

DIMENSIONAL VALIDITY OF THE INVENTORY OF ETHICAL PROBLEMS IN PRIMARY HEALTH CARE IN THE CONTEXT OF CHILDREN'S HEALTH

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ABSTRACT

Objective: to assess the dimensional validity and reliability of the *Inventory of Ethical Problems in Primary Health Care* adapted to the children's health context.

Method: a cross-sectional study with 101 nurses from the Family Health Strategy Units in a city of the Brazilian Northeast region. Data collection was carried out between May 2016 and June 2017. Construct validity was assessed by means of exploratory factor analysis and reliability by verifying internal consistency using Cronbach's alpha coefficient.

Results: the factor analysis revealed the multidimensionality of the *Inventory of Ethical Problems in Primary Health Care-Children's Health*. It consisted of 19 items, distributed into 4 factors: Factor 1 - Organization of the health system; Factor 2 - Professional Ethics; Factor 3 - Teamwork; and Factor 4 - Parents (or guardians) autonomy expression. Overall internal consistency by Cronbach's alpha and for the factors was moderate to satisfactory.

Conclusion: factor analysis revealed that the inventory has a multidimensional structure with 4 factors. The study showed evidence of validity and reliability that recommends the application of the IPE-APS to the context of children's health.

DESCRIPTORS: Validation studies. Family health nurses. Problem solving. Bioethics. Children's health.

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VALIDADE DIMENSIONAL DO INVENTÁRIO DE PROBLEMAS ÉTICOS NA ATENÇÃO PRIMÁRIA EM SAÚDE NO CONTEXTO DA SAÚDE DA CRIANÇA

RESUMO

Objetivo: avaliar a validade dimensional e a confiabilidade do *Inventário Problemas Éticos na Atenção Primária em Saúde* adaptado ao contexto da saúde da criança.

Método: estudo de desenho transversal com 101 enfermeiras de Unidades da Estratégia de Saúde da Família de uma cidade da região nordeste do Brasil. A coleta dos dados foi realizada entre maio de 2016 e junho de 2017. A validade de construto foi avaliada por meio da análise fatorial exploratória e a confiabilidade pela verificação da consistência interna utilizando o coeficiente alfa de *Cronbach*.

Resultados: a análise fatorial revelou a multidimensionalidade do *Inventário Problemas Éticos na Atenção Primária em Saúde-Saúde da Criança*. Foi composta por 19 itens, distribuídos em 4 fatores: Fator 1 - Organização do sistema de saúde; Fator 2 - Ética Profissional; Fator 3 - Trabalho em equipe e Fator 4 - Expressão da autonomia dos pais (ou responsáveis). A consistência interna geral pelo alfa de *Cronbach* e para os fatores foi moderada a satisfatória.

Conclusão: a análise fatorial revelou que o inventário possui uma estrutura multidimensional com 4 fatores. O estudo demonstrou evidências de validade e confiabilidade que recomendam a aplicação do IPE-APS ao contexto da saúde da criança.

DESCRITORES: Estudos de validação. Enfermeiras de saúde da família. Resolução de problemas. Bioética. Saúde da criança.

VALIDEZ DIMENSIONAL DEL INVENTARIO DE PROBLEMAS ÉTICOS EN LA ATENCIÓN PRIMARIA DE SALUD EN EL CONTEXTO DE SALUD DEL NIÑO

RESUMEN

Objetivo: evaluar la validez dimensional y la confiabilidad del *Inventario de Problemas Éticos en Atención Primaria de Salud* adaptado al contexto de salud del niño.

Método: estudio de corte transversal con 101 enfermeras de las Unidades del programa *Estrategia de Salud de la Familia* en una ciudad de la región noreste de Brasil. La recolección de datos se llevó a cabo entre mayo de 2016 y junio de 2017. La validez de constructo se evaluó mediante análisis factorial exploratorio y la confiabilidad por medio de la verificación de la consistencia interna a través del coeficiente alfa de *Cronbach*.

Resultados: el análisis factorial reveló la multidimensionalidad del *Inventario de Problemas Éticos en la Atención Primaria de Salud- Salud del Niño*. Estaba compuesto por 19 ítems, distribuidos en 4 factores: Factor 1 - Organización del sistema de salud; Factor 2 - Ética profesional; Factor 3 - Trabajo en equipo y Factor 4 - Expresión de la autonomía de los padres (o tutores). La consistencia interna general por el alfa de *Cronbach* y para los factores fue de moderada a satisfactoria.

Conclusión: el análisis factorial reveló que el inventario presenta una estructura multidimensional con 4 factores. El estudio mostró evidencias de validez y confiabilidad que recomiendan la aplicación del IPE-APS al contexto de salud del niño.

DESCRIPTORES: Estudios de validación. Enfermeras de salud familiar. Solución de problemas. Bioética. Salud del niño.

INTRODUCTION

In the Primary Health Care (PHC) practice, the Ethical Problem (EP) has been conceptualized as aspects, issues or ethical implications common to this scenario and which are not fundamentally a dilemma¹. In the context of Clinical Bioethics, EP is considered as a clinical or biomedical case for which there are several admissible solutions, generating doubts among the professionals about what to do. The relationship of the PHC professionals with the families and the community can offer favorable scenarios for the emergence of value conflicts, herein understood also as EPs².

The EPs experienced in PHC are characteristic of this assistance level, since the configuration and the organization logic of the services, at the different points of the network, contribute to their occurrence. Thus, it is not appropriate to use the same solutions and contextualizations employed in the hospital environment in PHC³.

