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NURSING DIAGNOSIS OF SEDENTARY LIFESTYLE: EXPERT VALIDATION[1]

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ABSTRACT: This study's aim was to verify with experts the appropriateness of the components (definition, defining characteristics and related factors) of the nursing diagnosis sedentary lifestyle for individuals with hypertension. The validation process took place from February to July 2011, by 48 nurse specialists in nursing terminologies and/or sedentary lifestyle and/or hypertension. Based on this study, changes in the definition of Sedentary Lifestyle and in the titles of five indicators are recommended, in addition to the addition of another six related factors and three defining characteristics to the list of the NANDA-International Taxonomy II. The process of expert validation enables improvement and more reliable and accurate identification of clinical indicators with greater diagnostic accuracy.

DESCRIPTORS: Nursing. Nursing diagnosis. Validation studies. Sedentary Lifestyle. Hypertension.

DIAGNÓSTICO DE ENFERMAGEM ESTILO DE VIDA SEDENTÁRIO: VALIDAÇÃO POR ESPECIALISTAS

RESUMO: Este estudo teve por finalidade verificar com especialistas a adequação dos componentes (definição, características definidoras e dos fatores relacionados) do diagnóstico de enfermagem Estilo de Vida Sedentário em indivíduos com hipertensão arterial. Com a participação de 48 enfermeiros especialistas em terminologias de enfermagem e/ou sedentarismo e/ou hipertensão arterial, a validação foi realizada no período de fevereiro a julho de 2011. A partir desta pesquisa, foram recomendadas alterações na definição do Estilo de Vida Sedentário, no título de cinco indicadores, além do acréscimo na lista da Taxonomia II da NANDA-Internacional de seis fatores relacionados e três características definidoras. Com isso, o processo de validação por especialistas possibilitará o aprimoramento e a identificação mais confiável e precisa dos indicadores clínicos, proporcionando uma maior acurácia diagnóstica.

DESCRITORES: Enfermagem. Diagnóstico de enfermagem. Estudos de validação. Estilo de vida sedentário. Hipertensão.

DIAGNÓSTICO DE ENFERMERÍA DEL ESTILO DE VIDA SEDENTARIO: VALIDACIÓN POR EXPERTOS

RESUMEN: Este estudio tiene como objetivo comprobar con especialistas la adecuación de los componentes (definición, características definitorias y factores relacionados) del diagnóstico de enfermería del estilo de vida sedentario en personas con hipertensión. La validación ocurrió de febrero a julio de 2011. Participaron en el proceso de validación 48 enfermeras especialistas en terminologías de enfermería y/o estilo de vida sedentario y/o hipertensión. Se recomienda cambios en la definición de estilo de vida sedentario y en el título de cinco indicadores, así como la incorporación a la lista de la NANDA-Internacional de seis factores relacionados y cinco características definitorias. El proceso de validación por expertos permitirá la mejora y la identificación más confiable y precisa de los indicadores clínicos, y por lo tanto más precisión diagnóstica.

DESCRIPTORES: Enfermería. Diagnóstico de enfermería. Estudios de validación. Estilo de vida sedentario. Hipertensión.

INTRODUCTION

Expert validation is the basis of improving diagnoses and is intended to review, refine, and verify the accuracy of the terminology that describes a phenomenon.[1] The judgment of scholars in the field who assess nursing diagnoses make them more reliable, precise, valid and decisive for coherent decision-making.

There are few studies addressing the Nursing diagnosis Sedentary Lifestyle (SL),[2] even though sedentariness is a worldwide concern given its role in the epidemiology of chronic diseases such as hypertension. One study conducted in 2010 in 26 Brazilian capitals and the Federal District involving 54,339 adult individuals reports that the frequency of exercise performed during free time is modest, ranging from 11.3% to 22.4%. In Fortaleza the percentage was 15.6%.[3]

Given the scope and complexity of a sedentary lifestyle, especially in the context of hypertension, understanding its determining factors can lead to a comprehensive view from its causes up to the consequences of this lifestyle. Therefore, the validation of nursing diagnoses directly contributes to the process.

