ABCS HEALTH SCIENCES

ORIGINAL ARTICLE

OPEN ACCESS

Development and validation of process indicators of the quality of nursing care for the elderly

Flavia Aparecida Dias Marmo[1], Zenewton André da Silva Gama[2], Darlene Mara dos Santos Tavares[1]

[1]Curso de Enfermagem, Departamento de Enfermagem em Educação e Saúde Comunitária, Universidade Federal do Triângulo Mineiro (UFTM) – Uberaba (MG), Brazil.
[2]Departamento de Saúde Coletiva, Universidade Federal do Rio Grande do Norte (UFRN) – Natal (RN), Brazil.

ABSTRACT

Introduction: Quality indicators are important for service management. However, in primary care, there is a shortage of indicators specifically regarding the elderly population. **Objective:** To build and validate process indicators of the quality of nursing care for the elderly. **Methods:** This is a methodological research, and the steps are based on proposals from the National Database of Nursing Quality Indicators and the Agency for Healthcare Research and Quality. The indicators were evaluated according to the criteria of face validity, terminology, necessity, content validity, reliability, viability, utility, and usability. Nine nurses participated in the expert panel, including professionals who provided primary care assistance, researchers in the area of health care for the elderly, and members of Brazilian health-related organizations. The Adequacy Method developed by Research and Development at the University of California Los Angeles was used. Data were analyzed using the median, Content Validity Index, and Kappa. **Results:** Twenty-two indicators were validated. All measures were considered appropriate, with content validity, and reached an agreement on terminology and necessity. Of the 22 indicators, only four were considered unavailable and impractical to collect. Thirteen indicators were not considered useful for determining the reception of financial incentives. In the assessment of usability to compare public reports, six indicators had relatively low scores. **Conclusion:** Indicators can contribute to monitoring the quality of care for the elderly, identifying opportunities for improvement in actions performed by nurses in primary care.

Keywords: quality indicators, health care; primary health care; geriatric nursing; aged.

How to cite this article: Marmo et al. Development and validation of process indicators of the quality of nursing care for the elderly. ABCS Health Sci. 2021;46:e021209. https://doi.org/10.7322/abcshs.2019149.1415

Received: Jan 06, 2020
Revised: Sep 05, 2020
Approved: Sep 09, 2020

Corresponding author: Darlene Mara dos Santos Tavares – Universidade Federal do Triângulo Mineiro – Avenida Getúlio Guaritá, 159 – CEP 38025-440 – Uberaba (MG), Brazil – E-mail: darlene.tavares@uftm.edu.br

Declaration of interests: nothing to declare

INTRODUCTION

The World Health Organization has led an international movement for the quality of health care[1]. Without quality, the health system loses its effect as a social determinant of health, preventing its benefits for the health of the population[2]. In this context, investment in primary health care is considered a fundamental principle for success in this subject[1].

However, the quality of care does not improve in isolation. According to the Juran[3] trilogy, for continuous improvement, it is essential to integrate planning, monitoring, and quality improvement.

The quality of care can be monitored or assessed through three dimensions related to the structure, the process, and the result. However, according to Donabedian[4], the process is the only direct way to assess quality. This is because the good structure may not be used to implement good practices, and the good or bad results do not always occur due to health care[4]. The process denotes what is actually done in the assistance/care to the individual, as well as the professional's activities related to the diagnosis, recommendation, or implementation of the treatment[4].

According to the National Quality Forum (NQF)[5], high-quality health care refers to "the right services, at the right time and on the right path to achieve the best possible level of health". This will be the concept adopted for the present study.

Although there are several proposals for health quality indicators at the primary level in different countries[6,7], indicators related to nursing care for the elderly in primary care are not described. For example, the indicators of the Improvement of Access and Quality in Primary Care Program (PMAQ-AB) are generic and not directly applicable to the work of nurses with the elderly, making it difficult to monitor the quality of care provided by this professional category, which is fundamental to primary health care[7].

In nursing, indicators have been identified especially in the hospital context and used by health-related organizations and researchers to measure nurses 'contribution to users' results. Once identified, sensitive nursing indicators can be applied to improve quality[8].

The NQF shows that nursing work directly affects the quality of health care and the lives of users. Among the research priorities of the NQF, there are measures of the intervention process centered on the nurse[9].

Considering these antecedents and the potential social losses of this knowledge gap for the quality of health care, as well as the importance of process indicators to directly assess this quality, the study prioritized the creation of process indicators for monitoring the quality of care.

Thus, this study aimed to build and validate quality indicators of nursing care for the elderly in primary health care.

METHODS

This is a methodological research for the development and validation of new indicators. The indicators developed were evaluated for face and content validity, necessity, reliability, feasibility, usefulness, and usability.

The steps for the construction of nursing care quality indicators were based on the development process proposed by the National Database of Nursing Quality Indicators (NDNQI)[10] and by the Agency for Healthcare Research and Quality (AHRQ)[11] (Figure 1).