An integrative literature review study⁴ showed that the EPs found by nurses in PHC were related to: problems in the relationships between team members, characterized by the work process, interprofessional relationships, information and training; problems involving communication, autonomy and respect in the relationship with the user; and problems related to human, financial and physical resources and to external influences in the management of health services.

The experience of EPs by health professionals is a daily reality in their workspace, which leads to the need of having instruments capable of measuring phenomena related to ethics/bioethics, in order to assist in their identification and approach to improve quality of care. These instruments can serve as an important resource for understanding the frequency with which ethically problematic situations occur and for improving ethical performance in clinical and research situations⁵.

There is still no consensus on appropriate instruments to measure EPs in health contexts and, particularly in PHC, the construction of these tools is hampered by the scarcity of publications on ethics and bioethics at this care level and when compared to the production of studies within the hospital setting^{3-4,6}.

In the international literature, up to date, no instruments have been identified for the assessment and measurement of EPs in PHC. However, in Brazil, an instrument was built in 2008 for the identification of EPs in the PHC context, called *Inventory of Ethical Problems in Primary Health Care (Inventário de Problemas Éticos na Atenção Primária em Saúde, IPE-APS)*⁷. It is a three-dimensional instrument that assesses EPs in relationships with users and families, in team relationships, and in relationships with the organization and the health system.

The study captured, by the frequency of events, from the experiences of professional nurses and physicians, the occurrence of EPs during care in PHC. The instrument was formulated from a qualitative research study that identified a list of ethical problems mentioned by PHC professionals. It subsequently underwent an evaluation of its items, by applying it to two groups of participants (nine experts in ethics/bioethics and 46 health professionals from PHC)⁸.

IPE-APS was applied in three different models of basic health units in order to confirm whether the ethical problems were repeated and if there were other problems that could be included in the instrument. The findings confirmed the applicability of the instrument in these scenarios and there was no admission of other items⁹.

The psychometric history of the scale revealed other evidence of validity and reliability of IPE-APS. In Brazil, content validity, using the Delphi technique, was performed with 9 professionals who were experts in PHC¹⁰. The analysis of construct validity using Exploratory Factor Analysis (EFA) was performed in two studies^{6,11} using *varimax* rotation and showed factorial loads above 0.32 and 0.52 for all the component items, with internal consistency values of 0.87 and 0.91. In Europe, a cross-cultural adaptation was carried out, with the translation of this instrument into Portuguese (from Portugal) and later application in 91 primary care physicians and nurses in the city of Porto, Portugal¹².

All these analyses were carried out in the context of Basic Health Units (BHUs), covering the general EPs experienced by nurses and physicians. However, among the different users cared for in PHC, the ethical/bioethical issues involved in caring for children deserve special attention, since the differences in the care offered to children and adults are not linked only to the physiological aspect, but also with regard to the ethical issues¹³. Despite the advances achieved by bioethics, and in particular by pediatric bioethics, important ethical problems still persist in child health care¹⁴.

In order to validate the content of an instrument with a specific focus on children's health, the authors of this study proposed the contextual adaptation of IPE-APS⁷, performing methodological procedures to adapt it to pediatric care in PHC. Validation was done with 10 experts and 30 nurses from the FHS of a city in the Brazilian Northeast region. In semantic and item equivalence, the three dimensions of IPE-APS had high agreement rates. In the pre-test, the nurses assessed the instrument as being easy to understand and suggested minor adjustments to the instruction and layout. The mean filling-in time was 15 minutes, resulting in the first version of the *Inventory of Ethical Problems in Primary Health Care-Children's Health (Inventário de Problemas Éticos na Atenção Primária em Saúde-Saúde da Criança, IPE-APS-SC)*¹⁵.

From the content validation of IPE-APS-SC, it was also necessary to investigate its dimensional structure. Therefore, the objective of this study was to assess the dimensional validity and reliability of IPE-APS-SC.

METHOD

This is a cross-sectional study that comprises the analysis of the construct validity and reproducibility of IPE-APS-SC. The method was guided by the *Consensus-based Standards for the selection of health Measurement Instruments (COSMIN)* checklist¹⁶.

The study was carried out in a municipality of approximately 600,000 inhabitants, located in the Brazilian Northeast Brazil. The entire population of 105 nurses from the Family Health Units (FHUs) was listed. The inclusion criteria were as follows: 1) being an FHU nurse and 2) having regularly assisted children at least for the last 6 months. Such criteria are justified because these are the professionals who perform childcare and because they need a minimum experience time with this assistance to properly answer the instrument. Among them, only 4 professionals refused to participate in the research, totaling 101 participating nurses. This number of participants meets the recommendations for carrying out the proposed analysis, which should be at least 100 subjects¹⁷.

Data collection was carried out between May 2016 and June 2017. Contact with the nurses took place during the days when they were at the municipal health secretariat participating in permanent education meetings. The instrument was applied by the main researcher, with the collaboration of four Nursing students, duly trained for this procedure.

The collection instrument consisted of two modules: the first with sociodemographic and professional variables of the participants (gender, age, working time in the FHS, time working in childcare, location of the FHS), and the second with the IPE-APS-SC to be evaluated. The IPE-APS-SC contained 38 items distributed in three dimensions. The first dimension consists of 18 items; the second has 8 items and the last has 12 items.

