

RESEARCH COMMUNICATION

Suitability of Turkish Written Patient Educational Materials Related to Breast Cancer

Neriman Akansel*, Nursel Aydin

Abstract

Objective: In this study, written educational materials related to breast cancer used for the education of patients were evaluated for their quality and suitability. **Methods.** In this descriptive study carried out between November 2010-March 2011, 17 examples of written educational materials used at 20 hospitals and outpatient clinics were evaluated using a Suitability of Written Materials form. **Findings:** It was determined that educational materials received average scores (12.5 ± 5.4) for their suitability, 58.8% not being considered written at a readable level. Cultural suitability of the materials scored as 0.9 ± 0.8 , which was found to be moderate for Turkish population. **Conclusions.** Most of the written patient education materials used for patient education related to breast cancer need some modification in their literacy, plans and graphic parts. More materials related to care after mastectomy appear necessary. Future research needs to focus on patients' understanding of the content and their satisfaction with written educational materials.

Keywords: Written educational materials - suitability - patient education - breast cancer

Asian Pacific J Cancer Prev, 12, 1609-1613

Introduction

Breast cancer is the most common cancer type seen in Turkish women by the rate of 23.8% of all malignancies, followed by colorectal, thyroid, lung and uterus cancers. According to a pilot study done in 8 cities in Turkey, it is reported that between the years of 2004-2006, 6,597 women were diagnosed with breast cancer (www.kanser.gov.tr.). Because breast cancer is the most common cancer in Turkish women, it essential to have available, educational materials related to breast health and breast cancer. In the study of Nehl et al. (2011), it is reported that breast cancer survivors agreed that the breast cancer related documents had moderate impact on reducing their anxiety or fear and increased their perception of control over their situation. The purpose of written patient education materials is to provide information about health promotion, diagnostic procedures, treatments and medications. They can favorably impact on knowledge, increase awareness and provide information and help people change their behaviors and beliefs (Paul and Redman, 1997; Bull et al., 2001). In order to undertake self-care behavior, patients need information that they can easily understand. The only way to use patient educational materials effectively is by having behavior that is clear and language easy to understand (Wilson et al., 2003).

Especially patients with poor health literacy skills struggle to understand basic medical forms and instructions. Healthy People 2010 defines health literacy as "the degree to which individuals have the capacity to

obtain, process, and understand basic health information and services needed to make appropriate health decisions" (Healthy People, 2011). The results of studies show that patient education materials are written at a difficulty level that is too high (Wallace et al., 2004) and written at high reading (Cox et al., 2011). However, these materials can only be effective if the target client audience can read and understand their content.

Materials and Methods

Study design

The aim of this descriptive study was to evaluate the suitability of written education materials related to breast health. Distributions of the printed materials according to their contents were as follows: breast self examination (8 materials), risks for breast cancer (4 materials), diagnostic techniques for breast cancer (3 materials) and surgical breast reconstruction techniques after breast cancer (1 material), breast implants (1).

Data Collection

Researchers visited hospitals and outpatient clinics between November 2010 - March 2011 for data collection. Total of 20 health care setting were visited during data collection period including University Hospital (1), private hospitals (6), outpatient clinics (9) and Ministry of Health Hospitals (5). Seventeen (17) examples of written educational materials designed for breast health used for patient education were collected and one sample from

¹Department of Nursing, School of Health, Uludag University, Görükle, Bursa, Turkey *For correspondence: nakansel@uludag.edu.tr

each written educational material related to breast health was gathered.

Statistical analysis

The brochures and single page education materials were evaluated using Evaluation of the Suitability of Written Materials form by two of the researchers independently. The Evaluation of the Suitability of Written Materials, which was developed by Doak et al. (1995) and used by Gökdoğan et al. (2003) in Turkey, was used in the evaluation of the suitability of written materials. This form is composed of six sub-qualities (which are given below) and total of 27 questions (Table 1).

