




ORIGINAL

Validación de contenido del cuestionario para medir conocimientos, actitudes y prácticas (CAP) en mujeres puérperas basado en la ruta materno - perinatal colombiana

Content validation of the questionnaire to measure knowledge, attitudes and practices (KAP) in postpartum women based on the Colombian maternal-perinatal route

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RESUMEN

Introducción: la ruta de atención materno-perinatal en Colombia busca garantizar la atención integral de las mujeres durante el embarazo, el parto y el puerperio. Para fortalecer esta atención, se requieren herramientas que recopilen los conocimientos, actitudes y prácticas (CAP) de las mujeres en el puerperio. La validación de estas herramientas permite el desarrollo de intervenciones eficaces que contribuyan a la reducción de la morbilidad y la mortalidad materna y perinatal.

Objetivo: validar cuestionario para medir los conocimientos actitudes y practicas (CAP) en mujeres puérperas basado en la ruta materno - perinatal colombiana.

Método: estudio descriptivo de validación de aspecto y de contenido de cuestionario para medir los conocimientos actitudes y practicas (CAP) basado en la ruta materno - perinatal, se distribuye en tres fases fase 1: revisión de literatura y diseño de la encuesta tipo CAP fase 2: validación contenido por 5 expertos.

Resultados: las pruebas de compresibilidad aplicadas a los 5 expertos reportaron una validez de contenido aceptable ya que CVC está por encima de 0,58.

Conclusión: el cuestionario para medir los conocimientos actitudes y practicas (CAP) en mujeres puérperas basado en la ruta materno - perinatal para es válido para la aplicación clínica y ambulatoria de las mujeres que reciben atención en el marco de la ruta materno perinatal en el contexto colombiano. Este instrumento es un insumo para futuras investigaciones que propendan fortalecer las acciones para evitar la morbimortalidad materna-perinatal.

Palabras clave: Estudio de Validación Embarazo; Periodo Posparto; Modelos de Atención de Salud; Enfermería.

ABSTRACT

Introduction: the maternal-perinatal care pathway in Colombia seeks to ensure comprehensive care for women during pregnancy, childbirth, and the postpartum period. To strengthen this care, tools are needed to collect data on the knowledge, attitudes, and practices (KAP) of women in the postpartum period. The validation of these tools allows for the development of effective interventions that contribute to the reduction of maternal and perinatal morbidity and mortality.

Objective: to validate a questionnaire to measure the knowledge, attitudes, and practices (KAP) of postpartum women based on the Colombian maternal-perinatal pathway.

Method: descriptive study to validate the appearance and content of a questionnaire to measure knowledge, attitudes, and practices (KAP) based on the maternal-perinatal pathway, divided into three phases: phase 1: literature review and design of the KAP-type survey; phase 2: content validation by five experts.

Results: comprehensibility tests applied to the five experts reported acceptable content validity, as CVC is above 0,58.

Conclusion: the questionnaire to measure knowledge, attitudes, and practices (KAP) in postpartum women based on the maternal-perinatal pathway is valid for clinical and outpatient application in women receiving care within the framework of the maternal-perinatal pathway in the Colombian context. This instrument is an input for future research aimed at strengthening actions to prevent maternal-perinatal morbidity and mortality.

Keywords: Validation Study; Pregnancy; Postpartum Period; Health Care Models; Nursing.

INTRODUCTION

According to the World Health Organization (WHO) definition, maternal mortality refers to the death of a woman during pregnancy, childbirth, or within 42 days of giving birth, due to causes related to or aggravated by pregnancy, childbirth, the postpartum period, or the medical care received, excluding accidental or incidental causes.⁽¹⁾ Among the indicators of the quality of the health insurance system are those related to maternal and perinatal morbidity and mortality, which, given that they are considered preventable, provide a sample of the health inequities and inequalities in a country. Some of the factors associated with the increase in indicators correspond to geographical conditions and the mother's socioeconomic and educational level.⁽²⁾

In Colombia, factors associated with obstetric complications arising from prenatal care have been identified, where fewer prenatal checkups have been linked to greater difficulties in achieving a successful pregnancy and full-term delivery.⁽³⁾ In this regard, one of the national strategies for providing prenatal care in Colombia is the Comprehensive Health Care Route (RIAS), stipulated in Resolution 3280 of August 2, 2018.⁽⁴⁾ It defines concerted, complementary, and efficient actions for the constant monitoring of pregnant women, to ensure comprehensive care for them and their families through comprehensive and safe health assessments.

