

## ORIGINAL

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## VALIDATION AND CROSS-CULTURAL ADAPTATION TO SPANISH OF THE PARENTAL SUPERVISION ATTRIBUTES PROFILE QUESTIONNAIRE: A METHOD FOR MEASURING PARENTAL SUPERVISION

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### ABSTRACT

**Background:** Child accidents are the most important preventable cause of morbidity and mortality in pediatric age. The degree of parental supervision is a factor that can influence, among others, in these accidents. The aim of this study was to validate and cross-culturally adapt to Spanish the questionnaire *Parental Supervision Attributes Profile Questionnaire* (PSAPQ) as a method of measuring the degree of parental supervision.

**Methods:** Forward and back-translation methodology was applied using 4 bilingual spanish-english people to obtain version 1.0 of the questionnaire. Subsequently, the questionnaire was reviewed by a committee of experts, obtaining version 1.1, which was provided to 149 parents of children between 2-5 years old, randomly obtained, who attended consultation for the well child visits in several health centers in the province of Valencia. For the statistical study, the internal consistency was analyzed using Cronbach's  $\alpha$  test and the test-retest reliability using Pearson correlations.

**Results:** A very good internal consistency was obtained, with Cronbach's  $\alpha$  values greater than 0.7 in three of the four subscales that make up the test, with the remaining being 0.68. The reliability obtained was excellent, with values with Pearson correlations close to or higher than 0.7 for all subscales.

**Conclusions:** The PSAPQ translated and validated into Spanish shows very good psychometric results with respect to the original, so it can be said that an adequate instrument has been obtained to objectively measure one of the possible risk factors of child accidents.

**Key words:** Child accidents, Cross-cultural adaptation, Prevention, Parental supervision, Validation.

### RESUMEN

#### Validación y adaptación transcultural al español del *Parental Supervision Attributes Profile Questionnaire*: método de medición de la supervisión parental

**Fundamentos:** Los accidentes infantiles son la causa prevenible más importante de morbi-mortalidad en edad pediátrica. El grado de supervisión parental es un factor que puede influir, entre otros, en su aparición. El objetivo de este estudio fue validar y adaptar transculturalmente al español el cuestionario *Parental Supervision Attributes Profile Questionnaire* (PSAPQ) como método de medida del grado de supervisión de los padres a sus hijos.

**Métodos:** Se empleó una metodología de traducción/retrotraducción mediante 4 personas bilingües (español-inglés), obteniéndose la versión 1.0 del cuestionario. Posteriormente, fue revisada por un comité de expertos, obteniéndose la versión 1.1, que se proporcionó a 149 padres de niños de entre 2-5 años, reclutados de forma aleatoria, que acudían a las revisiones del programa de salud infantil de diversos centros de salud de la provincia de Valencia. En el estudio estadístico se analizó la consistencia interna mediante el test alfa de Cronbach y la fiabilidad test-retest mediante correlaciones de Pearson.

**Resultados:** Se obtuvo buena consistencia interna, con valores de alfa de Cronbach mayores de 0,7 en tres de las cuatro subescalas que forman el test. En la restante se consiguió un valor de 0,68. En cuanto a la fiabilidad, se obtuvieron correlaciones de Pearson cercanas o superiores a 0,7 para todas las subescalas.

**Conclusiones:** El PSAPQ traducido y validado al idioma español muestra muy buenos resultados psicométricos respecto al original, por lo que se puede afirmar que se ha obtenido un instrumento adecuado para medir objetivamente uno de los posibles factores de riesgo de accidentes infantiles.

**Palabras clave:** Accidentes infantiles, Adaptación transcultural, Prevención, Supervisión parental, Validación.

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## INTRODUCTION

Currently, child accidents are a serious public health issue, since they represent the third-leading cause of pediatric mortality in the European Union<sup>(1,2)</sup>. In Spain, they are the second-leading cause after cancer, making them the leading cause among previously healthy children<sup>(3)</sup>.

