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Veröffentlichungsversion / Published Version  
Zeitschriftenartikel / journal article

#### Empfohlene Zitierung / Suggested Citation:

Borges, J. W. P., , Rodrigues, M. T. P., & Oliveira, C. J. d. (2016). Content validation of the operational definitions of non-acceptance to hypertension treatment. *Revista de Pesquisa: Cuidado é Fundamental Online*, 8(3), 4651-4658. <https://doi.org/10.9789/2175-5361.2016.v8i3.4651-4658>

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## Validação de conteúdo das definições operacionais da não adesão ao tratamento da hipertensão arterial<sup>1</sup>

Content validation of the operational definitions of non-acceptance to hypertension treatment

Validación de contenido de las definiciones operacionales de la falta de aceptación al tratamiento de hipertensión

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### Como citar este artigo:

Borges JWP; Moreira TMM; Rodrigues MTP; et al. Content validation of the operational definitions of non-acceptance to hypertension treatment. Rev Fund Care Online. 2016 jul/set; 8(3):4651-4658. DOI: <http://dx.doi.org/10.9789/2175-5361.2016.v8i3.4651-4658>

## RESUMO

**Objetivo:** validar o conteúdo das definições operacionais do construto “não adesão ao tratamento da hipertensão arterial”. **Método:** estudo metodológico de validação de conteúdo. Foi realizada uma revisão integrativa que demonstrou quatro dimensões da não adesão: pessoa, doença/tratamento, serviço de saúde e ambiente. Foram elaboradas 36 definições operacionais no âmbito dessas dimensões. As definições foram avaliadas por um painel de 17 especialistas na temática. Foi calculado o Índice de Validade de Conteúdo (IVC) de cada definição operacional, e realizado o teste binomial. **Resultados:** das 36 definições operacionais elaboradas, 20 foram validadas com excelente IVC ( $\geq 0,81$ ) com  $p < 0,005$ ; 11 sofreram adequações e foram reavaliadas, e cinco foram excluídas. **Conclusão:** o delineamento e a validação destas definições operacionais enquanto um evento específico da enfermagem contribuem para a consolidação de atributos de conceitos que vislumbram em última instância a demarcação da ciência de Enfermagem.

**Descritores:** hipertensão; cooperação do paciente; estudos de validação.

<sup>1</sup> Extracted from the dissertation: Evaluation Tool of Non Acceptance to Treatment of High Blood Pressure: development and validation of content. Postgraduate Program in Clinical Care Nursing and Health, Health Sciences Center, State University of Ceará, 2012.

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## ABSTRACT

**Objective:** to validate the content of the operational definitions of the construct “non-acceptance to hypertension treatment”. **Method:** a methodological study of content validation. It was performed an integrative review that showed four dimensions of nonacceptance: person, disease/treatment, health care and environment. Thirty-six operational definitions were developed in the context of these dimensions. The settings were evaluated by a panel of 17 experts. The Content Validity Index (CVI) was calculated for each operational definition, and the binomial test was performed. **Results:** among the 36 developed operational definitions, 20 were validated with excellent IVC ( $\geq 0,81$ ) with  $p < 0,005$ ; 11 suffered adjustments and were re-evaluated, five were excluded. **Conclusion:** the design and validation of these operational definitions as a specific event of nursing contribute to the consolidation of attributes of concepts that ultimately foresee the demarcation of nursing science.

**Descriptors:** hypertension; patient cooperation; validation studies.

## RESUMEN

**Objetivo:** validar el contenido de las definiciones operacionales del constructo “la falta de aceptación al tratamiento de la hipertensión”. **Método:** un estudio metodológico de validación de contenido. Se llevó a cabo una revisión integradora que mostró cuatro dimensiones de la no aceptación: persona, la enfermedad/tratamiento, la atención de la salud y el medio ambiente. Se desarrollaron 36 definiciones operacionales en el contexto de estas dimensiones. Las definiciones fueron evaluadas por un panel de 17 expertos en el tema. Se calculó el Índice de Validez de Contenido (IVC) para cada definición operacional, y se realizó la prueba binomial. **Resultados:** de las 36 definiciones operacionales desarrolladas, 20 fueron validadas con excelente IVC ( $\geq 0,81$ ) con  $p < 0,005$ ; 11 sufrieron ajustes y fueron re-evaluadas, cinco fueron excluidas. **Conclusión:** la línea y la validación de estas definiciones operacionales como un evento específico de la enfermería contribuye a la consolidación de los atributos de los conceptos que vislumbran, en última instancia, la demarcación de la ciencia de enfermería.