For each of the IPE-APS-SC items, a score was assigned based on the frequency with which the EP occurs, on a Likert-type scale from 1 to 4 in ascending order of compliance, in which: 1- never; 2 - rarely; 3 - often; and 4 - always. There was also a question referring to the fact that the situation described was not considered as an ethical problem by the respondent (option 0)¹⁵.

To test the hypothesis of normality of data distribution, an assumption for the intended analysis, the Kolmogorov-Smirnov test was applied, considered appropriate for studies with samples larger than 50 cases.

Descriptive statistics were used to analyze the nurses' sociodemographic and professional variables. For the quantitative variables, measures of central tendency (mean) and dispersion (standard deviation) were applied. For the qualitative variables, simple absolute and relative frequency measures were applied.

Construct validity was assessed by investigating the dimensional structure of the scale. This structure was identified by factor analysis with principal components. In order to confirm the general structure of the data, the adequacy of the sample and the factorization correlation matrix to the expected type of analysis, the *Kaiser-Meyer-Olkin* (KMO) test and the Barlett test were initially performed. To determine the number of factors to be extracted, the statistical criteria of Kaiser (*Eigenvalue*>1) and Cattell (*ScreePlot*) were used.

The rotation procedure adopted was orthogonal, of the Varimax type. The factorial loads were considered significant when they exceeded the absolute value of 0.50, indicating that at least 25% of the item's variance is explained by the factor, as proposed by other authors¹⁷. Thus, the analysis with 101 participants led to the adoption of load values higher than usual, aiming at a significance level (α) of 0.05 and a power level of 80%¹⁷.

Items that did not present a significant factorial load in any factor were excluded, as well as ambiguous items presenting load in more than one factor whose difference between them was less than 0.10. The items that presented factorial load in more than one factor and whose difference between them was greater than 0.10 remained in the factor with the highest factorial load.

The analysis of the items' discriminative power was performed using the Item-Total Correlation (ITC) coefficient, which aims at measuring the relationship of each item with the respective factor. 0.30 was standardized as the minimum value for the assessment¹⁸.

To examine reliability through the scale's internal consistency, Cronbach's alpha coefficient was used, which is appropriate for scales with more than two answer options. It varies between 0 and 1 and has minimum acceptability values between 0.60 and 0.70¹⁸ SPSS 22 for Windows was used for all the analyses.

The research was carried out after approval by the Research Ethics Committee of the Nursing School at *Universidade Federal de Bahia*.

RESULTS

The sociodemographic and professional data of the 101 nurses participating in the study are described in Table 1.

Table 1 – Distribution of the participants' sociodemographic and professional characteristics, Feira de Santana, Bahia, Brazil, 2017. (n=101)

Characteristics	Frequency (%) or mean [standard deviation]
Gender	
Male	05 (5%)
Female	96 (95%)
Age	35.5 [\pm 8.79]
Time of training (years)	8.0 [\pm 6.7]
Time working in FHS* (years)	5.1 [\pm 4.3]
Time of experience in childcare (years)	5.7 [\pm 5.3]
Location of the FHS where they work	
Urban area	77 (76.2%)
Rural area	24 (23.8%)

*FHS-Family Health Strategy

Regarding the Kolmogorov-Smirnov (KS), normality hypothesis test, a KS value greater than ($p > 0.05$) was obtained, indicating adherence to the Gaussian curve between the expected and observed distributions. The KMO test of 0.6 indicated the adequacy of the sample size and Bartlett's sphericity test < 0.001 showed that the correlation matrix is not an identity matrix.

According to Figure 1, the eigenvalue (Eigenvalue > 1) and Scree Plot criteria indicated a solution with 13 factors, representing 69% of the variance, which signaled the decision on the number of factors to extract. However, many factors had only two items; thus, solutions of 4 to 6 factors were tested and Principal Component Analysis (PCA) was carried out, analyzing the respective structures.

In the first solution with 5 and 6 factors, confusing saturation of the items was verified. However, in the 4-factor solution, there was a better factor structure, as there was a smaller number of ambiguous and confusing items that presented loads in more than one factor, as well as greater theoretical defense power.