The nursing diagnosis SL was included in the NANDA-International NANDA-I) in 2004 and is defined as a lifestyle characterized by a low level of exercise. This diagnosis presents the following defining characteristics: lack of physical fitness; a daily routine without exercise; preference for a low level of exercise, in addition to related factors such as deficient knowledge regarding the benefits of exercise for health, a lack of interest, lack of motivation, lack of resources (time, money, company, and structure) and a lack of preparedness for exercise.[1]

Expert validation is a stage after concept analysis and the definition of a list of components concerning the diagnosis[4] and is intended to establish which components proposed in the concept analysis represent the diagnosis under study and which should be excluded.

In a previous study, the process of conceptual analysis of the SL diagnosis in individuals with hypertension led to the following results: change of the definition of SL and some clinical indicators, the addition of seven related factors and four defining characteristics, besides indicators already available in the taxonomy II, NANDA-I.[5]

As a result, the following questions emerged: Are the components (definition, defining characteristics, and related factors) that are identified in the conceptual analysis appropriate to SL in individuals with hypertension?

Therefore, this study's objective was to verify the appropriateness of the components (definition, defining characteristics, and related factors) of the nursing diagnosis Sedentary Lifestyle in individuals with hypertension.

In this sense, we believe that the process of expert validation will enable a more reliable and precise identification of clinical indicators and the implementation of safer and more efficient nursing interventions. Additionally, refining and validating the elements of this process in the context of care provided to individuals with hypertension is intended to encourage the generalization of language involved in the diagnosis, to acquire the ability to predict and produce sufficient evidence to verify its representativeness.

METHOD

Expert validation is intended to verify how appropriate the components are in regard to the concept of a nursing diagnosis and its representativeness according to the opinion of experts.[4] For that, information was collected from expert nurses concerning the topic of nursing terminologies and/or hypertension and/or sedentariness in regard to their judgment of the items constructed in the concept analysis. The system of scoring criteria used to select experts was adapted to the field and nature of the study. It included seven items that totaled a maximum of 14 points.[5] The sample included professionals who met the following criteria: a) being an RN with at least a master's degree in the health field; and b) obtaining a minimum score of five.[6] The study was conducted from February to July 2011.

Three strategies were used to identify expert nurses: a) search curricula in the CNPq's Lattes Platform using the keywords of nursing diagnosis, hypertension, and sedentariness; b) the researchers located individuals from within their universe of relationships; and c) "snowball" sampling was used to select among the experts previously selected.

The sample size was determined based on achieving a minimum of 80% agreement in regard to the relevance of each component. A difference of 15% in the level of agreement was admitted, including an interval from 70% to 100%. The sample size was defined by $n=Z_{\alpha}^{2}.P.(1-P)/d^{2}$, in which

Z_α refers to the level of confidence (95%), P is the proportion of experts who should judge each item assessed to be relevant for the diagnosis and d is the difference of proportion considered acceptable. Hence, we verified the need for 28 experts.

A number of experts higher than what was determined by the sample computation was initially selected to account for potential refusals in participate of the study, difficulty contacting individuals, and unreturned or incomplete instruments. A letter invitation was then sent by email to 146 experts who met the inclusion criteria. Of these, 16 (10.9%) did not agree to participate and 29 (19.9%) did not reply after three attempts, leaving a total of 101 (69.2%) experts.

Those who agreed to participate in the study received free and informed consent forms, explanations and general information, together with two semi-structured questionnaires. One questionnaire addressed the experts' profiles and the other questionnaire was developed with data from the concept analysis[5]. Three judges, with experience in nursing terminologies, assessed the questionnaire in regard to ease of understanding, presentation and clarity.

It is worth noting that of the 101 experts, only 48 completed their participation in the study. To verify the appropriateness of the components of the diagnosis SL (definition, defining characteristics, related factors) in individuals with hypertension, we developed a Likert scale with the following classification: 1) Not indicative; 2) Only slightly indicative; 3) Somewhat indicative; 4) Pretty indicative; 5) Very much indicative.

