Child abuse: validation of a questionnaire translated into Brazilian Portuguese

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Abstract: This study sought to validate the Portuguese translation of a questionnaire on maltreatment of children and adolescents, developed by Russell *et al*. and to test its psychometric properties for use in Brazil. The original questionnaire was translated into Portuguese using a standardized forward-backward linguistic translation method. Both face and content validity were tested in a small pilot study (n = 8). In the main study, a convenience sample of 80 graduate dentistry students with different specialties, from Curitiba, PR, Brazil, were invited to complete the final Brazilian version of the questionnaire. Discriminant validity was assessed by comparing the results obtained from the questionnaire for different specialties (pediatric dentistry, for example). The respondents completed the questionnaire again after 4 weeks to evaluate test-retest reliability. The comparison of test *versus* retest questionnaire answers showed good agreement (kappa > 0.53, intraclass correlation > 0.84) for most questions. In regard to discriminant validity, a statistically significant difference was observed only in the experience and interest domains, in which pediatric dentists showed more experience with and interest in child abuse compared with dentists of other specialties (Mann-Whitney test, $p < 0.05$). The Brazilian version of the questionnaire was valid and reliable for assessing knowledge regarding child abuse by Portuguese-speaking dentists.

Descriptors: Child Abuse; Dentists; Questionnaires; Validation Studies.

Introduction

According to the Brazilian Ministry of Health, violence against children and adolescents is the great challenge of the century, and incurs high economic and social costs for both the federal government and families.[1] The Network of Protection for Children and Adolescents at Risk for Violence, an organization associated to the City Hall of Curitiba, PR, reported data revealing 4,735 suspected or proven cases of child abuse in 2009, including cases of neglect (66%), physical abuse (15%), sexual abuse (10%), psychological abuse (6.9%), and abandonment (1%). The age of the children ranged from 5 to 14 years of age, although violence was recorded in cases of children from as young as prenatal age up to 18 years of age. Similar data were reported in 2008.[2]

Maltreatment is any action or omission by an adult that results in physical, emotional, intellectual, or social harm to a child or adolescent.

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Maltreatment is classified according to the type of abuse, including physical violence, sexual violence, psychological violence, and neglect. However, these categories overlap because all forms of maltreatment have psychological sequelae.[1,3]

Roughly 50% to 65% of the physical injuries in cases of child abuse occur to the head, neck, face, and mouth. These regions are easily seen by a dentist because the face accounts for 41% of abuse injuries. The lips are the most affected area, followed by oral mucosa, teeth, gum, and the tongue.[4-6] Therefore, dentists are in an ideal position to detect signs of abuse, and should be able to recognize these signs.

Health professionals in Brazil have a legal obligation to report cases of suspected abuse against children and adolescents, based on Brazil's Federal Constitution and its Statute of the Child and Adolescent.[7] Studies in several countries have reported the difficulties that dentists face in diagnosing, documenting, and reporting suspected cases of abuse. As a result, these cases have gone underreported.[8-19]

Child maltreatment studies among dentists, using a validated instrument, are important because they make it possible to evaluate how well these professionals can recognize physical abuse signs in children, and can help develop strategies to change dentists' behavior toward reporting cases of child abuse, thus improving reporting results.

Brazil currently lacks validated research instruments on child maltreatment, causing limitations to researchers. There are two alternatives: either develop new questionnaires or else translate, adapt, and validate existing ones. However, the development of a new questionnaire makes comparisons with maltreatment data from different parts of the world difficult, unlike the use of a translated and validated instrument.[20]

Therefore, the present study sought to translate into Brazilian Portuguese and validate the questionnaire developed by Russell *et al.*[10] as a research instrument to assess child maltreatment.

Methodology

The questionnaire developed by Russell *et al.*[10] was selected for this study. This instrument was developed in English and consists of four parts. The first part refers to the social and demographic identification of the professional. The second part refers to prior experience with maltreatment (including six "yes" or "no" closed questions). The third part refers to the healthcare professional's knowledge, diagnosis, and conduct, and includes six questions (one "yes" or "no" closed question, two on a 0–10 scale, and three open questions). The fourth part refers to interest in involvement with the subject, and includes three questions (two closed questions and one on a 0–10 scale).

The research methodology included the following steps:

- translation,
- back-translation,
- cultural adaptation, and
- both content and psychometric validation.[21]

A pilot test was conducted with eight dentistry professors at Positivo University to evaluate questionnaire understanding and to validate its content. All of the professors had extensive knowledge of English and answered the original questionnaire in English, as well as the translated one in Portuguese.

They then evaluated each question of the questionnaire, attributing the following scores:

- 0 (I did not understand anything),
- 1 (I understood just a little),
- 2 (I understood it in part),
- 3 (I understood almost everything, but had some doubts),
- 4 (I understood almost everything),
- 5 (I understood it perfectly and had no doubts).

