Original Article

Instrument about knowledge, attitudes, and practices of pregnant women about the hypertensive disease of pregnancy*

Instrumento sobre conhecimento, atitude e prática de gestantes acerca da síndrome hipertensiva gestacional

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ABSTRACT

Objective: to elaborate and validate an instrument to evaluate the knowledge, attitudes, and practices of pregnant women regarding the hypertensive disease of pregnancy. **Methods:** methodological research, to develop and validate an instrument about the knowledge, attitudes, and practices of pregnant women regarding said disease. The stages of the design were: elaboration, content validation, and semantic analysis with the target audience. **Results:** to elaborate the instrument, the following items were adopted: definition, classification, signs and symptoms, risk factors, consequences, prevention and treatment of the hypertensive disease of pregnancy. The instrument was submitted to a validation by specialists. Its dimensions presented a Content Validity Index of 0.85, 0.89 for pertinence, 0.81 for clarity, and 0.86 for scope. The variable attitudes was below 0.8 in all dimensions. **Conclusion:** the instrument was considered to be valid and can be used to direct educational interventions, aimed to prevent the disease or its complications from surfacing.

Descriptors: Hypertension, Pregnancy-Induced; Health Knowledge, Attitudes, Practice; Validation Study; Nursing.

RESUMO

Objetivo: elaborar e validar instrumento para avaliação do conhecimento, da atitude e prática de gestantes acerca da síndrome hipertensiva gestacional. **Métodos**: pesquisa metodológica, com desenvolvimento e validação de instrumento sobre conhecimento, atitude e prática de gestantes em relação à síndrome. As etapas do delineamento foram: elaboração, validação de conteúdo e análise semântica com o público-alvo. **Resultados:** para elaboração do instrumento, adotaram-se os itens: definição, classificação, sinais e sintomas, fatores de risco, consequências, prevenção e tratamento da síndrome hipertensiva gestacional. Mediante construção, este foi submetido à validação por especialistas, e as dimensões do instrumento apresentaram Índice de Validade de Conteúdo total de 0,85, sendo 0,89 para pertinência; 0,81, para clareza; e 0,86, para abrangência. A variável atitude foi inferior a 0,8 em todas as dimensões. **Conclusão**: o material foi considerado válido e poderá ser utilizado para direcionar intervenções educativas, com vistas a prevenir surgimento ou complicações da síndrome.

Descritores: Hipertensão Induzida pela Gravidez; Conhecimentos, Atitudes e Práticas em Saúde; Estudo de Validação; Enfermagem.

Introduction

The number of maternal deaths in a country is one of the most important indicators of its social reality. In addition to biological factors, it reflects the socioeconomic level, the quality of health care, the inequality between genders, and the political determinations with regard to promoting public health. As a result, the need to diminish the indicators of maternal mortality becomes clear[1].

Hypertension in pregnancy is an important complication, significantly associated to maternal and fetal morbidity and mortality. The main issue in the management of this complication is reaching a balance between benefits for the mother, which result from a better control of arterial pressure, and the fetal risks that result from the toxicity iof the medication, in addition to a possible uterine-placental hypoperfusion[2].

The hypertensive disturbances of pregnancy are still an enormous international and national health problem for maternal and neonatal health. In the United states, pre-eclampsia, whether in isolation or superimposed on pre-existing chronic hypertension, is a great risk. There are still grave cases of morbidity and mortality among mothers and fetuses, although adequate prenatal care, with the detection of signs of pre-eclampsia and births to put an end to the problem, reduced the number and the extension of negative outcomes[3].

In Brazil, in 2015, 20.7% of deaths were due to hypertensive disorders during pregnancy, labor, and puerperium; 17.5% were due to complications in labor and childbirth; and 13.2%, due to complications that were mainly related to the puerperium[4]. However, for some pregnant women, the hypertensive disease may not represent a problem that demands surveillance and control, since many of them lack the knowledge about the complications of this disease, especially those with low incomes. In addition, it stands out that health workers who offer prenatal care must reflect, trying to achieve a more incisive conduct targeted at preventing complications that take place during pregnancy, labor, and puerperium[5].

