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Measuring parental and family efficacy beliefs of adolescents' parents: Cross-cultural comparisons in Italy and Portugal.

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Abstract

The goal of the present study was to examine the psychometric properties of the Perceived Parental Self-Efficacy (PPSE) and Perceived Family Collective Efficacy (PFCE) revised scales in the Portuguese and Italian contexts. To this aim two studies were conducted: the first reported the exploratory and confirmatory factor analyses with Portuguese samples while the second addressed the cross-cultural invariance of PPSE and PFCE (Portugal and Italy). Results of the first study showed the appropriate fit of the unifactorial model of both scales to Portuguese data. The invariance analyses performed in the second study attested to the PPSE and PFCE's configural, metric and scalar invariance in both countries. The correlations of PPSE and PFCE with communication, management of conflict and children's school achievement further attested to their construct and practical validity. Thus, PPSE and PFCE proved to be suitable to further use in research and psychological assessment fields.

Keywords: Parental Self-Efficacy, Family Collective Efficacy, Psychometric Properties and Cross-cultural Invariance.

Introduction

Among the mechanisms of human agency, research has extensively attested to the crucial role that self-efficacy exerts on individuals' development and functioning in multiple life contexts – familial, academic and professional (Caprara, Scabini, & Regalia, 2006). Over the years the conceptualizations and research tended to confine human agency to the personal agency exerted individually, nevertheless the triadic causal structure, posited by the social cognitive framework, put forward the interdependency between behavior, personal factors and social structures (Bandura, 1999). Within this framework, the sense of individual efficacy is shaped not only by intrapersonal mechanisms (cognitive, affective and social) but also by shared beliefs, interactions and joint actions with others (Caprara, Regalia, Scabini, Barbaranelli, & Bandura, 2004). Individuals' motivations and endeavors – how they set goals and engage in the actions to achieve them – are influenced, directly and indirectly, by perceived efficacy both at the individual and collective levels.

Bandura (1997) theorized that although personal and collective efficacy beliefs correspond to different units of human agency, their sources, the functions they respond to and the processes they activate are quite similar. While perceived self-efficacy beliefs refer to people's judgments about their capabilities to exert control over the events that affect their lives in given domains of action, perceived collective efficacy refers to people's beliefs about a group's aggregated capabilities to perform a course of actions needed to achieve the desired outcomes (Bandura, 1997, 1999; Fernández-Ballesteros, Díez-Nicolás, Caprara, Barbaranelli, & Bandura, 2002). Collective efficacy beliefs are rooted on self-efficacy, but they are not simply the sum of the self-efficacy perceptions. The focus of collective efficacy beliefs is in the operative capabilities and dynamics of the group to

perform concerted actions. Similarly to the self-efficacy beliefs system, people's beliefs about their group's collective efficacy, interfere with the set of options regarding the type of future they seek to achieve, the resources and strategies adopted and the consequent inclusion of those in a plan of action, and the amount of effort they put in the group endeavors (Bandura, 1997).

In accordance to these assumptions, individual and collective perceived beliefs are interdependent and complementary, thus fundamental to understand individuals' social development and functioning. Recognizing the relevance of collective agency to account for human agency in various social contexts, some research has addressed self-efficacy and collective efficacy beliefs simultaneously (Bandura, 1999; Fernández-Ballesteros et al., 2002; Pina-Neves, Faria, & Rätty, 2013), but within the family the studies of these constructs are very scarce (Bandura, Caprara, Barbaranelli, Regalia, & Scabini, 2011).

The family is likely a context *par excellence* in which one can examine how personal and collective efficacy beliefs develop and operate in concert. This is due to the fact that the self-efficacy and collective efficacy beliefs of the family members influence each other and impact on personal development, well-being and successful functioning (Bandura, 2006; Caprara, et al., 2006). Among the different forms of human agency that are expressed within the family system, the present study examines parents' perceptions about their personal efficacy and the collective efficacy of the family. The parental self-efficacy core of beliefs is focused on the dyadic relationship (parent-children) while the family collective efficacy system seeks to apprehend each member's perceptions about the capabilities of the family as whole. According to Caprara et al. (2006), the family members' individual efficacy (e.g., parental, marital) may be insufficient to completely ensure the fully exercise

of each role and the pursuit of established goals, because these core of beliefs are not fully independent of the other family members' feelings, expectations and motivations.