Scores 0, 1, 2, and 3 were rated as insufficient understanding, and scores 4 and 5 as sufficient understanding, as suggested by Conti *et al.*[22] A score of 5 was chosen by all of the respondents for most questions. A score of 4 was given to questions 7, 8, 12, 13, 14, and 15. A suggestion was made that the words "suspicious" and "confirmed" should appear in bold in questions 4 and 5 of the questionnaire. Another suggestion was to show the legends (scales) for questions 7 and 8 in the questions themselves, instead of showing these legends only at the end of question 15. A third suggestion was related to the

translation of the legend showing "0 - unable" and "10 - proficient," for which respondents suggested that the word "proficient" should be replaced by "able to recognize" (question 7), "able to diagnose" (question 8), and "willing to get involved in the detection" (question 15).

Question 13 was modified in the adaptation process. The initial translation stated, "…how to identify and on the mechanism for reporting suspicions…"; the amendment changed the terms to "how to identify and report suspicions…" A final version of the questionnaire was developed in Portuguese with these modifications.

The final version of the translated questionnaire was applied to 80 graduate dentistry students with different specializations at Positivo University, Curitiba, PR, Brazil. The questionnaire was self-applied. The questionnaires were retested 26 to 30 days after the initial application.

Test-retest reliability was calculated using the kappa coefficient and intraclass correlation coefficient (ICC). Bartko[23] classification was used to measure the ICCs.

The first part of the questionnaire, related to the professional's personal identification, was not considered, in order to afford a better psychometric analysis of the instrument itself. The remaining parts were divided into three domains:

- prior experience (questions 1–6),
- knowledge (questions 7–12), and
- interest (questions 13–15).

The answers to the closed questions were scored as 1 ("yes") or 0 ("no"). The open questions were categorized as coherent or incoherent answers, and scored the same way as the closed questions. The answers to questions 7, 8, and 15 were already in the form of a scale and were not changed. The proper response of the questions was used to conduct the evaluation. The values of each question were later added together.

The internal consistency of the questionnaire was assessed using the Spearman correlation coefficient for the analysis of each question within its domain. Discriminant validity was assessed by two groups formed for this purpose:

- a group more closely related to the topic (i.e., pediatric dentistry students) and
- another group composed of graduate students from other specialties.

The Mann-Whitney test was used to assess discriminant validity. SPSS software version 15.0 (Statistical Package for the Social Sciences, Chicago, IL, USA) was used to analyze the data, and a 5% significance level was adopted for all of the statistical analyses.

The study was performed following approval by the Research Ethics Committee of Positivo University (protocol no. 117/2011) and permission from the authors of the original questionnaire (Russell *et al.*).[10]

Results

Table 1 summarizes the answers to closed and scale questions of the questionnaire. Tables 2 and 3 show the comparisons of the questionnaire test and retest answers, demonstrating good agreement (kappa > 0.53, ICC > 0.84) for most of the questions.

A significant correlation was found for all of the questions in regard to the analysis of each question within its domain, with the exception of questions 6 and 11 (Table 4).

In regard to discriminant validity, a statistically significant difference was observed only in the experience and interest domains, in which pediatric dentists showed more experience with and interest in child abuse, compared with dentists from other specialties (Mann-Whitney test, $p < 0.05$; Table 5).

Discussion

The number of respondents in the sample of this study was close to the number of respondents in other questionnaire translation and validation studies.[24,25] The form of the application of the instrument (self-application) was the same as that used in the original questionnaire.[10] This form of application was also used in other studies, and did not affect the psychometric evaluation of the instrument.[25,26]

The questionnaire test and retest were performed at an interval of 26 to 30 days between the first and the second application; this is consistent with other studies.[19-21] The assessment of internal consistency

Table 1 - Responses of dentists to the questionnaire on child abuse (n = 80).

Questions*		
1. In your professional experience, have you ever seen a suspicious case of physical abuse among your child patients?	Yes	No
	20 (25%)	60 (75%)
2. Have you ever reported a suspicious case of child physical abuse among your patients?	Yes	No
	11 (12.7%)	69 (86.3%)
3. Did you see any case of child orofacial trauma in the last six months?	Yes	No
	14 (17.5%)	66 (82.5%)
4. Did you see any suspicious case of child physical abuse in the last 6 months?	Yes	No
	8 (10%)	72 (90%)
5. Did you see any definite case of physical abuse in the last 6 months?	Yes	No
	4 (5%)	76 (95%)
6. Did you report any suspicious or definite case of child physical abuse to authorities in the last 6 months?	Yes	No
	1 (1.3%)	79 (98.7%)
7. Using a scale from 0–10, to what extent can you recognize signs and symptoms of child physical abuse?	Median	(Min-Max)
	6	(4.5–7)
8. Using a scale from 0–10, to what extent can you effectively diagnose child physical abuse? 0_1_2_3_4_5_6_7_8_9_10	Median	(Min-Max)
	5	(4–7)
9. Do you know any mechanism for reporting child physical abuse (e.g., name of an agency to which suspicious cases should be reported, legal procedures to report)?	Yes	No
	46 (57.5%)	34 (42.5%)
13. Do you want further training on how to identify and on the mechanism for reporting suspicions of possible child physical abuse (e.g. courses, workshops)?	Yes	No
	75 (93.7%)	5 (6.3%)
14. Do you think that identification and reporting mechanisms of suspicions of possible child physical abuse should be part of vocational training courses?	Yes	No
	75 (93.7%)	5 (6.3%)
15. Using a scale from 0–10, to what extent are you willing to get involved in detecting child physical abuse?	Median	(Min-Max)
	10	(7–10)

*Open questions (items 10, 11 e 12) are not presented.

