Original article

Cross-cultural adaptation and validation of the Portuguese version of the Parental Supervision Attributes Profile Questionnaire

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ABSTRACT

Objective To cross-culturally adapt and validate the Portuguese version of the Parental Supervision Attributes Profile Questionnaire (PSAPQ). The PSAPQ is a measure of parental supervision, which has not been translated and adapted into any language other than English.
Methods The Portuguese version was the result of forward/backward translations, consensus panels and pretesting. Reliability and internal consistency were assessed using Cronbach's α, intraclass correlation coefficient (ICC) and confirmatory factor analysis (CFA) in adults with different educational levels. Results: Cronbach's α ($\alpha=0.70–0.79$) and ICC (>0.75) were acceptable in three of four factors. The results of CFA ($\chi^2/df=2.243$; CFI=0.951; GFI=0.96; RMSEA=0.056; P(RMSEA ≤ 0.05)=0.222) suggest a good adjustment between the factors.
Conclusions The Portuguese version of PSAPQ showed acceptable psychometric properties. This study evidenced some vulnerabilities of the fate subscale, emphasising the need for further investigation of the effects of the educational level of the parents.

In the majority of children's activities, there is adult supervision to manage the activity and reduce the risks for children. Supervision is an injury prevention strategy used by caregivers and teachers,[1] following the prior knowledge and monitoring of children's activities and behaviours,[2] based on three main dimensions: attention, proximity and continuity.[3] Supervision associates a continuous or intermittent interaction of visual and auditory attention with immediate intervention.[4]

In the management of risk behaviours, supervision encompasses the beliefs and attitudes of caregivers while they are watching children's behaviours, controlling hazards in the environment and making anticipatory decisions. There are some quantitative studies[5–8] about the type and frequency of child injuries. However, the qualitative studies that focus on supervision attributes profile can be complementary in defining more effective strategies and improving the training of caregivers. The most commonly used method for such studies is the administration of questionnaires to simulate supervision in hypothetical situations and to assess the rates of supervision. The evidence of the majority of studies about supervision is from Canada, the USA and Australia.[2 3 9–19]

Morrongiello and House[20] developed the Parental Supervision Attributes Profile Questionnaire (PSAPQ) based on two supervision dimensions (attention and physical proximity), and caregivers' attributes deemed relevant to child safety (protectiveness, supervision, vigilance in supervision and self-confidence in the ability to keep the child safe). The PSAPQ was developed to assess the protectiveness and parental supervision of children aged 2–5 years from the observation of parents' interaction with their children in playful contexts.[20] The authors intended to test the predictive power of the self-reported assessment questionnaire by linking the results of natural observations of parental supervision, children's risk-taking behaviour and injury history. Later, Morrongiello and Corbett[21] studied the psychometric properties of PSAPQ among 192 parents of children aged 2–5 years. The results of this study revealed that the subscales were representative of the different constructs, showed reliability as measured by test–retest reproducibility, confirmed the internal consistency (Cronbach's α values) and tested the convergent and discriminant validity of the subscales. The factorial structure of the four subscales was assessed through confirmatory factor analysis (CFA), which revealed good psychometric properties to assess supervision attributes profiles regarding children aged 2–5 years. Since then, the PSAPQ has been used in different studies (table 1) and has shown good psychometric properties even in other age ranges.[19]

Unadjusted supervisory attitudes can be observed when parents overestimate their children's abilities by minimising their role as a supervisor,[22] or when they underestimate their children's skills and become too protective by inhibiting their children's perceptual motor experiences, which would contribute to the development of essential skills for children's safety and autonomy.[23 24] Many caregivers also express self-confidence in their ability as supervisors and often believe that keeping their children safe is a matter of luck or fate. The different levels of supervision are related with the caregivers' skills to accurately assess the risk level and the child's skills to cope with the risk, but risk perception can be influenced by socioeconomic, cultural and ethnic factors.

