Development and validation of an informative booklet on bed bath

Construção e validação de um manual informativo sobre o banho no leito

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Abstract

Objective: To develop and validate an informative booklet on bed bath for coronary patients.
Method: The informative booklet was developed based on the experience of researchers and literature. The booklet was subjected to content validation for ten nurses, using the Delphi technique. The final version of the booklet has been validated with 35 patients admitted to the coronary care unit and who had experienced at least once the bed bath, using Likert scale.
Results: The informative booklet was developed containing information about bed bath and the reasons that patients need this procedure. In the first phase were required four rounds to obtain consensus among nurses. In the second phase, it was observed that the average of the responses were above 4, thus, the booklet was considered as validated.
Conclusion: This study developed and validated an informative booklet on bed bath for coronary patients.

Resumo

Objetivo: Construir e validar um manual informativo sobre o banho no leito para pacientes com síndrome coronária aguda.
Métodos: O manual informativo foi desenvolvido com base na experiência profissional dos pesquisadores e em levantamento bibliográfico. A versão preliminar do manual foi submetida à validação de conteúdo por dez enfermeiros, utilizando a Técnica de *Delphi*. A versão final do manual foi validada com 35 pacientes internados na unidade coronariana e que haviam vivenciado ao menos uma vez o banho no leito utilizando escala do tipo *Likert*.
Resultados: O manual informativo foi construído contendo informações sobre o banho no leito e as razões da necessidade deste procedimento. Na primeira fase foram necessárias quatro rodadas para o consenso entre os enfermeiros. Na segunda fase, foi observada uma média de escore superior a 4, sendo considerado como validado.
Conclusão: Foi construído e validado um manual informativo sobre o banho no leito para pacientes com síndrome coronária aguda.

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Introduction

Cardiovascular diseases are one of the main causes of morbidity and mortality in Brazil and in the world.[1,2] Statistical data, from the American Heart Association indicate that 82,600,000 Americans are afflicted with cardiovascular diseases, while ischemic heart diseases account for 16,300,000 cases.[3] In Brazil, it is estimated that in 2011, the ischemic heart disease accounted for 231,340 hospitalizations, which corresponds to 20% of hospitalizations due to circulatory diseases and 2% of all hospitalizations.[2]

Coronariopathy is a disease that often leads to unexpected hospitalizations and can trigger a threatening situation that leads to physiological and psychological changes. These changes frequently become more intense, depending on the procedure to which the patient is subject; one of these procedures is the bed bath. A previous study reports that the anxiety generated by bed baths was greater than the anxiety generated by shower baths, especially before the procedure is performed.[4] Anxiety associated with acute coronary syndrome may increase the heart rate, cardiac work, and oxygen consumption, worsening the disease.

In this context, nurses play an important role in providing guidance concerning bed baths. The nursing orientation can minimize the negative feelings of patients when they face new experiences, reassuring them and improving their quality of life.[5,6]

Informative booklets are one of the strategies that can be used by nurses for the orientation. These booklets ease the work of the multidisciplinary team when instructing patients and families during the treatment, recovery and self-care processes.[7] These booklets should, however, be in clear and objective language, appropriate to their target populations. Therefore, content validation of such resources is required.

Given this context, this study's objective is to develop and validate an informative booklet concerning bed baths for patients with acute coronary syndrome.

Methods

This study addresses the development and validation of an informative booklet according to the steps described by Echer[7] and was conducted between October 2010 and December 2012.

The informative booklet was developed based on the researchers' professional experience and a bibliographic review. The booklet was validated in two phases: it was first validated by nurses and then by patients.

The booklet's preliminary version was content validated by ten nurses: five professors from the field of fundamentals of nursing care, with at least two years of experience, and five nurses with at least two years of experience in Cardiac Intensive Care Units. The participants were asked to read the material and suggest changes in relation to the content, clarity and language of each of the items. A three-point Likert scale was used, in which one refers to totally inappropriate, two partially appropriate, and three totally appropriate. The participants were required to suggest relevant changes if they considered the booklet to be partially appropriate or totally inappropriate. In addition to its content, the nurses also assessed the type of paper, size of fonts and illustrations, as well as how sharp the illustrations were; 100% agreement was required for these items to be considered appropriate.

The Delphi technique was adopted in this phase to validate the informative booklet. The Delphi technique is a method used to obtain the opinion of a group of experts on criteria concerning a given topic and questionnaires are successively applied using information from previous phases seeking 100% consensus among the experts. The three basic principles of this technique were followed: the respondents remained anonymous, feedback from the group was obtained to re-evaluate subsequent rounds, and the instrument was reformulated until consensus was achieved among all the experts,[8,9] that is, all the items in the informative booklet should achieve an average score of 3 (totally appropriate) for content, clarity and language. The Delphi technique allows the number of experts to

be directly determined by the phenomenon under study, which can range from 7 to 12 experts.[10]

Once consensus was achieved among the nurses, the booklet's final version, was then evaluated by 35 patients in the second phase of validation. The sample size was obtained by statistical analysis considering a level of significance of 5% and a power of 95%. These patients were randomly chosen according to the inclusion criteria: being hospitalized in Cardiac Units; having experienced bed bathing at least once; having signed free and informed consent forms. Exclusion criteria were: illiterate patients or with decreased levels of consciousness or with a visual impairment.

