

Evaluation of Quality of Patient Education Pamphlets made by Nursing Students

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Received: November 2005

Accepted: Feburary 2005

Abstract

Background and purpose: patient education is one important competency expected from health care professionals . The aim of this study , was to evaluat quality of written materials provide for education of patients with chronic diseases in form of pamphlets made by nursing students .

Methods: This study used a non experimental, descriptive design .In this research , first copy of 120 pamphlets made by nursing students was gathered and literacy level of each patient that pamphlet was made for him(her) wrote in first page of each . For evaluating this pamphlets, researcher used two instruments: 1- self – made checklist includes three parts : message content, making and organization of the pamphlets and appearance and appeal of them and 2 - The SMOG formula for determining literacy level needed for reading this pamphlets.

Results: The results of the study revealed that , the main items chosed by students was related to endocrine system, specially diabetes, (15/8%, n= 19) and most of title discussed in these pamphlets was teaching about self – care actions (21/93%, n = 50) .The average literacy level needed for reading this pamphlets was 11/74 and. Each of them doesn't written at recommended literacy level at 6 or less..

Discussion: Patient education materials related to chronic diseases was written at beyound patients literacy level . if we want that patients use this materials , we must made them easear and more understanable and made them with attention to other recommended considerations .

Keyword: EVALUATION, TEACHING, PATIENT TEACHING, CHRONIC DISEASE

Journal of Medical Education winter 2006; 8(2); 103-110

Introduction

Nurses are natural teachers and they help to the patients that understand their condition and learn how to cooperate with the course of treatment (1). Hence , increase in the patient's knowledge of medication administration , use of medical equipment , food - drug interaction , nutrition , community resources , sign and symptoms that should be reported to the health care providers

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and increase ability of the patient, family or both to perform self – care skills and use of rehabilitation techniques to increase the patient's level of functioning are most important nursing action (2). Because of shortend stays , patient education during the past 15 years have brought major changes and has to be done an outpatient basis (3). There are several methods for patient teaching, but of all communication strategies used in health education, perhaps none is as pervasive as print material products (4). In fact, Written communication is efficient and is the least costly method to inform and instruct patients (5). Despite the abundance of information available – from pharmaceutical companies, magazines and newspaper articles, and the internet – written patient education materials provided by

health care facilities continue to be a primary source of information for many patients (6) and printed materials, particularly pamphlets, brochures, or booklets are designed primarily to increase knowledge, awareness, sensitivity, and intention to act (4). However, available material is often written at levels beyond the patient's literacy level (5) and results of many researches, show that during the past 40 years, these materials are written far above the reading levels of most patients (6). Literacy is an international problem (7) and numerous studies show that low literacy levels are strongly associated with poor health. Even when there is adjustment for confounding variables, such as socioeconomic and educational levels, people with the lowest reading and writing ability have poorer health, more outpatient visits, and higher health care expenses than do those with better reading skills, and they are more likely to be hospitalized. In fact patients with poorer reading and writing skills may not understand a health care provider's directions. For example, a study of 2659 patients at the two hospitals showed that 42% could not understand directions to take medication on an empty stomach, and 60% couldn't understand the meaning of a standard consent form (6).

Literacy is defined as the ability to use printed and written information to function in society, to achieve one's goals, and to develop one's knowledge and potential. The impact of literacy on health is significant (5) and low literacy is associated with several learning difficulties besides the obvious problem of reading such as limited vocabulary, difficulty processing images and symbols, difficulty understanding graphs and many other problems (8). Adults with low literacy skills have a poorer health status, have average health costs that are 6 times higher, are less likely to comply with medication regimens, and are less likely to understand their illnesses (5). For these reasons, reducing literacy demands of health literature improves patient's comprehension (9). In the health care setting, health literacy is defined as the ability to perform basic reading and numerical tasks required to function in the health care environment. People

in the lowest literacy level have difficulty reading and understanding material written at the 6th-grade level. Persons with marginal literacy levels have difficulty reading and understanding material written at the 10th-grade level. Finally, persons with adequate literacy levels comprehend most materials written for health care purposes (above 10th-grade level) (5).