The quality of methodological approaches of research on supervision was analysed by Petrass et al,[1] who found that most studies[25 26] used self-reported questionnaires and diaries. Other studies about supervision used observation methods.[20 27–29] However, the applicability of questionnaires should be tested in cultural contexts different than the ones in the original version. This aspect is very important when cultural or educational effects are expected, which is reasonable in the case of parental supervision behaviours.

Table 1 Summary of studies about Parental Supervision Attributes Profile Questionnaire (PSAPQ)

References	N	Educational level	PSAPQ factors	Reliability and validity	Implications
Morrongiello and House[20]	48 parents of children aged 2–5 years	24% academic degree 14% no answer	Protectiveness (10 items) Worry about safety (10 items) Vigilance in supervision (11 items) Confidence in the ability to keep the child safe (8 items)	Protectiveness α=0.70; r=0.06 Worry about safety α=0.69; r=0.14 Vigilance in supervision α=0.68; r=0.41 Confidence in the ability to keep the child safe α=0.65; r=0.33	Questionnaires about parental attributes and behaviours can be an alternative to the naturalistic observations. They associate supervisory practices with risk behaviour and injury history.
Morrongiello and Corbett[21]	192 parents of children aged 2–5 years	71% academic degree	Supervision (9 items) Protectiveness (9 items) Risk Tolerance (8 items) Fate (3 items)	Supervision α=0.77; r=0.76 Protectiveness α=0.78; r=0.72; Risk Tolerance α=0.79; r=0.76 Fate α=0.78; r=0.80 GFI=0.93; CFI=0.96; RMSEA=0.06	PSAPQ showed good reliability and validity. It can help identify children at risk of injury due to inadequate parental supervision
Morrongiello, et al.[39]	68 mothers of children aged 2–5 years	74% academic degree	Protectiveness (10 items) Vigilance (3 items) Ambivalence (4 items) Supervision (21 items)	Protectiveness α=0.76 Vigilance α=0.68 Ambivalence α=0.66 Supervision α=0.75 Total Score α=0.80	PSAPQ can be used in child supervision at home.
Morrongiello, Walpole and McArthur[40]	107 parents of children aged 2–5 years	70% academic degree	Part I: home supervision (25 items) Part II: play, self-care and risk activities (23 items)	Part I α=0.75 Part II α=0.89	Parental supervision practices are similar between fathers and mothers with young children.
Morrongiello et al.[17]	70 parents of children aged 2–5 years	Academic degree: 64.7% (fathers), 70.6% (mothers)	Part I: parental Attitudes about supervision (20 items) Part II: supervision of activities at home (14 items)	Part I (3 subscales) Protectiveness α=0.72 Vigilance about hazards α=0.68 Worry about child α=0.68 Total Score α=0.72 Part II (3 subscales) Play activities α=0.81 Self-care activities α=0.77 Risk activities α=0.70	Preventives strategies can be effective in reducing injuries in young children. Supervision decreases with age and behaviours become important.
Petrass et al[19]	20 parents of children aged 0–14 years	40% diploma 25% postgraduate studies	Supervision (9 items) Protectiveness (9 items) Risk Tolerance (8 items) Fate (3 items)	Protectiveness α=0.98; r=0.96 Supervision α=0.99; r=0.98 Risk Tolerance α=0.93; r=0.87 Fate α=0.94; r=0.89 There are no normative data published for PSAPQ.	PSAPQ showed good psychometrics proprieties in beach settings. Further research in other contexts to determine if PSAPQ can be a standardised measure of supervision in children's play settings.

The differences in injury rates that have been reported across ethnic groups, such as Hispanics,[30] underline the importance to have instruments that measure parental supervision, which are adapted and validated to different populations. There are no available measures of parental supervision validated in Portugal or in the Portuguese language. According to the Ethnologue,[31] Portuguese is the seventh most spoken language worldwide and the third most spoken occidental language, with 178 millions of first-language speakers in 37 countries, widespread mostly by Europe, Africa and South America. Thus, the cross-cultural adaptation of the PSAPQ[20 21] for Portuguese is an essential step to research, intervention and training in supervision processes.

