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Original Article

Assessment of the readability of patient education materials regarding breast cancer on websites

İnternet ortamındaki meme kanseri ile ilgili hasta eğitim materyallerinin okunabilirliğinin değerlendirilmesi

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ABSTRACT

Introduction: The Google search engine is a widely used resource for accessing health-related patient education texts. Therefore, accessible information in the texts should be accurate, up-to-date and appropriate to the general public health literacy level. The primary objective of the present study was to analyze the readability of patient education texts prepared for breast cancer presented on the internet and evaluate the content of texts.

Methods: A total of 200 websites at Google search engine evaluated using the terms "breast cancer and breast mass". The average readability level analyzed using Atesman and Bezirci-Yilmaz readability formulas. The texts also evaluated regarding the risk factors identified in the development of breast cancer, the presence of examination and screening methods that could be used in early diagnosis.

Results: A total of 64 internet sites that comply with the research criteria evaluated. The overall mean reading level of the texts found moderate, using the Atesman formula and at the college level according to Bezirci. Eighteen websites had both the risk factors identified in the development of breast cancer and the methods of screening.

Conclusions: The readability level of patient information texts regarding breast cancer in the existing websites was found to be moderate level. Only a quarter of the texts were found to be sufficient concerning content. Re-preparation of patient information sites regarding breast cancer content per the level of public health literacy may contribute more effective breast cancer screening and therefore early cancer diagnosis.

Keywords: Breast cancer, readabilty, internet information

ÖZ

Giriş: Google arama motoru, sağlıkla ilgili hasta eğitim bilgilerine erişmek için yaygın olarak kullanılan bir kaynaktır. Bu nedenle erişilebilir bilgilerin doğru, güncel ve genel toplum sağlık okuryazarlık düzeyine uygun olması önemlidir. Bu araştırmada internet ortamında sunulan meme kanseri ile ilgili hasta bilgilendirme metinlerinin okunabilirlik analizinin ve bu sitelerde yer alan metinlerin içerik değerlendirilmesinin yapılması amaçlandı.

Yöntem: "Google" arama motorunda; meme kanseri ve memede kitle anahtar kelimeleri ile arama yapılarak toplam 200 internet sitesi değerlendirildi. On cümleden az bilgi içeren, sohbet, forum, ticari blog sitelerdeki metinler çalışma dışı bırakıldı. Metinler; hazırlayan uzmanlık dalına göre; genel cerrahi ve genel cerrahi dışı olarak iki gruba ayrıldı. Metinlerin okunabilirlik düzeyleri, Ateşman ve Bezirci-Yılmaz formülleri kullanılarak hesaplandı. Metinler ayrıca meme kanseri gelişiminde tanımlanmış olan risk faktörleri, erken teşhiste kullanılabilecek muayene ve tarama yöntemi varlığı açısından da değerlendirildi.

Bulgular: Toplam 64 internet sitesinde yer alan hasta bilgilendirme metni araştırma kriterlerine uygun bulunarak değerlendirmeye alındı. Metinlerin okunabilirlik ortalaması; Ateşman'a göre orta güçlükte, Bezirci-Yılmaz'a göre 11. sınıf düzeyinde olup 2 grup arasında anlamlı bir fark yoktu. İçerik değerlendirmesinde iki grup benzer olmakla birlikte; sadece 18 sitede hem meme kanseri gelişiminde tanımlanan risk faktörleri hem de tarama yöntemleri mevcuttu.

Sonuç: Mevcut internet sitelerindeki meme kanseri hasta bilgilendirme metinlerinin okunabilirlik düzeyinin orta güçlükte olduğu tespit edildi. Metinlerden ancak dörtte birinin içerik yönünden yeterli olduğu bulundu. İnternet ortamında erişilen meme kanseri içerikli hasta bilgilendirme sitelerinin toplum sağlık okuryazarlık düzeyine uygun olarak yeniden hazırlanması ile erken kanser teşhisinde katkısı olabileceği kanaatindeyiz.

Anahtar kelimeler: Meme kanseri, okunabilirlik, internet bilgilendirmesi

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Introduction

Nowadays, it is possible to acquire information easily, cheaply and quickly and to communicate with other people thanks to the extraordinary development in the field of information technology and the rapid spread of the Internet all over the world. According to the data from Turkey Statistical Institute (TSI-2015), the Internet usage rate in our country has been reported as 62.1% [1]. In a study conducted in the United States of America (USA), it has been revealed that patients increasingly prefer to receive information from the Internet rather than being examined by the physician [2]. The most investigated topics related to health in the Internet environment are cancers, heart diseases and chronic diseases.