These unintended injuries are preventable, so if we know and act on the risk factors that promote them, we can reduce their incidence and, therefore, the serious consequences resulting from them. Among these risk factors, there are various studies that indicate the Degree of Parental Supervision<sup>(4,5)</sup> as a decisive factor. Deficiencies in parent/caregiver supervision of minors contribute to the occurrence of accidents<sup>(6,7,8,9)</sup>, and are proportional to the degree of severity<sup>(10,11)</sup>. Furthermore, it has been shown that children have more accidents when they are not under any type of supervision<sup>(12)</sup> or, on the other hand, when the supervision is excessive<sup>(13)</sup>.

One of the major current problems in evaluating this factor has been how to quantify it, since there is no validated instrument for such purpose. If you needed to measure the degree of parental supervision, it was done using very different methods; in some cases, it was a simple interview in which parents were asked how they supervised their children<sup>(14,15)</sup>, while in others audio or videos of children at risk of unintentional accident were shown and they were asked how they would react to the situation<sup>(16)</sup>, or caregivers were asked to describe situations in which they should supervise children and how they would do it<sup>(8,17)</sup>. This means that the methodology used was quite varied, not very regulated and, therefore, it was very difficult to assess the implication of the degree of parental supervision<sup>(18)</sup>.

On the other hand, it has been demonstrated that questionnaires are a reliable and valid

tool for the study of parental behavior<sup>(19,20)</sup>. In 2006, B.A. Morrongiello and M. Corbett designed and validated, in English, the Parental Supervision Attributes Profile Questionnaire (PSAPQ)<sup>(21)</sup>, a 29-item questionnaire that is evaluated using a 5-point Likert scale, divided into 4 subscales (protectiveness, supervision, risk tolerance, belief in fate), for children 2 to 5 years of age. Many of these items measure actions that would increase or decrease the likelihood of occurrence of child injuries.

Currently, in addition to the PSAPQ there are other questionnaires, such as the one designed by W. Harrell<sup>(22,23)</sup>, the purpose of which is also to measure parental supervision. However, in general, they have the limitation that they take a lot of time to complete and, therefore, cannot be used in all settings.

Due to its dissemination and simplicity, it seems that the PSAPQ is currently the best method for measurement of parental supervision. This questionnaire was validated in Portuguese in 2013<sup>(24)</sup>. It should be pointed out that Spanish is the second most-spoken language worldwide<sup>(25)</sup>, and is present on all continents, with approximately 550 million speakers, and is the second language in international communication after English; therefore, validation of the PSAPQ questionnaire into Spanish would offer undeniable benefits and breadth of dissemination.

For all of these reasons, the objective of this study was the adaptation, validation and evaluation of the psychometric properties of the PSAPQ questionnaire for its use in Spanish.

## SUBJECTS AND METHODS

**Instrument.** The PSAPQ questionnaire is a questionnaire that consists of 29 questions, in random order, divided into 4 subscales created from factors that, according to the authors of

the questionnaire, affect the degree of parental supervision: protectiveness (9 questions), supervision (9 questions), risk tolerance (8 questions), belief in fate (3 questions). Each of these questions is evaluated on a 5-point Likert-type scale (from 1: strongly disagree, to 5: strongly agree), according to the degree of agreement, or not, with each of them.

**Procedure.** The following steps were used for the validation of this questionnaire:

a) Translation and back-translation process:

i) Authorization was obtained from Dr. B.A. Morrongiello (author of the PSAPQ questionnaire) from the Psychology Department of the University of Guelph (Canada). The ethics committee of HU Dr. Peset in Valencia approved the project. Subsequently, the study was authorized by the medical management and primary care managers of the area to which the health centers where the validation took place belong.

ii) The translation and back-translation process was started, according to the protocol of Bullinger et al<sup>(26)</sup>, by 4 bilingual Spanish-English individuals. First, two of them translated the English version of the PSAPQ questionnaire into Spanish, and then the others back translated the Spanish version previously obtained into English.

iii) The different versions obtained were shared in a review committee, form by the four translations and three members of the research team, whose objective was to compare the original version with the different versions resulting from the translation-back translation process, detect inconsistencies and evaluate the semantic, idiomatic, conceptual and experimental equivalences, taking into account the cultural context in which application of the instrument was planned. It was necessary to ask the initial author about the context of the

term “equipment” in item 13 of the original test: “*I stay within reach of my child when he/she is playing on the equipment*”. Dr. B.A. Morrongiello clarified that this referred to equipment in children’s play areas (parks, etc.). Thus, version 1.0 of the questionnaire in Spanish was obtained.