The PSAPQ is a tool that requires a careful validation for specific profiles due to its permeability to social and cultural issues. The aim of this study is to cross-culturally translate and adapt the PSAPQ to Portuguese and validate the Portuguese version.

METHODS
Participants
This study involved 392 caregivers of preschool children (1–5 years of age), 86 parents (21.9%) and 306 mothers (78.1%) living in urban (55.1%), suburban (33.9%) and rural areas (11%). We selected a random sample of caregivers, who agreed to participate in a study on child safety, and whose children attended private and public childcare facilities in the areas of Lisbon, northern and southern Portugal. The educational levels ranged from 11 years or less (38%), 12 years (28%) and university education (34%). Regarding the parents' occupations, 66.3% of participants had a permanent job position, 14% had a temporary job and 19.6% were unemployed.

Procedure
We conducted individual interviews to collect sociodemographic data and to apply the PSAPQ. All participants signed the informed consent. Although the original tool was a self-reported questionnaire, participants with low education level were not excluded. In these cases, a trained investigator read the items to them, avoiding any influence in their answers. To enable temporal validation, 76 caregivers repeated this questionnaire 4 weeks later following the time frame used by the authors of the questionnaire.[21] The parents in this subsample presented identical demographic characteristic to those of the total sample. The Ethics Committee of the Faculdade de Motricidade Humana approved this study.

Instrument
The PSAPQ includes 29 items divided into four subscales: protectiveness (nine items), supervision (nine items), risk tolerance (eight items) and fate (three items). The score for each subscale is obtained from the average of the items measured on a 5-point Likert scale (1 = Never, 2=Rarely, 3=Repeatedly, 4=Most of the time and 5 = Always). The values obtained for each subscale represent the different dimensions of supervision.

The original version of PSAPQ and the authorisation for validation of the Portuguese version were provided by the author, Barbara Morrongiello, Psychology Department, University of Guelph (Canada).

Cross-cultural adaptation and translation of the PSAPQ
Following the sequential methodological approach for the process of translation and linguistic validation,[32 33] two independent European Portuguese native speakers translated the PSAPQ. Based on the two translations and as a result of the meeting between the two translators and the primary researcher

of this study, we produced a draft. To ensure an accurate translation of the original version and to avoid responses with different conceptual meanings in the target language and culture, a panel of experts reviewed the translation and retroversion. They suggested examples for a better understanding of items number 20, 21, 23 and 26. For instance, the initial form of item no. 20 was 'I always stay close to my child when they are playing with any equipment'. After the expert's suggestions, we added examples of equipment in the final form 'I always stay close to my child when they are playing with any equipment (eg, swings, slide)'. The suggestions were considered in preparing the pretest version. The pretest was applied to 37 caregivers who reported that the tool presented an easy-to-complete measure (about 10 min), with simple wording enabling a clear understanding.

Statistical analysis
In order to compare the results of the assessment of psychometric properties with the results of the original version of PSAPQ,[21] we used the same statistical procedures, namely, Cronbach's α to validate the internal consistency and Pearson's correlation coefficient for test–retest reliability. We calculated the Cronbach's α values as a measure of internal consistency, as well as the intraclass correlation coefficient (ICC) to evaluate temporal reliability. We evaluated construct validity by CFA. For all statistical analyses, we used IBM SPSS Statistics and IBM SPSS AMOS 20.

RESULTS
Internal consistency
The values for Cronbach's α coefficient for each subscale are shown in table 2. The values were above α=0.60 in all subscales except for subscale fate (α=0.48). To verify the contribution of the items to the internal consistency of each subscale, α values were calculated relating to when the item was deleted. The results showed Cronbach's α coefficients close to the total value of Cronbach's α.

