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Title: Adolescents' perceptions of parental behavior: Psychometric properties of the short-EMBU-A in a clinical sample

Short title: Psychometric properties of S-EMBU-A

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ABSTRACT

Objectives: to evaluate the psychometric properties of the Spanish version of the short EMBU-A in a clinical context. *Methods*: The S-EMBU-A is a 22-item self-report questionnaire, based on the original 64-item EMBU-A, that assesses perceived parental rearing style in adolescents, comprising 3 subscales (Rejection, Emotional Warmth, and Overprotection). The questionnaire was administered to a clinical sample of 281 Spanish psychiatric outpatients aged 13-18. Confirmatory factor analysis (CFA) was performed, analyzing the adolescents' reports about their parents' rearing style. *Results:* CFA yielded an acceptable fit to data of the 3-factor model (CFI = 0.90; RMSEA = 0.054) and parameters were equivalent for the ratings assigned to fathers and mothers. Satisfactory internal consistency reliability was obtained for the three scales (Cronbach's alpha ≥ 0.74). The influence of gender (of adolescents and parents) and age on scale scores was inappreciable. High scores for Rejection and low scores for Emotional Warmth were related to bad relationships with parents, absence of family support, presence of rejection, harsh discipline, and lack of parental supervision. *Conclusions:* The Spanish version of S-EMBU-A can be used with psychometric guarantees to identify rearing style in psychiatric outpatients, since evidence of quality in clinical setting matches that obtained in community samples.

Key-words: confirmatory factor analysis; EMBU; measurement invariance; rearing style; test reliability; test validity.

Adolescents' perceptions of parental behavior: Psychometric properties of the short-EMBU-A in a clinical sample

In recent decades the association between dysfunctional parental rearing behavior and the development of psychopathology has been extensively studied. Research using parental style instruments has been carried out for nearly 50 years and numerous questionnaires have been developed. The *Egna Minnen Beträffande Uppfostran* (EMBU; "my memories of upbringing") is one of the most widely applied self-report questionnaires to assess perceived parental rearing behaviors. It was originally created to evaluate the memories of adults during their upbringing [1], has been adapted in a wide number of countries, including Spain [2], and has demonstrated adequate cross-cultural validity and reliability [3]. It comprises 64-scaled items, which are scored for fathers and mothers separately. Three factors have been retrieved across all cultures: Rejection (i.e. criticizing and strict parental behavior), Emotional Warmth (i.e. loving and supporting parental behavior), and Overprotection (i.e. overcontrolling and interfering behavior), whereas the Favoring Subjects scale (i.e. more favorable treatment towards the index child than towards other siblings) has been shown to be specific for some countries.

Given the length of the original 64-item questionnaire [3], the need for an abbreviated form led to the development of a short 22-scaled item version (plus one unscaled item) in several languages (S-EMBU; [4]), which has been also adapted to the Spanish population [5]. Taking as a starting point the original version, two criteria were used for selecting the 23 items for the short form: content (sampling different elements from each specific construct) and empirical factor loadings and internal consistency reliability (being invariant across countries).

In addition, the need to assess the perception of present, rather than recalled parental

rearing, has led to the modification of the adult memories' version of the EMBU, creating

Spanish versions for use with adolescents (EMBU-A; [6]), children (EMBU-C; [7]) and

parents (EMBU-P; [8]). Using only information on parents is insufficient, given that

perception of rearing behavior might be more important than actual rearing behavior. To cite

Bögels et al [9; p. 1585] "To illustrate, if children perceive their parents as critical or as not

granting their autonomy, this might have more impact on children's psychological

functioning than actual parental behavior". In addition, parents, especially mothers, tend to

give a more favorable impression of their own rearing than children do about their parent's

rearing [9]. Moreover, several studies have underscored the importance of including child

reports in psychological assessment, because children's perceptions of parenting may

influence their psychosocial adjustment [10]. Therefore, the availability of such versions is

important for assessing current perceptions of parenting of children and adolescents while

living at home.