These actions seek to detect risk factors early, carry out specific protection activities, and offer diagnosis and treatment according to their health status, as shown in figure 1.

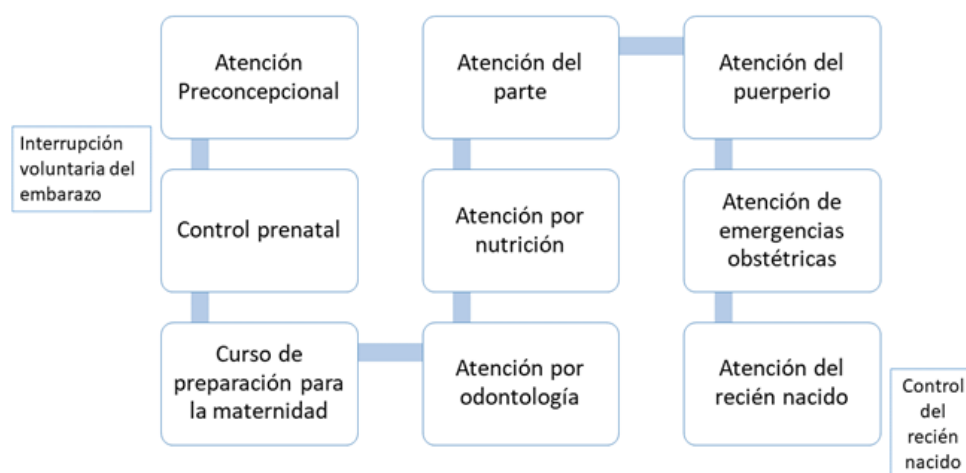


Figure 1. Perinatal maternal route (Resolution 3280/2018)

Although the pathway is an ideal strategy for ensuring the health of pregnant women, there are still a large number of institutions that have not implemented, monitored, or evaluated it to define actions that guarantee the prevention of maternal deaths. This has been evidenced in some recent studies, which found that the implementation of and adherence to the maternal-perinatal pathway have not been successful in terms of its recognition by health professionals involved in maternal-perinatal care, nor by pregnant women and their families.⁽⁵⁾

It is known that, in addition to adequate prenatal care, an appropriate level of knowledge, attitudes, and

practices is essential to reduce maternal and infant morbidity and mortality. In this regard, there are limited studies related to the development of validated instruments for measuring knowledge, attitudes, and practices in pregnant women, and even fewer of their relationship with existing care guidelines. Therefore, the objective of this study was to design and validate a questionnaire to measure knowledge, attitudes, and practices (KAP) based on the Colombian maternal-perinatal pathway.

METHOD

Descriptive study to validate the content of the questionnaire to measure knowledge, attitudes, and practices (KAP) based on the maternal-perinatal pathway of a pregnant woman or woman in the postpartum period who received care from it. It was developed in three phases.

Phase I: Literature Review and Questionnaire Construction. A review was conducted of the maternal-perinatal pathway established by the Ministry of Social Protection and exhaustive scientific literature on care for pregnant women. The following databases were used: PUBMED, SCIELO, and CINAHL, for which a search protocol was applied for instruments and CAP in Spanish, English, and Portuguese published in the last 15 years.

Based on the findings, a questionnaire was designed to measure knowledge, attitudes, and practices (KAP) based on the maternal-perinatal pathway, which included information necessary to determine the acceptance of health professionals' recommendations and their applicability to mothers who access them.

Phase II. Validation of the instrument's content. This was carried out by a panel of five experts, who agreed to participate voluntarily and were selected according to the following inclusion criteria: master's degree in nursing; publication on care for pregnant women; specialization in the clinical area of maternal-perinatal nursing care; minimum of three years of clinical experience in the area of maternal-perinatal care; and expertise in developing KAP.

To collect the information, the form to be completed was sent by email to each of the experts, and this information was then double-entered into the *Excel* database independently for subsequent validation.

For content validation, a form was designed consisting of each of the items that make up the assessment instrument, with three columns for the expert to rate the study variables: clarity, accuracy, comprehension, relevance, and significance for each item. An ordinal scale ranging from 1 ("not understandable," "not accurate," or "not clear") to 5 ("very understandable," "very accurate," or "very clear") was used to rate the variables, based on the model proposed by Lawshe⁽⁶⁾ and modified by Tristan⁽⁷⁾.