Test–retest reliability
The values of the ICC and Pearson's r correlation are presented in table 2. The Pearson's correlation coefficients were higher than 0.60 (r=0.69 and r=0.72) for two subscales (protectiveness and supervision), whereas for the subscales of risk tolerance and fate, the values were below 0.60 (r=0.52 and r=0.36). The

Table 2 Intraclass correlation coefficients of the Portuguese version, Pearson's correlation coefficients and Cronbach's α for the Portuguese and the original versions

Subscales	ICC	α	r
Protectiveness			
Original version		0.78	0.72
Portuguese version	0.81	0.76	0.69
Supervision			
Original version		0.77	0.76
Portuguese version	0.83	0.72	0.72
Risk Tolerance			
Original version		0.79	0.76
Portuguese version	0.68	0.61	0.52
Fate			
Original version		0.78	0.80
Portuguese version	0.52	0.48	0.36

results for the ICC confirm temporal stability and a high degree of correlation between protectiveness, supervision and risk tolerance subscales (ICC between 0.60 and 0.83) and a mild agreement for the fate subscale (ICC=0.52).

Construct validity

The PSAPQ's original factor model for the Portuguese version was adjusted, considering a reorganisation of the 29 original items of the questionnaire into 12 parcels [21] (table 3).

The results revealed a high quality of adjustment regarding all four original factors (χ^2/df=2.243, CFI=0.951, GFI=0.96, RMSEA=0.056, P(RMSEA≤0.05)=0.222) which, together with the high values (greater than 0.5) for the majority of standardised factor loadings, support the factor structure in question. The diagram of the CFA shown in figure 1 indicates the values of the standardised factor loadings and the reliability of each final item in the adjusted model. The construct validity includes not only factorial validity but also the evaluation of convergent and discriminative validity of factors. The very high load on all factors of the items assessed indicates convergent validity. The diagram also shows correlations between factors that register values similar to the values obtained in the original PSAPQ's validation, suggesting a reasonable level of discriminative validity. As in the original version, the correlation between protectiveness and supervision (r=0.97) is high and positive. Risk tolerance has negative correlations with protectiveness (r=−0.43) and supervision (r=−0.42).

DISCUSSION

The results of this study confirmed psychometric properties of the PSAPQ similar to the original version with a sample of parents of preschool children. For the translation and adaptation of PSAPQ, we used the sequential method.[32] The Portuguese version was applied to caregivers with different educational

Table 3 Reorganisation of Parental Supervision Attributes Profile Questionnaire into 12 parcels

Factor	Parcel	Factor score	
		Original	V. Portuguese
Protectiveness			
Parcel 1		0.75	0.78
	I feel very protective of my child		
	I think of all the dangerous things that could happen		
	I keep my child from playing rough games or doing things where he/she might get hurt		
Parcel 2		0.71	0.75
	I make him/her keep away from anything that could be dangerous		
	I feel fearful that something might happen to my child		
	I warn him/her about things that could be dangerous		
Parcel 3		0.67	0.68
	I keep an eye on my child's face to see how he/she is doing		
	I feel a strong sense of responsibility		
	I try things with my child before leaving him/her to do them on his/her own		
Supervision			
Parcel 1		0.83	0.44
	I have my child within arm's reach at all times		
	I know exactly what my child is doing		
	I can trust my child to play by himself/herself without constant supervision		
Parcel 2		0.84	0.60
	I stay within reach of my child when he/she is playing on the equipment		
	I keep a close watch on my child		
	I say to myself that I can trust him/her to play safely		
Parcel 3		0.64	0.80
	I stay close enough to my child so that I can get to him/her quickly		
	I hover next to my child		
	I make sure I know where my child is and what he/she is doing		
Risk tolerance			
Parcel 1		0.70	0.22
	I encourage my child to try new things		
	I let him/her learn from his/her own mishaps		
Parcel 2		0.87	0.98
	I let my child take some chances in what he/she does		
	I let my child to do things for himself/herself		
	I let my child experience minor mishaps if what he/she is doing is lots of fun		
Parcel 3		0.74	0.52
	I let my child make decisions for himself/herself		
	I encourage my child to take risks if it means having fun during play		
	I wait to see if he/she can do things on his/her own before I get involved		
Fate			
Item			
11	When my child gets injured, it is due to bad luck	0.61	0.42
3	Whether or not my child gets injured is largely a matter of fate	0.71	0.49
28	Good fortune plays a big part in determining whether or not my child gets injured	0.92	0.55