Focusing on the adolescent version (EMBU-A), Aluja et al [11], based on the initial

Spanish version developed by Castro et al [6], tested several shortened models for

adolescents, which included 36, 24, and 23 items. The latter comprised the same 23 items as

the adult memory short version adapted into different languages (22 scaled items, plus one

unscaled item; [4,5]). This proposal, which could be labeled S-EMBU-A, proved to have

satisfactory psychometric properties in a community sample and has the advantage of being a

short questionnaire that is directly comparable to the adult version. Moreover, the availability

of a valid and reliable Spanish short version may benefit not only studies conducted in Spain,

but also in Latin countries. However, unlike the child version [12], there is still a need to

empirically evaluate the psychometric properties of this short adolescent version in

disordered patients, as suggested by recommendations by the American Psychological

Association [13].

In relation to the study of the validity of the various versions of the EMBU, and specifically on internal structure, most of the previous research has been conducted with exploratory factor analysis, separately for ratings given to fathers and mothers, and then comparing the obtained solutions by using, mostly, the Tucker φ coefficient of congruence. The same applies for cross-cultural equivalence studies. When confirmatory factor analysis (CFA) has been employed [11,14-16], it has also been performed separately for both ratings. To date, factorial invariance through CFA has been only used in two previous studies with EMBU-C, across two groups with different cultural backgrounds in Holland [17] and across ratings assigned to fathers and mothers in Spain [12].

Lastly, validity studies on the relationship of EMBU with external variables have focused on demographic variables such as age or gender [2,3,7,11,12,14,17-19], and to a lesser extent on other psychological constructs such as anxiety [14], self-esteem [4,5,14], and sex role orientation or personality [4,5]. In previous research none of the scales showed an important relation with the gender of either the adolescents or parents [2,3,11,14,17-19], and age was only slightly inversely related to Emotional Warmth in children or preadolescents [7,12,17]. Anxiety and neuroticism were positively related to Rejection and Overprotection, and negatively related to Emotional Warmth, whereas the associations of the three EMBU scales with self-esteem were in the opposite direction. Emotional Warmth also correlated positively with extraversion, masculinity, and femininity [4,5,14]. However, the magnitude of all these relations was low or moderate.

Nevertheless, to our knowledge, only one study has related EMBU scores to other measures of the family environment such as involvement in children's school work, family cohesion, organization, and conflict [20]. The authors found negative correlations between Rejection and cohesion, organization and parental involvement in studies, and positive correlations with conflict, while the associations of these measures with Emotional Warmth

scores were in the opposite direction. In the same line, we find it interesting to provide empirical evidence relating S-EMBU-A to family adjustment variables involving problematic management practices such as lack of supervision, harsh discipline, and unsatisfactory family environment, as in a previous study with the child version [12].

Due to the above mentioned limitations, the aim of this study is to evaluate the psychometric properties of the Spanish version of S-EMBU-A in a clinical setting. Thus, the specific objectives are threefold: a) to test the internal structure and measurement invariance of adolescents' perceptions of their fathers and mothers on the Spanish version of the S-EMBU-A in a clinical sample by means of CFA, b) to study the internal consistency reliability of the derived scale scores, and c) to provide validity evidence in relation to the external variables of gender, age, and family adjustment.

Method

Participants

The total sample comprised 281 psychiatric outpatient adolescents, 133 males and 148 females, recruited from two Primary Public Mental Health Care Centers in Barcelona (Spain), between January 1998 and May 2005. Participants were representative of the population that uses mental health services, in terms of age, gender, and socioeconomic status. Age of adolescents ranged from 13 to 18 years ($M = 15.2$ years; $SD = 1.4$). Socioeconomic status, which was based on the parents' educational level and occupation according to Hollingshead's index [21], was: 11.5% high and medium-high, 58.9% medium and medium-low, and 29.6% low. The vast majority were Caucasian. The inclusion criterion was suffering from a psychopathological disease diagnosed according to *DSM-IV* [22], established with the Spanish adaptation of the DICA-IV (*Structured Diagnostic Interview for Children and Adolescents*; [23]). All the consecutive patients that agreed to participate and whose parents

also agreed were included. The most frequent diagnoses [22,23] were: disruptive behavior

(55.6%), anxiety (52.7%), mood (45.1%), elimination disorders (enuresis and encopresis)

(24.3%), tics (11.3%), eating disorders (9.2%), and substance use (6.3%). Adolescents with

mental deficiency or pervasive developmental disorder were excluded, because of their

difficulties answering some questions. The data was part of a larger study, approved by the

Ethics Committee of our university.