For suitability of items, 1-point was given for Yes and 0- point was given for No answers. The total points that an educational material could receive from is minimum of 1 and maximum of 27 points. Reverse scored questions (4 items) in the suitability of written materials were taken into account during evaluations of the educational materials. As the total score from patient educational material increase, the degree of suitability increases.

The statistical program for Social Sciences Windows 17.0 (SPSS Inc., Chicago, IL, USA) was used for the evaluation of research data. Results were given in numbers, percentages and mean, standard deviation, minimum, maximum points were calculated.

Ethical Considerations

Permission were obtained from F Gökdoğan who adapted the Suitability of Written Educational Materials Form in to Turkish, from the Chief Physicians Office, Hospital Boards and Uludağ University School of Health Directorate for this study.

Results

Total of 17 patient education materials were evaluated by two of the researchers independently. Ten (10) of the written educational materials were brochures and 7 of them were single page (dimensions of full A4 and half A4) documents. It was determined that five of the patient education materials were developed by Ministry of Health and only one patient education material included publication date on it. Mean of total score for suitability of written educational materials were 12.5 ± 5.4 (Mean \pm SD).

Content

Total score obtained from content part was 2.4 ± 1.5 . The aim of the most materials were easy to understand (73.5%) and content was open (61.8 %). More than half of the (58.8%) did not include any summary related to the key points.

Literacy

Total score obtained from literacy part was 1.7 ± 1.3 . Fifty eight point eight percent (58.8%) of the materials were not written at a readable level. Most of the materials included medical terminology that is too difficult for patients to understand. It was also determined that characters of the letters used in 8 materials were under

Table 1. Written Patient Educational Materials Evaluated Related to Breast Cancer

A. Contents
1. Can the aim of the material be understood easily?
2. Is the content open to behavior unique or problem solving?
3. Is the subject limited to the targets?
4. Is the summary or the criticism related to the key points?
B. Literacy
5. Have the materials been written at the readable level?
6. Have the materials been written in a conversational level?
7. Have clear and frequently used words been used in material instead of medical terms?
8. Has the structure been given prior to new information?
9. Is the organization advanced?
C. Pictures and Graphs
10. Are graphs, pictures and tables interesting? Do they convey the desired message?
11. Are the pictures simple, realistic and interesting?
12. Do the pictures explain the key points visually?
13. Has the explanation been made in the text next to all of the graphs?
14. Has a headline title been used for the announcement/ explanatory graphs and pictures?
D. Plan and Type
15. Are the pictures next to the related text?
16. Are the clues, such as arrows and boxes for showing the key information?
17. Is there a sufficient blank space?
18. Does the material look disordered?
19. Is there contrast between the paper and ink?
20. Have more than six font types or sizes been used on the same page?
21. Have they all been written in capital letters?
22. Are there sub-titles more than five to
E. Learning and Motivation
23. Is there an interaction between the text and graphs?
24. Has the desired behavior been shown with special terms or models?
25. Has the behavior implementable?
F. Cultural Suitability
26. Do the language, logistic, and lifestyles show suitability to the society?
27. Are the cultural images positive, realistic and suitable?

12 font sizes. Almost all of the materials (91.2%) did not include advanced organization.

Pictures and Graphs

In evaluating cover pictures placed on educational materials, we found that only four of the materials (n=4) rated "superior". In only 23.5% of the materials pictures and graphs included desired message. Some of the pictures were thought to be confusing for patients since they included medical terminology. In most of the materials pictures or graphs (32.4%) fail to explain the key points visually. Total score obtained from pictures and graphs part was 1.3 ± 1.6 which is relatively low.

Plan and Type

Most of the materials received high scores from the Plan and Type part. Mean score obtained from this part was 5.5 ± 0.9 . Fifty percent (50 %) of the materials included sufficient blank space. However 26.5% of the educational

materials looked disorganized.

Learning and Motivation

Mean score obtained from the plan and motivation part was 0.9 ± 1.2 . Only a couple of the materials included interactive learning stimulation. Only 32.4% of the materials included interaction between the texts and graphs (32.4%). Some of the materials included very detailed information which was hard to follow by readers.