Breast cancer is the most common cancer in women worldwide and is the second leading cause of cancer death. According to available data, the incidence of breast cancer is estimated to be 20/100,000 in the eastern part of Turkey and 40-50/100,000 in the western part of Turkey. The incidence of breast cancer also reaches a maximum level of 16.7% in the 45-49 age groups [3,4]. Early diagnosis and treatment are crucial for prolongation of survival, declining mortality rates and improvement of the quality of life in breast cancer patients. For this purpose, community-based screening programs are implemented in our country [4]. To achieve the desired effect from screening programs, breast cancer awareness should established in women at higher risk of developing breast cancer. Given the fact that the Internet is now widely used by individuals, it can be an excellent tool to raise breast cancer awareness and to reach a broader community. However, the information contained in patient information texts related to both breast cancer and other health conditions in the Internet environment should be accurate, reliable and current. Besides, it is also essential that this information can be read and understood by individuals without any education in the field of health.

Readability is a language-specific and objectively measurable concept that gives an idea of how easy or difficult the text is to be understood by various quantitative data on it. While readability was a vital concept mostly in inter-institutional correspondence, military units and different healthcare companies in the past years, it has now become a concept on which linguists and scientists have studied [5]. The readability level of a text can be calculated with various formulas developed for its language. In the USA, it is recommended that a text should be prepared at the level of classes 6-8 to be easily read and understood by the reader [6]. According to the data from TSI (2015), the mean duration of education in our country has been reported as 6.5 years [7]. Thus, it is imperative that health information present in the Internet environment prepared at a level of readability appropriate for the general public. The incidence of breast cancer is increasing both in the world and in our country. In this study, we aimed to analyze the readability level of patient information texts prepared for the early diagnosis of breast cancer in the Internet environment as well as to evaluate the content of these texts on websites.

Methods

This study approved by the Education Planning Board of University of Health Sciences Konya Training and Research Hospital (Decision Date: 05/04/2018 and Decision No: 14-09). Since Internet users often use general search engines instead of medical websites and portals for information search purposes and usually do not go beyond the first page of results for search engines, 'Google' the most popular general search engine in our country, was used in this study [8].

200 websites assessed on the first ten pages which reached in screening performed using the keywords "breast mass" and "breast cancer" on the search engine in April 2018. Chat, forum and commercial blogging websites and websites that contained information less than ten sentences excluded from the study. Patient information texts on these websites transferred to word program (Microsoft®, Office 2016). Titles, author information, URLs, addresses and links deleted so as not to affect readability results adversely. The average number of words (the average sentence length), the average number of syllables (the average word length), and the average number of words with 4 or more syllables were manually calculated using the "Microsoft Excel" program. These datas were transferred to the computer soft-ware program to calculate the readability values of Atesman and Bezirci-Yilmaz formulas [9,10].

Readability Measurement

The Atesman and Bezirci-Yilmaz formulas that have been defined and validated for determining the readability level of Turkish texts used in calculating the readability level of patient information texts on websites [9,10].

Atesman readability formula [9]

It was adapted into Turkish from Flesch's Reading Ease Formula by Atesman and is a formula based on word and sentence length [11].Readability Score = 198.825 – 40.175 x (total number of syllables/total number of words) – 2.610 x (total number of words/total number of sentences).

Table 1. Atesman readability ranges in Turkish

Atesman value	Range of readability
90–100	Very easy
70–89	Easy
50–69	Moderate difficulty
30–49	Difficult
1–29	Very difficult

The Atesman readability formula (Table 1) gives a score on a scale ranging from 0–100; a higher score indicates that the text is easier to read while a lower score suggests that the text is more difficult to read.