Measures

Diagnostic Interview for Children and Adolescents, DICA-IV. The Spanish adolescent

version of the DICA [23] was used to establish the presence of psychiatric disorders. This is a

structured interview that covers the most-frequent diagnostic categories in children and

adolescents aged 6-18 following DSM-IV definitions [22]. Training procedures and inter-

rater reliability are described in Osa et al [24]. The diagnostic status for each disorder was

created by combining the information from parents and adolescents at the symptom level: a

concrete symptom was considered present if the parents or the child reported it. This is the

most frequent algorithm in clinical and research settings for managing data on multiple

informants, since it has been demonstrated to be the most sensitive for identifying the

presence of psychological problems [25].

Egna Minnen Beträffande Uppfostran-Adolescent version, EMBU-A. The adolescent

version of the EMBU [6] originally comprised questions about Rejection (25 items),

Emotional Warmth (18 items), Overprotection (16 items), and Favoring Subjects (5 items).

The response format of the items is a 4-point Likert-type scale (1: *No, never*; 4: *Yes, nearly*

always). Each item allows for the recoding of information separately for the father's and

mother's rearing style perceived by the adolescents. To clarify interpretation in this study, the

original item numeration has been maintained [1]. The total score for each scale is obtained

from the direct sum of the item values, with higher scores indicating more presence of the construct. The internal consistency indices (Cronbach's alpha values) were acceptable in the original study [6], ranging from 0.73 (paternal Overprotection) to 0.91 (paternal Emotional Warmth), except for the Favoring Subjects scale (α values between 0.57 and 0.63).

Schedule for Risk Factors, SRF. The child and adolescent version of the Schedule for Risk Factors is a structured interview based on Service Utilization and Risk Factors [26,27]. It provides extensive information about potential areas of risk of psychopathology for children and adolescents aged 8-18. For the present study the two sections on family management practices reported by adolescents were adapted as in Ezpeleta et al [28]: discipline (7 aspects, differentiating by parent) and adult supervision (8 common aspects for both parents). In the discipline section the adolescent is asked to say how often his/her father and his/her mother uses each of 7 forms of discipline when the youth has done something wrong or something that the parents do not like, such as talk to him/her about what he/she did wrong, send him/her to his/her room, take away entertainments, or hit him/her. The adult supervision section consists of 8 questions about the extent to which the parents monitor the behavior of the child; for example, items ask about how often the youth leaves the house without telling the parents and how often the parents know where the youth is and who he/she is with when away from home. Scores for each question range from 0 (*no, never*) to 3 (*yes, almost always*). The total scores are the sum of the respective item values, reversed when necessary, with higher scores indicating more problematic practices: harsher parental discipline and less parental monitoring. Cronbach's alpha values (and mean inter-item correlations/mean item-total correlations) for the present sample were similar to those of the original instrument [27]: 0.67 (0.21/0.38) for perception of father's discipline, 0.63 (0.18/0.34) for perception of mother's discipline and 0.65 (0.19/0.35) for perception of adult supervision.

To complete the study of convergent validity, three representative questions from the

SRF on unsatisfactory family environment also used were the presence of rejection (if the parents have ever told the adolescent that they do not love him/her; 0: *no*; 1: *yes*), the lack of family support (if there is no adult at home to attend to his/her problems or not interested; 0: *no*; 1: *yes*), and a global question about the relationship with the parents (0: *good*; 1: *middling or bad*).

Procedure

After obtaining informed written consent from parents and oral consent from adolescents, trained interviewers (doctoral fellows and experienced clinicians) conducted the assessment, by means of DICA-IV and SRF interviews with adolescents. Later, the adolescents answered the EMBU-A individually. They had the chance to clear up any doubts with the members of the research team who administered the questionnaire, regarding instructions to respond to or content of the items.

Statistical analyses

Firstly, the percentage of item-endorsement was examined to detect highly skewed items (negative response by more than 95% or less than 5% of the participants; [29]).