iv) Validation of construct: through a factorial analysis (orthogonal with Varimax rotation), we assessed the degree of correspondence of the factors identified in the original questionnaire and in the Spanish version. To do this, we grouped and assigned each of the items to the factor with which it presented the greatest correlation.

b) Comprehensibility test: Version 1.0 of the questionnaire translated and back-translated into Spanish was administered to a pilot group of pediatricians and parents (a total of 15 people), who gave their opinion and suggested morphosyntactic changes to make it more comprehensible to the general public. These changes were made without changing the initial morphosyntactic meaning. Thus, version 1.1 of the questionnaire was obtained.

c) Observational study: The translated and cross-culturally adapted questionnaire as administered to a total of 149 randomly selected parents, guardians or caregivers of children aged 2-5 years who came to well child visits. This sample size was obtained by taking into account prior validation studies of this questionnaire<sup>(21,24)</sup>, since there is currently no consensus about the number of subjects necessary for works of this type<sup>(27)</sup>.

After explaining the project, the parents/caregivers or guardians of children who met all inclusion criteria (age between 2-5 years, well child visit and agreement to enroll in the study), and who did not have any of the exclusion criteria (history of intentional injury, no consent to

enroll in the study), were invited to participate in the study. After signing the informed consent form, they completed the questionnaire along with other socio-epidemiological questions (profession, education level and nationality of the parents, number of siblings of the child and child's birth rank among them, medical history of interest and prior history of unintentional injuries in the last 6 months), personally at the same medical visit or at their home.

Then, 1-3 months after the first questionnaire, either by e-mail via the Google Drive forms program [Google Forms] for all patients who gave their consent at the initial visit and provided their e-mail address, or by phone for those who so indicated at the initial visit, the questionnaire was completed again by 30 participants in order to measure its internal consistency (test-retest methodology).

d) Statistical analysis. The same statistical parameters used for validation of the original version of the PSAPQ test<sup>(21)</sup> and then the Portuguese version<sup>(24)</sup> were used, so that the results could be compared. The structure of the questionnaire was evaluated in the four dimensions proposed by the original author through a confirmatory factorial analysis, using an orthogonal Varimax rotation of factors and thus facilitating interpretation of the relationship of each item with the factors identified. The study of internal consistency was carried out using measurement of Cronbach's alpha and external consistency or test-retest reliability was determined by means of Pearson correlation. To do this, the SPSS statistics program, version 22.0, was used.

After completing all of these phases, the final version of the PSAPQ questionnaire adapted to Spanish was obtained (*annex I*).

The study of socio-epidemiological factors was carried out by means of an observational analysis.

It should be noted that for classification of the family socioeconomic status, the Goldthorpe classification modified by Feito<sup>(29)</sup> was used.

## RESULTS

**Characteristics of the participants of the observational study.** A total of 149 participants were recruited, parents/caregivers of 77 girls and 72 boys, with a mean age of 4 years. Of the participants, 88% were Spanish, 6.7% Latino, 3.3% non-Spanish Europeans and the remaining percentage were African and Asian.

The socio-epidemiological data studied found that 30.7% of the patients were single children, 38.7% had one sibling and the others had more than two siblings.

With regard to the education level of the parents, 66% of mothers and 51.3% of fathers had a university education; 22% of mothers and 29.3% of fathers had a secondary education, and the rest only had primary or no type of education.

In terms of family socioeconomic status, calculated according to the type of occupation of each of the parents using the Goldthorpe-Feito classification, 45.3% of mothers and 31.3% of fathers belonged to upper classes (I, II of the classification), 36% of mothers and 59.3% of fathers middle class (III, IV, V, VI of the classification) and the rest lower class (VII).

**Identification of factors.** The confirmatory factorial analysis identified up to 8 possible factors or dimensions, which explained 65.7% of the variance. When we forced identification of 4 components, like the original scale, 47.9% was explained and after rotation of these components, the factorial matrix was obtained (*table 1*).