Cultural Suitability

In 44.1% of the materials language was suitable for the society. Only 23.5% of them included cultural images that are realistic. Cultural suitability of the materials scored as 0.9 ± 0.8 , which was found to be moderate for Turkish population

Discussion

Patient education is an important intervention in nursing profession. Women need to be well-informed in order to gain knowledge and improve their practices concerning their breast health, since breast cancer is the leading type of cancers among women in Turkey and it is expected that the incidence of the breast cancer will increase dramatically by the year of 2012 (Eti Aslan & Gürkan, 2007). Need to improve women's knowledge and awareness about breast cancer, diagnosis; treatment options and care after diagnosis are important topics to teach target population. According to different studies done in Turkey, it was determined that important portion of the women did not perform Breast Self Examination (Günel, 2000; Zincir & Eğri 2000; Karayurt et al, 2008; Özyayın et al. 2009) and their knowledge related to breast self examination was inadequate (Parlar et al. 2004). While several methods reported being effective in patient education (demonstration, verbal communication etc.), using educational materials designed for patients along with verbal communication can be effective in changing patients' health behaviors and beliefs. The main purpose of the educational materials is to help patients learn on their own and share the learned information with significant others (McKenna & Scott, 2007). It is expected that patient education materials can be effective in patient education when the content is clear, have an effective design, prepared in understandable form for patients to learn.

In our study, breast health education materials were evaluated for their content, literacy, pictures and graphs, design and cultural suitability. According to findings of our study, breast health education materials received moderate scores (12.5 ± 5.4) for their suitability. This result is similar to those of Demir et al. (2008). Low scores were obtained especially from literacy, pictures and graphs, learning and motivation parts of the Suitability of Written Materials form. Cultural suitability parts received moderate score where we found cultural images of the educational materials were relatively positive.

In evaluation of the breast health materials, content part of our materials received moderate scores. This result is different from Demir et al.'s (2008) study where they highlighted that content part of the surgical educational

materials was relatively low. While most of the materials had a clear aim which make readers easily understand what the materials is about, criticism related to the key points was not adequate. It is documented that information reduces anxiety and increase in sense of control associated with breast cancer among breast cancer survivors (Nehl et al. 2011). Since lack of information may also increase anxiety, it is important to take into consideration that health education material to be up-to-date and not containing unnecessary details and includes publication date. Because knowledge in some fields of health care can change rapidly and materials can become outdated, having a publication date on materials is an important issue (Vahabi & Ferris, 1995). In our study, it is observed that only one educational material included publication date making others hard to check whether up-to-date version is available.

A patients' literacy level can adversely affect participation in their medical care and compliance with treatment (Owen et al. 2009). Numerous studies highlighted the disparity between readability of patient material and patient literacy levels (Weintraub et al, 2004; Helitzer et al. 2009; Cox et al., 2011). It is recommended that the terminology used in materials should be clear and easy to understand by patients at different educational levels. For example, Davis et al. (2001) found that many patients did not understand some terms which are often considered basic, such as "blood in the stool," "rectum," "screening," and "tumor." Similarly, results of our study showed that medical terms like "mortality," "morbidity," "fine needle biopsy," "dysplasia" etc. were used in patient education materials related to breast health. Another key point in preparing educational materials is to have them in readable level for target population to learn and understand. Estrada et al. (2000) concluded that the anticoagulation brochures were written above the comprehension level of most patients. In the study done by Weintraub et al. (2004) to determine the suitability of the prostate cancer education materials, it is also pointed that most of the materials were rated not suitable for their readability. It is recommended that clear typefaces, a minimum of 12-point font, and good contrast between the print and background being used in preparing educational materials in the literature (Mayeaux et al., 1996; Paul et al., 1997). It is determined that characters of the letters used in 8 materials were under 12 font sizes in our study which makes them hard to read. Considering the level of illiteracy among Turkish women is 12.3% (about 4 million women) (www.ksgm.gov.tr), not having suitable materials for target audience to understand can interfere with patients' ability to understand the desired message.