Next, CFA was conducted with AMOS 16 [30], using Full Information Maximum Likelihood (FIML) method of estimation [31,32]. Covariance matrix was analyzed, considering the adolescents' perceptions about fathers and mothers as repeated measures. First, the 3-factor and 22-scaled-item model (obviating the non-scaled item of the 23-item model; [5,11]) was tested. It was hypothesized that 7 items would load on the factor Rejection, 6 items on the factor Emotional Warmth and 9 items on the factor Overprotection. The same configuration was defined for both groups of responses. Factors were allowed to be correlated and error covariances of analogous items were freely estimated [33]. In addition,

the 1-factor model was also tested as a plausible rival model [34]. Second, factorial invariance across the two groups of adolescents' reports (on fathers and mothers) was tested fixing factor loadings (step 1) and next factor covariances (step 2) to be equal across both groups of responses [35]. Goodness-of-fit was assessed with the common fit indices [36]: chi-square, Tucker and Lewis index (TLI), comparative fit index (CFI), and root mean squared error of approximation (RMSEA). We adopted the following thresholds: RMSEA < 0.05 and TLI and CFI > 0.95 are indicative of good fit, whereas RMSEA < 0.08 and TLI and CFI > 0.90 represent reasonable fit [37,38].

We decided to use CFA, instead of a more data-driven approach such as exploratory factor analysis (EFA) or principal component analysis (PCA), because prior empirical and theoretical knowledge provided us with the necessary information to pre-specify all aspects of the CFA model, whereas exploratory techniques such as EFA or PCA are typically used earlier in the process of scale development and construct validation [39].

The other statistical analyses were carried out with SPSS 15 [40]. The internal consistency of the resulting scales was determined with Cronbach's alpha coefficient, with listwise deletion. Due to the low percentage of missing data (5.5%), scale scores were calculated if more than half of the corresponding scale item values were available [31]. A mixed 2 × 2 × 2 ANOVA of each of the three scale scores of the S-EMBU-A was performed to analyze the interaction effect of adolescent's gender, age, and parental gender, the last considered as a repeated measures factor, analogously to other studies with EMBU [17,19]. Pearson's correlation coefficients between S-EMBU-A scale scores were calculated in order to compare our results with those yielded by previous research [3,5,11,14,18]. In addition, correlations between analogous scale scores of the 64-item version (EMBU-A) and the 22-item version (S-EMBU-A) were calculated to asses the equivalence between both versions.

Finally, depending on the measurement scale, Pearson's or point-biserial correlation

coefficients also valued the relation between scores of S-EMBU-A and the measures of SRF.

Results

With respect to the endorsement criterion [29], only one item about Emotional Warmth (item

2: "Your parents not only tell you that they love you but they also hug and kiss you") did not

reach the usual threshold (3.3% of negative responses in mother's ratings). Nevertheless, it

was maintained, in line with previous studies that only removed an item when the

recommended item endorsement was not achieved for both ratings, on fathers and mothers

[3,18]. The influence of the skewed item on the factor solution was checked by omitting it

from the analysis. The solution of the remaining items did not differ importantly from that

with the skewed item included (no change in general structure), therefore the influence of the

skewed item on the factor solution may be considered marginal. Mean (and standard

deviation) values ranged from 1.29 to 2.94 (0.67 to 1.11) for the ratings assigned to fathers

and 1.29 to 3.20 (0.63 to 1.11) for the ratings assigned to mothers. Median (in absolute value)

of skewness was 1.1 and 1.0 (ratings given to fathers and mothers, respectively) and median

of kurtosis was 1.6 for both ratings. In any case, ML estimation method performs quite well

with mild non-normal data [32,41] and sample size [42] like ours.

Internal structure

The goodness-of-fit indices of the 3-factor model were satisfactory: $\chi^2(865) = 1591.2$; TLI =

0.88; CFI = 0.90; RMSEA = 0.055 (90% CI [0.051; 0.059]), and better than those of the 1-

factor competing model: $\chi^2(881) = 2515.3$; TLI = 0.74; CFI = 0.77; RMSEA = 0.081 (90%

CI [0.078; 0.085]). All of the item loadings of the 3-factor model were statistically significant

($p < .001$) and most of them exceeded the 0.30 value on their factor with few exceptions

(items 16 and 25) (data is available from the authors).