In the meantime, the role of nurses is paramount, since these professionals follow up the pregnant women throughout the pregnancy-puerperium cycle, facilitating an early identification of alterations, be them normal or otherwise. It stands out that the assistance provided by nurses to hypertensive pregnant women should stand out for their critical nature and autonomy, in addition to technical-scientific knowledge, and need to be strengthened by a problem-solving and dynamic multiprofessional team[3]. Therefore, it is important to elaborate new health strategies targeted at an early identification of health problems during prenatal care, prioritizing an individualized follow up and an adequate treatment, as prescribed by public policies of health care to high-risk pregnant women, which have been implemented recently[6].

With regard to that, the application of instruments in the health care services that attend to the health of pregnant women is an effective alternative, considering that, through surveys, it is possible to detect a reality, such as the presence of health problems that were not expected in a pregnancy. Also, this is an effective way to analyze the knowledge of pregnant women with regard to the theme, aiding professionals in the planning of educational interventions targeted at the shortcomings found.

Educational interventions are essential and must be a part of prenatal consultations and family planning. With regard to the hypertensive disease of pregnancy, it is a complication that has the potential to damage the mother-fetus entity, increasing the chance of mortality[4-5]. The level of knowledge of the pregnant women about it should be analyzed still in the first trimester, and activities of education in health should be developed based on the shortcomings detected. These are efficient attitudes to prevent complications and protect this entity[7].

The use of instruments in health care is paramount. However, they must be submitted to a process of validation by specialists, to guarantee the reliability of the content addressed in the technology. For this study, the theme hypertensive disease of pregnancy was chosen, since it was a gap in knowledge attested

by literature, which was shown by the fact that searches did not find investigations with regard to evaluations of the knowledge, the attitudes and practices of pregnant women about the hypertensive disease of pregnancy, which shows the importance of this study.

Therefore, considering that educational interventions carried out by nurses are important strategies with regard to promoting the health of mothers and neonates and preventing complications involving them, the objective of this study was to elaborate and validate an instrument to evaluate the knowledge, attitudes and practices of pregnant women regarding the hypertensive disease of pregnancy.

Methods

A methodological research was carried out to develop and validate an instrument. This took place from November 2017 to March 2018, according to three stages. The first one was the elaboration of the items of the instrument, whose content was defined considering a literature review in the databases Literatura Latino-Americana e do Caribe em Ciências (LILACS), Cumulative Index to Nursing and Allied Health Literature (CINAHL), and Medical Literature Analysis and Retrieval System Online (MEDLINE). The guiding question was: what is the importance of instruments to analyze the knowledge, the attitudes, and the practices of pregnant women with regard to the hypertensive disease of pregnancy? The Portuguese descriptors used were: Women's Health AND Hypertension, Pregnancy-Induced AND Health Knowledge, Attitudes, Practice AND Validation Studies, in addition to their versions in Portuguese and Spanish.

To fit in the inclusion criteria, the articles had to be in Portuguese, English, or Spanish, available in full and free of charge. Additionally, the base for the construction of the instrument was a study about the elaboration and validation of an electronic educational booklet, considering the scientific literature, which addressed the hypertensive disease of pregnancy through the following steps: definition, classification, signals and symptoms, risk factors, consequences,

prevention and treatment of the hypertensive disease of pregnancy and healthy pregnancy, to a total of 34 items[8]. The instrument was divided in four dimensions: sociodemographic and obstetric identification - questions 1-11; knowledge - questions 12-17; attitudes - questions 18-24; and practices - questions 25-34.

In the second stage, the content validity was verified. It is an assessment of how relevant a sample of items is to represent a definite universe[9].