A considerable amount of research has regarded the influence that parents' efficacy beliefs exert on the socio-emotional, cognitive and academic areas of the adolescents' development. Hence, directly and indirectly, parental efficacy beliefs have been associated with adolescents' achievement at school, self-regulatory efficacy beliefs, educational aspirations, self-esteem, socio-emotional state and psychosocial adjustment (Bandura, Barbaranelli, Caprara, & Pastorelli, 1996; Shumow & Lomax, 2002; Steca, Bassi, Caprara, & Fave, 2011).

As a whole system, the family should stand as the ideal environment in which the different capacities to communicate openly with one another, to put the common effort towards desired goals and to support each other in dealing with difficulties, converge into joint attainments in the service of collective development and one another's development and well-being. Findings from longitudinal research have corroborated the interrelated pathways of influence of individual and collective efficacy and showed their impact on relevant dimensions of family functioning such as open communication, parental monitoring and family satisfaction (Bandura et al., 2011; Caprara et al., 2006).

Perceived Parental Self-Efficacy and Perceived Family Collective Efficacy Scales

In parallel with the lack of studies, there is also a lack of valid instruments to assess the intrinsic complexity of the different family members' roles as well as that of whole family system and analyze the extent of its influence on the different domains of individual and family functioning. To this aim Caprara and his collaborators (Caprara et al., 2004) developed and validated a set of instruments among which perceived parental self-efficacy

(PPSE) and perceived family collective efficacy (PFCE) were designed to assess the self and collective efficacy beliefs respectively of parents and of all family members.

Parental efficacy beliefs rest upon parents' perceived capacity to balance affect and control monitoring in order to promote, monitor and support their children's development. Family collective efficacy beliefs refer to the shared perception of all family members that their family is capable to functioning as a system in sharing responsibilities and accomplishing multiple tasks to achieve common goals (Bandura et al., 2011; Caprara et al., 2006).

The validity of these scales was first studied in the Italian context through exploratory factor analysis (EFA), and correlations with family satisfaction, open communication and monitoring confirmed their construct validity (Caprara et al., 2004). A unidimensional structure was found for both scales (with 61% and 58% of total variance explained for fathers and mothers, respectively), and overall they held adequate internal consistency and construct and predictive validity. These structures were tested together through confirmatory factor analyses (CFA) and results supported the conceptual fit; i.e., the scales were interrelated but were not traceable to the same latent construct. However, the fit indices were not fully adequate to the empirical data (eg., $NNFI_{\text{fathers}} = .83$; $NNFI_{\text{mothers}} = .81$) and demonstrated some vulnerability of these scales, which opened the path to new research in this domain.

Pepe, Sobral, Gómez-Fraguela and Villar-Torres (2008) also adapted PFCE with Spanish adolescents. Similarly to the Italian context, EFA evidenced a unidimensional structure, although its explanatory power was low (40,9%). The corrected item-test correlations, another indicator used by these authors, globally displayed moderate values,

demonstrating the consistency of the structure. The construct validity was also corroborated by moderate correlations with coping dimensions, parental bonding and the use of drugs.

Similar psychometric results were found in the Portuguese adaptation of PPSE and PFCE (Costa & Faria, 2012). In EFA, besides the reasonable loadings, some items proved to be critical in the global factor structures and the variance explained was slightly low (44% and 56% for PPSE and PFCE, respectively). The CFA approached the results of the Italian validation, but failed to achieve sufficient goodness of fit (e.g. NNFI = .86), which stressed the need to the instruments' refinement.