Table 2 - Internal test-retest consistency (kappa values).

Questions	Kappa	*p* value
1	0.812	< 0.001
2	0.772	< 0.001
3	0.672	< 0.001
4	0.531	< 0.001
5	0.388	< 0.001
6	1.000	< 0.001
9	0.645	< 0.001
13	0.640	< 0.001
14	0.573	< 0.001

*$p < 0.05$, significant agreement.

Table 3 - Internal consistency (interclass correlation coefficient values).

Questions	Interclass correlation coefficient	95% confidence interval
7	0.85	0.76–0.90
8	0.83	0.74–0.89
15	0.88	0.81–0.92

Table 4 - Spearman correlation coefficient values for each question within its domain.

Domain	Question	Spearman correlation coefficient	*p* value
Prior experience	1	0.781	< 0.001*
	2	0.551	< 0.001*
	3	0.514	< 0.001*
	4	0.484	< 0.001*
	5	0.398	< 0.001*
	6	0.219	0.055
Knowledge	7	0.856	< 0.001*
	8	0.849	< 0.001*
	9	0.231	0.039*
	10	0.252	0.024*
	11	0.189	0.093
	12	0.413	< 0.001*
Interest	13	0.307	0.006*
	14	0.251	0.025*
	15	0.972	< 0.001*

*$p < 0.05$, significant correlation.

Table 5 - Mean ± standard deviation (SD) and median scores of the groups (pediatric dentists and other specialties) in the discriminant validity analysis.

Domain	Pediatric dentists (n = 21)		Other specialties (n = 59)		p value
	Mean ± SD	Median	Mean ± SD	Median	
Prior experience	1.43 ± 1.50	1	0.47 ± 0.75	0	0.002*
Knowledge	32.29 ± 8.90	30	31.36 ± 8.39	32	0.718
Interest	11.57 ± 0.75	12	9.76 ± 2.56	10	0.002*

*$p < 0.05$, significant difference (Mann-Whitney test).

showed that most of the questions ranged in agreement from acceptable to excellent. The type of question (e.g., scale) may have contributed to the excellent degree of agreement obtained for questions 7, 8, and 15. Only question 5 had fair agreement. This could be related to a misunderstanding of the word "confirmed." The respondents may have had doubts during the second application of the questionnaire, seeing that this question was very similar to question 4, which contains the word "suspicious." The Spearman correlation coefficient was used to analyze each question within its domain. Significant agreement was found for most of the questions, with the exception of question 6 (prior experience domain) and question 11 (knowledge domain). Question 11, which was an open question, could have confused respondents, insofar as the statement of this question was similar to that of question 10. Some respondents answered question 11 as "the same as question 10," not paying attention to the actual content of the question. This shows a lack of knowledge of the subject by the respondents, because they confused the words "suspicious" and "confirmed."

In regard to the comparison between pediatric dentists and dentists from other specialties, a statistically significant difference was found only in the prior experience and the interest domains. The pediatric dentist group presented higher mean scores in these domains than the other group. This can be explained by the fact that these professionals have greater contact with children and adolescents. However, no difference was found between these groups in the knowledge domain. This demonstrates that all of the respondents, regardless of their specialty, encountered difficulties in regard to knowledge (i.e., diagnosis and management of child and adolescent abuse). These results are similar to those of previous national and international studies in this field.[10,13,18]

Accordingly, this validated questionnaire may be useful for investigating the degree of difficulty that health professionals have in relation to this subject and for developing forms of guidance and education regarding child abuse.

The present study has some limitations, such as the lack of a gold standard instrument that evaluates knowledge regarding child abuse and to which the results of the translated questionnaire could be compared. Another limitation is that the questionnaire is not originally a scale, requiring some adjustments to allow psychometric analyses.

The instrument developed by Russell *et al.*[10] was selected for this study because it is easy to apply and interpret. These characteristics were maintained after translation and adaptation. This questionnaire is a tool that aims at obtaining epidemiological data and can help in the learning process regarding child maltreatment, and also help determine if health professionals are capable of diagnosing and reporting cases of abuse, or if specific training is needed for this purpose. It also provides information to devise strategies for healthcare professionals, especially dentists and their staff, who work directly with children and adolescents.

Conclusions

The results of the present study indicate that the Brazilian version of the questionnaire developed by Russell *et al.*[10] was easy to understand by dentists and had good psychometric properties (i.e., reliability, reproducibility, and internal consistency). This instrument can be considered reliable for research purposes or comparative literature-related purposes. It may also help resolve the doubts of healthcare professionals regarding child maltreatment.

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