern in the data can be explained by the postulated factor structure. We also examined the  $\chi^2/\text{degrees of freedom ratio}$  ( $\chi^2/\text{df}$ ), which decreases and approaches zero as the fit of the model improves. Generally, values between 2 and 5 indicate an acceptable fit (Byrne, 2010).

Items' descriptive statistics (i.e., means, standard deviations, minima and maxima) and distributions (skewness and kurtosis) were computed to examine items' metric characteristics (Carretero-Dios & Pérez, 2005). Assessment of corrected item-total correlations and Cronbach's alpha was carried out to determine each item's discriminant validity and internal consistency (DeVellis, 2011). The construct reliability and convergent validity of the scale were examined through the calculation of the Composite Reliability (CR) and of the Average Variance Extracted (AVE; Fornell & Larcker, 1981).

Test-retest reliability (Pearson's  $r$ ) was calculated for a subsample of participants who completed the EMWSS<sub>Peers-A</sub> a second time after a 3-week period.

Additionally, Pearson product-moment correlations were computed between the EMWSS<sub>Peers-A</sub> and measures of other relevant constructs (positive emotional memories

with family, self-compassion, external shame, self-judgment and psychopathology symptoms). To determine the scale's incremental validity, partial correlations were computed controlling for the related construct of positive emotional memories with family (measured by the EMWSS). These latter analyses examined whether the EMWSS<sub>Peers</sub>-A accounts for significant variance in relevant variables after controlling for the effects of a closely related construct.

Data analyses were conducted using PASW Software (Predictive Analytics Software, version 20, SPSS, Chicago, IL, USA) and AMOS software (Analysis of Moment Structures) version 22 (Amos Development Corporation, Crawfordville, FL, USA) (Arbuckle, 2009).

## **Results**

### *Dimensionality of the EMWSS<sub>Peers</sub>-A*

#### *Preliminary Data Analysis*

Univariate and multivariate normalities were screened and no severe violation of normal distribution was found. Skewness values ranged from -.15 to -.57 in the first sample, and from -1.53 to -.62 in the second sample, and kurtosis values ranged from -.09 to 1.81 and .00 to 2.69 in both samples, respectively (Tabachnick & Fidell, 2007). Single imputation method through mean substitution was used to account for missing data completely at random (occurring in less than 5% of the sample), replacing a missing value with the overall sample's mean (Tabachnick & Fidell, 2007). Analyses were conducted with the completed data.

### *Principal Component Analysis*

The 21 EMWSS<sub>Peers</sub>' items were subjected to a principal components' analysis (PCA). A single-factor solution emerged with good matrices indicators (Kaiser-Mayer-Olkin - KMO = .955; Bartlett' sphericity  $\chi^2_{(210)} = 3929.395$ ,  $p < .001$ ). Only one factor revealed an eigenvalue above 1 (eigenvalue: 12.81) and the scree plot supported the existence of one factor. This factor accounted for 61% of the total variance. All items revealed communality values higher than .394 and factor loadings between .63 and .84 (Table 1).

The analysis of the internal consistency of the scale indicated a Cronbach's alpha value of .97, and the deletion of any item was found to not improve the scale's reliability.

### *Confirmatory Factor Analysis (CFA)*

A CFA exploring the plausibility of the 21-item model was examined. Results indicated an adequate model fit to the data (CMIN = 587.30; CMIN/df = 3.11; CFI = .93; TLI = .92; RMSEA = .08 [.07- .08]). The analysis of local adjustment indices revealed that all items presented Standardized Regression Weights (SRW) above the recommended cut-off point of .40, and squared multiple correlation (SMC) values above .25; Tabachnick & Fidell, 2007). The analysis of modification indices (MI) indicated the pertinence of correlating the errors of the items 15 and 16 (MI = 26.68), 10 and 12 (MI = 20.200), 7 and 17 (MI = 27.01), 7 and 10 (MI = 28.01), and 6 and 9 (MI = 19.31), which resulted in an improvement of the model fit (CMIN = 476.46; CMIN/df = 2.59; CFI = .95, TLI = .94; RMSEA = .07 [.06-.08]). This indicated the presence of shared method error variance which could be attributed to a possible replication of



content of the items, and supported the decision of reducing the scale (Tabachnick & Fidell, 2007).