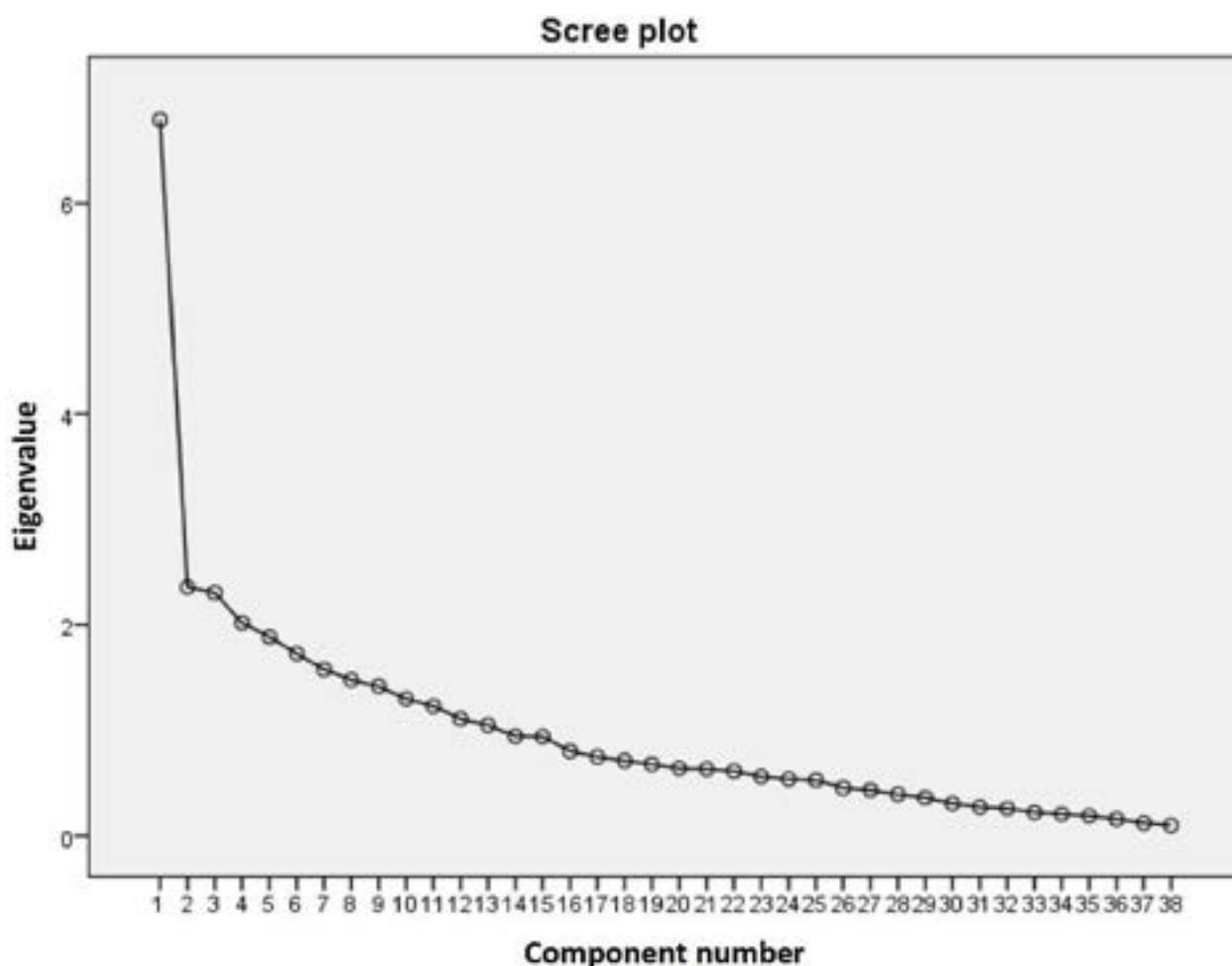


Figure 1 – Scree Plot chart, Feira de Santana, Bahia, Brazil, 2017.

Factor analysis resulted in an instrument with a greater number of factors than those defined in the instrument (Table 2). The grouping into 4 factors showed that 19 of the 38 items of IPE-APS had a factor loading greater than 0.50 in only one factor, suggesting its relevance to it.

Table 2 – Distribution of the items in the factor structure of IPE-APS-SC and respective factor loadings, Feira de Santana, Bahia, Brazil, 2017. (n=101).

Items		Factorial load				ITC*	α if item is removed
		1	2	3	4		
Factor 1 – Organization of the health system							
38	There is no rear removal service in the BHU.†	0.655				0.485	0.719
35	Difficulties regarding return and reliability of the laboratory test results	0.609				0.548	0.702
37	The BHU† is unable to provide emergency care to children.	0.581				0.522	0.701
36	The BHU† does not provide family health teams with conditions to support children's home visits.	0.520				0.514	0.707
28	Lack of support from intersectoral actions to discuss and solve ethical problems they encounter in their children's health practice.	0.520				0.417	0.725
32	Private health service professionals disregard the diagnostic or therapeutic course of action carried out by the professionals of the family health team.	0.503				0.347	0.738
34	Difficulties in the referral and counter-referral system for consultations with specialists and complementary tests for the children.	0.502				0.458	0.717
Factor 2 – Professional Ethics							
4	The FHS‡ professionals make inappropriate or wrong prescriptions for the children		0.666			0.312	0.414
12	The CHA§ tells their neighbors information they get from work about children and their families		0.540			0.282	0.459

Table 2 – Cont.

Items		Factorial load				ITC*	α if item is removed
		1	2	3	4		
9	The professionals request diagnostic tests for the child without informing the parents (or guardians) what is being requested and why		0.534			0.365	0.315
Factor 3 – Teamwork							
19	The professionals of the FHS [‡] team work with lack of commitment and involvement in children's health care			0.713		0.573	0.567
26	The BHU employees raise doubts about the FHS [‡] professionals' conduct			0.642		0.471	0.508
31	The FHS [‡] physician refuses to see children who do not have a medical appointment scheduled for the day, which ends up restricting their access to the BHU [†]			0.606		0.412	0.617
21	There is disrespect among the FHS [‡] team members			0.566		0.426	0.551
Factor 4 – Expression of parents (or guardians) autonomy							
17	The parents (or guardians) refuse to follow medical instructions or undergo tests that the physicians and nurses have indicated for the children				0.615	0.448	0.493
15	The parents (or guardians) refuse prescribed treatment to the child because they believe in divine healing				0.586	0.384	0.528

Table 2 – Cont.