Bezirci-Yilmaz readability formula

This formula developed in 2010 based on the length of sentences in texts, the number of syllables in words, the features of various readability formulas developed until today, and the statistical properties of Turkish [10]. When the readability level calculated, the number of syllables in

each word multiplied by its unique number. The readability level formulated as follows; $\sqrt{ANW \times ((H3 \times 0.84) + (H4 \times 1.5) + (H5 \times 3.5) + (H6 \times 26.25))}$

ANW: average number of words, **H3:** average number of 3-syllable words, **H4:** average number of 4-syllable words, **H5:** average number of 5-syllable words, **H6:** average number of words with 6 or more syllables

According to this formula, the readability level becomes more difficult as the length of sentences in texts increases. Moreover, an increase in the number of syllables in words makes it difficult to read words and indirectly sentences.This formula explains which class level a text represents according to the education system in our country:1-8= primary school;9-12= secondary school (high school); 12-16 = undergraduate, and ≥16 = higher education.

Content evaluation of texts

In the content analysis of patient information texts, "breast self-examination (BSE), clinical breast examination (CBE) and mammography (MG)," which can help early detection of breast cancer, were assessed. In addition, texts were evaluated in terms of the presence of risk factors (RFs) such as; female gender, advanced age, family history, genetic mutations, benign breast lesions, presence of cancer in the other breast, race, high breast density, early menarche, late menopause, history of radiotherapy to the chest wall, alcohol consumption, obesity, nulliparity or pregnancy over age 30, absence of breastfeeding, use of oral contraceptives, and postmenopausal hormone replacement therapy (HRT) that play a role in the development of breast cancer [12]. All of the texts evaluated by two general surgeons who had at least five years of experience in breast surgery. General surgery specialists have the primary responsibility for managing the diagnostic process and guiding treatment in breast cancer. Therefore, the information on websites were analyzed by categorizing into two groups as general surgery and other branches according to specialists who provided information. The two groups were compared regarding the readability level and text content.

Statistical analysis

Categorical data expressed as frequency and percentage. Numbers, percentages, means, and standard deviation were used for data presentation. The normal distribution of the data was assessed by the Shapiro-Wilk test. The Paired samples t-test was used if the data were normally distributed. The Chi-square test used to compare categorical data between independent groups. All statistical analyzes performed bidirectionally at the 5% significance level and the 95% confidence interval. The SPSS® 21 (IBM Inc, USA) software used to analyze the data.

Results

The screening performed using the keywords "breast mass" and "breast cancer" on the search engine “http://www.google.com.tr/” in April 2018. We examined a total of 200 websites including 100 websites on the first ten pages for each keyword. After the websites which met exclusion criteria and recurrent eliminated, 64 websites assessed and analyzed. Table 2 contains the names of the websites included in the study. The distribution of 64 evaluated websites according to the branches; n=44; general surgeon n=9; obstetric and gynecologist, n=4; radiologist, n=3; medical oncology specialists, n=3; plastic and reconstructive specialist, n=2; radiation oncology specialist and n=1; pathologist.

Table 2. The internet websites analyzed in the study

www.memekanseri.org.tr	www.florence.com.tr	www.fuatyuksel.com/tr	www.abdullahigci.com
www.memesaglik.com	www.kanserdanismanlik.com	sehsuvargokgoz.com	tr.santeplusgroup.com
www.arttipmerkezi.com	www.ultrasonklinik.com	www.izmirproktoloji.com	www.anadolusaglik.org
www.memorial.com.tr	akhisarozeldogus.com.tr	www.profdrhasanserdaroglu.com	www.omena.com.tr
www.jinekolognet.com	www.celalsaglam.com		www.istanbultipmerkezi.com.tr
www.acibadem.com.tr	www.bolgehastanesi.com	ekinfettahogluunluer.com	www.ekmeltezel.com
www.sehersirin.com	www.memekanserindeyenilikler.com	www.mutfv.org.tr	www.drcumhurarici.com
www.iyibircerrah.com		izmir.baskenthastaneleri.com	www.orhancelen.com.tr
www.drozdogan.com	www.vahitozmen.com	www.karatashastanesi.com.tr	www.isuhastanesi.com
www.doktornevra.com	www.yeditepehastanesi.com.tr	www.bucatip.com.tr	kudretinternational.com
www.drmustafasener.com	www.ademdervisoglu.com	tcdhalk.org	www.azimetozdemir.com.tr
guvenatasoy.com	www.bodrumdogaldogum.com	www.konyapatoloji.com	www.ademakcakaya.com
drcemyilmaz.com	www.alicalikusu.com	www.canfezasezgin.com	ilkerpala.com
www.mtahiroruc.com	www.kadiogluhastanesi.com	www.medstar.com.tr	www.medsentez.com/tr
centralhospital.com	www.yenikansertedavileri.org	memesagligi.baskent-adn.edu.tr	www.bahceci.com
www.emanetoglu.com	www.selcukkihtir.com	www.ismailyaman.com	www.ziyapasakadindogum.com.tr
www.kanserleyasamak.org	osmankurukahvecioglu.com		