According to one survey, many adults can't understand written materials that require only basic proficiency in reading (6). Unfortunately, researches have reported that health education print material often has a readability level that is too high. But they found that well-educated adults learn much more from simply written material than from more difficult material (4) and according to a study of 522 parents of pediatric patients compared comprehension of two brochures concerning the polio vaccine, one written at the 6th-grade reading level and the other at the 10th-grade level. All parents, regardless of reading ability and socioeconomic status, better comprehended brochure and were able to read it more quickly (6). Thus, providers need to be sensitive to the reading limitations of patients and patient education materials (10) and at present, readability of them must be assessed with SMOG formula at 6th grade or lower reading level (11,12,13).

For a printed health message to be persuasive, the public must receive an acceptable form, read it and understand it, believe it, and then act on it and messages must communicate accurate information in a clear manner with minimal technical, bureaucratic, or scientific jargon (4). A message should be constructed by moving from general or broad concepts to focused recommendations (4,14) and written information must be updated, and putting the date on materials, preferably on the first or last page of each pamphlet (6). The message must be credible and supported by reliable references (4) and arrange information according to the patient's priorities, with consider what patients need to know, what they want to know, and what it would be nice to know (6).

Visual attractiveness, variation in presentation, and appropriate mixes of pictures, graphics,

narrative, layout or design (4) and tone of the message is expressed (4,11) and , use the second - person pronoun, rather than first person is necessary other considerations (6).

If these factors are considered appropriately , the print material serves more effectively to increase readiness to consider elements of behavior change and conversely , If print material is developed or purchased without consideration of these factors, it is unlikely that the material will be read or understood (4).

However , there is little evidence to suggest that health educators systematically consider these factors when preparing or purchasing print material and these materials serve no useful teach purposes , if patients are unable to understand them (4,15) .

Information must be written in plain language to be suitable for a wide range of patients, including those with poor reading skills (16). The SMOG formula is widely used by the educators to determine how easy written health education materials are to read and comprehend (2,17). At present all forms used must be readable, using the SMOG formula, at a grade 6 level or less (12).

Yet, no research was done about this method in Persian language and I hope that result of this research can be useful for patient education domain.

Methods

This research used a nonexperimental, descriptive design and was done as a part of routine program of patient education in the 3 course of internship program of nursing students without any intervention .At the beginning of these course , the student made 1-3 pamphlets (depend on length of time of their course) for teaching the patients with chronic diseases as a part of their usual duties .

Then at the end of each educational course , first copy of these pamphlets was gathered and literacy level of each patient that pamphlet was made for him(her) was noted on the first page of each pamphlet .

On the second stage , each of 120 pamphlet was

coded and evaluate with researcher – made checklist leaflet (Appendix no. 1) .

The study used two instruments : the researched made checklist and the SMOG formula (Appendix no. 2) and SMOG Conversion Table developed by Harold C.McGraw (Appendix no. 3)

Readability of written information was measured using the SMOG grade formula, because it is accurate and correlates highly with other readability formulas(5) . In addition, the SMOG is simple,easy to use, and is widely used in health literacy studies (6).

Briefly , for use the SMOG formula , you must follow these four steps :

1. Choose 10 consecutive sentences at the beginning , middle , and end of the document (a total of 30 sentences).

2. Count every word in these sentences that has three or more syllables. If a word is repeated, count the repetition also. Proper nouns, if polysyllabic, should be counted. Hyphenated words are considered one word .

3. Calculate the square root of the number of words with three or more syllables.

4. Add 3 to the square root . this give you the SMOG readability level (11).

Results

Result of this study indicate that most item choosed by nursing students , was related to endocrine system , specially diabetes (15.83% , n = 19) and least item was related to hematologic system diseases and breast diseases (3.33% , n = 4) . This findings showed in (table no.1).

Also we found that most information provided in this pamphlets was related to self – care actions (19.16% , n = 110) , and least information was related to etiology of the chronic diseases (3.13% , n = 18) . This findings was showed in (table no. 2).

In this study, 73.33% of total samples have 30 or less sentence (Short pamphlets) and 26/67% have more than 30 sentences (Long pamphlets) and mean readability level for total 120 pamphlets was about 11.74 (range 7-15) and most of them

was written at 12th literacy grade level (29.17%, n=35) and none of them was not written at recommended grade 6 or less (table no.3).