In order to develop a briefer and more robust measure, and also taking into account prior investigation with the adult version of the scale (Ferreira et al., 2016), a second CFA was conducted testing the factorial structure of the measure when removing the items that revealed shared method error variance attributed to measurement method. A 12-item structure, which paralleled the structure examined in an adult population, was examined. Results revealed a very good model fit (CMIN = 127.06; CMIN/df = 2.44; CFI = .97; TLI = .96; RMSEA = .06 [.05-.08]). Regarding local adjustment indices, the SRW ranged from .65 (item 21) to .83 (item 3). Moreover, SMC values ranged from .43 (item 31) to .69 (item 132), corroborating the individual items' reliability.

The analysis of the correlation between the 21-item version of the EMWSS<sub>Peers-A</sub> and the 12-item scale revealed a correlation coefficient of .99 ( $p < .001$ ). Following recommendations to use brief measures when conducting research in the adolescent population (Shaw, Brady, & Davey, 2011), the following analyses of the measure were conducted on the 12-item version to ascertain the scale's robustness and reliability.

#### *Item Reliability Analysis*

The 12-item EMWSS<sub>Peers-A</sub> had an excellent internal consistency, with  $\alpha = .93$ . Corrected item-total correlations ranged from  $r = .63$  to  $r = .79$ . All items contributed positively to the internal consistency of the Portuguese version of the EMWSS<sub>Peers-A</sub> for adolescents, since the reliability would not improve if any item was deleted.

The construct validity of the measure was further confirmed with results revealing a CR value of .96. Moreover, the  $EMWSS_{Peers-A}$  presented an AVE of .66 corroborating the items' convergent validity (Hair, Black, Babin, & Anderson, 2010).

#### *Data Concerning Sex, Age and Years of Schooling*

The correlation between  $EMWSS_{Peers-A}$ 's total score and age ( $r = -.03, p = .625$ ), and years of schooling ( $r = -.02, p = .741$ ) were nonsignificant. Mean differences for sex were also not significant ( $t_{(352)} = -0.43, p = .666$ ).

#### *Test-retest Reliability*

$EMWSS_{Peers-A}$ ' test-retest reliability was studied in a subsample of 89 participants who completed this measure a second time, with an interval between 15 and 21 days ( $M = 18.00$ ) after the first administration. Pearson product moment correlation coefficient between test and retest was  $r = .86$  ( $p < .001$ ), indicating a good temporal stability of the time.

#### *The relationship between the $EMWSS_{Peers-A}$ and measures of emotion regulation and psychological adjustment*

Correlations were computed between the  $EMWSS_{Peers-A}$  and measures of other relevant constructs. Before any further analysis, the internal consistency of the used measures for the present sample ( $N = 354$ ) was verified and was revealed to be similar to previous studies ( $\alpha_{EMWSS-A} = .97$ ;  $\alpha_{DASS21\_Depression} = .84$ ;  $\alpha_{DASS21\_Anxiety} = .79$ ;  $\alpha_{DASS21\_Stress} = .88$ ;  $\alpha_{OAS2} = .91$ ;  $\alpha_{SCS\_Self-compassion} = .86$ ;  $\alpha_{SCS\_Self-judgment} = .91$ ). The  $EMWSS_{Peers-A}$  was revealed to be negatively correlated with external shame, self-

judgment, and psychopathological symptoms (depression, anxiety and stress), and positively linked to warm and safe memories of early family interactions, and self-compassion. These relationships were of small to moderate magnitudes according to Cohen's (1992) standards, suggesting (as expected) that the EMWSS<sub>Peers-A</sub> is related to but not redundant with these variables. To assess the scale's incremental validity, partial correlations were computed controlling for the related construct of emotional memories, as measured by the EMWSS. When controlling for early positive memories within the family, most of the correlations were small but significant, suggesting that the EMWSS<sub>Peers-A</sub> accounts for important variance in many aspects of psychological functioning after accounting for the related global construct of family-focused emotional memories (see Table 2).