Data were organized in a Microsoft Office Excel 2007 spreadsheet and analyzed using the Statistical Package for the Social Sciences (SPSS), version 16.0.

The Content Validity Index (CVI) of the nursing diagnosis was computed to assess the appropriateness or relevance of the components. Components with CVI equal to or higher than 0.80 were considered the main components; those with weighted averages between 0.80 and 0.50 were considered secondary components; and those with an average equal to or below 0.50 were considered irrelevant.[7] Because this index uses weighted averages, it generates overestimated data. For this reason, we chose to use a more conservative cutoff point (below 0.70) for those considered irrelevant instead of the cutoff point proposed by Fehring.[7]

Afterward, we verified that appropriateness of the adjustment of the proportion of experts who agreed with the appropriateness or relevance of each item. The items were grouped dichotomously. The frequencies concerning items 1, 2 and 3 classified the item either as inappropriate or not relevant; and 4 and 5 as appropriate or relevant. For that, the binomial test was used to verify whether the proportion of experts who deemed each criterion as appropriate was below 80%. The level of significance (α) adopted in this analysis was 5% so that p-values higher than 0.05 indicated that the proportion of experts who considered the item appropriate was statistically not below 80%.

In this sense, the appropriateness of the titles of the defining characteristics and related factors was analyzed by the total of experts and also individually, divided according to the score obtained based on the established criteria.[7] The established cutoff point was 10 points, because it was the average score obtained. Hence, one group was composed of 26 experts who obtained from five to 10 points and another group was composed of 22 experts who obtained from 11 to 14 points. The purpose of this division was to verify whether judgment differed according to score. Therefore, statistical differences found in this assessment, even with strata below the sample minimum size, show particularities probably related to the judges' levels of expertise.

To analyze the titles of the defining characteristics and related factors, we initially considered those with a proportion equal or above 80% ($p>0.05$) in at least one of the groups to be adequate, or according to the analysis that treated all the experts. In the cases of results of the binomial test that did not indicate adequacy, we considered those with CVI equal or above 0.7 in at least one of the groups to be adequate. If these proportions were not presented, the defining characteristic and/or related factor were excluded from the final list proposed for the nursing diagnosis SL.

Note that this study complied with recommendations from Resolution n. 196, October 10, 1996, National Council of Health and was authorized by the Institutional Review Board at the Federal University of Ceará (COMEPE), according to protocol n. 306/2010.

RESULTS

Of the 48 experts who participated in the study, most (93.8%) were women, originally from the Southeast or Northeast (47.9% each); the highest degree was a PhD (58.3%), most had partici-

pated in research groups on nursing terminologies (70.8%), developed academic studies related to nursing terminologies (77.1%); 66.7% developed studies addressing hypertension, had experience in clinical practice (64.6%), and teaching (91.7%) the use of nursing diagnoses, and provided nursing care to patients with hypertension and/or the nursing diagnosis SL (93.8%). The variables age and time since graduation were asymmetrically distributed (p-value<0.05), indicating that half was up to 30 years old and graduated seven years ago, ranging from three to 38 years, with an average age of 33.97 years old (±10.38).

In regard to the scores adapted to the Fehring (1994) model, we also obtained a normal distribution (p=0.031), showing that half the experts obtained 11 points with an average of 10.23 (±2.32), with a minimum of five and the maximum of 14. Considering the theoretical approach used in the concept analysis[5] and the changes proposed by some, we suggest the replacement of the definition of NANDA-I by the one proposed in this study: "a lifestyle in which individuals do not exercise as frequently, as long, or as intensely as recommended." This definition was preferred by 81.2% of the experts. It is worth highlighting that the suggestions for modifying the definition were of a structural/semantic nature, without changes of content.