Literature review to identify candidate indicators

The search for candidate indicators was carried out by reviewing the scientific literature, as well as specific searches in health-related organizations. The search for indicators together with health-related organizations occurred through research on websites (Agency for Healthcare Research and Quality; National Quality Measures Clearinghouse; Australian Commission on Safety and Quality in Health Care; Canadian Institute for Health Information; Department of Health - National Health Service - United Kingdom; Blackpool, Fylde and Wyre Hospitals United Kingdom; Healthier Scotland; Royal College of Nursing; Health Quality & Safety Commission New Zealand; Health and Social

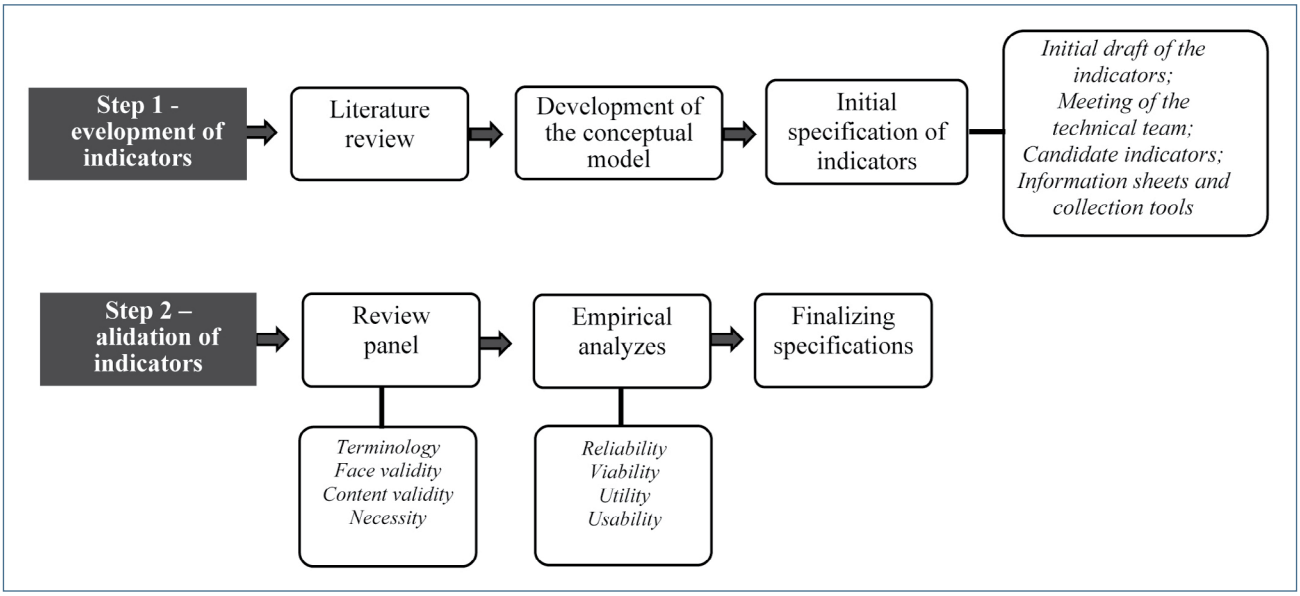

Figure 1: Visual representation of the methodological procedures used in this study.

Care Information Center England; National Database of Nursing Quality Indicators; National Quality Forum; Registered Nurses' Association of Ontario; Organization for Economic Co-operation and Development; Ministry of Health of Brazil; Support Center for Hospital Management of the Associação Paulista de Medicina) from January to February 2015. Documents citing indicators were identified or, when possible, research was carried out by using descriptors ('elderly' and/or 'primary care').

The search in the scientific literature[12] was carried out in the databases National Library of Medicine National Institutes of Health (PubMed), Cumulative Index to Nursing and Allied Health Literature (CINAHL), and Latin American and Caribbean Literature in Health Sciences (Lilacs). Controlled descriptors (Medical Subject Headings-MeSH, CINAHL Headings, and Health Sciences Descriptors-DeCS) were used, delimited according to each database, and uncontrolled descriptors (keywords) according to previous readings on the topic of interest (indicators process, nursing, and elderly). The inclusion criteria were studies that portrayed the indicators of nursing care/assistance in primary care; studies published in English, Portuguese or Spanish, from January 2003 to December 2013. Studies on literature review, editorial, or reply letter were excluded.

Development of the conceptual model

For the construction of the conceptual model[13], a documental analysis of national normative publications and documents was carried out, including those that govern primary care and/or related to health care for the elderly and the participation of specialists on the subject. Details on the development of the conceptual model are available in a previous publication[14].

Initial specification of candidate indicators

Based on the conceptual model built, an initial set of indicators was proposed. The technical file of the candidate indicators was based on the structure proposed by the Development Project of Methodology for Performance Evaluation of the Brazilian Health System (PROADESS)[15].

To measure candidate indicators, the following data collection methods were used: the audit to prove the existence of records; the questionnaire for the indicators in which it was necessary to obtain the view of the professionals from Family Health Service (FHS); and the review of medical records or other documents, for the elaboration of protocols for verification, according to the specificity of each indicator.