Furthermore, the description of the 4 dimensions of the questionnaire presented a

**Table 1**  
**Matrix of rotated components of the PSAPQ-Sv questionnaire**  
**(Parental Supervision Attributes Profile Questionnaire-versión española).**

Questions	Component			
	1	2	3	4
Q1. Me siento muy protector con mi hijo.	.579	-.219	.102	.281
Q2. Pienso en todas las cosas peligrosas que podrían ocurrir.	.614	.041	-.103	.206
Q3. Impido a mi hijo que participe en juegos bruscos o haga algo en lo que pueda salir lastimado.	.553	-.304	.021	-.116
Q4. Le mantengo alejado de todo aquello que pueda ser peligroso.	.637	-.082	.028	-.142
Q5. Temo que algo pueda sucederle a mi hijo.	.573	.113	.056	.159
Q6. Advierto a mi hijo sobre cosas que podrían ser peligrosas.	.355	.391	-.097	-.096
Q7. Vigilo la expresión de la cara de mi hijo para ver cómo está.	.589	.220	-.091	.079
Q8. Tengo una gran sentido de responsabilidad.	.498	.307	-.037	.060
Q9. Pruebo las cosas con mi hijo antes de dejar que las haga por su cuenta.	.585	-.067	-.006	-.206
Q10. Tengo a mi hijo al alcance de la mano en todo momento.	.611	-.146	.182	-.206
Q11. Sé exactamente lo que está haciendo mi hijo.	.501	.023	.042	-.290
P12. Puedo confiar en que mi hijo juegue solo sin supervisión constante.	-.133	-.067	-.127	.437
Q13. Estoy cerca de mi hijo cuando juega en el parque.	.592	-.027	-.084	-.315
Q14. Vigilo de cerca a mi hijo.	.691	-.016	-.038	-.273
Q15. Confío en que juegue de forma segura.	.448	-.063	.079	.050
Q16. Me quedo lo suficientemente cerca de mi hijo para poder alcanzarlo rápidamente.	.625	.190	-.065	-.263
Q17. Estoy “encima” de mi hijo.	.702	-.190	-.023	.073
Q18. Me aseguro de que sé dónde está mi hijo y de lo que está haciendo.	.472	.118	-.180	-.259
Q19. Animo a mi hijo a probar cosas nuevas.	.183	.680	.006	-.026
Q20. Dejo que aprenda de sus propios errores.	-.096	.614	-.214	.233
Q21. Dejo que mi hijo corra algunos riesgos en lo que hace.	-.057	.099	-.094	.650
Q22. Dejo que mi hijo haga cosas por sí mismo.	-.183	.800	.086	-.077
Q23. Si lo que está haciendo mi hijo es muy divertido, permitiría que tuviera un pequeño percance.	-.034	.049	.257	.799
Q24. Dejo que mi hijo tome decisiones por sí mismo.	-.073	.717	-.066	.132
Q25. Animo a mi hijo a arriesgarse si eso supone que se divierta cuando juega.	.027	.105	.308	.615
Q26. Antes de involucrarme espero a ver si él puede hacer las cosas por sí mismo.	-.092	.656	.321	-.041
Q27. Si mi hijo se lastima es debido a la mala suerte.	-.049	-.023	.881	.027
Q28. Que mi hijo se lastime o no es en gran medida cuestión de suerte.	.010	.013	.883	.039
Q29. La buena suerte determina en gran medida que mi hijo salga herido o no.	.019	-.002	.852	.076

relatively heterogeneous distribution of them, with greater values for “protectiveness” and “risk tolerance” and smaller for “supervision,” and especially for “fate” (table 2).

**Internal consistency.** Through study of Cronbach’s  $\alpha$ , we obtained values that varied from 0.684 for the dimension “risk tolerance” to 0.866 for “fate” (table 3).