Items		Factorial load				ITC*	α if item is removed
		1	2	3	4		
7	During the medical or nursing consultation, the parents (or guardians) request exams, medications or other inappropriate or unnecessary procedures for the child				0.550	0.376	0.528
25	The parents (or guardians) ask one of the FHS [‡] members to deny the access to any information related to the child's health to any other member of the family, even in situations where the participation of the entire family in care is required				0.532	0.266	0.576
16	Minors seek the BHU [†] and ask the team for tests, medications or other procedures, without parental consent and/or knowledge				0.532	0.322	0.551
	Cronbach's Alpha	0.74	0.50	0.62	0.59		Overall $\alpha = 0.767$
	Variance%	16.36	6.20	6.06	5.31		
	Cumulative Variance%	17.87	24.07	30.13	35.44		

Note: Extraction method: Principal Component Analysis; Rotation method: Varimax with Kaiser normalization, Converged rotation in 8 interactions. *ITC: Item-Total Correlation; [†]BHU: Basic Health Unit; [‡]FHS: Family Health Strategy; [§]CHA: Community Health Agent.

In PCA, factor 1 grouped 7 items that previously belonged predominantly to the *EP in relation to organization and to the health system* dimension, with factor loadings ranging from 0.655 to 0.502 that demonstrated a good relationship between these items and their factor. Factor 2 incorporated three items that belonged to the *EP in relations with the users and the family* dimension, and all presented acceptable factor loading values. Factor 3 grouped four items with predominance of high factor loads in the same factor that corresponded to the *EP in relation to the team* dimension. Factor 4 presented five items that specifically addressed issues involving the parents (or guardians) autonomy over the child's life. The factor loads presented by the items were acceptable and exclusive for this factor.

Thus, after PCA, from the total of 38 items of the original IPE-APS, 19 items were extracted. Among them, eleven belonged to the first dimension (1,2,3,5,6,8,10,11,13,14, 18); five made up the second dimension (19,20,22,23, 24) and three items comprised the last dimension (27, 30 and 33).

The results of the internal consistency analysis by means of Cronbach's alpha coefficient of the four factors of the IPE-APS-SC showed that the alpha coefficient presented moderate values ($\alpha = 0.74$ to 0.50), whereas the alpha of the 19 items was considered satisfactory (Table 2).

The principal components analysis in 4 factors allowed elaborating operational definitions from the groupings of items evidenced by PCA that contributed to the definition of the theoretical structure, corroborating the explanation of the bioethics construct in PHC and children's health (Chart 1).

Chart 1 – Operational description of the IPE-APS-SC factors, Feira de Santana, Bahia, Brazil, 2017.

Factors	Operational definition	Item in original version	Item in adapted version
1 – Organization of the health system	Ethical problems related to organizational issues in the health system, which are not under the nurse's control (structure, management, resources, articulation).	28,32,34,35,36,37, 38	2,19,1,16,8,12, 10
2 – Professional ethics	Ethical problems related to the professional ethics of the members that make up the family health strategy (confidentiality, malpractice, communication)	4,9, 12	6,7, 15
3 – Teamwork	Ethical problems related to different professional profiles that create obstacles to teamwork in PHC (commitment, respect, trust, flexibility)	19,21,26, 31	4,11,14, 13
4 – Expression of the parents (or guardians) autonomy	Ethical problems linked to the expression of parental autonomy to decide on the issues involving the child's life (treatment, confidentiality, children's decision) and how the professional deals with this ethical issue.	7,15,16,17, 25	17,3,18,5, 9

DISCUSSION

The structural validity analysis has been defined as the extent to which the measurement instrument's scores adequately reflect the dimensionality of the construct to be measured. This type of validity can be assessed by the exploratory factor analysis technique when there are still no clear ideas about the number and types of dimensions that are included in the investigated construct¹⁶.

In this study, the hypothesis to be investigated was whether the "Ethical problems in PHC" construct, assessed only with nurses and adapted to the specific context of children's health, was being adequately captured with a three-dimensional instrument.

It is known that the construct in question is variable and depends on the context and understanding of the professionals about the individual meaning, validation being recommended in studies that adapted the instrument to a different population¹⁹. Thus, it is believed that the adaptation of the original scale

to the children's health context¹⁵ was a fundamental step in obtaining good psychometric indexes and, undoubtedly, this preliminary stage positively influenced the appreciation of a consistent factor structure with considerable theoretical defense power.

The model presented corroborates the multidimensional property of the IPE-APS-SC scale. The factor structure of the Brazilian version has high and exclusive factorial loads for almost all items that comprised the final model. The validity analysis of IPE-APS-SC showed a structural configuration with 19 items, distributed into 4 factors; thus, based on the construct of the original instrument and on the theoretical framework of children's health, the four factors were renamed.

Factor 1, Organization of the health system, concentrated the largest number of items per factor, with a total of seven. It encompassed macro-structural issues, but with great potential to affect the daily lives of nurses who work in childcare. From an operational perspective, they consist in the organizational issues of the health system (structure, management, resources, articulation) not under the nurse's control.

To justify the grouping of items 36, 37 and 38 in factor 1, dealing with the structure of the FHS services, the result of a study that evaluated the experience of nurses in childcare consultations in the FHS was verified, pointing out the following difficulties in the structural sphere: insufficient physical space and lack of essential supplies and equipment to carry out the consultation, in addition to problems related to the team's commute, resulting in losses in home visits²⁰.

The managerial aspects of scarcity and allocation of human, financial and material resources generate ethical problems and influence their resolution⁴. In items 28,32, 34 and 35, it is possible to identify the specific demands from the management and/or the absence of articulated work in the health services.

The main problems related to the public health management process were indicated in a review article: lack of planning, comprehensiveness of health actions, equality, universality, financing, bureaucracy, decentralization, multidisciplinary teamwork, popular participation, access regulation, human resources management, evaluation and auditing, and service quality management²¹.