Review panel

The technical datasheets of the indicators were analyzed by a panel of experts with the participation of nine nurses equally divided into three groups: professionals who provided assistance in primary care, researchers in the area of health care for the elderly, and members of national organizations related to health.

The experts filled out an evaluation form with quantitative questions related to importance (face validity), terminology, need, and content validity[11,16]. The Adequacy Method developed by the Research and Development (RAND) of the University of California Los Angeles (UCLA)[17] was used (Figure 2).

Face validity (how important this indicator is for the health of the elderly cared for by the nurse), the terminology (how much this indicator is clearly written), and the need (how much this indicator is necessary) be included in the final list, as it is indispensable for assessing the quality of care for the elderly in

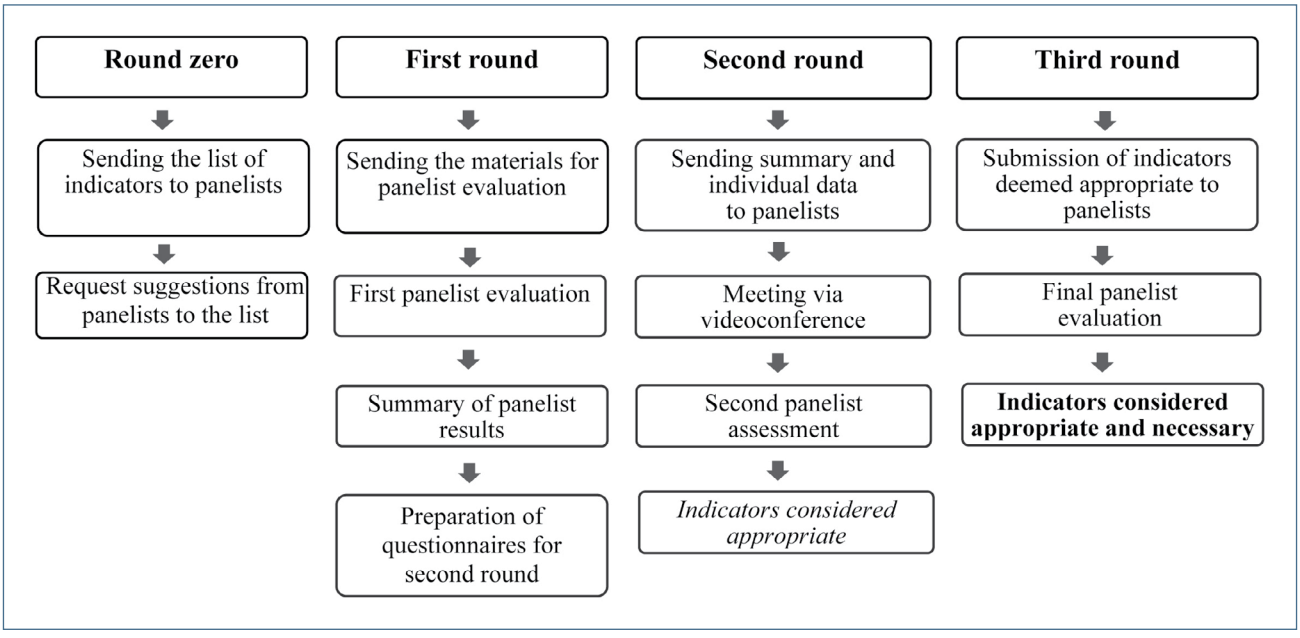

Figure 2: Steps in the RAND/UCLA adequacy process used in this study

primary care) were assessed on a scale of one (not at all) to nine points (a lot). For face validity, the level of adequacy and the measure of the agreement were used; terminology and need were classified by the measure accordingly. The level of adequacy was based on the median of the face validity score being: appropriate (median between 7-9), uncertain (median between 4-6), or inappropriate (median between 1-3)[17]. The measure of agreement for each item (face validity, terminology, and need) was obtained considering its median, being agreed when ≤2 panel members evaluated the indication outside the 3-point region (1-3; 4-6; 7-9), which contains the median; disagreement when ≥3 members of the panel evaluate the nomination in the region 1-3 and ≥3 members in the region of 7-9[17], and; inaccuracy (uncertainty) when they did not fit the 'agreement' or 'disagreement' conditions described above[11,17].

From this method emerged the indicators considered appropriate, according to face validity (importance), and the measures of agreement related to terminology and need. For the final assessment of the need, only the indicators classified as appropriate were considered[17].

The content validation included a scale from one to four (not representative to a representative), and the classification of the sub-dimensions of each indicator was based on PROADESS[18]. The data were analyzed using the Content Validity Index (CVI). For the calculation of the CVI, the number of specialists who rated the item as three or four was counted, and this number was divided by the total number of judges; thus, the proportion of specialists who considered the item as valid content was obtained (CVI=0.80)[19].