## **Discussion**

The role of peer relationships has been receiving accruing interest in the scientific literature. In fact, peer relationships play a particularly important role in adolescents' mental health (Gilbert & Irons, 2009; Wolfe & Mash, 2006; Wolfe, et al., 1986; Allen & Land 1999; Buhrmester, 1996; Freeman & Bradford, 2001). The impact of negative peer experiences, including bullying, rejection or exclusion, on adolescents' psychosocial adjustment has been demonstrated in several studies (Gazelle & Ladd, 2003; Goodman et al., 2001; Hawker & Boulton, 2000). Nonetheless, the impact of positive peer relationships and feelings of being valued, cared for, accepted by the peer group remained unexplored. The interest in positive emotional memories within early relationships, namely those related to parental interactions, has been growing (Richter et al., 2009; Baldwin & Dandeneau, 2005, Cunha et al., 2013; Cacioppo et al., 2000;

Gilbert et al., 2009; Masten, 2001; Matos et al., 2015; Martin, 2006; Richter et al., 2009). Nonetheless, the study of the recall of feelings of warmth and safeness within peer relationships was only recently stimulated by the adaptation of the EMWSS (Richter et al., 2009) to a focus on peer relationships. The current study aimed to analyse the EMWSS<sub>Peers</sub> in the adolescent population.

This study was conducted in distinct samples comprising a total of 584 adolescents from the Portuguese population. First, the EMWSS<sub>Peers</sub>-A, adapted to target adolescents' feelings in relation to their peer relationships, was examined through a PCA. The 21-item version of the scale revealed a one-dimensional structure with all items presenting high factorial loadings. Moreover, findings indicated that this structure presented a good model fit. This measure was also found to have high internal reliability. Nonetheless, the analysis of the items and results of the CFA revealed the presence of shared method error between certain items. Taking this into account, and also scholars recommendations to develop and use brief self-report measures in this population (Shaw, Brady, & Davey, 2011), a second analysis was conducted with the goal of testing the adequacy of a shorter version of the EMWSS<sub>Peers</sub>-A with 12 items, a structure which already identified and examined in an adult population (Ferreira et al., 2016). Results revealed that the 12-item EMWSS<sub>Peers</sub>-A presented a very good model fit. Moreover, local adjustment indices revealed that all items presented high factorial loadings and individual item reliability. In addition, the 12-item scale presented high composite reliability and temporal stability. Also, this version was found to be almost perfectly associated with the 21-item version of the EMWSS<sub>Peers</sub>-A, which further supported the construct reliability of the short version of the measure.

Findings further demonstrated that the  $EMWSS_{Peers-A}$  is associated in the expected direction with related constructs and with measures of psychological adjustment. In particular, results revealed a moderate association between a generic measure of positive memories of being valued and cared for within family relationships and the  $EMWSS_{Peers-A}$ , which indicates that these are related but distinct constructs. Furthermore, adolescents' feelings of connectedness, warmth, and safeness within peer relationships were found to be associated with an increased compassionate capacity to direct warmth and kindness towards the self, to view one's inadequacies and setbacks as common experiences, with a balanced perspective (as measured by the Self Compassion dimension of the SCS; Neff, 2003). On the contrary, this measure of positive memories within peer relationships was found to be negatively associated with a tendency to judge and criticize the self when facing failures, feeling isolated and overidentifying with one's thoughts and feelings (assessed by the self-judgment dimension of the SCS; Neff, 2003). Moreover, findings indicated that perceiving that one's memories of peer relationships are characterized by a warm and accepting context was negatively associated with perceptions of existing negatively in the mind of others, i.e., as an inadequate, inferior, defective person (measured by the OAS2; Allan & Goss, 2009), and with decreased reported symptoms of depression, anxiety, and stress (assessed by DASS; Lovibond & Lovibond, 1995). These findings are in line with prior evidence demonstrating the role that peer relationships play on psychological adjustment (Allen & Land 1999; Buhrmester, 1996; Freeman & Bradford, 2001; Gilbert & Irons, 2009; Wolfe & Mash, 2006; Wolfe et al., 1986). In particular, the current study extends current knowledge by demonstrating that positive emotional memories of peer relationships are significantly associated with individuals' sense of self, emotion