A five-point Likert scale, elaborated for the researchers, was used in the second phase for the patients to assess global comprehension of the booklet and comprehension for each of the items. The minimum value was 1 (I do not understand anything) and the maximum value was 5 (I understood it perfectly and have no doubts).

After consensus was achieved among the researchers and statistician, the instrument has to obtain a score equal to or above 4, that is, I understood almost everything, for it to be considered comprehensible for patients. The Wilcoxon test, which enables the assessment of inter-rater reliability, was used to verify agreement among patients; $p<0.05$ were considered statistically significant. In addition to the mean score, the percentage of answers with score 5 (I understood it perfectly and have no doubts) was also verified; for the instrument to be considered comprehensible, it should achieve agreement equal to or above 80%.

This study complied with national and international ethical standards concerning research involving human subjects.

Results

The informative booklet included questions and answers: six questions with their respective answers. The first question asked what a bed bath is, which is body hygiene performed in bed for patients requiring strict bed rest.

The second question refers to the reason a coronary patient should receive such care. This item explains to the patient that bed bath is advantageous because it reduces physical strain. It also explains that all kinds of physical strain should be avoided such as shower baths. It is essential because the coronary arteries are obstructed and blood cannot carry sufficient oxygen for it to work properly.

The booklet's third question describes the professional responsible for performing this procedure. It stresses that a qualified member of the nursing staff with experience in this procedure performs it wearing gloves throughout the procedure.

The fourth item describes how the procedure is performed. It contains information and illustrations of how bathing is performed in a bed: the patient remains lying down, doors and windows are shut, the patient is constantly monitored and continues to receive all intravenous drugs. This item also describes the material used during this procedure and that the water temperature will meet the patient's preference. Afterwards, the procedure's steps are described: face and hair are washed first and then the body is washed. As the body parts are washed, they are immediately rinsed, dried and covered by clean sheets. The item stresses that the patients themselves can wash their private parts, if possible and if they feel more comfortable, and finally, bed rails remain raised throughout the procedure.

The fifth item describes how long this procedure usually takes, from 15 to 40 minutes, and the sixth item reports how many times the patient requires this procedure: patients take one bed bath a day, or according to the patient's preference or need.

Ten nurses assessed the booklet's final version. The nurses' ages ranged from 30 to 55 years old, with an average of 41.2 ± 8.3 years old. Most nurses were women (n=9; 90.0%). In regard to their educational background, six nurses had a Master's degrees, five had a doctorate, and all had at least one specialization; five had more than one specialization. The nurses were experts in cardiology (n=4; 40%), medical-surgical (n=3; 30%), mental health (n=3; 30%), intensive therapy (n=2; 20%), nephrology (n=1; 10%), palliative care (n=1; 10%), nursing teaching (n=1; 10%), and cancer (n=1;

10%). In terms of experience, the nurses had graduate between five and 33 years ago, with an average of 17.1± 9.8 years since graduation.

In regard to the informative booklet, 90.0% (n=9) of the nurses considered the font size to be appropriate (only one suggested increasing the font size); 100.0% (n=10) considered the type of paper to be appropriate; 90.0% (n=9) considered the size of illustrations to be appropriate (only one suggested increasing its size); and, 70.0% (n=7) considered the illustrations to be sharp enough.

After this assessment, the size of the fonts and illustrations were increased, and the sharpness of illustrations was improved. All the nurses (n=10; 100.0%) considered the size of fonts and illustrations to be appropriate in the second evaluation.

The Delphi technique was used in the booklet's content validation and four rounds were required to obtain 100% consensus among the experts.

Changes were suggested in 12 phrases of the booklet in the first round. The phrases were then reformulated according to the nurses' opinions. The only suggestion not accepted in the first round was: *"The arteries responsible for taking oxygen (air) to your heart are clogged, causing pain during strain. To avoid such pain, you should avoid physical strain, such as shower bathing, because your heart will demand a greater amount of oxygen during this effort."* The researchers considered this sentence not to correspond to clinical experience and potentially could lead to anxiety, since not all patients with acute coronary syndrome experience pain as a symptom of the disease.

The 12 phrases were re-submitted to the nurses' analysis after reformulation and changes were suggested for ten phrases in the second round. The only suggestion not accepted in this round was: *"The bed bath will be performed by one or two members of the nursing staff using gloves the entire time."* We considered that the presence of two nursing professionals during the bed bath might increase the patients' anxiety and consequently, oxygen consumption, worsening the disease's progression.

Therefore, nine phrases were reformulated and re-submitted for the analysis of nurses in the third round. This time, changes were suggested for seven phrases. These phrases were then reformulated and resubmitted to the nurses' analysis in the fourth round. Only one (1) nurse suggested changes for two phrases in relation to the language used. The suggestions, however, referred to the Portuguese language and not to the content. For this reason, a new round was not required and the booklet was considered validated by the nurses.