Empirical analyzes

The pilot study was carried out in a cross-sectional evaluation between October and November 2016. Reliability, feasibility, usefulness, and usability analyzes were carried out[11,16].

Data reliability was measured by inter-rater agreement analysis using the kappa index considering the extraction of data from records in medical records/spreadsheets. Three FHSs were included by means of random drawing in order to complete the 30 cases for the indicators that were not possible to be obtained in the previous FHS; the inclusion criteria were complete teams in relation to the number of community agents and nurses working for at least a year. The first medical record was selected at random, and the others were selected according to the sample interval (SI) of each indicator, given by SI = number of eligible elderly (NE)/30. The sample size was 30 cases[20]. The medical records of the elderly aged 61 years or older and registered with the FHS for at least one year were considered as inclusion criteria for the sample. The reliability of the indicators collected through a questionnaire was measured with test-retest agreement analysis with an interval of 15 days.

As for viability, a complementary questionnaire was used by the evaluators, together with the material for extracting the data in the FHS, containing four questions: the data to compose this indicator are readily available or can be captured without excessive charges (yes, no); difficulties related to data collection; feasibility of being measured in the context of primary care; general assessment of the feasibility of data collection (scale from one to nine, the higher, the better the feasibility)[11,16].

The evaluation of the utility and usability of the indicators was carried out by the primary care managers of the municipality and the Minas Gerais State Department of Health, through four questions related to the indicator's usefulness for informing about the quality of nursing care for the elderly in primary care (yes or no); determine the receipt of financial incentives for the performance of the health team or unit in primary care (yes or no); compare public reports between ESFs and compare ESF at the level of geographic areas (states, municipalities, cities, neighborhoods); low (1-3 points), intermediate (4-6 points) or high (7-9 points)[11,16].

Finalizing specifications

The information sheets with the final specifications of the indicators were complemented with the items: additional questions related to the validation process, empirical analyzes, strengths and weaknesses, and recommendations for strengthening the indicator[11].

Indicators considered appropriate, agreement related to terminology and need, valid content, and positive evaluation in the empirical analyzes were maintained.

Ethical aspects

This project was approved by the Research Ethics Committee of the Universidade Federal do Triângulo Mineiro, opinion number 1,085,438. The participants of each stage were presented with the Free and Informed Consent Form; only after signature did the study proceed in accordance with Brazilian National Council of Health (CNS) Resolution No. 466/12[21].

RESULTS

Indicators developed in the study

After reviewing the literature, potential candidate indicators were not identified. The indicators proposed for the primary level in Australia recommend performance dimensions such as accessibility, continuity of care, and effectiveness[6]; in Brazil, the categorization is related to primary care areas such as women's, children's, oral, mental health, among others[7]. It was found in the scientific literature that the indicators of quality of nursing care in primary care are those related to wounds, palliative care; care for

diabetes mellitus; reproductive, maternal, and child health; user satisfaction; asthma and chronic obstructive pulmonary disease; depression and the nursing process; geriatric conditions[22-29].

Given this absence, after considering the specific duties of the nurse outlined in the conceptual model, 21 indicators were built (Table 1). Two assignments that could be performed by other members of the health team were delimited for the care of the nurse (use of the handbook of the elderly and home visit in Home Care 1).

Analysis of the validity of the developed indicators

In round one, the nine panelists participated, with all indicators considered appropriate and necessary; 15 obtained a measure according to the terminology, and 20 were considered valid (Table 1). This table shows the median values for each item, followed by the number of panelists who voted and the CVI value for the indicators.

In the second vote, the nine panelists participated, the six indicators with imprecise voting being considered appropriate. As suggested by the panel, four indicators had their names changed: the indicator 'care planning for the elderly' was changed to 'activity planning aimed at the elderly population'; 'Regular monitoring of the elderly care indicator' changed to 'monitoring the physical mobility of the elderly'; 'Assessment and improvement of care for the elderly' changed to 'assessment of health actions aimed at the elderly population'; 'Appropriate vaccination card' for 'vaccination suitable for the elderly. The consultation indicators have been adjusted to 'consultation coverage'. This stage ended with 22 indicators considering the panel's suggestion to duplicate the coordination indicator of the nursing staff and community health agents in caring for the elderly, separating them by professional category. All measures were classified as median 7-9 with an agreement and CVI>0.80.

The reliability of the indicators "coverage of the gynecological nursing consultation" (kappa=1) and "care prescription in low complexity cases AD1" (kappa=0.65) was approved. However, it was not possible to calculate the reliability of 15 of the 17 measurable by means of the medical record/spreadsheets due to the fact that the data collected by one of the evaluators had the same answer option (no record for all the evaluated medical records). It is also emphasized the impossibility of measuring four indicators related to overweight/obesity and borderline blood pressure due to the lack of data recording in the elderly population.