**Descriptoros:** hipertensión; cooperación del paciente; estudios de validación.

## INTRODUCTION

The lack of adherence (non-acceptance) to treatment of hypertension (SAH) is identified as the main cause of uncontrolled blood pressure, representing a significant risk of cardiovascular events, which can be seen in high rates of morbidity and mortality from cardiovascular diseases.<sup>1</sup>

Non-acceptance is defined as the behavior of the person who fails to match a health promotion plan or therapeutic agreed between her and the healthcare professional.<sup>2</sup> It is a complex phenomenon structured by the dimensions of person, disease/treatment, and health service and systemically organized environment.<sup>3</sup>

From this complexity the following question is posed: how can nurses act to decrease the non-acceptance to treatment of hypertension considering their constitutive interfaces? It's a challenge to nursing care that can be addressed from the

structuring of these dimensions of practical knowledge, in which it is possible to delineate focus for the actions. Thus, we place the operational definitions of non-acceptance to treatment of hypertension as a theoretical tool that can give practical meaning to the conceptual definitions.

An operational definition is a procedure that assigns a communicable meaning to a concept by specifying how the concept is applied within a specific set of circumstances.<sup>4</sup> They are essential components of nursing diagnosis research, because they fill a gap between observation and scientific research. They describe what will be measured and how the measurement can be done, acting towards increasing the reliability and validity of the data and indicating the criteria for evaluation of nursing interventions.<sup>5</sup>

Thus, the objective of this study was to evaluate the contents of the operational definitions of the construct “non-acceptance to treatment of hypertension.”

## METHODS

The study has a methodological and quantitative approach. The methodological research discovers, organizes and analyzes data to build, validate and evaluate tools and research techniques, focusing on the development of specific tools in order to improve the consistency and validity of these instruments.<sup>6</sup>

It was sought to understand the dimensionality of this construct, that is, the internal structure and semantics that makes up the “non-acceptance to treatment of hypertension”. The theory of the construct and/or empirical data available about it was carefully analyzed.<sup>4</sup> Thus, a broad literature review was carried, which analyzed 48 studies under 16 countries, making it possible to design this construct as a complex phenomenon involving four dimensions: the person, the disease/treatment, the health service, the environment.

After designing the dimensionality, operational definitions were built. The passage from the abstract esphere to the concrete ground is precisely possible by the operational definitions and is based on the legitimacy of empirical and behavioral representation of the construct. This definition is operational when it's defined, not in the terms of other constructs, but in terms of concrete operations of the physical behavior through which the construct is expressed.<sup>4</sup>

For the development of operational settings, a guide instrument was used, which has a funnel structure in flow concepts, going from the elucidation of the more general concept (dimensionality) to the achievement of specific concepts and objectives (operational settings). Thereby, 36 operational definitions were prepared, from these there were: 13 in person dimension, 10 in disease/treatment dimension, 07 in the size of health service dimension, 06 in the environmental dimension.

The operational definitions developed were exposed to content analysis by a panel of experts regarding the

treatment of hypertension. Such experts have decided over the pertinence of each operational definition to the construct each represents. Regarding the analysis of experts, they must be experts in the construct of the area, because their task is to decide if the items are referring or not to the latent trait in question.

For sample definition a search was made within the databases of Higher Education Personnel Improvement Coordination (CAPES) of Brazil in order to find potential experts for the sample. This database held an electronic search using the descriptors “hypertension” and “patient compliance”, resulting in a population of 123 experts. For establishing the size of the sample a formula was adopted taking into account the final proportion of experts in relation to a specific dichotomous variable and a maximum acceptable difference between this proportion<sup>(2)</sup>. The final sample was composed by 17 experts.

As a criteria for selection, it was developed an adaptation of Fehring<sup>7</sup> scoring system, which has built a system “The Fehring Model” for selection of expert nurses for nursing taxonomies validation.

The adjustment was made to adapt the object of study with the criteria: master, mandatory criteria (zero point); master with a thesis on adherence to hypertension treatment (two points); research on SAH area (three points), article published in the area of adherence to the hypertension treatment in journals  $\geq B2$  (two points), doctor with a thesis on hypertension (four points), clinical experience of at least one year under the Primary Health Care (two points), certificate of specialization in the area of hypertension, cardiology, Family Health/Public Health or related fields (one point) - being 14 the maximum of possible points.