After the nurses' validation, the booklet was then submitted to the validation of 35 patients. The ages of the patients ranged from 42 to 70 years old, with an average of 58.5+8.2 years old.

In regard to the patients' gender, 85.7% (n=30) were male. Most (n=33; 94.3%) had experienced previous hospitalizations, while 54.3% of these hospitalizations were due to acute myocardial infarction.

In regard to the second phase of validation, table 1 shows that the percentage of agreement was greater than 90.0% in all the items evaluated, that is, more than 90.0% of the interviewees answered "I understood perfectly and have no doubts." The confidence interval ranged from 76.9% to 100.0%.

Table 1. Percentage of answers with a score of 5 and confidence interval

	n(%)	CI 95%	
		Lower limit %	Upper limit %
The booklet as a whole	34(97.1)	85.1	99.9
What is a bed bath?	34(97.1)	85.1	99.9
Why do I need a bed bath?	32(91.4)	76.9	98.2
Who will bathe me?	35(100.0)	90.0	100.0
How is the procedure performed?	35(100.0)	90.0	100.0
How long does it take?	35(100.0)	90.0	100.0
How many times is it performed?	34(97.1)	85.1	99.9

Legend: n=35

The average score of the answers for each item (Table 2) were greater than four and agreement among patients was statistically significant. The booklet was thus considered validated by the patients.

Table 2. Items of informative booklet

	Average	Median	Standard deviation	Minimum	Maximum	p-value
The booklet as a whole	4.97	5.00	0.17	4.00	5.00	<0.0001
What is a bed bath?	4.97	5.00	0.17	4.00	5.00	<0.0001
Why do I need a bed bath?	4.89	5.00	0.40	3.00	5.00	<0.0001
Who will bathe me?	5.00	5.00	0.00	5.00	5.00	<0.0001
How is the procedure performed?	5.00	5.00	0.00	5.00	5.00	<0.0001
How long does it take?	5.00	5.00	0.00	5.00	5.00	<0.0001
How many times is it performed?	4.97	5.00	0.17	4.00	5.00	<0.0001

Legend: n=35

Discussion

Bath is one of the most frequent activities in the routine of the population in general and is among the most intimate and private moments, when individuals have contact with their own bodies. Inpatients requiring bed baths are individuals who passed from an active to a passive individual and have become dependent on the nursing staff to perform this procedure. This dependency may often inhibit and/or impede the patient from asking about procedures and/or treatments,[11] potentially generating feelings such as fear and anxiety.

Human beings need to be reassured about procedures since doubts can lead to unpleasant feelings, such as anxiety and anguish.[12] For this reason, nursing guidance is crucial in this context.

Nursing guidance can be provided individually and/or through the use of informative booklets. Informative booklets are designed to help patients and families during treatment and self-care and standardize instructions provided by the nursing staff, so that patients can understand the health-disease continuum and make decisions.[7,13,14]

The development of educational material should meet the expectations and priorities of patients concerning a given subject and when this material is well-developed and easy to understand, it improves knowledge and the satisfaction of patients.[14-16]

Another point to stress is that booklets should contain illustrations to ease the understanding of those who read it.[17] Additionally, the sequence of content, organization of ideas, space, type of paper and font, should be appropriately chosen to facilate reading.[15]

Language should be clear and objective for readers to understand the content.[7] Therefore, such resources need to be validated by experts and individuals who will use it.[7,16] Few studies, however, assess the steps required for its development as well as the impact of its information.[7,14,18]

There are many ways to validate booklets and/or instruments and the Delphi technique is one of them. The Delphi technique has been widely used in validation studies seeking to ensure that content is appropriate to a given population. A literature review with the objective to identify and characterize papers using the Delphi technique published in Brazilian nursing periodicals shows that this technique can contribute to scientific advancement in all specialties and fields of nursing.[9]

The results of some studies using this technique report that 2 to 4 rounds were required to validate content, which corroborates this study's findings.[19-23] Sometimes, though, three or more rounds may be required to exhaust the subject.[20]

The use of educational material enables more extensive interaction among health professionals, patients and families and the development of this type of material has been a growing practice in the nursing field.[24]

Given the results found, the following limitations should be considered. One study recomends that prior to a booklet's development, the patients' informational needs, concerning a given procedure, should be identified[25] and this stage was not performed in this study. Additionally, the study was conducted in a single cardiac unit and among a specific Brazilian population. For this reason, it should be validated in other populations.

Conclusion

The informative booklet was developed and validated by nurses and patients. Even though it may be used by diverse populations, its validation in other populations is required.

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Collaborations

Lopes JL, Nogueira-Martins LA and Barros ALBL contributed to the project's conception, analysis and interpretation of data, redaction, and critical review, which was relevant for the intellectual content and final approval of the version to be published. Barbosa DA participated in the project's conception, redaction, critical review of intellectual content and the final approval of the version to be published.

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