Original Article

Developing Patient Education Questionnaire in Iranian Population

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Abstract

Introduction: Patient education is a key component for effective self-management and monitoring required with many acute and chronic conditions. The objective of the study was to develop an instrument to measure patient education content.

Materials and Methods*:* First of all, literature searches were undertaken to determine current national and international patient education questionnaires. Then a forty five item questionnaire was developed. The questioner was filled by 396 patients of medical surgical wards of Kerman hospitals. Reliability of the questionnaire was assessed by Cronbach's alpha. Factor analysis in conjunction with Principal Component Analysis (PCA) was applied to assess the construct validity of the instrument.

Results: The result regarding reliability of the scale showed that The alpha coefficient of the scale was 0.95. Using PCA, a five-factor solution was selected as the most appropriate model, which accounted for nearly 70% of the total variance; disease information, disease complication, drug information, general information, and miscellaneous.

Conclusion: Our new questionnaire demonstrates good psychometric properties. This tool helps patients to create a realistic picture of what to expect in the early recovery period at home.

Keywords: Patient Education as Topic; Questionnaires; Consumer Health Information

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Introduction

Clinical patient education is planned, organized, progressive, and logical process of teaching and learning provided to patients and clients in all clinical settings [1]. On clinical patient care units, patient education is a significant part of regular nursing care [2]. Patient education is an essential nursing practice standardthat meaningfully impacts a patient's health and quality of life [3]. Patient education has some benefits, such as the provision of information, advice and behavior modification techniques, to influence the patients' knowledge, opinions and health and illness behavior in order to ensure that the patient is able to co-operate effectively in deciding on the care which he receives and can make the best possible contribution to that care[4].

Patient education is one of the key interventions in nursing. Generally patients need information about their own illness and its care, side effects and complications, and about health-related problems. It is also important to know about further care. In addition information is needed on daily activities and practical solutions, and on financial matters [4].

According to Timmins [5] Patients require information to help prevent stress and improve their coping with hospital events [5]. Krisi [6] reported that there is abundant research evidence on the positive impacts of patient education on patient empowerment and self-care . Education interventions have helped to increase patients' knowledge about their health, condition and self-care and to reduce the negative impacts of health problems on quality of life and on the psyche. It has also been reported that patient satisfaction increases with information [6].

Several studies which have focused on patients' perceived informational needs during their hospitalization or at the time of discharge, demonstrated an agreement in some areas of informational needs [7]. These are: awareness of condition, medications, treatments, complications, managing daily activities and interpersonal communication. Norwegian studies about patients' views on quality of care they get revealed their dissatisfaction with information they receive from health care providers [8]. They claimed that in Norway, there is a law that patients have the right to receive helpful information about their health status and treatment choices [9].

Cleary et al [10] found that patient express that they need information about medication when they discharge from the hospital, and this was the most important informational needs compared to others. In England, Alibhai et al [1] found that only a small proportion of patients (49%) were educated about medication at discharge, and only 30% reported that they received written information. Naire et al [11] reported that patient would like to receive information about treatment options that are accessible. According to Brian [12] a staggering amount of hospitalized patients receive no education about how to care for themselves at home at all. Life in the hospital

is full of conflicting priorities, and the education of the patient becomes one of the lower priorities. Neily et al [13] demonstrated that without specific instruction, many patients do not receive appropriate information to follow a dietary sodium restriction [15]. In addition, appropriate discharge planning is a priority in today's healthcare environment in which patients are discharged 'quicker and sicker', sometimes without home support. Adequate and appropriate discharge planning helps promote health literacy, which has benefits for both patients and their caregivers in helping them manage postsurgical recovery at home. Reviewing literature revealed that most researches that explored patients' perception about their informational needs were conducted in western countries and their findings may not be applicable in the Iranian context. This study thus was conducted to develop an instrument in the context to examine patients' perceptions about their educational needs.