Thus, the above limitations encouraged a revision of both PPSE and PFCE and further validation of the revised versions in Italy and Portugal. To this aim the present article reports two studies. The first study is specifically focused on the PPSE and PFCE scales' revision through the exploratory and confirmatory factor analyses. The second study addresses the extent to which the two measures can equally serve in Italy and Portugal as proper measures of family functioning.

Because of the growing globalization and interconnectedness between countries, the sources of self-efficacy beliefs, the processes and its expression tend to be similar across countries (Bandura, 2002). Integrated in the Southern culture of Europe, Portugal and Italy are quite proximal in their economics, educational and social structures. Both countries share similar values regarding family functions in society and show similar patterns of relations and obligations among the various family members. Yet one can't underestimate the diversity between the cultures of the two countries due to the later democratization and economic development of Portugal in comparison to Italy (Pepi, Faria, & Alesi, 2006). Considering this, we expected very similar factorial structural models when comparing both

countries and retained that despite the similarities among the cultures, this could represent a contribution to the cross-cultural validation and generalizability of the scales.

The construct validity was examined through correlations with external variables, such as dimensions of students' school achievement, children internalizing and externalizing problems, styles of communication and parents' conflict with children. Considering the existing research in this field, we expected positive correlations of both PPSE and PFCE with communication and compromise style of conflict and negative correlations with children internalizing and externalizing problems, closed communication and aggressive style of conflict (Bandura et al. 2011; Caprara et al., 2004, 2006). Moreover, we expected a positive correlation of PPSE with children's academic achievement (Bandura et al. 1996; Shumow & Lomax, 2002).

Study 1: Exploratory and Confirmatory Factor Analyses

Method

Participants

Sample 1, used in EFA, constituted 225 parents of Portuguese adolescents (176 mothers and 49 fathers), aged between 33 and 64 years ($M=44.5$; $SD\pm 5.00$). Most of them belonged to medium sociocultural (29%) and medium professional (30%) levels. Eighty-one percent were married and lived within a nuclear family (73%) with one or two children (28% and 54%, respectively). Sample 2, used in CFA was composed of 671 Portuguese parents, the majority of whom were mothers ($N=506$). Their age ranged between 33 and 62 years ($M=46.2$; $SD\pm 5.23$). Most of them were married (81%) and lived within a nuclear family (75%) with one or two children (27% and 53%, respectively). The medium-high sociocultural (31%) and the medium-high professional (34%) levels were the most

represented in this sample.

Procedure

The participants were recruited from 10 secondary schools in Porto, Portugal. In parents' meetings, participants were given information about the study's purpose, and the majority of them consented to answer the questionnaires.

Instruments

The English versions of the PPSE and PFCE scales were used as a starting point in the translation process. First, two investigators translated the English versions of both instruments to Portuguese. To confirm if the Portuguese translations were reliable, an expert translated them back to English. Afterward, two judges (both fluent in English and Portuguese) evaluated and compared the retroversion with the original English versions and confirmed their accuracy.

Perceived Parental Self-Efficacy Scale (PPSE). The original version includes 12 items assessing parents beliefs about their abilities (1) to hold open communication with their children, (2) to stimulate their children to develop self-resilience and manage new challenges, (3) to accomplish agreement regarding personal responsibilities, (4) to deal firmly with infractions of rules and commitments, (5) to prevent disagreements from extending to conflicts, and (6) to create quality and enjoyable activities with their children (Caprara et al., 2006). Participants were asked to express their perceived self-efficacy using a scale that ranged from 1 (*Incapable*) to 6 (*Completely capable*). Cronbach's alpha was .88.

Perceived Family Collective Efficacy Scale (PFCE). This scale includes 20 items that measure the perceptions of family's abilities (1) to manage everyday practices, (2) to

make decisions and planning through unanimity, (3) to cope with adversities and face them together, (4) to assume reciprocal duties and responsibilities, (5) to provide emotional support in difficult times, (6) to set aside different obligations and interests to stay with each other, (7) to spend quality moments together, and (8) to interact and participate actively in the community at large (Bandura et al., 2011; Caprara et al., 2004). To express their perceived family efficacy beliefs, participants used the same 6-point answering scale (ranging from 1 = *Incapable*, to 6 = *Completely capable*). *Cronbach's alpha* was .96.