Figure 1 Results of the confirmatory factor analysis of the Portuguese version of Parental Supervision Attributes Profile Questionnaire.
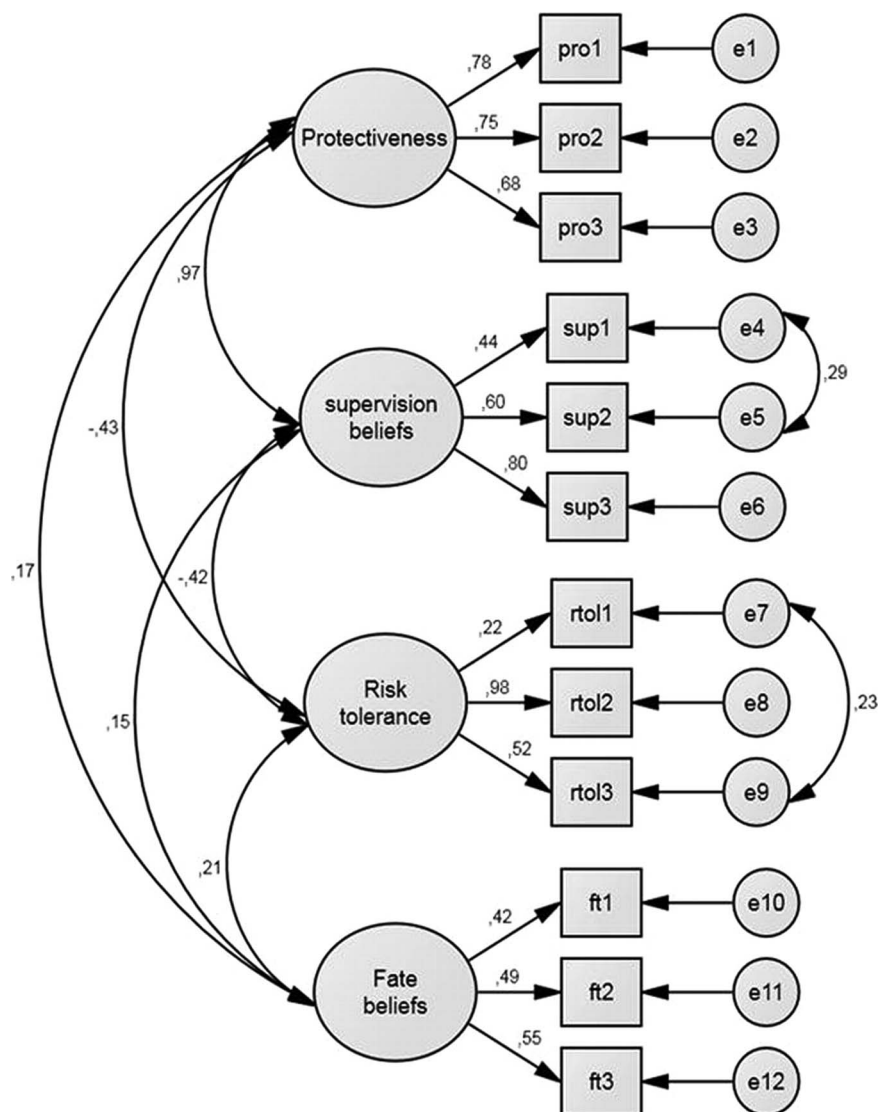
levels that include a high rate (38%) of individuals with a low educational level. For participants with low educational levels, examples were added to some of the items used, and the questionnaire was read aloud to ensure cross-cultural equivalence.