According to data presented in tables 1 and 2 after the experts' analyses, the addition of six related factors in the list of Taxonomy II, NANDA-I (2010) were suggested: "Attitudes, beliefs, health habits that hinder the practice of exercise"; "Lack of social support for the practice of exercise"; "Lack of confidence to practice exercise"; "Impaired mobility"; "Activity Intolerance"; "Report of pain"; and three defining characteristics: "Overweight"; "Low performance in instrumental activities of daily living"; and "Does not exercise during free time"), which presented proportions of agreement equal to or greater than 80% (p>0.05) and/or CVI above 0.70 in at least one of the groups.

On the other hand, the related factor "Emotional Responses" and the defining characteristic "Report of health disorders" were excluded. We note, according to the judgment of experts, all the indicators contained in NANDA-I were maintained, with the exception of a change in the terminology of the following indicators: "Deficient knowledge concerning the benefit of physical activity to health and/or on the consequences of sedentariness"; "Lack of .resources (time, money, place, safety, equipment)"; "Lack of interest in exercise" and "Lack of physical fitness", which were divided into: "Reduced cardiorespiratory resistance", "Decreased muscle strength" and "decreased joint flexibility".

Table 1 - Assessment of the factors related to the nursing diagnosis Sedentary Lifestyle in individuals with hypertension, according to groups of experts. Fortaleza-CE, Brazil 2011

Related factors	All the experts			Up to 10 points			Above 10 points		
	CVI *	% †	p ‡	CVI *	% †	p ‡	CVI *	% †	p ‡
Deficient knowledge concerning the benefits of exercise to health and/or the consequences of sedentariness.	0.85	81.2	0.642	0.86	84.6	0.793	0.86	77.2	0.457
Attitudes, beliefs, and health habits that hinder the practice of exercise.	0.88	81.2	0.642	0.88	76.9	0.422	0.88	86.3	0.845
Lack of motivation to exercise.	0.88	93.6	0.997	0.93	88.4	0.916	0.93	100.0	1.000
Lack of interest in exercise	0.87	91.4	0.990	0.92	84.6	0.793	0.92	100.0	1.000
Lack of social support to exercise	0.78	72.9	0.147	0.85	0.692	0.131	0.85	0.77	0.457
Lack of resources (time, money, place, safety, equipment)	0.85	75.0	0.240	0.87	73.0	0.252	0.87	0.77	0.457
Lack of confidence to exercise	0.73	61.7	0.002	0.77	61.5	0.023	0.77	61.9	0.040
Lack of preparedness to exercise	0.73	58.3	<0.001	0.78	57.6	0.007	0.78	59.1	0.020
Impaired mobility	0.92	85.4	0.871	0.93	84.6	0.793	0.93	81.8	0.668
Activity intolerance	0.91	91.6	0.992	0.92	96.1	0.997	0.92	86.3	0.845
Report of pain	0.90	91.6	0.992	0.89	92.3	0.977	0.89	90.9	0.952
Emotional responses	0.69	48.9	<0.001	0.69	42.3	<0.001	0.69	57.1	0.014

* Validity of Content Index; † Percentage of agreement; ‡ Binomial test.

Table 2 - Assessment of the appropriateness of the defining characteristics of the nursing diagnosis Sedentary Lifestyle in individuals with hypertension, according to groups of experts. Fortaleza-CE, Brazil 2011

Defining characteristics	All the experts			5 to 10 points			11 to 14 points		
	CVI *	%†	p‡	CVI *	%†	p‡	CVI *	%†	p‡
Overweight	0.79	66.6%	0.021	0.78	73.0	0.252	0.79	59.1	0.020
Low performance in daily life activities	0.73	50.0%	<0.001	0.78	61.5	0.023	0.65	36.3	<0.001
Choose life routine without exercise	0.94	89.5%	0.975	0.97	84.6	0.793	0.96	90.9	0.952
Does not exercise during free time	0.74	66.6%	0.021	0.74	61.5	0.023	0.75	72.7	0.267
Reduced cardiorespiratory endurance	0.82	66.6%	0.021	0.82	73.0	0.252	0.80	59.1	0.020
Decreased muscle strength	0.79	56.2%	<0.001	0.79	57.6	0.007	0.77	54.5	0.006
Decreased joint flexibility	0.73	52.1%	<0.001	0.74	57.6	0.007	0.71	45.4	<0.001
Verbalizes preference for activities with little exercise	0.88	80.8%	0.615	0.83	73.0	0.252	0.94	90.4	0.942
Report of health disorders	0.58	27.1%	<0.001	0.60	30.7	<0.001	0.54	22.7	<0.001

* Validity of Content Index; † Percentage of agreement; ‡ Binomial test.

