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REVIEW

Should Web-Based Education Be Implemented for Colorectal Cancer Patients?

Kolorektal Kanserli Hastalarda Web Tabanlı Eğitim Yapılmalı mı?

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ABSTRACT

Improved access to health-related information through increased access to the internet can be viewed as an important opportunity for both healthcare professionals and patients. The internet has fundamentally changed the dynamics of the patient/healthcare provider relationship, turning patients from passive receivers of information to actively researching information consumers, and thus paving the way for technological advances. Individuals primarily research chronic diseases, especially cancer. Of all the cancers, colorectal cancer is steadily and significantly increasing worldwide. Colorectal cancer patients are faced with physiological, sociocultural, and psychological problems during the treatment process. This negatively affects the patients' health. Educational interventions prepared especially for patients with colorectal cancer may help reduce the symptom burden and improve care by providing information when and where patients need it. Patient education has a major role in health management. Standard training using written materials such as brochures and educational booklets are insufficient for patients to acquire positive health behaviors. Web-based education (WBE) is considered an effective tool for presenting health education because of its many advantages over written materials. This new training model makes it possible for patients to act together with health professionals during the treatment process. Through WBE, patients who otherwise would not be able to meet can share their knowledge and experiences with each other, which can reduce repeat hospital admissions. Although there are web-based patient education applications in different areas in Turkey, there are none specifically designed for colorectal cancer patients. Therefore, the aim of this review was to raise awareness of the need for a WBE program to prepare individuals with colorectal cancer to manage their illness and treatment process.

Keywords: Colorectal cancer, web-based education, nursing

ÖZ

İnternete erişimin artmasıyla sağlıkla ilgili konulara daha kolay erişilebilmesi, sağlık çalışanları ve hastalar için önemli bir fırsat olarak değerlendirilebilir. İnternet sayesinde daha önce hazır bilgi alıcısı konumunda olan hastalar, yapısal değişimle birlikte araştıran bilgi tüketicilerine dönüşerek, hasta ve sağlık personeli arasındaki ilişkilerde teknoloji yönünde ilerlemenin ortaya çıkmasını sağlamaktadır. Bireyler çoğunlukla başta kanser olmak üzere kronik hastalıklarla ilgili bilgileri internet ortamından araştırmaktadırlar. Bütün kanserlerin içinde kolorektal kanser, gün geçtikçe dünyada anlamlı şekilde artmaktadır. Kolorektal kanser hastaları tedavi süreci boyunca fizyolojik, sosyokültürel ve psikolojik sorunlarla karşılaşmaktadırlar. Bu durum hastaların sağlığını olumsuz yönde etkilemektedir. Kolorektal kanserli hastalara özel olarak hazırlanacak olan eğitimin, hastalara ihtiyaç duydukları zaman ve mekanda bilgi sağlayarak semptom yükünü azaltacağı ve kanserli bireyin bakımında yardımcı olacağı düşünülmektedir. Sağlık yönetiminde hasta eğitiminin büyük bir payı vardır. Broşür, eğitim kitapçığı gibi yazılı materyaller kullanılarak sunulan standart eğitimler, hastaların olumlu sağlık davranışı kazanmalarında yetersiz kalmaktadır. Web tabanlı eğitim (WTE), yazılı materyallere göre sahip olduğu birçok avantaj nedeniyle sağlık eğitimi sunmada etkili bir araç olarak kabul edilmektedir. Bu yeni eğitim modeli, tedavi sürecinde sağlık profesyonelleriyle beraber hareket eden hastaların ortaya çıkmasını mümkün kılmaktadır. Bir araya gelemeyen hastalar WTE sayesinde bilgi ve deneyimlerini birbirleriyle paylaşarak hastaneye tekrarlı yatışları azaltmada etkili olmaktadır. Ülkemizde farklı alanlarda web tabanlı hasta eğitimi uygulamaları bulunmaktayken doğrudan kolorektal kanserli hastalar ve bakımlarına yönelik WTE'ye rastlanmamıştır. Bu nedenle bu derlemenin amacı, kolorektal kanserli bireylerin hastalıklarını ve tedavi süreçlerini yönetebilmeleri için hazırlanacak WTE programının gerekliliği konusunda farkındalık yaratmaktır.