For the data analysis, descriptive statistics were used to characterize the experts' information, and the corresponding aspect and content validity indices were calculated. According to Lawshe's model⁽⁶⁾, the comprehensibility of each item was measured as a percentage, and the Content Validity Index was adopted as the acceptable comprehensibility of each item. Items with a score greater than 0,58 are considered acceptable in the overall calculation for each item.

The bioethics committees of the participating institutions approved this research. Informed consent was obtained from the participating experts.

RESULTS AND DISCUSSION

The questionnaire to measure knowledge, attitudes, and practices (KAP) in the Colombian maternal-perinatal pathway includes a section on sociodemographic and clinical data of postpartum women, including age, area of residence, socioeconomic status, level of education, social security, and membership in vulnerable populations, as well as gynecological, pathological, and toxicological history. Followed by 51 items, of which 22 measure knowledge, 16 measure attitudes, and 13 measure practices, as shown in table 1, questionnaire content validation tool to measure knowledge, attitudes, and practices (KAP) in postpartum women based on the Colombian maternal-perinatal pathway.

Table 1. Test of questions in the questionnaire

Question number	Construct	Question
1	Knowledge	Is there a free program for counseling and monitoring during pregnancy, childbirth, and postpartum?
2		Should prenatal checkups begin during the first 3 months of pregnancy?
3		Should you attend at least 4 prenatal checkups during pregnancy?
4,5,6,7,8		In the following list, indicate which precautions you should take to prevent complications during pregnancy: -Using illegal drugs -Use condoms to prevent sexually transmitted infections -Compliance with the vaccination schedule -Self-medicating with herbs or natural remedies -Taking micronutrients prescribed by your doctor/nurse during prenatal checkups

9,10,11,12,13		The following are warning signs that you should seek postpartum care: -Light, moderate bleeding in small amounts, without odor. -Fever or temperature above 38 degrees Celsius. -Headache, blurred vision, and ringing in the ears -Breast pain, hot breasts, reddened and hard areas on the breasts. -Change in mood, with predominant feelings of continuous sadness or anxiety.
14		Does a normal pregnancy last between 38 and 40 weeks?
15		Is there a right to voluntary termination of pregnancy in Colombia?
16		In Colombia, is access to voluntary termination of pregnancy freely and unconditionally available before the 24th week?
17,18,19,20		In relation to newborn care, the following are included: 17. Exclusive breastfeeding on demand 18. Placing a bandage on the newborn's abdomen to prevent the umbilical cord from protruding 19. Do not burp the baby after feeding 20. Follow-up appointment for the newborn with a pediatrician in 3 to 5 days
21		The correct technique for feeding your baby (breastfeeding) includes: good latch including nipple and areola, effective sucking by the newborn, and a comfortable position?
22		Is it recommended to alternate breastfeeding with bottle feeding every two hours during the first six months of life?
1	Attitudes	Do you consider prenatal checkups important and do you attend them?
2		During your pregnancy, did you choose to consult and pay for private doctors or specialists rather than going to your health service?
3		During your pregnancy, did you prefer to go to the pharmacy rather than your EPS doctor?
4		Do you believe that following the recommendations of healthcare professionals increases the chances of having a healthy pregnancy and newborn?
5		Was it important for you to eat healthily during your pregnancy?
6		Do you feel it is necessary to exercise to maintain physical health during pregnancy?
7		Would you take multivitamins during subsequent pregnancies?
8		If you feel that your health or that of your newborn is at risk, do you go to the emergency room?
9		Do you consider family planning necessary once the pregnancy is over?
10		Do you feel capable of caring for your newborn?
11		Do you think it is better to offer your newborn a bottle/formula rather than breastfeeding on demand?
12		In future pregnancies, will you attend the breastfeeding counseling sessions offered by health professionals?
13		Do you consider it important that women who decide to terminate their pregnancy have access to legal, safe, and free abortion services?
14		In future pregnancies, would you be happy to attend a course on responsible parenthood/psychoprophylaxis?
15		Would you like the healthcare professionals who accompanied you during your pregnancy and/or delivery to treat you again in the future?
16		Do you go to traditional healers or bone setters to treat your child?
1	Practices	Did you use any family planning methods prior to your recent pregnancy?
2		Did you attend a medical consultation to prepare for your pregnancy? (preconception consultation)
3		How many months pregnant were you when you started attending prenatal checkups?
4		During your pregnancy, did you undergo the following procedures and/or tests and/or medical consultations? How many times?
5		Did you follow all the nutritional, exercise, and hygiene recommendations given by the health professionals who cared for you?
6		Where did you give birth?
7		Did you have a medical checkup during the first week after giving birth?
8		Did you attend a course on responsible parenthood/psychoprophylactic course?
9		Did you get tested for HIV?
10		Did you get tested for syphilis?
11		Have you followed the general recommendations you received from healthcare personnel regarding care during your pregnancy and diet?
12		Have you followed the recommendations on breastfeeding that you received from healthcare personnel?
13		Did you and your child receive and complete the vaccination schedule?