It was considered an inclusion criteria the fact of acquiring a score greater or equal to five points in the modified scale. The exclusion criteria were: expert who 5 years ago changed his line of research and no longer works with SAH theme.

To collect data, the experts were contacted via email to take part in the study. An invitation letter explaining the purpose, an outline of the methodology and the role of the expert in the research was also sent to the experts. After consent, data collection instruments and Informed Consent were sent to them.

Two types of forms were used: the first carried the characterization instrument composing sociodemographic and academic variables; the second, the instrument validation content of operational settings. So the experts could assess the relevance of each operational definition to the research phenomenon, a categorical ordinal scale of four points was applied: 1, not indicative; 2, very little indicative; 3, considerably indicative; and 4, very much indicative. A 30 days deadline was provided for the experts to return the instruments answered; however, due to the low return such deadline was extended to 60 days.

After the evaluation, we calculated the Content Validity Index (IVC) for each of the definitions in order to

determine the level of agreement among experts. Firstly each individually and then setting all definitions as a whole.

The IVC was defined as the proportion of items that received a score of 3 or 4 by experts. It was considered as having validity of excellent content - taking into consideration a panel of experts with more than 16 members - one IVC between 0,75 or higher.<sup>6</sup>

The collected data were processed in a statistical program through which was obtained the contents of all variables. To carry out the analysis of the operational definitions their IVC was calculated. It was also performed the exact test of binomial distribution for small samples - considering a significance level of 5% ( $p > 0,05$ ) and the proportion of 0,75 for the desired agreement for estimating the statistical reliability of the IVC.

The study was approved by the Research Ethics Committee of the State University of Ceará (Case number 11517971-2) in accordance with Resolution 466/12.

## RESULTS

Among the experts 94,1% were female, with an average age of 39,14 years old, with a minimum of 27 and maximum of 54 years old. The majority of them studied Nursing (70,6%), four (23,5%) Pharmacy, and one (5,9%) Medicine. With regard to training in postgraduate courses strict sense, one (5,9%) had post-doctorate, 52,9% (9) had doctorates and 41,2% (7) were masters. Regarding the training time, there was an average of 16.32 years, with minimum of 4 and maximum of 32 years.

Regarding the region and the city where the experts reside, this study involved three regions (Northeast, Southeast and South); nine states (Bahia, Ceará, Paraíba, Piauí, Espírito Santo, Minas Gerais, São Paulo, Rio Grande do Sul and Paraná) and 13 cities (Salvador, Fortaleza, Crato, Joao Pessoa, Floriano, Vitoria, Alfenas, São Paulo, Ribeirão Preto, Itapeva, Londrina, Maringa and São Mateus) indicating a multiplicity of views and different cultures in the analysis of operational definitions. The scores obtained in the Fehring adapted model obtained an average of 10,41 points with a standard deviation of 2.476; the lowest score was 07 and the highest 14 points.

The validations content of 36 operational definitions are presented in Tables 01 and 02.

**Table 1:** content Validity Index (CVI) operational definitions of the latent trait “non-acceptance to the treatment of Hypertension” according to the person dimension. Fortaleza, CE, Brazil, 2014.

	OPERATIONAL DEFINITIONS	CVI* Item	Binomial Test
<b>Person dimension</b>	01 Feel good causes the hypertensive discontinue medication	1,0	0,000
	02 Believing there's no need to adopt a change in lifestyle	0,88	0,050
	03 Forgetting to use the medication	0,94	0,007
	04 Lack of motivation to adopt healthy eating	0,94	0,007
	05 Alcohol use <sup>†</sup>	0,76	0,353
	06 High frequency of <i>fast food</i> consumption <sup>†</sup>	0,76	0,353
	07 Decision not to take the medication or take it only in the presence of symptoms	1,0	0,000
	08 Setting of modern life to makes the individual always busy to perform physical exercise <sup>†</sup>	0,76	0,353
	09 Low social participation over the last two weeks when it showed that the negative effects of the interactions of the members of the family act on blood pressure (stress) <sup>†</sup>	0,65	0,107
	10 Difficulty in following a diet regime other than that of the rest of the family is a crucial point for the adoption of dietary measures	0,94	0,007
	11 The large number of social meetings among families, promoting collective power in abundance ‡	0,59	0,040
	12 Low family income for the purchase of medicines and healthy lifestyle <sup>†</sup>	0,71	0,235
	13 The non-attendance at consultations to avoid running out at work	0,81	0,197

\* Content Validity Index of the item;  
<sup>†</sup> Operational definitions reviewed;  
<sup>‡</sup> Operating definitions deleted.