Regarding the judges, professionals with experience in assistance were selected, in addition to others with experience in teaching and/or research in the fields of maternal health (obstetrics), Knowledge, Attitudes and Practices (KAP) survey, and health education. The search for judges took place through the curriculum available in the Lattes Platform, in the portal of the National Council of Scientific and Technological Development, and through the use of the snowball sample method, that is, the selection of further subjects through the indication or recommendation of previous ones[9].

Twelve judges were found, nine of whom accepted participating in the study. They received an invitation via e-mail, with guidance about the research and how to participate in it, the Free and Informed Consent Form, the instrument of assessment, and the KAP survey. They were asked to assess the materials in 20 days, with a possible extension for 30 days. For the collection of the data regarding validation, a form to be filled on-line was adopted, since this type of form is practical and makes it possible to expand the participation of judges.

For the evaluation of the content, a guide based on the principles of the elaboration of psychological scales was developed[10]. The judges evaluated whether the items were pertinent to the variables for the theoretical construction, using the criteria of behavior, objectivity, simplicity, clarity, relevance, and precision of the technology. The evaluative instrument considered the pertinence, the clarity, and the scope of the items in the survey. The Content Validity Index (CVI) was used to measure the agreement between

judges during the process of response analysis, with a confidence interval of 95%[9]. Each item was evaluated individually, and later, the instrument as a whole was assessed[11]. A Likert scale was used, scored from one to four according to the responses of the judges with regard to the degree of relevance of each item[9].

About the pertinence (how well the items adequate to the objective of the study), judges evaluated it as: (1) Not relevant or not representative; (2) Needs an extensive revision to become representative; (3) Needs a small revision to become representative; and (4) Relevant or representative. The clarity (in the writing of the items) was evaluated as: (1) Not clear; (2) Little clear; (3) Moderately clear; and (4) Very clear. Regarding the scope (whether the scope of the items is enough to attend to the objective), each item was evaluated as: (1) Not comprehensive; (2) Little comprehensive; (3) Moderately comprehensive; and (4) Very comprehensive. Judges were asked to indicate the necessary reviews and the items that should be included or excluded.

The Content Validity Index was calculated by adding up the items with answers 3 and 4 and dividing the value by the total of responses, while items with a score of 1 or 2 were reviewed. A CVI of 0.8 or more was considered adequate[9,11]. The items which did not reach this index were changed by the researcher and underwent a new analysis by the same group of judges, and were kept in the instrument if they received an agreement above 90%[11].

In the third stage, a semantic analysis (regarding the evaluation of the target audience with regard to the ease of reading, the understanding, and the appearance of the instrument) was carried out with 33 hypertensive pregnant women who were being followed up due to a high-risk prenatal in a tertiary health care maternity, in the city of Fortaleza-CE, Brazil. When they arrived for a routine consultation, they were invited to participate in the study, and its objective was explained during the interview. The study included pregnant women with a diagnostic of hypertensive disease of pregnancy, regardless of age, who had up to 33 weeks gestation, were literate, and could

communicate in spoken Portuguese. After they accepted participating and read and signed the Free and Informed Consent Form, the instrument was applied.

The project was approved by the Research Ethics Committee of the Universidade Estadual de Campinas, under legal opinion No. 2,238,364/2017, according to Resolution 466/2012 from the National Council of Health.

Results

In the first stage, a literature review was carried out, and 298 publications were found. However, only 16 were included in the study to determine the items of the instrument. In the second stage, the content validation stage, nine judges participated. The predominant features of them were being female (88.9%), with an age varying from 30 to 39 years old (66.7%), graduated in nursing (88.9%), graduated for up to 10 years (55.6%), having been working in the field of teaching (66.7%) as professors (66.7%) for up to nine years (55.6%). Their highest degree was a PhD (66.7%), and they had participated in research groups targeted at the theme of hypertensive disease of pregnancy or in the field of obstetrics (77.8%), having published researches involving the themes of validating instruments that use KAP (55.6%) and obstetrics (88.9%).