DISCUSSION

Expert validation or content validation concerning the appropriateness of clinical indicators allows the inference that the nursing diagnosis Sedentary Lifestyle is more reliable, precise, valid and decisive for nurses' coherent decision-making. There is, however, consensus in regard to the difficulty identifying and recruiting nurse experts in the diagnosis that is intended to be validated due to a reduced number of experts in the field of interest concerning the diagnosis under study and also to a reduced number of professionals using nursing diagnoses in clinical practice.[8] Additionally, the growing number of studies of this nature leads to a saturation in the field, reducing possibilities of collaboration and participation.

The characterization of the experts participating in this study is similar to that presented by other studies validating nursing terminologies.[9-11] It is believed that the considerable number of doctors in the field, their experience in teaching, in providing care and in doing research, using nursing diagnoses in these contexts, and the presence of experts from the 16 states of Brazil, contribute to increasing the reliability of data obtained in the process of expert validation of the nursing diagnosis Sedentary Lifestyle. Additionally, it is known that the higher the score obtained, according to Fehring's criteria, the higher the power of evidence of validation.

When considering the repercussions of sedentariness on the health conditions of individuals with hypertension, it is necessary to understand the factors that lead to a sedentary lifestyle. For this reason, we verify the need to promote actions that promote regular exercise, or even influence government strategies, with the intent to improve adherence to the practice of exercise.[12]

We verify, in professional practice, various determinants that influence a sedentary lifestyle. In this sense, it is necessary to identify the attitudes, beliefs, and health habits of individuals, since these explain the choice of sedentary behavior over the practice of exercise.[13]

In regard to the related factor, "Lack of social support", researchers note that individuals who perceive social support as being unsatisfactory or unavailable may feel unable to change or maintain behaviors that favor cardiovascular health, such as exercise, appropriate diet, and quitting smoking. [13-14]

Among evidence found in the literature, lack of confidence assessed in terms of self-efficacy is another determinant that negatively affects the practice of exercise. Beliefs regarding self-efficacy influence one's motivational and self-regulatory process. They also influence the choices people make and the paths they choose, in addition to the level of effort the person will apply in a given task and how much time will dedicate to overcoming obstacles. Thus, perceived self-efficacy determines the individuals' level of commitment and reflects personal abilities to adopt a certain behavior.[15] Behavioral changes, however, primarily require understanding on the part of health workers, of the external situation and then require, on the part of individuals, an internal change that moves toward behavioral modification.[16]

It is known that impaired mobility may generate disability or difficulty for those affected by

hypertension, hinder walking, gait and exercise. The likelihood of developing SL among those with impaired mobility was statistically higher (p=0.028 and prevalence ratio of 1.241), while those with SL were more likely to develop Activity intolerance (p=0.019 and prevalence ratio of 1.476).[17]

The related factor "Activity intolerance" represents the compilation of signs and symptoms that interfere in the practice of exercise, such as dyspnea, discomfort, weakness and/or abnormal heart rate in response to strain[5] and obtained high CVI (0.91). Nonetheless, a previous study reports low levels of CVI (0.41) for similar characteristics, leading to the conclusion in that study that it is not necessary for SL.[18]

Another factor that also negatively affects exercise is pain, whether it is acute or chronic. In a comparative analysis between elderly individuals performing exercise and sedentary elderly individuals, the sedentary group more frequently reported pain when compared to the active group (p=0.045).[19] In another study, chronic pain hindering the practice of exercise was reported by 59.7% of the population.[20]