The readability level of the all websites was found as "moderately difficult" according to the Atesman readability formula and at the level of "secondary school (high school)" according to the Bezirci-Yılmaz readability formula. When the readability level was examined by categorizing the websites into two groups as general surgery specialists and other specialists, the readability level of the websites in both groups was "moderately difficult" according to the Atesman readability formula and was at the level of "secondary school (high school)" according to the Bezirci-Yılmaz readability formula (Table 3). There was no significant difference between the two groups in terms of the readability level (p=0.793, p=0.809).

Table 3. Readability values of the groups

	General surgery (n=44) Mean±SD	Non - general surgery (n=20) Mean±SD	t	p
Atesman Readability	53.53±7.46	52.95±9.88	-0.217	0.793
Bezirci-Yılmaz Readability	11.78±2.70	11.60±3.20	-0.716	0.809
Average syllable number	2.83±0.09	2.85±0.14	0.133	0.428
Average word count	11.92±2.36	11.48±2.56	0.334	0.498
Average 4 or more syllable words	3.40±0.82	3.32±0.88	0.450	0.726

* Two independent sample t-tests was performed.

When all websites were evaluated, the average number of syllables was 2.86 (2.75-2.92), the average number of words was 11.4 (10.3-13.3), and the average number of words with 4 or more syllables was 3.3 (2.7-3.9). There was no significant difference between the two groups in terms of the average number of syllables, the average number of words, and the average number of words with 4 or more syllables (Table 3).

The content evaluation of the texts was made by two general surgeons who were not involved in the study. While 40.6% of all websites contained information about BSE, 59.4% included information about CBE, 53.1% contained information about MG, and 50% contained information about RF. When the content evaluation was made by categorizing the websites into two groups as general surgery specialists and other specialists, there was no significant difference between the two groups regarding BSE, CBE, MG, or RF (Table 4). 21.9% of all websites did not contain any information about BSE, CBE, MG, or RF used in the early diagnosis of breast cancer, only 28.1% of all websites contained all of this information.

Table 4. Content analysis of informative texts

	General surgery (n=44)	Non - general surgery (n=20)	χ^2	p
BSE	18(40.9%)	8(40.0%)	0.005	0.945
CBE	28(63.6%)	10(50.0%)	1.060	0.303
MG	23(52.3%)	11(55.0%)	0.041	0.839
RF	25(56.8%)	7(35.0%)	2.618	0.106

* Chi-Square test was performed. BSE: Breast self-examination, CBE: Clinical breast examination, MG: Mammography, RF: Risk factor

Discussion

Today, the Internet is the most common source of information that patients refer to as a guide for making a medical decision. Breast cancer patients are increasingly using the Internet for reasons such as getting a second opinion, obtaining information about necessary tests and treatments, and preparing questions to be asked to the physician [13].This study is the first study to analyze the websites containing patient information texts related to breast cancer in our country. It was found that the readability level of patient information texts on these websites was moderately difficult, and one-fourth of the websites were sufficient regarding text content.

The ability of individuals to access proper health information service and to use these health services is related to the concept of health literacy [14]. An individual's health literacy level may be worse than his/her general literacy level. Thus, preparing the readability level of patient information texts related to breast cancer presented in the Internet environment to cover the individuals in the community has critical importance information of breast cancer awareness and ineffective implementation of screening programs. We found that the readability level of patient information texts on all websites examined in our study was "moderately difficult" according to the Atesman readability formula and was at the level of "secondary school (high school)" according to the Bezirci-Yılmaz readability formula.