The evaluation of the dimensions of the instruments had a CVI of 0.85. The pertinence was 0.89, the clarity 0.81, and the scope 0.86. Most items in each dimension had CVIs above 0.8 (Table 1).

Table 1 – Evaluation of the expert judges about the dimensions of the instrument Knowledge, Attitudes, and Practices - Hypertensive Disease of Pregnancy. Campinas, SP, Brazil, 2018

Dimensions	Content Validity Index		
	Pertinence	Clarity	Scope
Sociodemographic and obstetric identification	1.00	0.89	1.00
Knowledge	0.89	0.89	0.78
Attitudes	0.78	0.67	0.78
Practices	0.89	0.78	0.89
General evaluation	0.89	0.81	0.86
Total	0.85		

Instrument about knowledge, attitudes, and practices of pregnant women about the hypertensive disease of pregnancy

Pregnant woman nº_____ AP_____				
Part 1 - Sociodemographic and obstetric identification				
( ) Pre-consultation			( ) 7th day	( ) 30th day
1 - Name (Initials):				
Origin (city). Specify whether this is the city where you live:				
3 - Age (in years):				
4 - Educational level (complete years of formal education):				
5 - Religion: ( ) Catholic	( ) Spiritist	( ) Evangelical	( ) Jewish	
( ) Umbanda/candomblé	( ) No religion	( ) Another		
6 - Skin color (self-declared):		( )White	( ) Black	( ) Brown ( ) Yellow
7 - Profession/occupation:				
8 - Family income in R$:				
9 - Marital Status:	( ) Single		( ) Widow	( ) Divorced
10 - Number of prenatal consultations in this pregnancy:				
11 - Gestational age in weeks (GA)? (If you do not know, insert DLM or US to calculate)				
12 - G____D____A____				
13 - Body Mass Index:				

Part 2 - Knowledge about hypertension in pregnancy

14 - Have you ever heard of hypertension in pregnancy? ( ) Yes ( ) No			
15 - Hypertension in pregnancy is: ( ) A complication in pregnancy ( ) A normal process that takes place in pregnancy			
16 - Is hypertension in pregnancy related to arterial pressure?		( ) Yes	( ) No
16.1 - If yes, how?			
17 - Who gave you this information (more than one item can be selected)?			
( ) TV	( ) Internet	( ) School	( ) Health professionals
( ) Radio	( )Newspaper	( ) Family	( ) Do not remember ( ) Another source:
18 - Can you tell what complications this type of hypertension can provoke?			
( ) Does not know ( ) Renal system complications ( ) Cardiovascular system complications			
( ) Transvaginal bleeding ( ) Neurological system complications ( ) Uterine-placental system complications			
( ) Hellp Syndrome ( ) Premature birth ( ) Death of mother-child			
( ) Others:			
19 - Can you tell why one acquires this hypertension during pregnancy?		( ) Yes	( ) No
19.1 - If YES, why?			
20 - In your opinion, what do pregnant women feel when they have hypertension in pregnancy?			
( ) Headaches ( ) Stomach pain ( ) Convulsions ( ) Swelling in legs, feet and face			
( ) Constantly elevated arterial pressure ( ) Loss of proteins in urine ( ) Exaggerated increase in body weight			
( ) Others:			
21 - Can you tell whether there are treatments for hypertension in pregnancy? ( ) Yes ( ) No			
21.1 - If YES, what is it?			
22 - Do you know the risk factors to develop hypertension in pregnancy?			
( ) Diabetes ( ) Obesity ( ) Multiple pregnancy ( ) First pregnancy ( ) Pregnancy of twins			
( ) Black skin color ( ) Previous multiparity ( ) Case of HDP in pregnancy ( ) Hyperproteic/hypersodic diet			
( ) Age above 35 and below 17 years old ( ) Pregnancy with partners: ( ) Others:			
( ) Personal or family-related previous cases of pre-eclampsia and/or chronic arterial hypertension			
23 - Can you tell what the types of hypertension in pregnancy are?			
( ) Chronic hypertension - CH ( ) Pregnancy-induced hypertension - PIH ( ) Pre-eclampsia - PE			
( ) Preeclampsia superimposed on chronic hypertension– PES ( ) Eclampsia ( ) Does not know			
24 - Do you know what yours is?		( ) Yes	( ) No
24.1 - If YES, which one?			
[To be filled in by the researcher, do not ask] general evaluation of knowledge: ( ) Adequate ( ) Inadequate			