This unconstrained 3-factor model was established as the baseline model for the invariance procedure (data of the complete sequence is available from the authors). Such restrictions (factor loadings and factor covariances) did not lead to a significantly worse fit and the model was fully invariant across the ratings given to fathers and mothers. Goodness-of-fit indices of the final (fully constrained) model were: $\chi^2(890) = 1629.4$; TLI = 0.89; CFI = 0.90; RMSEA = 0.054 (90% CI [0.050; 0.059]). All factor loadings and factor covariances were statistically significant ($p < .001$) and equivalent across the ratings assigned to fathers and mothers. Figure 1 presents standardized factor loadings and standardized factor covariances within each group of responses. Factor correlations between adolescents' perceptions of their fathers and mothers for analogous factor pairs ranged from 0.57 (Rejection) to 0.67 (Emotional Warmth). Factor correlations between non-analogous factor pairs were lower (−0.26 to 0.42).

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Correlation coefficients between direct scale scores were negative between Rejection and Emotional Warmth (−0.46 fathers and −0.41 mothers), positive between Rejection and Overprotection (0.50 fathers and 0.48 mothers), and negative but considerably smaller between Emotional Warmth and Overprotection (−0.16 fathers and −0.20 mothers).

Direct scale scores of the 22-item short version (S-EMBU-A) were highly correlated with the corresponding direct scale scores of the 64-item original version (EMBU-A) (r between 0.90 and 0.95; $p < .001$).

Internal consistency reliability and homogeneity

Cronbach's alpha values and mean inter-item correlations (in brackets) for each scale of the ratings awarded to fathers and mothers were, respectively: 0.83 (0.41) and 0.77 (0.34) for

Rejection, 0.83 (0.44) and 0.80 (0.40) for Emotional Warmth, and 0.74 (0.24) for

Overprotection (both ratings). Alpha comparison tests [43] showed no statistical differences

across groups, except for the Rejection scale ($p = .009$), reports on fathers being more

consistent. Standard error of measurement (Table 1) ranged from 1.6 (paternal Rejection) to

2.5 (maternal Overprotection).

Relation to gender and age

Means and standard deviation of the S-EMBU-A direct scores are presented in Table 1. The 2

(gender of adolescent) × 2 (age: 13-15 and 16-18 years) × 2 (gender of parents) ANOVA did

not reveal any statistically significant interaction or any main effect of gender of adolescent

for any of the three scales. Mothers were viewed as providing significantly more Emotional

Warmth ($p < .001$; 95% CI [0.9; 1.7]) and Overprotection ($p < .001$; 95% CI [0.8; 1.9]) than

fathers. A significant effect of adolescent age emerged for Overprotection: adolescents aged

16-18 perceived their parents as more overprotective than the group of 13-15 year olds did (p
$= .014$; 95% CI [0.3; 2.7]).

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Relation to family adjustment

Table 2 presents the correlation coefficients between S-EMBU-A scale scores and the SRF

measures reported by the adolescents. Rejection scores correlated positively and highly with

harsh discipline ($r \geq 0.53$) and bad relationships with parents ($r_{pb} \geq 0.38$), and correlated

positively but moderately with the presence of rejection ($r_{pb} \geq 0.22$), lack of parental

supervision ($r \geq 0.19$), and lack of family support ($r_{pb} \geq 0.18$). Emotional Warmth scores also

correlated negatively and highly with bad relationships with parents ($r_{pb} \leq -0.39$) and lack of

family support ($r_{pb} \leq -0.36$), and correlated negatively but moderately with lack of parental

supervision ($r \leq -0.28$), harsh discipline ($r \leq -0.27$), and presence of rejection ($r_{pb} \leq -0.15$).

Regarding Overprotection scores, the greatest correlation values were found with bad

relationships with parents ($r_{pb} = 0.31$) and harsh discipline ($r \geq 0.30$), whilst the remaining

values were lower: lack of family support ($r_{pb} \geq 0.18$), lack of parental supervision ($r \geq 0.14$),

and presence of rejection ($r_{pb} \geq 0.07$).