Visual attractiveness is an important element suggested that development of written materials should consider (Meade & Smith, 1991). Findings of our study showed that pictures and graphs parts of the written educational materials were insufficient and they did not convey the desired message. Mean score obtained from pictures and graphs part was relatively low and evaluated as inadequate which is similar to other studies (Weintraub et al., 2004; Demir et al., 2008). Using well designed and understandable pictures and graphs are important to give

desired message along with the text. However the findings of our study showed that the use of illustrations within materials varied according to their suitability. Also having medical terminology as an explanation next to the pictures in some of the materials was found to be confusing for target audience.

How the text in the materials is physically presented, arranged and organized can influence the readers' comprehension. Careful layout/typography of materials can make them easier to understand (Helitzer et al., 2009). Demir et al.(2008) stated that lowest scores obtained from plan and type part of the materials in their study. However results of our study showed that plan and type part received high score compared to other parts of the suitability of written materials form. Also some of the materials looked disordered which causes the thought that this may alter patients' ability to learn and understand the main fact the materials planned to give.

If materials can stimulate or inspire readers' interest, prompt trail of the certain behaviors and help them accept the relevance of what they read, understanding and learning occur more easily (Helitzer et al 2009). Well-designed and appropriately written materials can augment other educational efforts and ultimately improve patient care (Owen et al.,2009). An important feature of written health education materials is reader interaction as it can improve interest and recall of information (Doak et al,1996). In our study, only a few of the materials included interactive learning stimulation which is important way of giving desired messages. Learning and motivation part of the materials received low scores generally which makes written materials unsuitable for their learning and motivation. This result is similar to Weintraub et al.'s (2004) study where they determined materials received inadequate points on motivation and stimulation while Demir et al. (2008) reported learning and motivation part of the written materials used for patient in surgery clinics were at a medium level.

It is recommended that materials used for patient education to be culturally suitable (Meade & Smith, 1991). In our study all materials received moderate scores from the cultural suitability part. Only about half of the materials language and life styles looked suitable to the society. Demir et al. (2008) also found that cultural suitability of the materials were complete.

In this study, materials were not selected by any systematic sampling strategies. Findings of this study may not be generalizable to all of the patient educational materials. Evaluation of the materials by patients can give different results especially in literacy and learning parts.

It was determined that written educational materials developed on breast health received lower points from literacy, pictures and graphs, learning and motivation, moderate scores from cultural suitability. However contents and plan and type parts of the materials were found to receive higher scores compare to other parts. It was also determined that education materials developed for patient education includes numerous medical terms that are hard for most of the patients to understand. Most of the materials focused on breast self examination. However, no material was found related to patient care after

mastectomy and other breast diseases. It is recommended that written educational materials should be evaluated by patients before using them in patient education.

Acknowledgements

Study design, data collection and manuscript preparation were conducted jointly by the two authors.