Based on the validation indices obtained for the operational definitions of the Person dimension, it was found that six (the number 01, 02, 03, 04, 07, and 10) had excellent scores  $\geq 0,78$ . However, five operational settings (05, 06, 08, 9 and 12 IVCi) were considered good (IVC between 0,60 and 0,78) and required review and reassessment by experts. The number 11 has been eliminated.

**Table 2:** content Validity Index (CVI) of operational definitions of the latent trait “non-acceptance to the treatment of Hypertension” according to the dimensions/ disease treatment, health and environment. Fortaleza, CE, Brazil, 2014.

	OPERATIONAL DEFINITIONS	CVI* item	Binomial Test
<b>Dimension Disease/Treatment</b>	14 The side effects of the medicines	0,94	0,007
	15 The number of daily pills ingested	0,94	0,007
	16 The presence of comorbidities <sup>†</sup>	0,75	0,370
	17 Involvement of mental state	0,81	0,197
	18 High level of stress <sup>†</sup>	0,69	0,190
	19 High blood pressure	0,81	0,197
	20 Privious history of hypertensive crisis	0,81	0,197
	21 Use of alternative practices instead of the agreed treatment <sup>†</sup>	0,69	0,190
	22 Absence of SAH symptoms	0,88	0,063
	23 Less perception of the benefit of pharmaceuticals	0,88	0,063
<b>Health Service Dimension</b>	24 Poor health education on control of SAH	0,88	0,063
	25 Professional-subject communication barrier with hypertension	0,88	0,063
	26 Stressing consultations	0,82	0,164
	27 Mistrust of health professionals regarding what's said by the person with hypertension <sup>†</sup>	0,76	0,353
	28 Poor quality of the health service <sup>†</sup>	0,76	0,353
	29 Lack of access to laboratory tests, clinical material, drugs, and human resources	1,0	0,000
	30 Uncoordinated team regarding the home visit	0,88	0,063
<b>Environmental Dimension</b>	31 Dissatisfaction with the environment of the health unit	0,82	0,164
	32 Lack of a convenient place for physical activity <sup>†</sup>	0,71	0,235
	33 Violence in the neighborhood of residence interrupting the willingness to go to the health unit <sup>‡</sup>	0,53	0,120
	34 Distance between the place where people with SAH lived and worked <sup>‡</sup>	0,53	0,120
	35 Long staying in a foreign country <sup>‡</sup>	0,24	0,000
	36 Natural disasters <sup>‡</sup>	0,29	0,000

\* Content Validity Index of the item;  
<sup>†</sup> Operational definitions reviewed;  
<sup>‡</sup> Operational definitions eliminated.

Regarding the operational definitions of disease treatment dimension, there were seven validated definitions (the number 14, 15, 17, 19, 20, 22 and 23) with IVCi  $\geq 0,78$  ( $p > 0,05$ ). In this dimension, three required review and reassessment of content (the number 16, 18 and 21).

in the dimension of health service the most operational definitions (numbers 24, 25, 26, 29 and 30) had excellent IVCi ( $\geq 0,78$ ;  $p < 0,005$ ). Yet, in operational definitions of the environment dimension, there were no operational definitions validated satisfactorily. Most of them got unsatisfactory IVCi, down 0.60, resulting in the exclusion of four settings (33, 34, 35 and 36). Only 31 obtained the operational definition content validation in the first analysis, and number 32 got IVCi that led to a second analysis.

## DISCUSSION

The formulation and validation of operational nursing phenomena definitions are important tools for understanding and preparing care plans for up to promote a comprehensive clinical care. Within the field of non-acceptance to treatment of hypertension, elucidating this construct from their operational definitions will foster nurses to new ways of conducting clinical nursing care.

On operational definitions requiring review, we have the N°05 (Use of alcoholic beverages). Despite the fact that alcoholic beverages consume is recognized as a major risk factor for high blood pressure and complications of cardiovascular risk, this operational definition did not get enough score for validation. Prolonged intake of alcohol can raise blood pressure, and increase cardiovascular mortality in general. Such practice should be discouraged by health professionals.<sup>8</sup> The suitability of this operational definition obtained IVC 1.0 from the label: alcohol consume.