Overview of the statistical analyses

To examine the dimensionality of PPSE and PFCE, EFA was carried out on Sample 1, using principal axis factoring as an extraction method, and direct *oblimin* as a rotation method. We chose an oblique rotation method since we expected the factors to be correlated and not orthogonal. The number of factors to retain was determined according to the Velicer's MAP criterion (Velicer, 1976), parallel analysis (Horn, 1965), and the very simple structure criterion (VSS; Revelle & Rocklin, 1979), using the R package (Psych; Revelle, 2015). While the MAP focuses on the percentages of systematic and unsystematic variance remaining in a correlation matrix after extractions of increasing numbers of components (see O'Connor, 2000), parallel analysis, compares the scree of factors of the observed data with that of a random data matrix of the same size as the original. Finally the VSS criterion suggests the optimal, defined as the most interpretable number of factors (Revelle, 2015). We focused on these criteria, because there is an increasing consensus that MAP, parallel analysis, and VSS are superior to other procedures for selecting the best number of factors to retain (O'Connor, 2000; Revelle, 2015). Items' loadings (acceptable equal to .35), communalities, and inter-item correlations were used to select the best items

to maintain in subsequent confirmative analyses.

Confirmatory factor analysis (CFA) was then performed on Sample 2, using the selected pool of items from PPSE and PFCE to check the stability of the reduced version of the instrument obtained from the EFA performed on Sample 1. All CFA models were estimated via *maximum likelihood* (ML) using the software *AMOS* (v. 19, SPSS Inc, Chicago, IL.). For the evaluation of covariance structure models, we used the χ^2 Goodness of Fit supplemented by the Non Normative Fit Index (NNFI), Comparative Fit Index (CFI), the Standardized Root Mean Square Residual (SRMR) and the Root Mean Square Error of Approximation (RMSEA). We accepted values for both NNFI and CFI equals or greater than .95, and lower or equal to .08 for the SRMR and the RSMEA (Byrne, 2010).

Results

Exploratory Factor Analysis

We performed an EFA on the 31 selected items, using data from Sample 1. Six factors had eigenvalues higher than 1 (the first ten eigenvalues were 13.68, 2.33, 1.41, 1.26, 1.16, 1.02, 0.90, 0.88, 0.79, 0.69), yet parallel analysis (the first ten random eigenvalues were 1.78, 1.65, 1.58, 1.51, 1.45, 1.39, 1.34, 1.29, 1.24, 1.20, 1.15), as well as the Velicer's MAP criterion (value = .02; Velicer, 1976), and the very simple structure criterion (value = .94; Revelle & Rocklin, 1979) indicated a two factor solution. The two factors explained together 75% of the common variance. The two latent constructs were correlated ($r = .70$), and clearly recognizable as PPSE and PFCE. Whereas all items loaded on the hypothesized factor¹, some of the items resulted in a negative or in a weak relation with the hypothesized latent factor. Thus, we performed an iterative sequence of factor analyses: at each step the most unsatisfactory item was dropped and the analysis was repeated, until we obtained a

final pool of 6 items for PPSE, and 7 for PFCE. Table 1 shows standardized factors' loadings, eigenvalues (estimated and random), and results from the MAP and the VSS test. Overall, all items' loadings of PPSE, except for PPSE1 and PPSE2 items, were above .70, with a mean of .68 and a standard deviation of .10. Regarding PFCE items' loadings, values were greater than those observed for PPSE, ranging between .67 and .89 with a mean of .80 and a standard deviation of .05. The observed correlation between factors was .68. To further evaluate the degree of overlap between the original version of the instrument and the reduced one, we computed the correlation between the two instruments. This correlation was .97, attesting a good degree of overlap. Alphas coefficients were good, being .84 (95% confidence interval (CI): lower = .81, higher = .87) for PPSE, and .92 (95% confidence interval (CI): lower = .91, higher = .94) for PFCE.