Table 1: Median values (Md) and number of panelists (N) in the range for face validity, terminology, need, and CVI in round one, Uberaba, Minas Gerais, Brazil, 2017

Indicators	Face		Terminology		Need		CVI
	Md	N	Md	N	Md	N	
Management							
Elderly care planning.	9	8	6	**5**	9	9	**0.78**
Regular monitoring of indicator for assistance to the elderly.	8	9	6	**5**	8	9	0.89
Evaluation and improvement of care for the elderly.	9	8	8	**6**	9	9	1.0
Coordination of the nursing staff and community health agents in caring for the elderly.	9	9	7	**6**	9	9	1.0
Care for the elderly in general							
Nursing consultation for the elderly.	9	9	9	7	9	9	1.0
Evaluation of the elderly in the nursing consultation.	9	9	9	7	9	9	1.0
Consultation for screening diabetes mellitus.	9	8	9	7	9	8	1.0
Gynecological nursing consultation.	9	9	9	7	9	7	1.0
Evaluation of the elderly woman in the gynecological nursing consultation.	9	9	9	7	9	8	1.0
Adequate vaccination card.	9	9	9	7	9	9	1.0
Use of the book of the elderly in nursing care.	9	9	9	7	9	8	1.0
Care for the elderly in specific conditions							
Nursing consultation for the elderly with diabetes mellitus.	9	9	9	7	9	9	1.0
Evaluation of the elderly with diabetes mellitus in the nursing consultation.	9	9	9	7	9	9	1.0
Nursing consultation for the elderly with systemic arterial hypertension.	9	9	9	7	9	9	1.0
Evaluation of the elderly with systemic arterial hypertension in the nursing consultation.	9	9	9	7	9	9	1.0
Nursing consultation for the overweight/obese elderly.	8	8	8	7	8	8	0.89
Assessment of overweight/obese elderly in the nursing consultation.	9	9	9	7	9	9	1.0
Nursing consultation for the elderly with borderline blood pressure.	9	9	9	7	9	9	1.0
Evaluation of the elderly with borderline blood pressure in the nursing consultation.	9	9	9	7	9	9	1.0
Care prescription in low complexity cases (AD1)	9	9	9	**6**	9	9	1.0
Home visit in low complexity cases (AD1)	9	9	8	**6**	9	9	1.0

Md: median; N: number of panelists; CVI: Content Validity Index.

The indicators collected by means of an audit and a questionnaire obtained concordant answers.

As for feasibility, among the 22 indicators, 18 were positively assessed (Table 2). For the indicator "Use of the handbook of the elderly in nursing care", one of the evaluators suggested reviewing the method of collection since this information is not recorded in the medical records. For the other indicators, considered to be available and viable, the evaluation was, more often, in the highly recommended range (score of 8-9), with the exception of the indicator "Use of the handbook of the elderly in nursing care" (score of 5-7).

Twenty-one indicators obtained a positive response regarding usefulness; only the indicator "Monitoring the physical mobility of the elderly" was negatively assessed for a reason for not measuring the assistance provided. Regarding being useful to determine the receipt of financial incentives, nine indicators showed a positive response (Table 2). The negative evaluations for the other indicators were at the level of state management by the State Department of Health of Minas Gerais.

In the evaluation on the usability of the indicator to compare public reports between the FHS and at the level of the geographical areas, 16 indicators obtained positive results, Table 2.

Finalizing specifications

Considering that the 22 indicators showed high face validity, acceptability by the panel, and adequate performance in the empirical analyzes, the forms were completed by inserting questions related to the validation process, empirical analyzes, strengths and weaknesses, and recommendations for strengthening the indicator. The sheets for the 22 indicators are available online at the Harvard Dataverse[30].

DISCUSSION

This study contributes to the management of primary health care services by providing an original set of indicators to measure the quality of care for the elderly from the assessment of the work process of nursing professionals. The results of this study fill a gap to improve the quality of care for the elderly, as was evident from the results of the literature review carried out. The 22 indicators created can be considered in national health policies such as the PMAQ, which has shown positive impacts for health management and assistance in the scientific literature[31], or even within the local planning of the basic health units in Brazil.

Table 2: Summary of approval of indicators in measures of face validity (A), content validity (B), reliability (C), feasibility (D), utility for incentives (E), usability for comparing areas (F), Uberaba, Minas Gerais, Brazil, 2017