regulation capabilities and mental health, especially in adolescence. These associations were significant even when accounting for the EMWSS-A, which supports the scale incremental validity. Specifically, results indicated that the EMWSS<sub>Peers</sub>-A accounted for an additional amount of variance of the examined constructs, namely external shame, depression and anxiety symptoms, above the overall EMWSS-A. These results are particularly informative for researchers interested in exploring the specific effect of interpersonal emotional experiences on indicators of psychological adjustment, such as shame, in adolescence. Furthermore, results indicated that sex, age and years of education have no significant effect on perceptions of positive peer relationships, which is in accordance with prior research that did not find significant associations between these demographic variables and positive emotional memories within family relationships assessed by the EMWSS-A (Cunha et al., 2014).

In summary, the EMWSS<sub>Peers</sub>-A was found to be a reliable measure that allows for a brief and easy assessment of a construct that seems to be significantly linked with adolescents' self-evaluation, emotion regulation, and psychological distress symptoms. Thus, the EMWSS<sub>Peers</sub>-A is a measure with potential utility for future model testing investigating the role of emotional memories related to peer relationships on adolescents' psychological adjustment. The use of this measure is particularly useful to clinicians and researchers in order to understand how the recollection of peer relationships can affect the development of self-identity and the quality of current and future interpersonal relationships. The use of this specific measure is therefore particularly relevant given the salience that peer relationships have in this developmental stage and its enduring effects.

The current study needs to be analysed taking into consideration some limitations. Although the sample of the current study was large and comprised male and female adolescents presenting an ample age range, this sample can not be considered to be representative sample of this population. Thus, future studies should examine the structure and psychometric properties of the scale in other samples. Further examination could also be conducted in clinical samples (e.g., externalizing disorders) and in adolescents with psychosocial difficulties (e.g., low income, violent backgrounds), which could inform future research and intervention approaches in these areas. As the current study was conducted in the Portuguese population, future studies should also analyse the scale in different adolescent populations and languages (e.g., English). Moreover, although retrospective recall data has been found to be relatively reliable and stable, current emotional state may impact the recollection and current perceptions of the quality of interpersonal relationships (Brewin, Andrews, & Gotlib, 1993), and thus future studies should further validate the current findings by using other sources (e.g., parents, teachers, peers) and assessment methodologies (e.g., behavioural observation, interviews).

Nonetheless, the current study presents the development of a new measure for adolescents that targets the perception of the quality of peer relationships, with potential applicability for research and intervention purposes.

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**Table 1**

EMWSS<sub>peers-A</sub>'s factor items' means (*M*), standard deviations (*SD*), factor loadings, communalities (*h*<sup>2</sup>), Cronbach's alpha if item deleted, standardized regression weights (*SRW*), squared multiple correlations (*SMC*) for 21-item version of the EMWSS<sub>Peers-A</sub>; standardized regression weights, squared multiple correlations and Cronbach's alpha if item deleted for 12-item version of the EMWSS<sub>Peers-A</sub>.