Part 3 - Attitudes about the hypertension in pregnancy

25 - In your opinion, is it useful/necessary for pregnant women to receive information about hypertension in pregnancy at the start of the prenatal consultations?	( ) Yes	( ) No	
25.1 - If NOT, why?			
26 - In your opinion, a hypertensive pregnant woman needs to have a different diet from pregnant women who are not hypertensive?	( ) Yes	( ) No	( ) Does not know
26.1 - If YES, why?			
27 - In your opinion, what is the main preoccupation of a pregnant woman with hypertension?			

Part 4 - Practices related to hypertension in pregnancy

28 - Do you have any complication from hypertension in your pregnancy?	( ) Yes	( ) No	( ) Does not know
28.1 - If YES, what?_____			
29 - Do you check your arterial pressure in your daily life, outside of prenatal consultations?		( ) Yes	( ) No
29.1 - How often does this happen: _____			
30 - Was any treatment for hypertension prescribed for you? ( ) No ( ) Does not know ( ) Medication ( ) Diet ( ) Exercise ( ) Others			
30.1 – 1) Medication – which? _____ 2) Diet, which? _____			
31 - Do you follow a specific diet to prevent complications from hypertension in pregnancy?		( ) Yes	( ) No
31.1 - If YES, which?			
32 - How much water do you use to drink a day? _____			
33 - Do you rest, physically, every day (during the day)?		( ) Yes	( ) No
33.1 - Why?_____			
34 - Do you practice physical activities?		( ) Yes	( ) No
34.1 - If YES, what?_____ How often? _____			
34.2 - If NOT, why? _____			

Figure 1 – Instrument validated to assess the knowledge, attitudes, and practices of pregnant women with regard to hypertension in pregnancy. Campinas, SP, Brazil, 2018

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The judges suggested few changes in the instrument, most of which were related to a better understanding of each question.

In the third stage, a semantic validation was carried out, to identify problems with regard to understanding and acceptance of the terms included in the instrument. In this stage, 33 women participated, all of whom had been receiving prenatal care for high-risk pregnancies in a maternity in the city of Fortaleza-CE, Brazil. They filled the instrument in and then analyzed it, through a form, in which they recognized what difficulties they had in the process, such as the number of items or the understanding of certain terms. In this stage, no difficulties were found in the understanding of the participants about the questions in the tool. Figure 1 shows the final version of the validated instrument.

Discussion

The limitations of this study resulted from the different levels of instrument evaluation, since each part was evaluated using different parameters. Another issue to be highlighted is the fact that the instrument was not applied to its target audience. In addition, the CVI was also inflated by the strategy used to collapse the dimension sub-levels. However, the selection of judges with long experience in the fields of assistance and/or teaching allowed for a critical and relevant analysis of the instrument.

The elaboration of an instrument to analyze the knowledge, the attitudes, and the practices of pregnant women about the hypertensive disease of pregnancy is an important health technology for the assistance to pregnant women, since it guides the actions of professionals towards promoting and maintaining health[12] through the identification of the knowledge of women about the disease, the evaluation of their attitudes, and the assessment of their daily practices regarding activities that can generate risks for the development of the problem and/or lead to greater complications, in cases where the syndrome is installed.