Operational definitions number 06 (High fast food consumption frequency) and 08 (Set of modern life makes the individual always busy for physical exercise) reflect the habitus constituted in contemporary society. The dedication to meals and leisure time activities are increasingly scarce, as the time dedicated to economic and financial activities is growing rapidly - combined with the new mediascape food industry for fast food.

This kind of behavior is injurious to people living with hypertension. The meal plan with reduced salt and low calorie foods should be a part of the eating routine of such people.<sup>9</sup>

Regarding the operational definition n°08, the work overload generates physical and mental fatigue, discouraging the practice of physical exercise. This burden may hinder the self-care activities essential to promoting health and, in particular, adherence to the therapeutic management of hypertension.<sup>10</sup>

These operational definitions have been renamed to: high frequency of consumption of fast food (sandwiches, pastries, esfirras, fries); time dedicated to leisure activities is increasingly scarce over the financial economic activities

of the person with hypertension. Each category obtained adequacy IVCi of 1,00 and 0,80, respectively.

The operational definition n° 09 deals with stress in a peculiar situation, one generated in family life. Family participation is highly relevant in the acquisition of habits and changes in lifestyle, as well as in the adherence to treatment. It is believed that this operational setting has not obtained sufficient validation score for being restricted to a locus. Stress in our times is part of the lives of individuals in a variety of environments - either family or work - acting directly on blood pressure.

Thus, the operational definition was revised, getting adequacy IVC 1,0, being conceptualized as: Coexistence in environments with high levels of stressors, whether in family or community life, acts on blood pressure and should be seen as a target to the non-drug treatment.

The environmental stress is an important factor to be considered in the assessment of blood pressure, as well as in its genesis.<sup>11</sup> However, research indicates that the relationship between stress and hypertension is not yet fully understood and requires longitudinal studies for the consolidation of such information.<sup>12</sup>

The 12° operational definition (low household income for the purchase of medicines and healthy lifestyle) had an adequate IVCi, but not enough to validate it. It is assumed that this operational definition was not well formulated once it briefly associates income to two distinct factors: purchase of medicines and healthy lifestyle. Thus, it has been reset to a new assessment content: family income with low purchasing power which hinders access to medicines when they are not provided by health facilities, a balanced diet and performing some types of physical activities (swimming, whirlpool, gym, etc.). The adequacy ratio of this operational definition was low (IVC 0.60), culminating in its elimination.

The influence of socioeconomic status in the occurrence of hypertension is complex and difficult to establish. However, studies which associate variables of this stratum to the problem of non-acceptance to treatment are evident.<sup>1,3,9</sup> One must consider, however, that in a developing country like Brazil where people with lower purchasing power are considered by their social status, it is understandable the difficulty in changing the lifestyle.<sup>10</sup> Therefore, in order to obtain better adherence to treatment it is necessary to consider the real living conditions of individuals.

The operational definition n° 11 (the large number of social meetings between families, which promote collective power in abundance) got bad evaluation, with a 0.59 IVCi and was eliminated from the study.

In what regards the operational definition n° 16 "Comorbidities", it constitutes a fact that complexifies the therapeutic monitoring, increasing the load of drugs and thus amplifying the side effects of such drugs. Moreover, it is an evidence of noncompliance with treatment, because its bad driving is one of the main triggers of injury to the target organ. This definition required realignment and reassessment.

Thus, the operational definition n° 16 was renamed to “The presence of other diseases or health conditions, as well as high blood pressure, demanding an increase in the number of prescription drugs, side effects of these drugs and care support”, resulting in excellent index adequacy (IVC = 1,0).

The use of alternative practices at the expense of conventional treatment of hypertension (operational definition n° 21) is linked to the cultural values of the subjects as well as to their level of knowledge and understanding of the disease.<sup>13</sup>

Complementary and alternative medicine therapies are often used as adjuncts to conventional therapy for patients with cardiovascular disease. Complementary practical usage patterns represent important data in the provision of appropriate assistance.<sup>14-5</sup> This operational definition has not obtained content validity (IVC = 0,60), being eliminated. Elimination was attributed to the possibility of abandoning the conventional treatment for those who practice complementary therapies. We conjectured that if this operational definition could lead to the understanding that complementary therapies are supporting to the conventional treatment, it would get validation.

The operational definition n° 27 (mistrust of health professionals in relation to the speech of people with hypertension) obtained an IVCi 0,76 ( $p > 0,05$ ). It refers to the established dialogue process between the professional and the person with hypertension. It's in this moment of encounter in which there is the agreement of the proposed treatment, being the effective communication a prerequisite for the success of this agreement.