After the translation and cross-cultural adaptation of PSAPQ, there was an assessment of the psychometric properties of the Portuguese version. Results confirmed the factorial structure in four dimensions similar to the original version. A CFA showed a good adjustment with CFI values >0.95, GFI >0.9 and RMSEA <0.06.

The internal consistency, conveyed by the values of Cronbach's α for the Portuguese version, was reasonable[33] and consistent with the original version's values (Cronbach's α >0.7) in the subscales of protectiveness and supervision. For the subscale of risk tolerance, Cronbach's α value of 0.61 was considered acceptable. However, the fate subscale revealed a value of 0.48, which is considered low. In these two last subscales, values are inconsistent with the original version.

Results for temporal reliability showed, with respect to Pearson's correlation, values higher than 0.60, similar to the original version in two of the four subscales (protectiveness and supervision). Regarding the ICC,[34] values above 0.60 in three of the four subscales (protectiveness, supervision and risk tolerance) were found.

All results related to the fate subscale showed values below the ones in the original version for Cronbach's α coefficient, Pearson's correlation and ICC. This suggests a lack of internal consistency and temporal reliability for the subscale of fate, which may be related to cultural differences in the perception of the ability to control their children at risk, between Portuguese and Canadian parents, which has been studied in the original instrument. The results for internal consistency and temporal reliability for the subscale of fate showed low values, which are inconsistent with the original version. The meaning ascribed to fate by Portuguese participants may be different from the meaning ascribed by English-speaking participants. In Portugal, fate might be associated with an attitude of thinking that everything has already been determined and nothing can alter destiny. Incidentally, there is some evidence from Brazil[35] that the so-called accidents evoke the notions of preventability to 85.1% of the subjects, foreseeability to 50.3%, fatality to 15.1% and intentionality to 2.3%. However, students from different courses had different interpretations, and students from education courses in Brazil tended to associate accident with notions of non-preventability and fatality. There is no investigation in Portugal concerning this issue, and the words 'accident', 'injury' and 'lesion' probably do not show the same association

with the notions of causality, intent, foreseeability and prevent-ability. In addition, some indicators of the Portuguese culture lead us to believe that the notion of fate might be different in Portugal and Brazil. For example, the popular Portuguese musical genre 'fado' (lit., 'destiny') is known for conveying a sense of hopelessness in its lyrics.[36] In situations of perceived danger, cultural differences can be very expressive. For example, the perception of danger varies according to cultural groups, namely, English-speaking parents perceive the road as more dangerous than Chinese and Arab parents.[37] This issue claims for a deeper investigation.

Monitoring children's health may be positively associated with the adoption of safety strategies.[38] Thus, the knowledge of caregivers' beliefs may contribute to the development of safety strategies and its adjustment to different cultural contexts.

CONCLUSION

This study has showed that the Portuguese version of PSAPQ has reasonable psychometric properties. The application of this scale will enable its use in studies of parental supervision by identifying the profiles of supervision and by adjusting parent education programmes for child safety. Despite the reasonable psychometric characteristics of PSAPQ, there are some difficulties in the perception of the fate subscale that seem to be related with specific cultural aspects of non-English cultures. Fate as a construct is not easy to analyse empirically, and the results suggest the need to investigate variables such as the parent's level of education, literacy or age, in order to better understand the role of beliefs in the occurrence of injuries and in decision-making regarding parental and educational supervision.

What is already known on this subject

▶ The Parental Supervision Attributes Profile Questionnaire is a valid instrument to assess parental supervision, but it has not been adapted into any language other than English.
▶ Portuguese is the seventh most spoken language worldwide and the third most spoken occidental language. It is of paramount importance to have instruments that evaluate parental supervision adapted and validated into Portuguese.

What this study adds

▶ This study cross-culturally adapted the Parental Supervision Attributes Profile Questionnaire (PSAPQ) to the Portuguese language.
▶ The Portuguese version of the PSAPQ has acceptable psychometric properties.
▶ Some vulnerabilities of the fate subscale for the Portuguese sample were identified, which seem to be related with specific cultural aspects.

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