The experts who validated this questionnaire were 100 % women and nurses in healthcare and university teaching, who provided the concept for the validation of the questionnaire in Colombia, as shown in table 2 below, which lists activities carried out in the maternal-perinatal area.

Table 2. Results of years of experience of the judges		
Years of healthcare experience	Years of teaching experience	Years of research experience
3	15	0
15	25	3
17	8	1
6	0	0
23	22	15

The compressibility tests applied to the five experts reported acceptable content validity, as CVC is above 0,58. As shown in table 3 below.

Table 3. Results Validity of Appearance Lawhse Index and Modified Index (Items 1 to 51)										
Item	CVRI Index/ relevance	Original Lawhse	INDEX CVRI/ Compression Dimension	Original Lawhse	INDEX CVRI/Clarity dimension	Original Lawhse	INDEX CVRI/ Dimension of Accuracy	Original Lawhse	INDEX CVRI/ Relevance Dimension	Original Lawhse
1	1,00	1,00	1,0	1,00	1,00	1,00	1,00	1,00	1,00	1,00
2	1,00	1,00	1,00	1,00	1,00	1,00	1,00	1,00	1,00	1,00
3	0,60	0,20	1,00	1,00	1,00	1,00	0,80	0,60	0,60	0,20
4	1,00	1,00	0,80	0,60	0,80	0,60	0,80	0,60	1,00	1,00
5	1,00	1,00	1,00	1,00	1,00	1,00	1,00	1,00	1,00	1,00
6	1,00	1,00	1,00	1,00	1,00	1,00	1,00	1,00	1,00	1,00
7	1,00	1,00	0,80	0,60	0,80	0,60	0,80	0,60	1,00	1,00
8	1,00	1,00	1,00	1,00	1,00	1,00	1,00	1,00	1,00	1,00
9	0,80	0,60	1,00	1,00	1,00	1,00	1,00	1,00	0,80	0,60
10	1,00	1,00	1,00	1,00	1,00	1,00	1,00	1,00	1,00	1,00
11	1,00	1,00	1,00	1,00	1,00	1,00	1,00	1,00	1,00	1,00
12	1,00	1,00	1,00	1,00	1,00	1,00	1,00	1,00	1,00	1,00
13	1,00	1,00	1,00	1,00	1,00	1,00	1,00	1,00	1,00	1,00
14	1,00	1,00	1,00	1,00	1,00	1,00	1,00	1,00	1,00	1,00
15	1,00	1,00	1,00	1,00	1,00	1,00	1,00	1,00	1,00	1,00
16	1,00	1,00	1,00	1,00	1,00	1,00	1,00	1,00	1,00	1,00
17	1,00	1,00	1,00	1,00	1,00	1,00	1,00	1,00	1,00	1,00
18	0,80	0,60	1,00	1,00	1,00	1,00	1,00	1,00	0,80	0,60
19	0,80	0,60	1,00	1,00	0,80	0,60	0,80	0,60	0,80	0,60
20	1,00	1,00	1,00	1,00	1,00	1,00	1,00	1,00	1,00	1,00
21	1,00	1,00	1,00	1,00	1,00	1,00	1,00	1,00	1,00	1,00
22	0,80	0,60	1,00	1,00	1,00	1,00	0,80	0,60	0,80	0,60
1	1,00	1,00	1,00	1,00	1,00	1,00	1,00	1,00	1,00	1,00
2	1,00	1,00	1,00	1,00	1,00	1,00	1,00	1,00	1,00	1,00
3	0,80	0,60	1,00	1,00	1,00	1,00	0,80	0,60	0,80	0,60
4	1,00	1,00	1,00	1,00	1,00	1,00	1,00	1,00	1,00	1,00
5	1,00	1,00	1,00	1,00	1,00	1,00	1,00	1,00	1,00	1,00
6	1,00	1,00	1,00	1,00	1,00	1,00	1,00	1,00	1,00	1,00
7	1,00	1,00	1,00	1,00	1,00	1,00	1,00	1,00	1,00	1,00
8	1,00	1,00	1,00	1,00	1,00	1,00	1,00	1,00	1,00	1,00
9	1,00	1,00	1,00	1,00	1,00	1,00	1,00	1,00	1,00	-1,00
10	1,00	1,00	1,00	1,00	1,00	1,00	1,00	1,00	1,00	-1,00
11	0,80	0,60	1,00	1,00	1,00	1,00	0,80	0,60	1,00	-1,00
12	1,00	1,00	1,00	1,00	1,00	1,00	1,00	1,00	1,00	-1,00
13	1,00	1,00	1,00	1,00	1,00	1,00	1,00	1,00	1,00	-1,00