Indicadores	A	B	C	D	E	F
Planning activities aimed at the elderly population.	Yes	No	NA	Yes	Yes	No
Monitoring the physical mobility of the elderly.	Yes	Yes	NA	Yes	No	No
Evaluation of health actions aimed at the elderly population.	Yes	Yes	NA	Yes	Yes	Yes
Coordination of the nursing team in elderly care.	Yes	Yes	NA	Yes	Yes	Yes
Coordination of community health workers in the care of the elderly.	Yes	Yes	NA	Yes	Yes	Yes
Coverage of nursing consultation for the elderly.	Yes	Yes	Yes	Yes	Yes	Yes
Evaluation of the elderly in the nursing consultation.	Yes	Yes	NV	Yes	Yes	Yes
Coverage of the consultation for screening for diabetes mellitus.	Yes	Yes	NV	Yes	Yes	Yes
Coverage of the gynecological nursing consultation.	Yes	Yes	NV	Yes	Yes	No
Evaluation of the elderly woman in the gynecological nursing consultation.	Yes	Yes	NV	Yes	Yes	No
Adequate vaccination for the elderly.	Yes	Yes	NV	Yes	Yes	No
Use of the book of the elderly in nursing care.	Yes	Yes	NV	Yes	Yes	No
Coverage of the nursing consultation for the elderly with diabetes mellitus.	Yes	Yes	NV	Yes	Yes	Yes
Evaluation of the elderly with diabetes mellitus in the nursing consultation.	Yes	Yes	NV	Yes	Yes	Yes
Coverage of the nursing consultation for the elderly with systemic arterial hypertension.	Yes	Yes	NV	Yes	Yes	Yes
Evaluation of the elderly with systemic arterial hypertension in the nursing consultation.	Yes	Yes	NV	Yes	Yes	Yes
Coverage of the nursing consultation for the overweight/obese elderly.	Yes	Yes	NV	No	Yes	Yes
Assessment of overweight/obese elderly in the nursing consultation.	Yes	Yes	NV	No	Yes	Yes
Coverage of nursing consultation for the elderly with borderline blood pressure.	Yes	Yes	NV	No	Yes	Yes
Evaluation of the elderly with borderline blood pressure in the nursing consultation.	Yes	Yes	NV	No	Yes	Yes
Care prescription in low complexity cases (AD1)	Yes	Yes	Yes	Yes	Yes	Yes
Home visit in low complexity cases (AD1)	Yes	Yes	NV	Yes	Yes	Yes

NA: Not applicable; NV: not verified

The panel process has been reported for proposing indicators of quality in health[32]. This supported the data in this study as to the validity of the proposed indicators since they all obtained approval from the panel of judges. Content validation is fundamental in the construction of reliable measures, providing subsidies to expand knowledge. Thus, validation, with a view to standardizing care, is useful for the proper performance of specific nursing procedures[33].

The indicators in this research were considered reliable, considering that the kappa value greater than 0.60 has been considered acceptable in a pilot study for the development and validation of indicators[20]. Reliability analysis is essential to guarantee reliable results in conducting research and in evaluating subjects with the use of measurement instruments in the health field[34].

However, the impossibility of testing reliability on four indicators suggests the need for future tests in different locations in order to identify its application in other contexts due to possible regional differences. One can think about the possible adaptation of these indicators. However, it is believed that this would represent losses to the object of study, considering that the identification of weight, height, and annual blood pressure (between hypertensive and individuals without arterial hypertension) are preventive measures recommended in this level of attention. Thus, it is suggested that the processes for monitoring and annotating the data in the medical records are reviewed, as it is understood that simplifying these indicators would mean going backward in the nursing care process.

It is also worth mentioning the need for parsimony in the analysis of the indicator "Coverage of gynecological nursing consultation", given the realization of gynecological medical consultation, considering the possibility of underestimating the indicator due to the possibility of it being performed by another health professional.

Most of the indicators showed the feasibility of collection. However, an integrative review showed that nursing records are incipient[35] in line with the results of this research. In this sense, it is necessary to reflect on the reason for the absence of records; this may be related to the failure to note what was done or even the failure to perform the evaluated items. It is noteworthy that the workload of nurses in primary care[36] can contribute to the detriment of the annotation considering the demand for care to be performed to the assigned population.

The negative assessment regarding the usefulness of the indicators by the Minas Gerais State Department of Health may be related to the specificity of national financial incentives that do not include specific assessments such as the proposal of this study, aimed at the quality of nursing care. Regarding usability, a survey with health managers, including primary care, found that the indicators help in management actions and the diagnosis of problems in the unit by contrast with the situation in other health units; however, there was little use to guide managerial actions. No real importance was observed for this management tool, as managers recognized their difficulties and limitations for implementation[37]. It should be noted that the negative assessment regarding the usefulness and usability of the indicators by the state management does not preclude its recommendation for implementation but suggests the need for reflection on the valorization of these attributions that come from national and state guidelines in care for the elderly.

Finally, considering that all candidate indicators showed high face validity, acceptability by the panel, and adequate performance in the empirical analyzes[11], it is possible to recommend the implementation of the 22 indicators. However, considering that this research aims to incorporate indicators within public policies, it is suggested that the one that best represents the measurement of the quality of nursing care in this context is selected. It is not costly to obtain it by the local management team.

Thus, after final reflection on the product of this study, the researchers also suggest that the 22 validated indicators can be discussed in seminars in order to obtain a better view of the pairs before their implementation. In addition, it is suggested that further research be developed to propose indicators based on other data from the quality assessment, such as the structure and outcome of nursing care for the elderly.

The set of indicators of this study was built based on national publications, being guided by the principles of primary care in Brazil. Therefore its applicability is limited to the context of the nurse's work in FHS, as its actions are standardized by the Ministry of Health.