Factor 2, Professional Ethics, consists of only three items (4, 9 and 12); however, it was incorporated as a representative of the "Ethical problems in PHC" construct, as it concerns the EPs related to professional ethics of the FHS component members, such as secrecy, malpractice and communication, with great potential for risks to the physical and relational integrity of those involved. Its maintenance was based on methodological guidelines in the literature that establish the minimum requirement of three indicators per factor, since less than three items would certainly compromise a more adequate mapping of the increasing intensity of the dimensional content¹⁷ (because it presented robustness only in the structure of 4 factors).

Errors in the professional conduct, indicated in item 4, can cause harms to the children assisted by the FHS. A literature review pointed out that the main iatrogenesis committed by nurses is drug iatrogenesis, being related to negligence, malpractice and recklessness²².

In item 9, the absence and/or failure of communication in the relationship between the PHC professionals and users is observed, generating countless conflicts. It is understood that good communication can minimize ethical demands, affecting the construction of a therapeutic and ethical relationship⁴.

In factor 3, Teamwork, the four items (19,21, 26 and 31) were linked to actions of the individual sphere that compromised teamwork, which is essential for the integrality of the care offered to the children.

A literature review synthesizes the concept of teamwork in PHC as "a form of structuring and organizing work processes, based on intersubjective relationships, effective communications and articulation of practices and knowledge that are collectively constructed, with common goals and shared responsibilities, including the participation of users and the community in the production of care"^{23:153}.

With regard to the operational definition of factor 3, there are ethical problems related to the different professional profiles that create obstacles to teamwork in PHC, compromising the commitment, respect, trust and flexibility that are so necessary for interprofessional work.

The psychometric history of the two exploratory factor analysis of IPE-APS corroborates with the three factors already mentioned, in which some factors present theoretical correspondence^{6,11}. This similarity evidences that these items cover ethical issues common to any age group assisted by PHC.

However, factor 4 revealed a construct specific to the children's health context, called Expression of the parents (or guardians) autonomy. This ethical problem is linked to the parents' autonomous expression when deciding on issues involving the child's life, such as treatment, confidentiality, children's decision, and the way in which the professional deals with this ethical demand. A research study of the integrative review type states that the very frequent EPs in PHC are associated with issues related to autonomy⁴.

Items 7,15,17, 25 evidence the EPs related to the difficulty that health professionals face dealing with the autonomy of the users represented by parents or guardians in childcare. However, this problem has historical roots, called paternalism, common among pediatricians²⁴ and nurses²⁵. In the female work context performed by nurses, maternalism²⁵ is also identified, which, like paternalism, conflicts with the parents' (or guardians') right to decision-making.

One of the most frequent themes in the list of ethical problems experienced by the professionals who take care of children in PHC is related to the professional-family relationship²⁴. A review research study that identified 40 ethical problems in the practice of childhood medicine highlights the following issues: informed consent, patient information, parents' stress due to the emotional burden while monitoring their children's treatment, and lack of training in communication/child psychology of the professionals involved in child care²⁶.

A number of women scholars point out that, in childcare consultations, the mother must be considered by the health professional as co-responsible for child care, and the establishment of a relationship that encourages bonding, exchange and construction of consensus and respect for their autonomy is indicated; thus avoiding seeing her as a passive figure, limited to adopting professional guidelines²⁷.

The exclusion of nineteen items from the instrument initially caused concern, a fact that led to a thorough review of the items that did not reach a factorial load of 0.50, in order to verify some theoretical contribution of these items to the factors under analysis. In addition to that, it is added that the author of the original instrument was consulted to assess the relevance of grouping some items into different factors.

This new analysis listed the excluded items, as already theoretically represented, considering that they have low or crossed factorial loads, indicating ambiguity. In addition to that, it is possible to assume that they have been misinterpreted by the participants due to a possible problem in the writing.

In the practice, there is a tendency to encourage the use of more objective and shorter instruments. A study carried out in England, using an instrument applied to women, showed that some methods increased the response rate, among which shorter questionnaires stand out²⁸.

The internal consistency in factors 2 and 4 showed moderate values: 0.50 and 0.59, respectively. Cronbach's Alpha statistical method compares the items of a factor and measures the mean correlation between all these items¹⁹; thus, a small number of items, as in factors 2 and 4, certainly affected internal consistency values.

The alpha values of factors 1 and 3 in this study were considered adequate and similar to the other factor analyses performed with the original instrument^{6,11} and also similar to other studies that used psychometry to measure subjective phenomena, in which ethics and bioethics issues experienced by the nurses are involved²⁹⁻³⁰.

The item-total correlation measure and Cronbach's alpha, if the item is excluded, allowed assessing to what extent the internal consistency of the IPE-APS-SC factors would be affected by the removal of an item with low discrimination power. It was verified that items 12 and 25 did not reach an ITC value above 0.30; however, they did not obtain any improvement in their reliability indexes, which would not justify their removal, as it could also imply representation problems in the content mapped by these indicators. Thus, it was decided to maintain them in this four-factor model.

In addition to that³¹ is fundamental to continue to understand the ethical problems experienced by professionals in PHC, aiming to recognize the way in which they manage these problems and the possible effects on the professionals and their users.

In this sense, the concern to offer an instrument such as IPE-APS is associated not only with the accounting of ethical problems, but it can also be useful for the improvement of health services by fostering discussions and reflections on ethical issues¹¹ and for the validation/measurement process in the teaching-learning process in bioethics and moral judgment⁶.