Confirmatory Factor Analysis

To further validate the scales structure obtained in EFA, we performed CFA in the Sample 2. A two-factor solution was specified for the reduced scales (13 items). We specified a congeneric model in which correlated errors were not allowed, but the latent factors were set free to correlate. Results revealed a very good fit of the model to our data. Although the chi-square was significant ($\chi^2 = 120.31$, $df = 62$, $p < .001$), which was easily attributable to the large sample size, all other alternative fit indices were above the often recommended cut-off values (Hu & Bentler, 1999), NNFI = .97, CFI = .98, SRMR = .03, and RMSEA = .06.

Standardized items' loadings ranged from .71 to .83 ($M = .79$, $SD = .04$) for PFCE, and from .67 to .79 ($M = .74$, $SD = .04$) for PPSE. Alpha coefficients of reliability were .88 for PPSE and .91 for PFCE. The correlation between latent factors was .82. Fixing the

correlation between PPSE and PFCE to 1, there was a significant increase of the chi-square of the model ($\Delta\chi^2(1) = 29.45, p < .001$). Thus, the constructs were not perfectly correlated and discriminant validity can be inferred.

Study 2: Invariance Analysis and Construct Validity

Participants

The Portuguese participants lived in Porto, north of Portugal, and were involved in an ongoing longitudinal study, taking place in a secondary school context. In terms of socio-demographic characteristics, the participants were representative of the average parents of adolescents attending this schooling level (Instituto Nacional de Estatística, 2009). The sample aggregated 281 parents, equally distributed by gender and aged between 32 to 70 years ($M=46.0; SD = 5.70$). Similar to the previous Portuguese samples, the majority of these participants was married (84%) and lived in a nuclear family (77%) with one or two children (27% and 54%, respectively). With regard to socioeconomic status, the most represented demographics were medium-high sociocultural (31%) and professional (37%) levels.

In the Italian context, both parents of the adolescent were included. All participants were from Genzano, a residential community near Rome, and were also involved in an ongoing longitudinal study. The socioeconomic characteristics considered for the present analyses matched that of average Italian youths of a similar age across the years in which the study was performed (Istituto Italiano di Statistica, 2002). Two hundred and eighty-seven parents participated, aged between 33 and 55 ($M=40.3; SD= 7.10$). The majority of these participants was married (73%) and lived in a nuclear family (88%) with one or two children (55% and 40%, respectively). Regarding socioeconomic status, those most

represented were medium-high sociocultural (40%) and professional (33%) levels.

Procedure

The procedure of Portuguese data collection was the same as explained in study 1. In the Italian context, children enrolled in public secondary school nearby Rome. To take part in this study, the adolescents' caretakers were first contacted by phone and invited to participate. Then, the researchers asked the other partner if he/she was willing to fill in the self-report questionnaires. The administration of the instruments took place at participants' homes and was conducted by one member of the research staff.

Instruments

Besides the reduced versions of PFCE and PPSE, Italian participants also completed the following instruments.

Child Behavior Checklist (CBCL). Developed by Achenbach (1991), this parent-report questionnaire rates various behavioral and emotional problems. It is divided into two behavioral levels: internalized (i.e., anxiety, depression, and overcontrol) and externalized (i.e., aggression, hyperactivity, noncompliance, and undercontrol) behaviors. After answering the socio-demographic questions, describing the most frequent behaviors/routines of their child, parents check the list of behaviors (e.g., "*Drinks alcohol without parents' approval*"; "*Can't concentrate, can't pay attention for long*") using a 2-point scale (ranging from 0 = *Not True (as far as you know)*, to 2 = *Very True or Often True*). *Cronbach's alpha* for the externalized scale was .89 and for the internalized scale was .85.