In addition, the validation process must be continuous and can be further developed and specified in different realities where the indicators are to be applied. Thus, it is possible to carry out additional analyzes of reliability, feasibility, usability, and utility in other locations. This would make it possible to expand the reflection on the applicability and identify the need for possible adjustments to the indicators. The broader view could suggest the incorporation of these measures as strategies for monitoring health care for the elderly in national information systems.

This study developed and validated 22 original indicators to measure the quality of care for the elderly according to the nursing work process. All indicators were considered appropriate, with valid content, and according to the terminology and need. The indicators were further evaluated according to the attributes of reliability, availability, and usefulness, proving to be, for the most part, potentially useful tools for use in the management of primary health care services. These indicators are expected to be useful for primary health care, facilitating the management and continuous improvement of the quality of care for the elderly.

REFERENCES

1. World Health Organization (WHO). OECD. International Bank for Reconstruction and Development. Delivering quality health services A global imperative for universal health coverage. Geneva: WHO, 2018.

2. Kruk ME, Gage AD, Arsenault C, Jordan K, Leslie HH, Roder-Dewan S, ***et al***. High-quality health systems in the sustainable development goals era: time for a revolution. Lancet Glob Health. 2018;6(11):e1196-252. https://doi.org/10.1016/S2214-109X(18)30386-3

3. Best M, Neuhauser D. Joseph Juran: overcoming resistance to organisational change. Qual Saf Health Care. 2006;15(5):380-2. https://doi.org/10.1136/qshc.2006.020016

4. Donabedian A. The quality of care: how can it be assessed? 1988. Arch Pathol Lab Med. 1997;121(11):1145-50.

5. National Quality Forum (NQF). Phrase book: a plain language guide to NQF jargon. Available from: http://public.qualityforum.org/NQFDocuments/Phrasebook.pdf.

6. Australian Commission on Safety and Quality in Health Care (ACSQHC). Practice-level indicators of safety and quality for primary health care specification. Sydney: ACSQHC, 2012.

7. Brasil. Ministério da Saúde. Secretaria de Atenção à Saúde. Departamento de Atenção Básica. Programa Nacional de Melhoria do Acesso e da Qualidade da Atenção Básica (PMAQ). Manual instrutivo: anexo: ficha de qualificação dos indicadores. Brasília: Ministério da Saúde, 2012.

8. Burston S, Chaboyer W, Gillespie B. Nurse-sensitive indicators suitable to reflect nursing care quality: a review and discussion of issues. J Clin Nurs. 2014;23(13-14):1785-95. https://doi.org/10.1111/jocn.12337

9. National Quality Forum (NQF). National voluntary consensus standards for nursing sensitive care: an initial performance measure set. Available from: http://www.qualityforum.org/Publications/2004/10/Nursing_Sensitive_04_full.aspx.

10. National Database of Nursing Quality Indicators (NDNQI). NDNQI Nursing-Sensitive Indicators. Available from: https://nursingandndnqi.weebly.com/ndnqi-indicators.html.

11. Agency for Healthcare Research and Quality (AHRQ). Quality indicator measure development, implementation, maintenance, and retirement. Rockville: AHRQ, 2011.

12. Galvão CM, Mendes KDS, Silveira RCCP. Revisão integrativa: método de revisão para sintetizar as evidências disponíveis na literatura. In: Brevidelli MM, Sertório SCM. Trabalho de conclusão de curso: guia prático para docentes e alunos da área da saúde. São Paulo: Iátrica, 2010; p.105-26.

13. Fawcett J, Desanto-Madeya S. Contemporary nursing knowledge: analysis and evaluation of nursing models and theories. EUA: Davies Company, 2012.

14. Dias FA, Gama ZAS, Tavares DMS. Primary health care to the elderly: a conceptual model of nursing. Cogitare Enferm. 2017;22(3):e53224. http://dx.doi.org/10.5380/ce.v22i3.53224

15. Brasil. Laboratório de Informações em Saúde (LIS). Instituto de Comunicação e Informação em Ciência e Tecnologia (ICICT). Fundação Oswaldo Cruz. PROADESS: avaliação de desempenho do sistema de saúde brasileiro: indicadores para monitoramento: relatório final. Rio de Janeiro: FIOCRUZ, 2011.

16. National Quality Forum (NQF). Measure evaluation criteria. Available from: http://www.qualityforum.org/ Measuring_Performance/Submitting_Standards/2013_Measure_Evaluation_Criteria_and_Guidance_on_Evaluation.aspx.

17. Fitch K, Bernstein SJ, Aguilar MD, Burnand B, Lacalle JR, Lázaro P, *et al*. The RAND/UCLA Appropriateness Method user's manual. Arlington: Rand, 2001.