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Discussion

This study examined the psychometric properties of the short EMBU-A, which is a

questionnaire measuring adolescents' perceptions of parental rearing practices. The S-

EMBU-A presented an adequate 3-factor structure (Rejection, Emotional Warmth, and

Overprotection) in psychiatric settings, when evaluating the short adult form developed by

Arrindell et al [4] in disordered adolescents. All the items showed significant factor loadings,

which were equivalent across the ratings given by the adolescents for both parents. Our

results in a clinical sample support the proposal made by Aluja et al [11] to use the same

short adult form in adolescent samples. Moreover, goodness-of-fit indices in our sample were

even better than those obtained in a community sample [11].

Our results on the pattern of correlations between scales are consistent with previous

studies in adolescents [11,14,18] and adults [2-5]. Specifically, the relation between

Emotional Warmth and Overprotection was negative and below 0.20 (in absolute value),

which is aligned with null or low-negative correlations obtained by the authors mentioned.

Specifically, we found low negative but statistically significant values in Spanish adolescents,

like Aluja et al [11]. In such a difficult stage as is adolescence, young men and women can

perceive over-involvement, intrusiveness, strictness, and demands of obedience as lack of

affection (Emotional Warmth), whereas in young children control attempts (Overprotection)

by parents are related to a higher rather than a lower level of affection and interest [7], and in adults both concepts appear to be rather independent. Moreover, as expected, Rejection correlated highly and positively with Overprotection and negatively with Emotional Warmth. Therefore, it can be assumed that in disordered adolescents, the S-EMBU-A maintains the same structure as in community samples.

Internal consistency was satisfactory, regarding the length of each scale. Mean inter-item correlation and Cronbach's alpha values of Overprotection were lower, as in all test validation studies in adults, adolescents, or children [2-8,11,12,14-20] but above the minimum acceptable level [44].

In relation to the mean scores, the ratings given to fathers were slightly smaller than those assigned to mothers for Emotional Warmth and Overprotection. However, taking into account the magnitude of the differences found (average from 1.3 to 1.5 points), which were below the standard error of measurement, we consider that the influence of the gender of the adolescents and the parents on all scales is negligible, as in previous studies with adolescents or adults [2,3,11,14,17-19].

The magnitude of most of the correlations between the S-EMBU-A and the SRF was moderate but significant, as with the child version in disordered children [12]. Thus, S-EMBU-A scale scores showed an acceptable convergent validity in the sample analyzed, since Rejection and Emotional Warmth scores correlated with other indicators such as bad or middling relationship with parents, presence of rejection, lack of family support, harsh discipline, and lack of supervision in the expected direction. Overprotection was mainly directly associated with bad or middling relationship with parents and harsh discipline too. In this developmental period adolescents are striving toward autonomy, and elements of strictness and obedience assessed by the Overprotection scale can be viewed as harsh discipline at home.

Because the S-EMBU-A is as reliable and valid as the EMBU-A, it can thus be recommended with confidence as a functional equivalent to the early 64-item version when the clinical and/or research context does not adequately permit the application of the original longer measure or an extensive interview. Therefore, the S-EMBU-A is a short easy-to-use instrument that can be useful for identifying families at risk, and thus complements the child version (EMBU-C; [12], also evaluated in a clinical sample.

The greatest strength of the present study is the use of a structural equation modeling approach to compare the factor structure simultaneously for adolescents' ratings assigned to both parents. Moreover, to the best of our knowledge, this is one of the first studies to provide evidence of the relation between EMBU scores and family adjustment indicators collected through a structured clinical interview conducted by experts.

With the availability of a same 22-item version for adolescents and adults, longitudinal studies on parental rearing perceptions can be conducted with direct comparisons across different age groups. In addition, children's and adolescents' reports are known to have poor concordance with parents in many areas of psychological assessment [45]. Therefore, in both clinical and research applications, it would be appropriate to consider multiple informants, reporting reliable and valid data [46]. Specifically, evaluation of rearing style should focus on the home context and may include both self and other perspectives. In this scenario, the development of a shortened parent version of the EMBU-P [8] would also lead to directly comparable versions of both sources of information, from the actual adolescent with S-EMBU-A, and from their parents.