During prenatal assistance, nursing consultations are important to acquire a link with pregnant women and their relatives, since they work as an incentive for dialog and for educational activities to promote health and prevent diseases and other health problems[13]. Therefore, it is relevant to consider, during the elaboration of an instrument, the validation of its content and semantics. Since these instruments are understood to integrate the clinical practice and research in different areas of knowledge, evaluating their quality is essential to be able to select tools that provide valid and reliable measurements[9,14-15].

The need to consider the improvements suggested by the judges is as crucial as it is to reach values deemed ideal for the internal validation of an instrument[11]. The higher the number of suggestions, the better the revision of the technology should be[16]. The small number of suggestions of changes for the tool validated in this study can justify the CVI results found, which are superior to those in a research about technological performance developed recently[17], and similar to another one[18].

In addition to an internal construction and validation, the technology produced must be analyzed by its target audience, since this is the only way it can be considered representative of the reality of the target population. That makes it possible for the investigator to determine the level of knowledge demanded from the participant, so the application of the instrument is useful[11]. Therefore, for this study, the semantic validation was found to be satisfactory, since there were no difficulties in the filling of the instrument. This is an extremely important factor, since the adequate filling of the instrument and the consequent analysis of knowledge require participants to understand well what is required of them. This finding corroborates another study that analyzed the knowledge of students about leprosy[19].

The application of health technologies in the clinical practice is extremely valuable, since these offer subsidies to improve assistance. A recent study had a positive effect through the implanting of the instrument to find out the knowledge, attitudes, and practices of pregnant women about the cytopatholo-

gical exams to mediate educational interventions, finding improvements in the level of knowledge of pregnant women after a guided intervention. This finding shows the importance of carrying out studies from this perspective[7].

Another study, performed by a nurse counting on the participation of pregnant women, analyzed the knowledge of these women about the hypertensive disease of pregnancy, detecting insufficient knowledge and doubts about the causes, the evolution, and the treatment/follow up of the disease[5]. This is an important issue because in the prenatal follow up the multiprofessional team must prioritize health education actions, which favor the empowering of women through self-care activities that make them co-responsible for their own assistance and for committing to prevent alterations that can generate health risks for the health and life of both mother and fetus[13].

The formulation of strategies that can act over this population is extremely relevant, and, especially, urgent in the current health scenario, due to the presence of organizational, social, and individual barriers that interfere in the equal access to health services, especially during obstetric care[20].

Considering this context, the use of the validated instrument, specifically for hypertensive pregnant women, can aid professionals in the analysis of their level of knowledge about the syndrome, filling in gaps in knowledge early and making it possible to carry out guided educational interventions in a timely manner, avoiding the surfacing and/or the potential complications of the hypertensive disease of pregnancy[8]. In short, the use of this instrument can reinforce preventive actions during the period of pregnancy through the provision of safe and humane assistance, with more quality, and directed at the shortcomings in the knowledge, attitudes, or practices of these women[7].

It stands out that elaborating and validating instruments, before applying them in randomized clinical trials, allow the researchers to obtain more precise results during data collection. In this study, the investigation with the target audience had a positive outcome, since, throughout the application of the instrument for semantic validation, no difficulties to understand terms and/or other elements were found. Coupled with the validation of the content by expert judges, the possibility of using this technology in clinical practice is clear, and it could contribute for a scientific nursing as it improves the realization of educational interventions targeted at pregnant women.

Conclusion

The instrument built to evaluate the knowledge, the attitudes, and the practices of pregnant women about the hypertensive disease of pregnancy was valid with regard to the dimensions proposed, allowing researchers to collect relevant data that will favor a preventive assistance practice, considering the development of educational interventions to avoid the surfacing of this disease and its complications.

Collaborations

Jacob LMS contributed for the conception and for the project, data analysis and interpretation, article writing, in the relevant critical review of the intellectual content and the final approval of the version to be published. Lopes MHBM and Shimo AKK contributed for the conception and for the project, data analysis and interpretation, article writing, and in the relevant critical review of the intellectual content and the final approval of the version to be published.

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