The results of this study should bring about implications for the Nursing practice by providing an instrument that may identify the occurrence of ethical problems in the context of childcare and by raising a reflection on their daily practice in childcare, with the expectation of qualifying this care.

The difference of this instrument in relation to its predecessors, in the context of adult health, is highlighted since it captures information from the nurses' perspective (although the proposed items seem to be applicable to other professionals who interact with the child and their family). However, for this application, it would be necessary to validate it in another professional category, such as nursing technicians, Community Health Agents (CHAs) and the team from the Family Health Support Center (*Núcleo de Apoio à Saúde da Família, NASF*).

The current version of IPE-APS-SC, with 19 items, has the advantage of being brief, having only four answer categories, being easy to apply and, therefore, less tiring, with the possibility of being more accepted by the respondents.

A likely limitation concerns the fact that the instrument was tested in a single geographic context. Further studies in other regions of the country would be recommended to corroborate the structure obtained and preferably through confirmatory factor analyses. In addition to good evidence on the configurational and metric structure, it is also necessary to assess the instrument's capacity regarding its invariance.

CONCLUSION

The construct validity analysis obtained by verifying the factor structure of IPE-APS-SC allowed identifying a version consisting of 19 items distributed in four dimensions.

The study presented evidence of validity and reliability on the application of IPE-APS to the context of children's health. However, this is the first evidence, and further analyses are necessary in order to verify the instrument's discriminant validity using other samples and new scenarios.

It is suggested to extend these assessments to confirmatory factor analyses, in addition to an appreciation of the relationships between the dimensions identified and other concepts relevant to the ethical problems construct.

REFERENCES

1. Sugarman J. Ethics in primary care. New York, NY(US): McGraw-Hill; 2000.
2. Gracia D. Problemas con la deliberación. *Folia Human* [Internet]. 2019 [cited 2020 Mar 09];3:1-16. Available from: <https://revista.proeditio.com/foleahumanistica/article/view/1192>

3. Simas KBF, Simões PP, Gomes AP, Costa AAZ, Pereira CG, Siqueira-Batista R. (Bio) Ethics and primary health care: preliminary study on Family Clinics in the city of Rio de Janeiro, Brazil. *Ciênc Saúde Coletiva* [Internet]. 2016 [cited 2017 Feb 24];21(5):1481-90. Available from: <https://doi.org/10.1590/1413-81232015215.00332015>
4. Nora CRD, Zoboli ELCP, Vieira M. Ethical problems experienced by nurses in primary health care: integrative literature review. *Rev Gaúcha Enferm* [Internet]. 2015 [cited 2017 Feb 24];36(1):112-21. Available from: <https://doi.org/10.1590/1983-1447.2015.01.48809>
5. Redman BK. Review of measurement instruments in clinical and research ethics, 1999-2003. *J Med Ethics* [Internet]. 2006 [cited 2017 Nov 17];32:153-6. Available from: <https://doi.org/10.1136/jme.2005.012567>
6. Oliveira AM, Gouveia V, Nunes R. An Instrument for perceiving ethical problems in primary healthcare: psychometric parameters and ethical components. *Int J Clin Med* [Internet]. 2014 [cited 2016 Oct 09];5(6):1020-9. Available from: <https://doi.org/10.4236/ijcm.2014.516133>
7. Silva LT. Construção e validação de um instrumento para mensuração de ocorrência de problema ético na atenção básica [Dissertação]. São Paulo (SP): Universidade de São Paulo, Escola de Enfermagem; 2008 [cited 2014 Apr 25]. Available from: https://www.teses.usp.br/teses/disponiveis/7/7137/tde-15052008-143443/publico/Luana_Torelli.pdf
8. Zoboli ELCP. Problemas éticos en atención primaria, São Paulo, Brasil. *Rev Bras Bioética* [Internet]. 2007 [cited 2015 Oct 29];3(1):27-39. Available from: <https://doi.org/10.26512/rbb.v3i1.7903>
9. Zoboli ELCP. Relación clínica y problemas éticos en atención primaria, São Paulo, Brasil. *Aten Primaria* [Internet]. 2010 [cited 2015 May 10];42(8):406-11. Available from: <https://doi.org/10.1016/j.aprim.2010.01.018>
10. Junges JR, Zoboli ELCP, Schaefer R, Nora CRD, Basso M. Validation of the comprehensiveness of an instrument on ethical problems in primary care. *Rev Gaúcha Enferm* [Internet]. 2014 [cited 2016 Mar 05];35(2):148-56. Available from: <https://doi.org/10.1590/1983-1447.2014.01.39811>
11. Junges JR, Zoboli ELCP, Patussi MP, Schaefer R, Nora CRD. Construction and validation of the instrument "Inventory of ethical problems in primary health care". *Rev Bioét* [Internet]. 2014 [cited 2016 Mar 05];22(2):309-17. Available from: <https://doi.org/10.1590/1983-80422014222012>
12. Neves-Amado J. Problemas éticos na comunidade. *Rev Ordem dos Enfermeiros* [Internet]. 2011 [cited 2017 Jan 26];37:27-30. Available from: <http://hdl.handle.net/10400.14/5171>
13. Hester DM. Ethical issues in pediatrics. In: Hester DM, Schonfeld T, eds. *Guidance for Healthcare Ethics Committees*. Cambridge University Press; 2012. p.114-21.
14. Carnevale F. Reconocer la voz del niño: desarrollando um nuevo paradigma para la ética de la infancia. *Bioética Complutense* [Internet]. 2016 [cited 2017 Jan 06];26:13-9. Available from: <https://www.ucm.es/data/cont/docs/137-2016-07-07-Bio%C3%A9tica%20Complutense%2026.pdf>
15. Santos DV, Santa-Rosa DO, Zoboli ELCP, Freitas KS. Adaptation of the inventory of ethical problems to the child health context. *Acta Paul Enferm* [Internet]. 2016 [cited 2016 Jul 20];29(5):586-94. Available from: <https://doi.org/10.1590/1982-0194201600081>
16. De Vet HCW, Terwee CB, Mokkink LB, Knol DL. *Measurement in medicine: a practical guide*. 5th ed. Cambridge (UK): Cambridge University Press; 2015.
17. Hair Jr JF, Black WC, Babin BJ, Anderson RE. *Multivariate data analysis*. 7th ed. Upper Saddle River, NJ(US): Pearson Prentice Hall; 2010.
18. Streiner DL, Norman GR. *Health measurement scales: a practical guide to their development and use*. New York, NY(US): Oxford University Press; 2015 [cited 2017 Jul 22]. Available from: <https://oxfordmedicine.com/view/10.1093/med/9780199685219.001.0001/med-9780199685219>