Conclusion

This study was the first to undertake a thorough examination of the equivalence of the factor structure of S-EMBU-A using CFA in Spanish adolescents. Although the use of a non-

random sample, the results presented in this paper demonstrate the validity and reliability of the S-EMBU-A in the Spanish clinical population. In future research of the S-EMBU-A we propose the incorporation of more information on adolescents' psychopathological problems and adjustment, in order to obtain evidence of the predictive validity of the test, in terms of appearance and maintenance of specific mental disorders.

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Table 1: Mean, standard deviation (*SD*), and standard error of measurement (*SEM*) for each S-EMBU-A scale score with respect to gender and age

S-EMBU-A scale (minimum÷maximum)	Gender of adolescent	Age (years)	father Mean (*SD*)	*n*	*SEM*	mother Mean (*SD*)	*n*	*SEM*
Rejection (7÷28)	Males	13-15	9.70 (3.63)	94		9.63 (3.53)	100	
		16-18	10.24 (3.14)	29		9.59 (3.48)	29	
	Females	13-15	9.78 (3.82)	88		9.87 (3.09)	93	
		16-18	10.82 (4.48)	50		10.34 (3.56)	53	
	Total		10.00 (3.82)	261	1.60	9.84 (3.38)	275	1.62
Emotional Warmth (6÷24)	Males	13-15	16.22 (4.53)	97		17.12 (4.00)	101	
		16-18	14.47 (4.94)	30		16.33 (4.23)	30	
	Females	13-15	15.10 (4.94)	88		16.44 (4.42)	93	
		16-18	15.22 (4.67)	50		16.72 (4.21)	53	
	Total		15.46 (4.75)	265	1.98	16.73 (4.20)	277	1.88
Overprotection (9÷36)	Males	13-15	17.11 (3.90)	95		18.54 (4.65)	101	
		16-18	18.34 (4.55)	29		20.00 (5.15)	29	
	Females	13-15	17.83 (4.91)	87		19.26 (4.66)	93	
		16-18	19.52 (6.05)	50		21.06 (5.03)	53	
	Total		17.95 (4.83)	261	2.48	19.42 (4.84)	276	2.46

Table 2: Correlation coefficients between the S-EMBU-A scale scores and the SRF measures provided by the adolescents

| | S-EMBU-A scale | | | | | |
| | Rejection | | Emotional Warmth | | Overprotection | |
SRF measure	father	mother	father	mother	father	mother
Bad/middling relationship	.41**	.38**	−.46**	−.39**	.31**	.31**
Presence of rejection	.31**	.22**	−.18**	−.15*	.16*	.07
Lack of support	.18**	.27**	−.36**	−.40**	.12	.10
Harsh discipline	.58**	.53**	−.27**	−.30**	.41**	.30**
Lack of supervision	.22**	.19**	−.34**	−.28**	.09	.14*

Figure 1: Standardized factor loadings and factor correlations for ratings given to fathers (left) and mothers (right). Error variances and covariances are omitted. Item No. 69 was recoded prior to analysis.

.36 .35	R16	Like siblings more
.63 .64	R23	Corporal punishment
.63 .61	R33	Scapegoat
.63 .67	R59	Criticism
.73 .74	R64	Punish
.76 .71	R71	Induce feelings of shame
.57 .57	R76	Bitter or angry
.74 .73	E2	Cuddle
.76 .75	E21	Comfort
.54 .48	E47	Encouragement
.58 .53	E48	Praise
.78 .77	E74	Attachment and tenderness
.63 .64	E78	Proud when successful
.54 .58	O1	Interfere
.47 .44	O14	Influence dressing
.54 .58	O18	Forbid
.23 .24	O25	Guilt engendering
.57 .57	O46	Account to parents
.47 .49	O66	Worry
.38 .40	O69	No freedom allowed
.54 .57	O70	Put definite limits
.51 .50	O73	Anxiety exaggerated

Factors: Rejection, Emotional Warmth, Overprotection

Correlations: −.47 −.53 (Rejection – Emotional Warmth), .65 .64 (Rejection – Overprotection), −.26 −.28 (Emotional Warmth – Overprotection)