Aggressive Management of Conflict Between Parents and Children (AMC).

Originally developed by Honess et al. (1997), this scale measures the extent to which

parents manage conflicts between themselves and their children, adopting an aggressive or hostile attitude. Composed of six items that express behaviors that occur during disagreements about important issues in life (e.g.: When I and my child disagree: “*I shake a lot and often I scream,*” “*I get really angry and beat him*”), parents used a rating ranging from 1 = *Not at all* to 4 = *Very well*. *Cronbach’s alpha* coefficient was .81.

Parent-Adolescent Communication (PAC). Parent-Adolescent Communication was a 20-item scale designed by Barnes and Olson (1982) and divided into two dimensions: Openness and Problems. Openness is related to a free-flowing exchange of information, either factual or emotional, and also to the perception of unconstrained and understanding interactions and consequently the level of satisfaction with them. Problems, in contrast, focus on the negative aspects of communication, namely the difficulties in sharing and negative styles of interaction. Parents expressed their agreement through a 5-point scale (ranging from 1 = *Strongly agree* to 5 = *Strongly disagree*) with regard to items like: “*I always listen to him carefully*” or “*If my child were in trouble he could talk to me.*” Openness showed a *Cronbach alpha* of .87 and Problems of .77.

Overview of the statistical analyses

We chose multi-group confirmatory analysis to assess measurement invariance of PPSE and PFCE across Portugal and Italy, following the guideline devised by Byrne (2010). In more detail, first we tested the fit of the two correlated factors model in each of the samples separately. Then, we started with the invariance routine. As a first step, we fitted a configural invariance model in which factor loadings, item intercepts, and error variances were unconstrained across groups. As a second step, we tested a metric invariance by comparing the fit of a model in which factor loadings were constrained to be

equal, with the previous, unconstrained model. Then, scalar invariance was investigated by imposing equivalence constraints on the intercepts, and comparing the resulting model with the previous metric invariance model. Differences between models were tested using a chi-square difference test ($\Delta\chi^2$), well suited for comparing nested models, and the comparative fit index (ΔCFI) (Byrne, 2010; Cheung & Rensvold, 2002).

The construct validity of PPSE and PFCE was investigated by computing correlations between PPSE and PFCE scale scores with scales from the CBCL, PAC, AMC, and school achievement, available only in the Italian data.

Results

Cross-Culture Invariance

The two correlated factors model fitted the data in Portugal and in Italy well (see Table 2). Factor loadings ranged from .68 to .85 for PPSE ($M_{\text{Portugal}} = .75$; $SD = .04$; $M_{\text{Italy}} = .79$; $SD = .07$), and .71 to .89 ($M_{\text{Portugal}} = .79$; $SD = .04$; $M_{\text{Italy}} = .85$; $SD = .04$) for PFCE. Latent factors correlated .82 in both Portugal and Italy. Again, this correlation was significantly different from 1 in Portugal ($\Delta\chi^2(1) = 31.10$, $p < .001$), and in Italy ($\Delta\chi^2(1) = 34.61$, $p < .001$).

Also, in Table 2 the fit indices are summarized for the different models examined in the invariance routine. The configural invariance model (Model 1) showed a reasonable fit to the empirical data of both countries. Model 2, or the metric invariance model in which the item loadings were constrained to be equal for both groups, also resulted in a good fit and, most importantly, not significantly different from Model 1, as attested by a non-significant $\Delta\chi^2$ test, and a ΔCFI below the critical value of .01. Model 3, the scalar

invariance model, showed in turn a good data fit, and was not significantly different from Model 2 (according to $\Delta\chi^2$ and ΔCFI). Full cross-cultural invariance (i.e., configural, metric, and scalar) could be considered attained.