When the websites categorized into two groups as general surgery specialists and other specialists, there was no significant difference between the two groups concerning the readability level. In a study conducted on readability level of Web sites on breast, colon, and prostate cancers, thereadability of cancer information on the Internet found at a college level similar to our study [15]. Several endogenous and exogenous risk factors have identified in the development of breast cancer. Non-modifiable factors such as menarcheal age and family history make essential contributions to lifetime risk. Modifiable risk factors such as alcohol consumption and obesity are lifestyle choices that can be changed to reduce the risk of breast cancer. Risk assessment tools for breast cancer used to enable them to feel their risk levels and to inform them about modifiable risk factors to help patients better personalize screening proposals [13]. Identification of high-risk groups for developing breast cancer in the community is essential for both making these individuals aware of their risk and for providing closer monitoring in screening programs. However, some groups are involved in the routine screen as well as groups that are at increased risk of developing breast cancer. Patient groups with risk factors should be informed and provided to apply to screen programs and health care institutions. We found that 50% of all websites contained information about RF. Although this rate was higher in the general surgery group than in the other group, there was no significant difference between the two groups.

Three essential elements can guide for the early diagnosis of breast cancer: breast self-examination, physical examination by the physician, and mammography. To raise public awareness, it recommended that counseling services should be provided for each woman to perform BSE after 20 years of age and that BSE should be performed on a monthly basis by all women over 20 years of age. BSE is a method of examination that can

be quickly learned and applied, is harmless and economic, allows the woman to recognize her breast tissue and to notice changes earlier when it is performed regularly every month and protects the privacy of the woman. However, target populations knowledge level about breast cancer and BSE found to have insufficient [16]. In a study conducted in China, there was little evidence that women who performed BSE detected breast cancer early [17]. Also Cochrane report from two large trials do not suggest a beneficial effect of screening by BSE. [18]. However, the most common reason for admission in patients with diagnosed with breast cancer is palpable masses. Therefore, BSE must be assessed together with CBE. Notably, individuals with high-risk factors should be admitted to health institutions at specific intervals for CBE by a specialist team [12]. Thus, this will prevent unnecessary biopsies and increase the detection rate of early-stage breast cancer. In the present study 40.6% of all websites contained information about BSE. Although this rate was 40.9% in the general surgery group and 40% in the other group, there was no significant difference between the two groups. Also 59.4% of all websites contained information regarding CBE. Although this rate was 63.6% in the general surgery group and 50% in the other group, there was no significant difference between the two groups.

The incidence of breast cancer is lower in underdeveloped and developing countries than in the western world. However, the incidence of metastatic breast cancer is higher in underdeveloped and developing countries due to the lack of comprehensive screening programs. Mammography has been standardized to applied every two years in the form of double exposure shooting including mediolateral oblique and craniocaudal for both breasts in all women aged 40-69 years by the screening program determined in our country. An effective screening program aims that more than 70% of the target population participate in the screening program. However, the rate of past two-year mammography was 35% according to a study conducted in the eastern provinces of our country, whereas this rate was 45% in the western region of our country [19, 20]. There is a need for studies to increase participation in MG screening programs. Thus, we found that 53.1% of all websites contained information about MG. Although this rate was 52.3% in the general surgery group and 55% in the other group, there was no significant difference between the two groups. For patients to benefit from the health information content they receive on the Internet, the texts should be written in a clear way and at the same time they should be presented in sufficient quality. For the effective development of electronic health content and services, the necessity of arranging medical websites by the specified quality criteria was put forward in 2002 [21]. The majority of the texts in the patient information sites examined in this research were not checked and certified regarding quality and quantity was a limitation of the present study. Another limitation was that the readability formulas could be used to determine which educational reading level the text addresses, but these formulas do not contain precise data about the comprehensibility of the text. Further studies in this area are necessary.

Conclusion

Consequently, it was found that the readability level of patient information texts related to breast cancer on websites was moderately difficult and that one-fourth of the websites were sufficient concerning text content. Identification of individuals at higher risk of developing breast cancer in the community is of great importance for early diagnosis and effective treatment. Besides general surgeons who are primarily responsible for the management of the diagnostic process and treatment, it is crucial that radiology, obstetrics and gynecology, family medicine specialists and other health professionals who have an active role in the diagnostic process exert efforts to raise awareness. We recommend that the reorganization of websites containing patient information texts in the Internet environment regarding both information content and readability by relevant public institutions and associations may contribute to the early diagnosis of breast cancer in individuals with high-risk factors.