Materials and Methods

Participants

This cross-sectional study was carried out in Kerman, the largest province in Iran. The questionnaire was intended for all patients who were discharged from the participating wards (three hospitals except psychiatric hospital) in Kerman University of Medical Sciences and Health Services during on randomly selected time. Inclusion criteria were: those who are at age 18 years or above, at least two day hospitalization, ability to communicate and

patients who can understand questions. Sample size was 396 based on pilot study on 30 patients who had inclusion criteria of the study (M=44.7, SD=9.6, d=0.1 of standard deviation).Questionnaires were sent out to the participating units and nurses identified patients who could be recruited to participate in this study. For illiterate patient, the data were gathered by interview.

The questionnaire

A critical review of the literature, analysis of similar questionnaires [1, 7, 8, 9, 15, 16] key informant interviews were conducted to identify appropriate issues. Items were constructed to measure patients' perception of their educational needs. The preliminary scale consisted of 45 items designed to measure the participants' perception toward nurses' educational performance. The questions were graded from 0 to 3 (0=no case, 1=no education at all 1=relative education 3=complete education). A questionnaire was designed to obtain background information. The validity of scale has been assessed through a content validity discussion. Scholars of nursing care have reviewed the content of the scales and agreed upon a reasonable content validity of about 30 items. For translation of questionnaires from English into Farsi, the standard forward-backward procedure was applied. Translation of the items and the response categories independently performed by two professional translators and then temporary versions were provided. Afterwards they were back translated into English and after a careful cultural

adaptation the final versions were provided. Translated questionnaires went through pilot-testing. Suggestions by patient were combined into the final questionnaire version.

Analysis

To assess the internal consistency (reliability) of the questionnaire we estimated the Cronbach's alpha coefficient. The minimum acceptable level of Cronbach's for self-report questionnaire was assumed 0.6. To assess the strength between each question and the rest of questions we estimated the correlation between each question and the summation of the rest of questions after correction for overlapping. Items which showed weak association with the rest of variables were excluded if their deletion did not cause the Cronbach's alpha to decrease. We then applied Factor Analysis which had two aims: a) to evaluate the construct validity of the scale and b) to reduce the range of variables to a smaller number of components for interpretation. To do so we applied Principal Component Analysis (PCA) in conjunction with Varimax rotation. However, with n original variables we will obtain n components.

To select smaller number of components we select the components which together explain more than 60% of variation in original variables. A factor loading of 0.3 was selected as the minimum acceptable cut-off. Determining the sample adequacy for PCA, the Kaiser-Meyer Olkin (KMO) statistics was estimated. The p-values > 0.5 was assumed as acceptable level of correlation between variables. All analyses were done using SPSS 15.00.

Results

Participants demographic variables

A descriptive analysis of the background information revealed that most of participants were male (62%) and 66.4% of them were married. 32.6% were older than 50 years. 30.55% of participants were illiterate and 40.7% of them had no history of hospitalization.

Reliability and validity of questionnaire

The alpha coefficient of the scale was 0.95. The corrected item-scale correlation ranged 0.32 to 0.80. The alpha coefficient in male (N= 246) and female (N=150) were 0.96 and 0.95 respectively. The data were collected from three hospitals. The alpha coefficients were 0.88, 0.93, and 0.95 respectively. Results in difference education levels, and based on marriage status were almost the same. This indicates acceptability of internal validity of scale based on sex, hospital, marriage, and education (Table 1).

There was no significant difference between demographic variables and components of the questionnaire. Using principal component analysis method a five-factor solution was selected as the most appropriate model, which accounted for nearly 70% of the total variance. Factor loadings are included in Table 2. Loadings under 0.3 were not reported such as, "possible side effects of non-pharmacological treatment", "how to deal with emotional effects of disease", "signs and symptoms of

allergy to medications", "time of visiting doctor" and so forth.

Table 1. Internal consistency of patient education questionnaire by demographic characteristics

Variable	category	N	Alpha
Gender	Male	246	0.96
	Female	150	0.95
Hospital	1	125	0.88
	2	115	0.63
	3	156	0.95
Marital status	Single	93	0.96
	married	263	0.95
	Others	40	0.95
Education	Illiterate	121	0.94
	Primary	79	0.94
	Secondary	64	0.95
	Diploma	90	.96
	Higher than diploma	3	0.96

The KMO measure of sampling adequacy was 0.94. Further examination and interpretation of the items, the five components were identifies as:

1) Disease information domain: this category consists of 8 items (1-5, 7-9). In this category, the highest load (66%) belonged to "sings of disease".