References

- Bull FC, Holt CL, Kreuter M, et al (2001). Understanding the effects of printed health education materials: Which features lead to which outcomes? *J Health Communication*, **6**, 265-79.
- Cox N, Bowmer C, Ring A (2011). Health literacy and the provision of information to women with breast cancer. *Clin Oncol*, **23**, 223-7.
- Davis TC, Dolan NC, Ferreira MR, et al (2001).The role of inadequate health literacy skills in colorectal cancer screening. *Cancer Invest*, **19**, 193-200.
- Demir F, Ozsaker E, Özcan Aİ (2008). The quality and suitability of written educational materials for patients. *J Clin Nurs*, **17**, 259-65.
- Doak C, Doak L, Loring K (1995). Selecting, preparing and using materials in patient education. Patient Education A Practical Approach, 2nd edition, California, Sage Publications.
- Doak CC, Doak L, Root JH (1996). Teaching Patients with Low Literacy Skills. 2nd edition. Philadelphia: J.B. Lippincott Company
- Estrada CA, Hryniewicz M, Higgs VB, et al (2000). Anticoagulant patient information material is written at high readability levels. *Stroke*, **31**, 2966-2970.
- Eti Aslan F, Gürkan A (2007). The risk of breast cancer at women. *J Breast Hlth*, **3**, 63-8.
- Gökdoğan F, Ozcan A, Kir E, et al (2003). Are the educational booklets readable? 2nd International 9 th. National Nursing Congress Book, Istanbul. Istanbul University Publishing, 545-549.
- Günel YG, Günel İ (2000). Attitudes of working women aged 25-55 years towards breast cancer. *J Hlth Soc*, **10**, 21-4.
- Healthy People 2010. U.S. Department of Health and Human Services, Office of Disease Prevention and Health Promotion: an assesment of cancer prevention materials.
- Helitzer D, Hollis C, Cotner J, et al (2009). Health literacy demands of written health information materials. *Cancer Culture Literacy*, **16**, 70-8.
- Karayurt Ö, Coşkun A, Cerit K (2008). Nurses' beliefs about breast cancer and breast self examination and their breast self examination performance. *J Breast Hlth*, **4**, 15-20.
- Mayeaux E, Murphy P, Arnold C, et al (1996). Improving patient education for patients with low literacy skills. *Am Fam Phys*, **53**, 205-11.
- Meade CD, Smith CF (1991). Readability formulas: cautions and criteria. *Patient Educ Counsel*, **17**, 153-8.
- McKenna K, Scott J (2007). Do written educational materials that use content and design principles improve older people's knowledge? *Aust Occup Ther J*, **54**, 103-12.
- Nehl E, Blanchard C, Conerly RC, et al(2003). Evaluation of the American Cancer Society's Breast Cancer-related documents by cancer survivors. *J Cancer Educ*, **18**, 106-14.
- Owen JE, Kohne J, Douglas L, et al(2009). An implementation pathway for matching education materials with literacy level of dialysis patients. *Renal Soc Aust J*, **5**, 133-137.
- Özaydın AN, Güllüoğlu BM, Unalan PC, et al (2009). Breast

- cancer knowledge, source of information, and breast health practices of women in Bahcesehir. *J Breast Hlth*, **5**, 214-224
- Parlar S, Bozkurt İA, Ovalioğlu N (2004). An evaluation of education related to the breast cancer and breast self examination given to the women at Mother and Child Health Care Center. *J Cumhuriyet University Nursing College*, **8**, 9-15.
- Paul C, Redman S (1997). A review of the effectiveness of print materials in changing health-related knowledge, attitudes and behaviour. *Health Promotion J Australia*, **7**, 919.
- Paul CL, Redman S, Sanson-Fisher RW (1997). The development of a checklist of content and design characteristics for printed health education materials. *Health Promotion Journal of Australia*, **7**, 153-159.
- The Ministry of Health of Turkey, Cancer Control Department, 2004-2006 Cancer Statistics, available at: <http://www.kanser.gov.tr>. reached April, 2011
- TC (Turkish Republic Office of Prime Minister Directorate of Women's Status). The report on status of women, December, 2010, available at: <http://www.ksgm.gov.tr>, reached at April 2011.
- Vahabi M & Ferris L (1995) Improving written education materials: review of the evidence. *Health Education Journal*, **54**:99-106.
- Wallace LS, Lennon ES (2004). American Academy of Family Physicians Patient Education Materials: Can Patients Read Them? *Health Literacy and Family Medicine*, **36**(8):571-4.
- Weintarub D, Maliski SA, Fink A, Choe S, Litwin MS (2004) Suitability of prostate cancer education materials: applying a standardized assessment tool to currently available materials. *Patient Educational Counseling*, **55**:275-280.
- Wilson FL, Racine E, Tekieli V, et al (2003) Literacy, readability and cultural barriers: critical factors to consider when educating older African Americans about anticoagulation therapy. *Journal of Clinical Nursing*, **12**, 275-282
- SPSS version 17, SPSS Inc., Chicago, IL, USA.
- Zincir H, Eğri M (2000). Knowledge, attitudes and behaviours related to breast cancer and prevention in women aged 40 years and older in city of Malatya. The Symposium on the Future of Education in Schools of Health, Malatya.