Construct Validity

Correlations of PPSE and PFCE with other outcomes were also performed. Both scales revealed low negative and significant ($p < .01$) correlations with internalized (PPSE = $-.18$; PFCE = $-.22$) and externalized (PPSE = $-.16$; PFCE = $-.16$) symptoms, and moderately high negative and significant correlations with measures of close communication with parents (PPSE = $-.22$; PFCE = $-.21$) and of aggressive styles of conflict (PPSE = $-.31$; PFCE = $-.33$). Strong positive correlations ($p < .01$) were found between PPSE and PFCE with measures of open communication (PPSE = $.61$; PFCE = $.56$) and compromise styles of conflict (PPSE = $.54$; PFCE = $.48$). Only PPSE revealed a low positive and significant correlation with children's academic achievement (PPSE = $.13$, $p < .05$).

Discussion

The current contribution reports two studies aimed to assess the psychometric properties of the PPSE and PFCE scales in Portugal and Italy. EFA findings of both shortened versions presented in study 1 proved to have good psychometric properties, in terms of model fit, item loadings and reliability. In study 2, findings attested to the cross-cultural measurement invariance of PPSE and PFCE in Italy and Portugal. Accordingly, in both samples the two scales shared the same factor structure, and the items behaved in the same manner for both groups. These findings substantiate the idea that the nature of self-efficacy tends to be similar across cultures as result of a growing global

interdependence (Bandura, 2002).

With regard to external validity, we found that PPSE and PFCE were negatively correlated with children internalizing and externalizing problems, aggressive style of conflict and close communication with parents. Contrarily, compromise style of conflict and open communication were negative correlates of PPSE and PFCE. Overall, these results are in line with previous studies (for example Caprara et al., 2006), and support the existence of a positive relation between parents' self and collective efficacy and adolescents' behavior and communication style. To be sure, a correlations of parental efficacy tended to be higher with the variables expressing the dynamics of the relationship parent-children and the style of communication of the dyad, whereas family collective efficacy tended to correlated more with adolescent's manifest behaviors. Of interest, in line with previous findings (Bandura, 2006), only PPSE appeared to be moderately associated with academic achievement.

From a general point of view, the findings above also provide evidence of the interdependence between individual and collective efficacy constructs. In both studies, the interrelation between factors was of considerable magnitude (although not perfect), and the correlation values of parental efficacy and family collective efficacy with the other dimensions of family functioning and adolescents' psychosocial adjustment and academic achievement were very closer. First, the interdependence seems to be in line with Bandura's reasoning about collective efficacy having its roots on self-efficacy core system (Bandura, 1997). Despite the fact that self-efficacy may have an influence on collective efficacy perceptions, which ultimately make it difficult to distinguish both constructs, this result should be read with caution and need further examination. Therefore, studies

including both constructs simultaneously and additional analyses are needed. Second, the correlations observed among parental efficacy, family collective efficacy and the criterion variables also suggest that both sources of beliefs had relevant influences in the aforementioned spheres. Moreover, as Bandura's theory (1997, 1999) states, joining together individual and collective efficacy beliefs is fundamental to attain a broad comprehension of human functioning and consequently to the design of effective interventions. In fact, to understand adolescents functioning, parents perceived efficacy about the exercise of their functions and the relationship established with their children are equally important as the beliefs they hold about the capacities of the family to act as an effective system (Bandura et al., 2011; Caprara et al., 2006). Future studies should further explore in which domains of family transactions both sources of efficacy are mostly decisive. Thus, one may suppose that self-efficacy beliefs are mostly important for parent-children relationship, where parents' closeness, surveillance and mentoring are crucial for children's school aspirations and achievement (Bandura, 1996). Likewise one may presume that collective efficacy is mostly influent in affecting family's morale, harmony, satisfaction and sense of common pride and confidence (Bandura et al., 2011).

We are quite aware of the limitations of our study, mostly associated to samples of convenience. It is also unfortunate that we could not replicate the study of construct validity in the Portuguese sample. Therefore, future research should control the samples' composition and use other measures to allow a better examination of the construct validity. In this context, it would also be useful to consider, for example, adolescents' self-reported measures. Future investigations should also be able to replicate these results and include empirical data from other cultures.