2) Disease complication domain: questions 6, 10, 12-15, formed this category. In this category most of participants (84%) believed that the most important informational needs are "sign and symptoms of complications" and "required measures at the onset of complications".

3) Drug information domain: This component consists of 7 items describe that drug informational needs is important in "patient education" (11, 16-24). The highest load in this category (88%) was related to

"route of using medications" and "medications shape".

4) General information domain: a total of 6 items (25-30) were classified as "general information" domain. These items were related to activity and diet. The highest load

(66%) was seen in item "activities permitted to return to normal situation".

5) Miscellaneous domain: items 31-33 were categorized in this component. These items have verity in subjects. The highest load (92%) was assigned to "time of pulling suture".

Table 2. "Patient education" factors and loading of five factor solution

Items	Disease information	Disease complications	Drug information	General information	Miscellaneous
1. Nature of disease	0.44				0.43
2. Cause of disease	0.64				0.32
3. Risk factors of disease	0.55			0.32	0.34
4. Sings of disease	0.66	0.34			
5. Impact of disease on other parts of the body	0.61			0.38	
6. Possibility of disease recurrence		0.33			
7. Disease prognosis	0.61				
8. Duration of disease	0.51				0.43
9. Impact of disease on career	0.56	0.49			
10. Follow up and treatments benefits		0.43	0.39	0.34	0.32
11. Methods of pain relief			0.41		
12. Complications that need immediate action		0.79			0.34
13. How to prevent complication		0.82			
14. Signs and symptoms of complications		0.84			
15. Required measures at the onset of complications		0.84			
16. Reasons of using medications			0.45*	0.43	
17. Amount of medications			0.74		
18. Effect of medications			0.51	0.40	
19. Time of medication use			0.87		
20. Route of using medication			0.88		
21. Recommendation about how to use medications		0.57	0.37		
22. Medication interaction			0.71		
23. Name of medications			0.68		
24. Medication shape			0.88		
25. Activities permitted to return to normal activities			0.33	0.69	
26. Amount of activity limitation		0.43		0.66	
27. Time allowed for activities	0.30	0.44		0.64	
28. Time to start regular diet			0.49	0.52	
29. Useful foods		0.35		0.65	
30. Harmful foods	0.33	0.32	0.32	0.59	
31. Time o pulling sutures					0.92
32. Bathing time					0.91
33. How to take care of wound					0.82

Discussion

Component 1: Disease information

In this domain, patients reported 7 items as their educational needs. Earlier studies [17], indicated some of general patient informational need about their own illness, its care, and its complications as well. Fagermoen and Hamilton [17] believed that lack of information about the nature of disease leads to repeated referrals to health care centers. According to their findings, patients are worried about their condition during the first week after discharge. Waling has also reported that education is necessary for both psychological and physical health of patients. They asserted that adequate patient education improves the level of patient's adaptation to disease, increase their satisfaction and consequently reduces their stress. Fagerman and Hilton [17] also reported the same results and believed that nurses should provide patients adequate information about psychological aspects of their disease at time of discharge from hospital. The patient's right constitution explains that it is patient's right to receive detailed information about diagnosis, treatment and prognosis of the disease from health care providers [18].

Component 2: disease complication

According to the results, participants set 7 Items in the domain of disease complications. Similarly, patients in the research of Fagerman and Hilton [18] described "disease complication" as important informational need [17]. Other studies reported that patients perceived "disease complications" is one the most important content of patient education. Johansson et al [19] also reported that in general, patients need information about their disease complications, and also all problems that disturbs their wellbeing and health. It is also important to know how to care of themselves. According to research reports [16] patients who were at the time of discharge expressed the need for more information about possible complications, how to recognize them and what actions to take if they occur [20]. Also the patients should be informed about the disease progression of the disease. Maloney and Weiss [21] also found that patients need more information regarding management and prevention of potential complications.