19. Echevarria-Guanilo ME, Gonçalves N, Romaniski PJ. Propriedades psicométricas de instrumentos de medidas: bases conceituais e métodos de avaliação – parte II. *Texto Contexto Enferm* [Internet]. 2019 [cited 2020 Aug 26];28:e20170311. Available from: <https://doi.org/10.1590/1980-265X-tce-2017-0311>
20. Soares DG, Pinheiro MCX, Queiroz DM, Soares DG. Implementation of childcare and care challenges in the family health strategy in a city of the Ceará state. *Rev Bras Promoç Saúde* [Internet]. 2016 [cited 2017 Apr 01];29(1):132-8. Available from: <https://doi.org/10.5020/18061230.2016.p132>
21. Martins CC, Waclawovsky AJ. Problemas e desafios enfrentados pelos gestores públicos no processo de gestão em saúde. *Rev Gest Sist Saúde* [Internet]. 2015 [cited 2021 Feb 08];4(1):100-9. Available from: <https://doi.org/10.5585/rgss.v4i1.157>
22. Silva ALNV, Silva MCF, Duarte SH, Santos RM. Violations and ethical incidents committed by nursing professionals: an integrative review. *Rev Enferm UFPE* [Internet]. 2015 [cited 2017 May 19];9(1):201-11. Available from: <https://doi.org/10.5205/reuol.6817-60679-1-ED.0901201528>
23. Brito GBE, Branco ABAC. Trabalho em equipe na atenção básica à saúde: pesquisa bibliográfica. *Rev Psicol Saúde* [Internet]. 2020 [cited 2021 Feb 08];12(1):143-55. Available from: <https://doi.org/10.20435/pssa.v12i1.669>
24. Mendiola JGG, Gil GC, Barreiro MP, Sánchez NTC. Dilemas éticos y bioéticos de la práctica en la atención primaria de salud. *MediSur* [Internet]. 2010 [cited 2017 May 19];8(2):38-45. Available from: <https://www.redalyc.org/articulo.oa?id=180014818007>
25. Zoboli ELCP, Sartorio NA. Bioética e enfermagem: uma interface no cuidado. *O Mundo da Saúde* [Internet]. 2006 [cited 2017 Feb 03];30(3):382-97. Available from: <https://doi.org/10.15343/0104-7809.200630.3.2>
26. Lopes JR, Navarro-Zaragoza J, Navarro FC, Luna A. Dilemas éticos en la práctica de la medicina infantil. *Cuadernos de Bioética* [Internet]. 2017 [cited 2021 Feb 08];XXVIII(1):29-40. Available from: <https://www.redalyc.org/articulo.oa?id=87550119003>
27. Reichert APS, Rodrigues PF, Albuquerque TM, Collet N, Minayo MCS. Bond between nurses and mothers of children younger than two years: perception of nurses. *Ciênc Saúde Coletiva* [Internet]. 2016 [cited 2021 Feb 10];21(8):2375-82. Available from: <https://doi.org/10.1590/1413-81232015218.07662016>
28. Harrison S, Henderson J, Alderdice F, Quigley MA. Methods to increase response rates to a population-based maternity survey: a comparison of two pilot studies. *BMC Med Res Methodol* [Internet]. 2019 [cited 2021 Feb 18];19:65. Available from: <https://doi.org/10.1186/s12874-019-0702-3>
29. Schaefer R, Zoboli EL, Vieira MM. Psychometric evaluation of the moral distress risk scale: a methodological study. *Nurs Ethics* [Internet]. 2019 [cited 2019 Feb 20];26(2):434-42. Available from: <https://doi.org/10.1177/0969733017707347>
30. Huang FF, Yang Q, Zhang J, Zhang QH, Khoshnood K, Zhang JP. Cross-cultural validation of the moral sensitivity questionnaire-revised Chinese version. *Nurs Ethics* [Internet]. 2016 [cited 2017 June 30];23(7):784-93. Available from: <https://doi.org/10.1177/0969733015583183>
31. Laabs CA. Moral problems and distress among nurse practitioners in primary care. *J Am Acad Nurse Pract* [Internet]. 2005 [cited 2017 June 30];17(2):76-84. Available from: <https://doi.org/10.1111/j.1041-2972.2005.00014.x>

NOTES

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Writing and/or critical review of the content: Santos DV, Freitas KS, Rosa DOS, Zoboli, ELCP, Miranda JOF.

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