In this context we rescued a theoretical model of communication for treating hypertension, which comprises three phases: understanding and acceptance (phase 1) where there is dialogue to transfer information from the caregiver to the person with hypertension, aimed at understanding and accepting the personal situation and the associated risk; translation into action (phase 2) which includes the initiation of drug treatment and lifestyle changes; and long-term retention (phase 3) covering the reinforcement of effective communication, repetition and systematic monitoring of the increased adherence to the treatment plan.<sup>16</sup>

Thus, interpersonal trust must be present in all therapeutic encounters for the good living of these people in their social roles. In this sense, we renamed the operational definition for: the subject with hypertension realizes that the health care provider does not trust in his/her speeches and attitudes (people with hypertension). IVC obtained the adequacy of 0,80.

The operational definition n° 28 (Poor health service quality) obtained IVC 0,76, being subject to reevaluation, which resulted in IVC adequacy 0,40, being eliminated.

Dissatisfaction with the health environment is one of the factors that discourages participation in activities in that environment.<sup>17</sup> The resoluteness of services

and customer satisfaction are ways to assess the health services, from the results obtained in the service to users. Satisfaction with the services offered by any health system, especially of public nature, are important in adherence to treatment and consultations, in controlling the disease and, consequently, the quality of life - especially in chronic diseases.<sup>18</sup> This operational doesn't define which aspect is being deficient in the health service, being distant from the operationalization for action performance required by the operational definitions.

The lack of a convenient place for physical activity (operational definition n°32) discourages the realization of this non-pharmacological treatment modality. The lack of a suitable location, with a good structure and with an instructor can lead to the practice of non indicated exercises for each patients case and can be harmful rather than therapeutic.<sup>19</sup>

Thus, the operational definition n° 32 was renamed to: “Lack of proper location with a good structure and instructor for physical activities makes this an unattractive activity for people with hypertension”. However, this definition readjustment index was 0.40, being eliminated.

The validation of the operational definitions brings great contributions to the study of non-acceptance to treatment of hypertension and subsidize the construction of epidemiological indicators, preparation of charts, algorithms and the design of research aimed at knowledge and the development of interventions in this field of nursing in public health.

For nursing, knowledge of operational definitions will allow the professional to go beyond the naive dialogue with the person who has hypertension. The use of this knowledge will allow a reflection web, built by a reflective dialogue with the theories that engender the making of nurses of Primary.

It's consistent in this way, with the concept of clinical nursing care as an integrative axis of these operational definitions, as these expand the ways that may be delineated by nurses in conducting a clinical care. This care requires the awareness of professional with regard to subjective aspects arising from a pluripotent reality, marked by the culture and ideologies, being held in a paradigmatic way for new strengthened clinical practice while becoming a nurse - culminating in the design of a new ethos of acting to the nurses at the clinic.

The acquisition of a body of operational definitions - valid from a multidimensional understanding - like a real systemic reflection mode about the reality live by people with hypertension, about the practice and knowledge of health professionals, and the context in which social interactions occur, enable new horizons in understanding and in therapeutic approach in the context of hypertension.

Taking into consideration studies in terminology and nursing practice, we have built the operational definitions and validated important sources of knowledge for the foundation of clinical nursing actions performed with these

people. The establishment of a specialized language is the basis for the organization of the proper knowledge of the profession - once such such knowledge builds a universal terminology from the systematic observation.<sup>20</sup>

The basis of a common language in science in general, and specifically in nursing, is a laborious field of conceptual confrontation between science and non science - between what is and what is not nursing, that is, between what it is, in epistemological terms, and what is not a part of the demarcation of this science. It is in the process of complex understanding that a defining activity of the nursing field is built - guiding the spaces for actions towards individual and community aspects.

So envision the formulation of operational definitions of non-adherence to treatment of hypertension and its content validation contributes with the building process of a nursing taxonomies system - since it is a profession that is also based on the relationship with people with this health condition.

## CONCLUSION

Twenty operational definitions were validated with excellent IVCi, 11 suffered adjustments and were reevaluated, and five were excluded. This study, involving the design and validation of operational definitions of a specific event of nursing contributes to the consolidation of an epistemology of practice. Such consolidation comes from the strengthening of the attributes of concepts that envision ultimately the demarcation of Nursing Science.



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Received on: 16/08/2014

Required for review: No

Approved on: 17/09/2015

Published on: 15/07/2016

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