Table 1. Number and relative percent of Items choosed for patient education

Items choosed for patient education	No.of pamphlet	Percentage
Hematologic diseases	4	3.3
Breast diseases	4	3.3
Infectious diseases	5	4.2
Respiratory diseases	6	5
Drug therapy	8	6.7
Neurologic diseases	9	7.6
Musculu – skeletal diseases	10	8.3
Integumentary system diseases	11	9.2
Cardio–Vascular diseases	12	10
Gastero Intestinal diseases	16	13.3
Urologic diseases	16	13.3
Endocrine diseases	19	15.8
Total	120	100

Table 2. Information provided in each pamphlet

Information that provide in each pamphlet	No.of pamphlet	Percentage
Etiology	18	3/13
Diagnosis	25	4/36
Prevention	26	4/53
Drug regimen	29	5/05
Food regimen	48	8/36
Activity & Excercise	56	9/76
Patophysiology	70	12/2
Sign & Symptoms	90	15/68
Treatment	102	17/77
Self – Care	110	19/16
Total	574	100

Note: In each pamphlet, more than one title was discussed

Also mean grade level of short pamphlets was 12.13 and, ean grade level of long pamphlets was about 11.60 (table no.4).

Most framework – making problem of the pamphlets , was the use of technical words both in title and context of the pamphlets (table no.5), and then , absence of table of content (83.33% n = 100) and then , absence of table of references used for making the pamphlets 77.50, n = 93). This findings are presented at (table no.6).

Table 3. Grade Level of Literacy for reading each pamplets

Grade Level of Literacy	No. of pamphlet	Percentage
6 th Grade and Lower	0	0
7 th Grade	1	0/84
8 th Grade	4	3/33
9 th Grade	5	4/17
10 th Grade	13	10/83
11 th Grade	22	18/33
12 th Grade	35	29/17
13 th Grade	31	25/83
14 th Grade	5	4/17
15 th Grade	4	3/33
Total	120	100

Table 4. Literacy grade level for reading short and long pamphlets

Grade Level of Literacy	Long pamphlets		Short pamplets	
	No.	percentage	No.	percentage
6 th Grade and Lower	0	0%	0	0%
7 th Grade	1	1/14%	0	0%
8 th Grade	3	3/41%	1	3/12%
9 th Grade	3	3/41%	2	6/25%
10 th Grade	9	10/23%	4	12/5%
11 th Grade	18	20/45%	4	12/5%
12 th Grade	30	34/09%	5	15/63%
13 th Grade	21	23/86%	10	31/25%
14 th Grade	3	3/41%	2	6/25%
15 th Grade	0	0%	4	12/5%
Total	88	73/33%	32	26/67%

Table 5. Number and relative percent of technical words used in pamphlets

Technical words	No.	percentage
0	18	15%
1-4	56	46/67%
5-9	19	15/83%
10-14	12	10%
15-19	9	7/5%
>19	6	5%
Total	120	100%

particularly pamphlets, brochures, or booklets, have the potential to reach specific segments of a target audience and also reach a large number of persons (4).

In fact, these brochures, written instructions, and medication sheets, as well as consent forms, are given to patients at health care facilities to reinforce, or replace, verbal instructions (6). (21). The SMOG formula is widely used to determine how easy written health education materials are to read and comprehend (17).

Well – produced pamphlets were able to alter

Table 6. Other characteristics of the pamphlets (Organization, appeal & appearance)

Characteristics of the pamphlets	Yes		No		Total percentage
	No.	percentage	No.	percentage	
Technical words on title & content of pamphlets	102	85%	18	15%	100
Page number	56	46/67%	64	53/33%	100
Table of contents	20	16/67%	100	83/33%	100
Table of references	27	22/5%	93	77/5%	100
Picture(s)	70	58/33%	50	41/67%	100
Appropriateness of pictures to content	55	78/57%	15	21/43%	100
Appropriateness of font size of title / font size of context	53	44/17%	67	55/83%	100
Use of color(s)	47	39/17%	73	60/83%	100
Appropriate font size of context (minimum 12 or equivalent 12)	64	53/33%	56	46/67%	100
Typing	23	19/17%	97	80/83%	100
No white page on pamphlet	31	25/83%	89	74/17%	100
White appropriate layout	18	15%	102	85%	100
Use of index method on the context	43	35/83%	77	64/17%	100
Use of numbers on the context	51	42/5%	69	57/5%	100
Use of serif on the context	35	29/17%	85	70/83%	100

Discussion

Nurses have a vital role in educating patients and ensuring that teaching materials are appropriate for the target population (18) and nurses are frequently called upon to develop and evaluate printed education materials in their role as patient educators (19).