Items	<i>M</i> ( <i>SD</i> )	PCA-21 ( <i>N</i> = 230)			CFA-21 ( <i>N</i> = 354)		CFA-12 ( <i>N</i> = 354)		
		Factor loading	<i>h</i> <sup>2</sup>	<i>α</i> if deleted	<i>SRW</i>	<i>SMC</i>	<i>SRW</i>	<i>SMC</i>	<i>α</i> if deleted
<b>1. I felt secure and safe with my group of friends.</b>	<b>3.18</b> <b>(0.92)</b>	.73	.54	.97	.72	.52	.73	.53	.92
<b>2. I felt my friends appreciated the way I was.</b>	<b>3.11</b> <b>(0.88)</b>	.71	.51	.97	.72	.52	.73	.54	.92
3. I felt understood by my group of friends.	2.97 (0.83)	.72	.52	.97	.69	.48	-	-	-
4. I felt a sense of warmth with my group of friends.	3.17 (0.81)	.77	.59	.97	.75	.56	-	-	-
<b>5. I felt comfortable sharing my feelings and thoughts with my friends.</b>	<b>2.67</b> <b>(1.06)</b>	.63	.39	.97	.69	.48	.66	.44	.93
<b>6. I felt my friends enjoyed my company.</b>	<b>3.19</b> <b>(0.77)</b>	.81	.66	.97	.80	.53	.80	.64	.92
7. I knew that I could count on empathy and understanding from my friends when I was unhappy.	3.17 (0.80)	.76	.58	.97	.68	.47	-	-	-
<b>8. I felt peaceful and calm when I was with my friends.</b>	<b>3.13</b> <b>(0.82)</b>	.82	.67	.97	.64	.41	.65	.42	.93
9. I felt that I was a cherished member of my group of friends.	3.00 (0.92)	.80	.65	.97	.75	.56	-	-	-
<b>10. I could easily be soothed by my friends when I was unhappy.</b>	<b>3.04</b> <b>(0.89)</b>	.75	.57	.97	.72	.51	.67	.44	.92
11. I felt loved by my friends.	2.99 (0.85)	.83	.70	.96	.84	.70	-	-	-
<b>12. I felt comfortable turning to my friends for help and advice.</b>	<b>2.98</b> <b>(0.95)</b>	.83	.68	.96	.78	.61	.74	.55	.92



<b>13. I felt part of the group of friends that I valued.</b>	<b>3.17 (0.84)</b>	<b>.81</b>	<b>.65</b>	<b>.97</b>	<b>.82</b>	<b>.67</b>	<b>.83</b>	<b>.69</b>	<b>.92</b>
<b>14. I felt loved even when my friends were upset about something I had done.-</b>	<b>2.69 (0.99)</b>	<b>.69</b>	<b>.47</b>	<b>.97</b>	<b>.69</b>	<b>.47</b>	<b>.68</b>	<b>.46</b>	<b>.93</b>
<b>15. I felt happy when I was with my friends.</b>	<b>3.34 (0.74)</b>	<b>.80</b>	<b>.63</b>	<b>.97</b>	<b>.73</b>	<b>.54</b>	<b>.74</b>	<b>.55</b>	<b>.92</b>
16. I had feelings of connectedness with my friends.	3.10 (0.89)	.80	.64	.97	.74	.54	-	-	-
17. I knew I could rely on my friends to console me when I was upset.	3.04 (0.87)	.84	.71	.96	.82	.68	-	-	-
<b>18. I felt my friends cared about me.</b>	<b>3.15 (0.86)</b>	<b>.84</b>	<b>.70</b>	<b>.96</b>	<b>.82</b>	<b>.68</b>	<b>.81</b>	<b>.66</b>	<b>.92</b>
19. I had a sense of belonging to my group of friends	3.10 (0.90)	.84	.71	.96	.82	.67	-	-	-
20. I knew that I could count on help from my friends when I was unhappy.	3.19 (0.82)	.83	.69	.96	.78	.62	-	-	-
<b>21. I felt at ease when I was with my friends.</b>	<b>3.22 (0.86)</b>	<b>.76</b>	<b>.60</b>	<b>.97</b>	<b>.63</b>	<b>.40</b>	<b>.65</b>	<b>.43</b>	<b>.93</b>

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*Note.* Items in bold were retained in the final 12-item version.

**Table 2**

Zero-order and partial correlations between the Early Memories of Warmth and Safeness Scale with Peers (EMWSS<sub>Peers</sub>-A) and other variables ( $N = 354$ ).

Measures	EMWSS <sub>Peers</sub> -A	
	Zero-order correlation	Partial correlation (controlling for EMWSS-A)
EMWSS-A	.56**	-
OAS2	-.55**	-.32**
SCS-Self-judgment	-.28**	-.11*
SCS-Self-compassion	.23**	.13*
DASS21_Depression	-.40**	-.22**
DASS21_Anxiety	-.32**	-.17**
DASS21_ Stress	-.26**	-.11*

*Note.* EMWSS-A= Early Memories of Warmth and Safeness Scale for adolescents; OAS2 = Other as Shamer (brief version); SCS = Self-Compassion Scale; DASS-21 = Depression, Anxiety and Stress Scales

\*\* $p \leq .001$ ; \*\* $p < .05$ .

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