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References

1. Turkey Statistical Institute. [Research on the use of information technologies in households] (in Turkish). Available at: http://www.tuik.gov.tr/HbPrint.do?id=18660 (Access Date: March 18, 2019)
2. Pew Internet & American Life Project. [Vital decisions: how internet users decide what information to trust when they or their loved ones are sick]. Available at: http://www.pewinternet.org/2002/05/22/vital-decisions-a-pew-internet-health-report/ (Access Date: March 18, 2019)
3. World Health Statistics 2008. Available at: www.who.int/whosis/whostata (Access Date: March 18, 2019)
4. Ozmen V. Breast cancer in Turkey and in the world. J Breast Health. 2008;4(2):6-12.
5. Goldbort R. Readable writing by scientists and researchers. J Environ Health. 2001;63(8):40-2. https://www.ncbi.nlm.nih.gov/pubmed/11381867
6. Friedman DB, Hoffman-Goetz L. A systematic review of readability and comprehension instruments used for print and web-based cancer information. Health Educ Behav. 2006;33(3):352-73. https://doi.org/10.1177/2F1090198105277329
7. Yesilyurt ME, Karadeniz O, Gulel FE, Caglar A, Uyar SG. Mean and expected years of schooling for provinces in Turkey. PJESS 2016;3(1):1-7
8. Eysenbach G, Kohler C. How do consumers search for and appraise health information on the World Wide Web? Qualitative study using focus groups, usability tests, and in-depth interviews. BMJ 2002;324(7337):573-7. https://doi.org/10.1136/bmj.324.7337.573
9. Atesman E. [Measuring readability in Turkish] (in Turkish). Lang J 1997;58:171-174.
10. Bezirci B, Yilmaz AE. A software library for measurement of readability of textsand a new readability metric for Turkish. J Sci Eng 2010;12(3):49-62.
11. Flesch R. A new readability yard stick. J Appl Phycol 1948;32(3):221-33. http://dx.doi.org/10.1037/h0057532
12. Breast Cancer Facts & Figures 2015-2016. Atlanta, Ga: American Cancer Society; 2015. Available at: https://www.cancer.org/content/dam/cancer-org/research/cancer-facts-and-statistics/breast-cancer-facts-and-figures/breast-cancer-facts-and-figures-2015-2016.pdf (Access Date: March 18, 2019)
13. Huang GJ, Penson DF. Internet health resources and the cancer patient. Cancer Invest. 2008;26(2):202-7. https://doi.org/10.1080/07357900701566197
14. Mancuso JM. Health literacy: a concept/dimensional analysis. Nurs Health Sci 2008;10(3):248-55. https://dx.doi.org/10.1111/j.1442-2018.2008.00394.x

15. Friedman DB, Hoffman-Goetz L, Arocha JF. Readability of cancer information on the internet. J Cancer Educ 2004:19(2):117-22. https://doi.org/10.1207/s15430154jce1902_13
16. Golbasi Z, Cetin R, Kalkan S, Durmus T. The knowledge and behaviors of female university students about breast cancer and breast self-examination. Eur J Breast Health 2010;6(2):69-73.
17. Thomas DB, Gao DL, Ray RM, Wang WW, Allison CJ, Chen FL, et al. Randomized trial of breast self-examination in Shanghai: final results. J Natl Cancer Inst 2002;94(19):1445-57. https://www.ncbi.nlm.nih.gov/pubmed/12359854
18. Kosters JP, Gøtzsche PC. Regular self-examination or clinical examination for early detection of breast cancer. Cochrane Database Syst Rev 2003;(2):CD003373. https://doi.org//10.1002/14651858.CD003373
19. Ozmen V, Nilufer OA, Cabioglu N, Gulluoglu BM, Unalan PC, Gorpe S, et al. Survey on a mammographic screening program in Istanbul, Turkey. Breast J 2011;17(3):260-7. https://doi.org/10.1111/j.1524-4741.2011.01065.x
20. Ozmen T, Yuce S, Guler T, Ulun C, Ozaydin N, Pruthi S, et al. The screening of breast cancer awareness and health behaviors of women age 40 to 69 in Mus, the least developed city in Turkey: A population based, cross-sectional study. J Clin Oncol 2015;33:15_suppl, e12569-e12569. https://doi.org/10.1200/jco.2015.33.15_suppl.e12569
21. Commission of the European Communities, Brussels eEurope 2002: Quality Criteria for Health related Websites. J Med Internet Res 2002;4(3):e15. https://doi.org/10.2196/jmir.4.3.e15