Thus, nurses are relying on printed materials to reinforce, or even supplement, hospital patient education programs (20). Printed materials,

knowledge, attitudes, and select behaviors over a wide range of health – related issues (4), but these materials serve no useful teach purpose if patients are unable to understand them (15). Numerous studies show that distributing printed preventive health material has not been shown to change patient behavior. The lack of effect could be due to unreadable or boring materials (22).

Result of this study show that greatest disease chosen by students was related to endocrine

system, specially diabetes, and most of title discussed in these pamphlets was teaching about self – care actions . Perhaps one reason for this action, was be that the nursing students usually use their text book for making these pamphlets and, because diabetes was one of the diseases that has patient teaching in this textbooks, they choose diabetes for easy accessibility to this teaching points , and not related to number of diabetic patients.

Winslow noted that “ Compiling and creating patient education materials are difficult and time – consuming tasks. Therefore ,once a need is identified , the nurse strives to find printed materials that can be used or modified . Nurses can talk with colleagues , review the literature , or obtain material from patient education and pharmaceutical companies”.(6)

In this study, most choosed items was related to self – care behavior . Because patients with chronic diseases needs acquire self – care ability for long period, choosing this items for educating them are appropriate. In facts , if this items made with right rules , have educational worth . For example ,in survey of patient with family history of breast cancer, over 90% of respondent felt the leaflet covered what they wanted to know in an understandable and caring way (23).

We used an SMOG formula to determine document readability and revealed that mean literacy grade level for reading title of this pamphlets was 13 th grade and, mean grade level for reading content of this pamphlets was 12th grade . Similar findings have been shown in other areas of medicine.For exampe , result of study of 50 brochures commonly used in anticoagulation management show that none had a readability score at the 6th grade level or below, and 74% of this was at 9th-12th grade levels . The readability grade level was similar for brochures produced by industry or health advocacy groups (5).

Indeed , Readability is an essential concept for patient education materials (24), according to various institutes,this materilas must written at 6th grade level or less, because materials written at higher grade level is less likely to be read or understood (5) and also reducing literacy

demands of health literature improves patients comprehension (9). Therefore , education materials should be tested for readabilty and comprhension in sample populations before being accepted for general use (25) and it is nessary that health care providers will know if the materials are aproprate for their patients (24). The high readability levels did differ at one grade among shorter and longer pamphlets. Result of one study about 4 pamphets used for anticoagulation drugs , revealed that readability level was the same for brochures containing > 30 sentences compared with shorter brochures (5). Also study of barnes show that health educator most prefferd pamphlet was thorough and easy to read, although it was among the most lengthy of pamphlets and naming a new concept with a definition and an example was significantly related to purchase decisions (4). Difference between mean literacy level of patients that pamphlets was made for them , with literacy level needed for reading of this pamphlets was five grade level . In one study the sampled cancer materials was written at grade 12 or higher , and only one booklet was written at less than a grade six reading level (26). In addition, the result of one study revealed the average self – reported for highest grade completed in school was 12 grade, however , the actual mean reading kills were between 7-8 th grade . The readability of the written information was 3-4 grades higher than patient’s reading abilities (27). In another study , among patients receiving warfarin , 53% could not read material written at the 9th grade level, while 83% of them reported having completed the 9th grade or beyond .Thus, tailoring readability of patient information to reported grade completed may result in inappropriate material (5) .

In this study , most of the pamphlet include technical and vague words . Similar results was shown in survey of readability level of consent forms for teaching about contraception that reveald , the most common problems associated with high readability scores , were the use of ‘unfamiliar’ words (12) .

In this study we understand that although some of nursing students use pictures in most of the

pamphlet, but some of this pictures were not related to their content and only was used for filling white space on them. And also some of the pamphlets, in spite of having one complete white page, don't have appropriate layout for each page. While researchers believe that written information that uses figures and pictures, may improve comprehension (5).

Difference in font size for title and context (at least, 2 font size or greater) was considered only in 53% of pamphlets. In this regard, timby noted that "choosing printed materials with font size 12-16, and print with on white page, increase clarity of vision (28).

In summary, all patient information material offered for use of patient with chronic diseases is written at levels beyond the comprehension of most patients. Developing patient information at a low readability level is necessary, but not sufficient to improve comprehension. Other methods of communication, and written information that uses figures, pictograms, large font and avoid from using technical words, may also improve comprehension (5).

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