Yet we believe that the two studies complement each other in providing a novel contribution to the current literature. Indeed our findings corroborate the validity of PPSE and PFCE as proper instruments to address family efficacy beliefs across cultural contexts. This may cover a void and supply with new instruments for educational and community settings in which analysis of family dynamics and relations is in high demand. For instance, the use of these measures in educational contexts can provide a wider view of the family and the adolescents functioning, and help to best adjust the plan of intervention, whether individual or systemic, to overcome school problems, such as lack of motivation, dropout and low academic performance. Thereafter it may also be helpful to define goals and strategies to guide educators, teachers and parents to operate in concert to enhance adolescents' behavioral change, adjustment and development.

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Running Head: PARENTAL AND FAMILY EFFICACY SCALES – REVISED VERSIONS

Table 1

Mean, standard deviation and results from EFA for PPSE and PFCE scales in the Portuguese sample 1.

Items	M	SD	PFCE	PPSE	h^2
Get your son/daughter to talk to you about highly personal matters (10).	4.4	1.30	-.06	.87	.70
Talk to your son/daughter about your relationship and feelings for each other (11).	4.8	1.06	.02	.75	.58
Get your son/daughter to confide in you about his/her worries (8).	4.7	1.09	.03	.74	.57
Get your son/daughter to set realistic goals and help him/her to achieve them (12).	4.8	.96	.11	.71	.54
Help your son/daughter manage problems that he/she has with others (1).	4.7	1.03	.02	.56	.28
Support your son's/daughter's self-reliance when he/she feels unable to handle the demands (2).	4.9	.96	.09	.55	.33
Help each other to achieve their personal goals (8).	4.9	.91	.89	-.05	.74
Build respect for each other's particular interests (10).	4.8	.91	.81	-.01	.65
Support each other in times of stress (6).	5.1	.91	.80	-.03	.60
Bounce back quickly from adverse experiences (7).	4.7	.98	.79	-.06	.57
Accept each member's need for independence (19).	4.8	.88	.77	.02	.62
Get family members to carry out their responsibilities when they neglect them (11).	4.7	.96	.74	.11	.66
Build trust in each other (12).	4.9	.91	.67	.14	.59

Notes. Primary loadings are bolded. The original items number is shown in brackets; h^2 – Communality. First ten eigenvalues: 5.57, 1.39, 1.08, 0.77, 0.69, 0.61, 0.50, 0.44, 0.37, 0.26. First ten random eigenvalues: 1.41, 1.29, 1.21, 1.14, 1.07, 1.01, 0.95, 0.89, 0.84, 0.79, 0.74, 0.66. Values of the VSS and of the MPA supported a two-factor structure (being, respectively: 0.89, and .03).

Table 2

Fit indices of measurement of PPSE and PFCE scales for Portugal and Italy

Models	χ^2	<i>df</i>	NNFI	CFI	RMSEA	$\Delta\chi^2$	Δ DF	<i>p</i>	Δ CFI
Italy (n=287)	163.88	60	.96	.97	.08 (.06, .09)	-	-	-	-
Portugal (n=281)	120.31	62	.97	.98	.06 (.04, .07)	-	-	-	-
Model 1. Configural Invariance	399.54	126	.94	.95	.06 (.06, .07)	-	-	-	-
Model 2. Metric invariance	405.84	137	.95	.95	.06 (.05, .07)	6.3	9	.71	.001
Model 3. Scalar Invariance	414.15	150	.95	.95	.06 (.05, .06)	8.3	13	.82	.001

Table 3

Correlations among PPSE and PFCE scales and external variables in Italian Sample.

Italy	PPSE	PFCE
Internalizing	-.18**	-.22**
Externalizing	-.15**	-.16**
Compromise Style of Conflict	.54**	.48**
Aggressive Style of Conflict	-.31**	-.33**
Open Communication	.61**	.56**
Close Communication	-.22**	-.21**
Grade Point Average	.13*	.10

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