Component 3: drug information

This component consist of 7 items described that drug informational needs is important in "patient education" (12, 19, 22, 23, 26, 27, and 34). Medication regimens for patient are particularly vulnerable to adherence problems regarding disease. Meloney [21] reported that one of the subscale that patient emphasized on was "practice with treatments and/or medications". Hegney et al [22] have emphasized on patient education regarding drug's use. Kerzman [23] in his study examined knowledge of discharged patients about their medical treatment. He found that patients had a poor knowledge about their drugs at time of discharge. He also asserted that in a literature review they done, 40% of the subjects had received necessary information about drug taking and self-care. Increases adherence to medication and treatment regimens, may cause

more efficient andcost – effective health care delivery system [4].

Studies found that basic information about medication such as names of the different drugs, dosing schedule and indication are needed to receive by patients [11, 24]. Borgsteede et al [24] concluded that some patients would have preferred to have more information about medication during admission. According to Nair et al [11] side effects of medication were not educated to patient at the time of hospitalization. Patient should be informed, the drug patient is supposed to take, lag period required for the benefits of prescribed drug to appear, possible side effects, how to recognize those side effects, how serious these are and what measure should be taken by patient regarding the disease and side effect. Patients should be re-enforced about the dosage regimen. They go on the key areas that need to be upon are, informing he patients about the side effects, warnings and future consultation[20].

Component 4: general information

Several studies indicated that many patients perceived, it is necessary to have some information toward "daily activities", "limitations of physical activity" and "nutritional needs" [16, 25, 26]. Fagermoen and Glenys [18] conducted a study to assess patients' information at the time of discharge. They found that recommendations related to self-care such as changing diet and activity are important to be included in patients' educational program [27].

Component 5: Miscellaneous

Items 31, 32 and 33 were included in component of Miscellaneous. These items belonged to different subjects and two of them (31, 32) were related to the information that needs to be followed up. The majority of participants (92%) believed that "time of pulling suture" and (90%) "Bathing time" are the most important educational needs at the time of discharge. Of participants, 82% claimed that "how to take care of wound" is very important item that should be included in their education at discharge time. According to several studies, wound care and bathing time is an important educational need for patients who are at the time of discharge [17, 26, 28]. Most of patients' care needs after the discharge (e.g. bathing, getting dressed, changing dressings, wound care, help with physical therapy regimens, etc.) usually undertaken by families [26]. Piepar [29] asserted that Participants' greatest concerns about going home were, how active to be at home, wound pain, looking for wound complications, and watching for wound infection .There is abundant research evidence that focused on the positive effects of patient education on patient empowerment and his/her self-care [21].

The findings are from a suitability sample in one thus cannot be generalized to the population at large. The purposeful sample of patients which is not the representative of all Iranian patients could deteriorate the generalization of the findings. Furthermore, use of the self-report questionnaires may have led to an overestimation of some of the

findings due to variance which is common in different methods.

Conclusion

Patients in this study agreed on the most important areas that are needed to be educated by nurses at the time of admission, during their hospitalization and at the time of discharge as well. These areas were; disease information, disease complications, medication information, general information (activity, diet) and miscellaneous. Based on the result of this study, patient educational program needs to be patient – centered. It means that patients' informational needs assessed initially and then the content of educational program constructed.

This instrument is the only scale that assessed patients' educational needs at the time of discharge in the Iranian context. The results of this study suggest that patients need a broad educational program at the time of discharge.

All items identified as the most important needs by participants. So it can be stated that the instrument has a good psychometric properties. All information included in this scale may assist patients to generate a realistic picture of what should be expected in the early recovery period at home. Such content may reduce patients' uncertainty, increase their confidence and improve their competence to do self-care at home. It also facilitates their recovery at home. Using patient education program, nurse are able to assist patients to enhance their self-care activities and decreased their length of stay at hospital. Therefore, nurses have an important role in developing discharge information plan. The basic principles of research ethics were followed at all stages of the study. Research permission was obtained from the hospital committee for medical investigation. All participants in the study were completely voluntary. All the data were handed confidentially.

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