**Table 2**  
**Descriptives of dimensions of the questionnaire PSAPQ**  
**(Parental Supervision Attributes Profile Questionnaire).**

Values	Protectionism	Supervision	Risk tolerance	Fate/ Fatality
Mean	.579	-.219	.102	.281
Median	.614	.041	-.103	.206
Standard deviation	.553	-.304	.021	-.116
Minimum	.637	-.082	.028	-.142
Percentiles	25	.573	.113	.056
	50	.355	.391	-.097
	75	.589	.220	-.091

**Table 3**  
**Internal consistency of the questionnaire PSAPQ**  
**(Parental Supervision Attributes Profile Questionnaire).**

Dimension	Items	Cronbach $\alpha$
Protectionism	1 a 9	.796
Supervision	10 a 18	.751
Risk tolerance	19 a 26	.684
Fate/Fatality	27 a 29	.866

**Table 4**  
**Comparison of Cronbach's  $\alpha$  between Morrongiello & Corbett<sup>(21)</sup> (Canadá),**  
**Andrade et al<sup>(24)</sup> (Portugal) and the present study.**

Studies	Internal consistency through Cronbach $\alpha$ study			
	Protectionism	Supervision	Risk tolerance	Fate/ Fatality
Morrongiello and Corbett	.78	.77	.79	.78
Andrade et al	.76	.72	.61	.48
Present study	.80	.75	.68	.87

**Table 5**  
**Comparison of Pearson's correlation between Morrongiello & Corbett<sup>(21)</sup> (Canada),**  
**Andrade et al<sup>(24)</sup> (Portugal) and the present study.**

Studies	External consistency or reliability through Pearson's correlation			
	Protectionism	Supervision	Risk tolerance	Fate/ Fatality
Morrongiello and Corbett	.72	.76	.76	.80
Andrade et al	.69	.72	.52	.36
Present study	.81	.79	.67	.65

**External consistency or reliability.** Reliability or stability of responses was verified in 30 subjects, to whom the questionnaire was re-administered (re-test) 3 months after the first consultation (test); then the statistical study was done through analysis of the Pearson correlation coefficient. Table 4 compares the results obtained in the different validation studies of the PSAPQ.

Values greater than 0.6 were obtained in the risk tolerance ( $r=0.665$ ) and fate ( $r=0.651$ ) subscales, and greater than 0.7 in the protectiveness ( $r=0.814$ ) and supervision ( $r=0.787$ ) subscales (table 5).

## DISCUSSION

The results demonstrate that we have obtained a reliable Spanish-language tool for the objective measurement of the degree of parental supervision, allowing its use in various Spanish-speaking populations.

Unintentional child injuries are a serious public health issue, since they represent one of the leading causes of morbidity and mortality worldwide in pediatric patients, in addition to their high psychological impact on the child and his/her family members.

There is no single factor that favors the occurrence of unintentional injuries; rather there are multiple factors, or the sum of them, as well as the presence of various intra- and interpersonal variables responsible for increasing the likelihood of their occurrence. Knowledge of these variables is very important for their prevention, since if we act on them, we can decrease the risk of accidents due to this.

The degree of parental supervision is considered to be a decisive risk factor<sup>(7,14)</sup>, so it is very important to have an objective and reliable tool to be able to evaluate and thus act on it.

With this purpose in mind, in 2006, the PSAPQ questionnaire was validated in English<sup>(21)</sup> and then, in 2013, in Portuguese<sup>(24)</sup>.

To date, there is no validated method in Spanish, even though it is the second most-spoken language worldwide and in scientific communication; therefore, the cross-cultural adaptation and validation of the PSAPQ was considered to be important. For all of these reasons, our objective in this study was to validate and cross-culturally adapt the PSAPQ questionnaire to Spanish and thus make available a tool that can be used clinically or epidemiologically when objective measurement of the degree of parental supervision is required. Furthermore, the use of a single questionnaire in this field allows comparison of different studies carried out in different countries.

To carry out the validation and cross-cultural adaptation of the PSAPQ questionnaire to Spanish, a regulated process was used<sup>(26,28)</sup>, including a population sample with different socioeconomic and cultural statuses, so as to increase the representativeness.

In addition, an analytical study of the results was carried out. It revealed, in terms of internal consistency, Cronbach's  $\alpha$  values greater than 0.7 in three of the four subscales of the questionnaire (protectiveness, supervision and fate), with a very similar value in the remaining subscale.

These results indicate that the Spanish version of the questionnaire has an acceptable internal reliability, demonstrating that the items that form each subscale are related and evaluate the same construct.