14	1,00	1,00	1,00	1,00	1,00	1,00	1,00	1,00	1,00	-1,00
15	1,00	1,00	1,00	1,00	1,00	1,00	1,00	1,00	1,00	-1,00
16	0,80	0,60	1,00	1,00	1,00	1,00	0,80	0,60	1,00	-1,00
1	1,00	1,00	1,00	1,00	1,00	1,00	1,00	1,00	1,00	-1,00
2	1,00	1,00	1,00	1,00	1,00	1,00	1,00	1,00	1,00	-1,00
3	1,00	1,00	1,00	1,00	1,00	1,00	1,00	1,00	1,00	-1,00
4	1,00	1,00	1,00	1,00	1,00	1,00	0,80	0,60	1,00	-1,00
5	1,00	1,00	1,00	1,00	1,00	1,00	1,00	1,00	1,00	-1,00
6	1,00	1,00	1,00	1,00	1,00	1,00	1,00	1,00	1,00	-1,00
7	1,00	1,00	1,00	1,00	1,00	1,00	1,00	1,00	1,00	-1,00
8	1,00	1,00	1,00	1,00	1,00	1,00	1,00	1,00	1,00	-1,00
9	1,00	1,00	1,00	1,00	1,00	1,00	1,00	1,00	1,00	-1,00
10	1,00	1,00	1,00	1,00	1,00	1,00	1,00	1,00	1,00	-1,00
11	0,80	0,60	1,00	1,00	0,80	0,60	0,80	0,60	1,00	-1,00
12	1,00	1,00	1,00	1,00	1,00	1,00	1,00	1,00	1,00	-1,00
13	1,00	1,00	1,00	1,00	1,00	1,00	1,00	1,00	1,00	-1,00
Modified CVI*	0,96	NA	0,99	NA	0,98	NA	0,96	NA	0,97	NA

Note: CVRi= Content Validity Ratio of acceptable items according to Lawshe's criteria; *CVI = Content Validity Index: items with a score >0,58 are added together and divided by the total number of acceptable items.

Through the research carried out, an instrument with acceptable content validity has been obtained, according to the criteria proposed by Tristán-López. This implies that there is agreement between the expected characteristics of the specific construct (knowledge, attitudes, and practices) and the performance of the test to measure it. Additionally, a majority agreement has been reached among the evaluators regarding the essential category for all the questions in the questionnaire.

It is important to note that no other research was found that had used adapted questionnaires on knowledge, attitudes, and practices in postpartum women throughout the entire process of pregnancy, childbirth, and postpartum care, including preconception care for a maternal-perinatal care model. Therefore, having a content-validated instrument for a specific population is very useful in research, planning, and evaluation processes in this field.

For this reason, knowledge was considered to be the understanding of a subject acquired through experience or learning and used to solve problems or express ideas. Attitude is related to the emotional aspect, as it is based on a person's feelings, predispositions, and beliefs regarding a particular subject. On the other hand, practice involves executing an action based on an individual's knowledge and experience.⁽⁸⁾

Various studies⁽⁹⁾ have revealed that there is a close association between women's level of knowledge and attitude. It has been observed that those with higher levels of education and economic status tend to use health services more frequently.