Content validation studies addressing the nursing diagnosis "Sedentariness" [18,21] defined the following as defining characteristics: "Exclusively performing operational activities of daily living" and "Only performed activities of daily living such as: shopping, bathing, banking, cooking, home chores, and occupational activities", with CVI of 0.75 and 0.63, respectively. The index found was similar (0.73) for the characteristic "Low performance of activities of daily living". In this sense, it is believed that a sedentary lifestyle negatively influences one's autonomy and independence in the performance of instrumental activities of daily living and physical fitness.[22]

Therefore, the growing level of sedentariness in the population is one of the factors contributing to the current pandemic of obesity. Gain in weight, body mass index and/or fat tissue was considered a critical defining characteristic of SL, with CVI of 0.84.[18] When the relationship between obesity and indicators of cardiovascular risk is assessed, a relationship between weight and sedentariness is observed (p=0.027). Abdominal obesity was observed in 35.1%; 70% of these were also sedentary.[23]

In a study conducted with 972 adults, 69.8% report that no exercise performed during free time. They reported that a lack of lighted public places, with easy access, with structures for leisure, and urban violence were factors that hindered the practice of exercises.[24]

A previous study addressing SL reports low indexes of agreement among experts in regard to the presence or absence of the defining characteristic "lack of physical fitness" when determining the definition of SL. Nonetheless, this defining characteristic was the most prevalent, with 84.8%, and the most sensitive (98.92%), with a negative predictive value of 95.74%.[25] Additionally, this characteristic, together with the clinical indicators "verbalizes a preference for activity with low level of exercise" and "lack of preparedness for exercise", predicts this diagnosis in 85.2% of the cases.[2]

Dividing this characteristic into "reduced cardiorespiratory capacity", "decreased muscle strength" and "decreased joint flexibility" was preferred by 95.8% of the experts over "shows lack physical fitness" and also presented higher indexes of content validation when compared to other studies.[21]

In this context, the regular and systematic practice of exercise is a beneficial factor and mitigates decreased muscle strength, improves cardiorespiratory resistance and joint flexibility.[26] Therefore, encouraging the regular practice of exercises, including during free times, is urgent and will improve the parameters of body composition of functional capacity and the components of physical fitness.

Finally, as a final result of the expert validation of the nursing diagnosis SL, the final proposal incorporates 11 related factors, namely: "deficient knowledge of the benefits of physical exercise on health and/or the consequences of sedentariness"; "lack of motivation for the practice of exercises"; "lack of interest in exercise"; "lack of resources (time, money, place, safety and equipment)"; "lack of preparedness for the practice of exercise"; "attitudes, beliefs, and/or health habits that hinder the practice of exercise"; "lack of social support for the practice of exercise"; "lack of confidence for the practice of exercise"; "impaired mobility"; "activity intolerance"; and "report of pain". In regard to the defining characteristics, according to the opinions of the experts, the following defining characteristics were recommended: "reduced cardiorespiratory capacity", "decreased muscle strength", "decreased joint flexibility", "chooses a routine without exercise", "verbalizes a preference for activities with little exercise", "overweight", "low performance in instrumental activities of daily living" and "does not practice exercise during free time".

CONCLUSION

After the experts' analyses, the definition and titles of the related factors and defining characteristics were readjusted, whenever pertinent, in order to make them more representative of the nursing diagnosis Sedentary Lifestyle in individuals with hypertension. Hence, we suggest the reformulation of the definition of the nursing diagnosis SL with the addition of six related factors and three defining characteristics in the list of Taxonomy II, NANDA-I, as well as the change of terminology for five clinical indicators.

We stress the difficulty in finding experts in the diagnosis under study, the low rate of return of the instrument, and slowness of responses. Thus, there is a possibility of less accurate assessments even when they achieved the score recommended by Fehring.

We believe that the expert validation process of the nursing diagnosis SL enabled the improvement of clinical indicators, with more reliable and precise identification, therefore, enabling greater diagnostic accuracy.

We recommend that other studies address SL in view of new scientific evidence, to encourage reflection and arouse interest among nurses in order to address more clearly the care provided to patients. For that, it is necessary to conduct clinical validation to consolidate the results found in this study.

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