With regard to reliability, a Pearson correlation coefficient  $> 0.7$  was obtained for the supervision and protectiveness subscales, and values very similar to this were found for risk

tolerance and fate; the latter was greater than the work of Andrade et al.<sup>24</sup> in Portugal, and these results were very similar to those obtained in the questionnaire carried out by the Canadian authors.

Given these results, we can confirm that our study has good consistency, which is positive between the responses obtained separately over time in the test-retest.

Furthermore, our study also evaluated socio-epidemiological variables such as participants' number of siblings, country of origin of the parents, family socio-cultural status, etc., with the purpose of, in subsequent works, studying the relationship of these factors to the degree of parental supervision.

The first of this work's limitations is the sample size, which, although the results are statistically significant, may have required a larger size; however, the inclusion and exclusion criteria of the participants were very strict. Furthermore, data collection was carried out simultaneously with well child visits at the various health centers, with the cooperation of pediatricians, who assessed children who met the inclusion criteria, explained the project and, if the parents signed the informed consent form, carried out the interview and proceeded to fill out the questionnaire. This translated into a work overload, added to the high care pressure that these professionals face, so after obtaining a sufficient sample size to achieve statistically significant results, data collection was concluded.

The number of patients to whom the questionnaire was administered for the internal consistency study is limited. Although it is sufficient to obtain a significant Cronbach's  $\alpha$ , it would have been interesting to be able to collect a larger sample size; however, it was very complicated since out of all of the participants

to whom the questionnaire was re-sent, only 24 responded by e-mail and 6 by phone.

The third limitation was the inability to find a scale similar to the PSAPQ test to be able to study the criteria validity. However, this variable is also not considered in the Canadian and Portuguese studies, presumably due to this same limitation.

Although in the confirmatory factorial analysis there are variables that do not exactly match those of the initial test, this can be explained because the population of our study is different from the Canadian population and the idiomatic meanings of words vary; in addition, there may be errors when interpreting or answering questions.

In conclusion, we can confirm that a useful and cross-culturally adapted tool has been obtained for measurement of the degree of parental supervision, to allow action against one of the risk factors that favor child accidents, the second-leading cause of morbidity and mortality in pediatric patients in Spain. Thus, it allows the start of campaigns for prevention of this type of accident by means of awareness and education of parents/caregivers, in order to be able to decrease the incidence these accidents.

Moreover, this questionnaire can be used in all other settings in which it is necessary to objectively and reliably know the degree of parental supervision for different purposes, such as: primary care pediatrics, legal services, social services, etc.; therefore, this validation takes on an even greater importance.

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<b>Annex I</b>					
<b>Version translated and transculturally adapted to the Spanish from the PSAPQ questionnaire.</b>					
Questions	Absolutely disagreed	Disagreed	Nor agreed nor disagreed	Agreed	Absolutely agreed
Q1. Me siento muy protector con mi hijo.					
Q2. Pienso en todas las cosas peligrosas que podrían ocurrir.					
Q3. Impido a mi hijo que participe en juegos bruscos o...					
Q4. Le mantengo alejado de todo aquello que pueda ser peligroso.					
Q5. Temo que algo pueda sucederle a mi hijo.					
Q6. Advierto a mi hijo sobre cosas que podrían ser peligrosas.					
Q7. Vigilo la expresión de la cara de mi hijo para ver cómo está.					
Q8. Tengo un gran sentido de responsabilidad.					
Q9. Pruebo las cosas con mi hijo antes de dejar que las haga por su cuenta.					
Q10. Tengo a mi hijo al alcance de la mano en todo momento.					
Q11. Sé exactamente lo que está haciendo mi hijo.					
Q12. Puedo confiar en que mi hijo juegue solo sin supervisión constante.					
Q13. Estoy cerca de mi hijo cuando juega en el parque.					
Q14. Vigilo de cerca a mi hijo.					
Q15. Confío en que juegue de forma segura.					
Q16. Me quedo lo suf. cerca de mi hijo para poder alcanzarlo rápidamente.					
Q17. Estoy “encima” de mi hijo.					
Q18. Me aseguro de que sé dónde está mi hijo y de lo que está haciendo.					
Q19. Animo a mi hijo a probar cosas nuevas.					
Q20. Dejo que aprenda de sus propios errores.					