A study conducted in Peru validated a tool for assessing the knowledge and practices of postpartum women regarding newborn care. The study was conducted with five experts, health professionals, including health teachers, specialists in neonatology, and researchers, with a Cronbach's alpha of ,693 and 83 % content validity, demonstrating its reliability for use.⁽¹⁰⁾

Similarly, another study from 2022 on the knowledge and practices of first-time mothers in newborn care at the San Juan Hospital in Lurigancho used an instrument with a content validity of 0,78, showing high reliability.⁽¹¹⁾

Another report on a study conducted in Colombia to validate a questionnaire on knowledge, attitudes, and practices regarding fruit and vegetable consumption established a validity coefficient that confirmed that all items achieved the minimum score of 0,48 required for validation. This was determined through an evaluation carried out by a panel of six experts, which yielded results similar to those obtained in this CAP validation.⁽¹²⁾

A limitation of the study is that, although the methodology used allowed quantitative scores and ratings to be obtained for the questionnaire items, and experts in the field evaluated these, the interpretation of the questions may depend on the subjective criteria of the evaluators. Therefore, it is suggested that this situation be improved by obtaining statistical validations of the questionnaire, such as stability and equivalence validity.

CONCLUSIONS

The knowledge, attitudes, and practices (KAP) instrument for postpartum women, based on the Colombian maternal-perinatal pathway, demonstrates adequate content validity. This instrument can be used in a clinical or academic setting. It is suggested that future research conduct statistical reliability and validity analyses based on its application in postpartum women.

REFERENCES

1. Mortalidad materna. Available from: <https://www.who.int/es/news-room/fact-sheets/detail/maternal-mortality>
2. Acelas-Granados DF, Orostegui A, Alarcón-Nivia MÁ. Factores de riesgo para morbilidad materna extrema en gestantes sin demora en la atención médica según la estrategia camino para la supervivencia. *Rev Chil Obstet Ginecol*. 2016;81(3):181-8. Available from: http://www.scielo.cl/scielo.php?script=sci_arttext&pid=S0717-75262016000300003&lng=es&nrm=iso&tlng=es
3. La información es notificada semanalmente por las entidades territoriales (ET) al Instituto Nacional de.
4. Normatividad_Nuevo - Resolución No. 3280 de 20183280.pdf. Available from: https://www.minsalud.gov.co/Normatividad_Nuevo/Forms/DispForm.aspx?ID=5333
5. Analisis cualitativo de las rutas de atencion integral en salud materno perinatal. Available from: <https://repositorio.unbosque.edu.co/handle/20.500.12495/1975>
6. LAWSHE CH. A QUANTITATIVE APPROACH TO CONTENT VALIDITY1. *Pers Psychol*. 1975 Dec 1;28(4):563-75. Available from: <https://onlinelibrary.wiley.com/doi/full/10.1111/j.1744-6570.1975.tb01393.x>
7. Facultad de Ciencias Humanas. Available from: <https://www.humanas.unal.edu.co/2017//index.php>
8. De Revisión A, Bárbara H, De Brito A, Cunha G, Sette S, Leal LP. Conocimientos, actitudes y prácticas de las abuelas en torno a la lactancia materna: una metasíntesis Cleide Maria Pontes 3 <https://orcid.org/0000-0003-4707-6873>. Available from: www.eerp.usp.br/rlae
9. Bazán F, Posso M, Gutiérrez C. Conocimientos, actitudes y prácticas sobre la prueba de Papanicolaou. *Anales de la Facultad de Medicina*. 2007;68(1):47-54. Available from: http://www.scielo.org.pe/scielo.php?script=sci_arttext&pid=S1025-55832007000100006&lng=es&nrm=iso&tlng=es.
10. Macha Luna YL. Conocimiento y Prácticas de Puérperas sobre el cuidado del recién nacido Hospital San Juan de Lurigancho, 2017. Universidad César Vallejo. 2017. Available from: <https://repositorio.ucv.edu.pe/handle/20.500.12692/13030>
11. Mayo Espinoza B, Margarita M, Gutarra Muñoz B, Ángel M. Conocimiento y prácticas de madres primigestas en el cuidado del recién nacido en el hospital San Juan de Lurigancho - 2020. Repositorio Institucional - UMA. 2020 Sep 25. Available from: <https://repositorio.uma.edu.pe/handle/20.500.12970/285>
12. Paola A, Vergara M, Rincón MD, Lucia O, Díaz L, Pérez O. Validation By Expert Judgment Of A Questionnaire On Knowledge, Attitudes And Practices Of The Consumption Of Fruits And Vegetables. 2023;48(1).

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CONFLICT OF INTEREST

The authors declare that they have no conflict of interest.

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