18. Viacava F, Ugá MAD, Porto S, Laguardia J, Moreira RS. Evaluation of performance of health systems: a model for analysis. Cienc Saude Coletiva. 2012;17(4):921-34. http://dx.doi.org/10.1590/S1413-81232012000400014

19. Rubio DM, Berg-Weger M, Tebb SS, Lee ES, Rauch S. Objectifying content validity: conducting a content validity study in social work research. Soc Work Res. 2003;27(2):94-111. https://doi.org/10.1093/swr/27.2.94

20. Gama ZAS, Saturno-Hernández PJ, Ribeiro DNC, Freitas MR, Medeiros PJ, Batista AM, ***et al***. Development and validation of indicators for best patient safety practices: the ISEP-Brazil Project. Cad Saude Publica. 2016;32(9):e00026215. http://dx.doi.org/10.1590/0102-311X00026215

21. Brasil. Resolução Nº 466, de 12 de dezembro de 2012. Revolve Aprovar as diretrizes e normas regulamentadoras de pesquisas envolvendo seres humanos. Available from: https://conselho.saude.gov.br/resolucoes/2012/Reso466.pdf.

22. Betz CL, Cowell JM, Lobo ML, Craft-Rosenberg M. American Academy of Nursing Child and Family Expert Panel Health Care Quality and Outcomes Guidelines for Nursing of Children and Families: phase II. Nurs Outlook. 2004;52(6):311-6. http://dx.doi.org/10.1016/j.outlook.2004.10.003

23. Carlfjord S, Lindberg M. Asthma and COPD in primary health care, quality according to national guidelines: a cross-sectional and a retrospective study. BMC Fam Pract. 2008;9:36. http://dx.doi.org/10.1186/1471-2296-9-36

24. Lemley KB, Marks B. Patient satisfaction of young adults in rural clinics: policy implications for nurse practitioner practice. Policy Polit Nurs Pract. 2009;10(2):143-52. http://dx.doi.org/10.1177/1527154409341882

25. Hasna F, Hundt GL, Al-Smairan M, Alzaroo S. Quality of primary nursing care for Bedouin in Jordan. Int J Nurs Pract. 2010;16(6):564-72. http://dx.doi.org/10.1111/j.1440-172X.2010.01882.x

26. McIlrath C, Keeney S, McKenna H, McLaughlin D. Benchmarks for effective primary care-based nursing services for adults with depression: a Delphi study. J Adv Nurs. 2010;66(2):269-81. http://dx.doi.org/10.1111/j.1365-2648.2009.05140.x

27. Davies P, Wye L, Horrocks S, Salisbury C, Sharp D. Developing quality indicators for community services: the case of district nursing. Qual Prim Care. 2011;19(3):155-66.

28. Rivas FJP, García JMS, Arenas CM, Lagos MB, López MG. Implementation and evaluation of the nursing process in primary health care. Int J Nurs Knowl. 2012;23(1):18-28. http://dx.doi.org/10.1111/j.2047-3095.2011.01199.x

29. Roth CP, Ganz DA, Nickles L, Martin D, Beckman R, Wenger NS. Nurse care manager contribution to quality of care in a dual-eligible special needs plan. J Gerontol Nurs. 2012;38(7):44-54. http://dx.doi.org/10.3928/00989134-20120606-10

30. Dias FM. Fichas de informação dos indicadores de qualidade da assistência de enfermagem ao idoso na atenção primária. Draft Version. Cambridge: Harvard Dataverse, 2019. Available from: https://doi.org/10.7910/DVN/W3YEYA

31. Flôres GMS, Weigelt LD, Rezende MS, Telles R, Krug SBF. Gestão pública no SUS: considerações acerca do PMAQ-AB. Saúde Debate. 2018;42(116):237-47. http://dx.doi.org/10.1590/0103-1104201811619

32. Kotter T, Blozik E, Scherer M. Methods for the guideline-based development of quality indicators–a systematic review. Implement Sci. 2012;7:21. http://dx.doi.org/10.1186/1748-5908-7-21

33. Medeiros RKS, Ferreira Júnior MA, Pinto DPSR, Vitor AF, Santos VEP, Barichello E. Pasquali's model of content validation in the Nursing researches. Rev Enf Ref. 2015;4(4):127-35. http://dx.doi.org/10.12707/RIV14009

34. Alexandre NMC, Gallasch CH, Lima MHM, Rodrigues RCM. Reliability in the development and evaluation of measurement instruments in the health field. Rev Eletr Enf. 2013;15(3):802-9. https://doi.org/10.5216/ree.v15i3.20776

35. Krauzer IM, Karal A, Bordignon M, Trindade LL. Records of nursing from the perspective of an integrative review. J Nurs Health. 2015;5(1):68-79.

36. Caçador BS, Brito MJM, Moreira DA, Rezende LC, Vilela GL. Being a nurse in the family health strategy programme: challenges and possibilities. Rev Mineira Enferm. 2015;19(3):612-9. http://www.dx.doi.org/10.5935/1415-2762.20150047

37. Lima KWS, Antunes JLF, Silva ZP. Perception of managers on the use of indicators in health services. Saude Soc. 2015;24(1):61-71. http://dx.doi.org/10.1590/S0104-12902015000100005