Anahtar Kelimeler: Kolorektal kanser, web tabanlı eğitim, hemşirelik

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Introduction

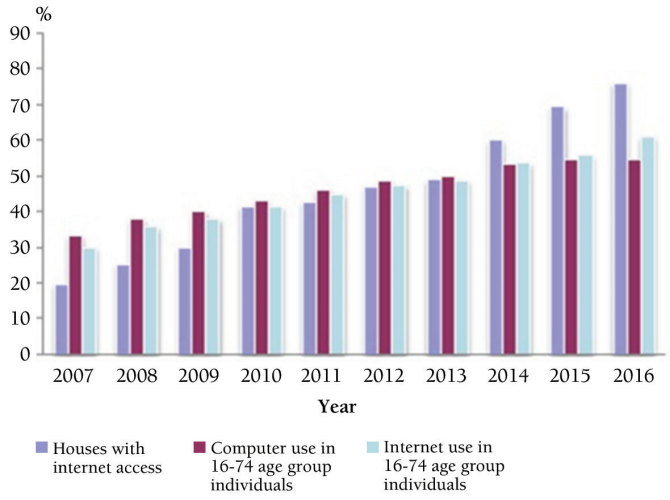
With technology advancing at an astonishing pace, new communication tools are enabling individuals both to obtain information more easily and from verifiable resources, and to express their ideas freely.[1,2] Innovation and improvement in modern treatment methods and management has considerably increased and changed opportunities for home treatment.[3] Health- and disease-related issues are among the topics people most need to exchange information about.[4] With the shift from personal computers to smartphones, both healthcare personnel and patients have more opportunities to make use of social media.[5] Thanks to the internet, the general public can access information about diseases with no limitation of time and place, as well as receive emotional support and motivation during the treatment process.[6] People primarily search online for information about chronic illnesses, particularly cancer.[3] One of the main ways of providing cancer patients cost- and time-effective supportive care is to empower them with knowledge. The purpose of educating cancer patients and their families is to support them in terms of improving the course of the illness, ensuring adherence to both self-care and the recommended treatment, recognizing/managing side effects, and sustaining activities of daily living.[7,8,9,10,11] Of the many types of cancer, the incidence of colorectal cancer is rising significantly worldwide.[12] Patients diagnosed with colorectal cancer are faced with therapeutic procedures including surgery, chemotherapy, and/or radiotherapy, depending on the extent of their disease. The basic principle of the surgical treatment of colorectal cancer is to remove the primary tumour and regional lymphatics, ensuring clean surgical margins. Creating a temporary or permanent stoma to divert flow from part of the colon is among the most commonly utilized surgical strategies.[13] Whether a stoma is created or not, colorectal cancer patients often suffer physiological, sociocultural and psychological problems following surgery.[14,15,16] It is important for nurses to educate these patients and their families so that they experience less postoperative anxiety, adapt more readily to treatment, and better cope with the postoperative problems they face in the hospital and at home.[17,18] Nurses play a vital part in teaching the patients how to perform self-care and use interactive health communication applications to facilitate disease management. The standard informational material currently offered, which uses printed materials such as brochures and training booklets, is not sufficient for the individual to develop positive health behaviors.[19,20,21] Web-based education (WBE), a distance learning model, is recognized by nurses as an effective tool for providing health education because of the many advantages it offers compared to printed materials. This education model helps create a group of healthcare professionals and patients who collaborate throughout the treatment process.[22,23,24] Although web-based patient education applications have been implemented in various areas both in Turkey and abroad, there is no WBE designed specifically for colorectal cancer patients and their management. Due to the psychosocial problems colorectal cancer patients experience during the treatment process, it is believed that specialized WBE may reduce the symptom burden and enhance the care of these patients by providing them information when and where they need it. Therefore, the aim of this review was to evaluate previous studies focusing on individuals' attitudes and behaviours regarding obtaining information about their diseases from the internet, in order to raise awareness of the current necessity for a WBE program to help colorectal cancer patients and their families manage the treatment process.

Materials and Methods

To achieve the primary objective of this review, we examined academic studies conducted in various countries in and after 2005 regarding the effects of health-related internet use on the treatment process. For our secondary objective, we examined studies related to colorectal cancer patients' need to acquire information. The study focused on forums where people found disease-related information and how they benefited from the internet, as well as search engine results regarding websites, social networking sites, internet-based education, and distance education. This included studies related to online information sources and the correct use of the information obtained therefrom, and how such websites alter the relationship between patient and healthcare providers and influence how individuals cope with their disease.

The Frequency of Internet Use in Turkey and Worldwide

Statistics indicate that there is a sharp increase in internet use all over the world. As of March 30, 2017, the proportion of the global population with internet access is reported to be 49.7%, with the number of internet users having drastically increased by 936% in the last five years to reach 3.739.698.500. Internet use varies by continent and region depending on the rates of development. The continents and regions with the highest rates of internet use are North America (88.1%), Europe (77.4%), and Australia (68.1%).[25] Internet use in Turkey is also developing rapidly, in keeping with this global increase. According to data from the Turkish Statistical Institute, in April 2016 the rate of internet use between the ages of 16 and 74 was 54.9% and 61.2%, respectively (Graph 1). In the same year, 76.3%



Graph 1. Basic indicators, 2007-2016[26]

of households had internet access and 96.9% had mobile telephones or smartphones.[26] According to 2015 data from "We Are Social", which is a bank of data obtained from the Global Web Index, the average time spent browsing the internet is 4 hours 37 minutes and the average time spent on mobile internet is 2 hours 51 minutes in Turkey.[27] These rates indicate that the internet may be used for sharing healthcare information in our country as it is elsewhere in the world.

Health-Related Internet Use

The widespread availability of internet access both at work and in the home, affordable internet options, overcrowded hospitals, and the need to make hospital appointments and check test results online are all factors that encourage people to use internet for their health problems.[23] Health communication is one of the key areas in the effective use of the internet, which is expanding rapidly and becoming a tool actively used by large populations. Health communication encompasses a wide range of topics including informing the public about diseases and health, improving their general health, providing information about the treatment process, and changing their attitudes towards health.[4,28] In the USA, the "Healthy People 2020" project listed the following goals of internet and social media use under the subheading of "health communication and health information technology":[29]

- To improve the health literacy of the population,
- To increase the proportion of people using electronic personal health management tools,
- To increase individuals' access to the internet,
- To increase the quality of websites related to health communication,
- To increase the number of crisis and emergency risk messages intended to protect public health,
- To increase social marketing in health promotion and disease prevention.

Every day, more and more people are using health-related social media, learning information from online encyclopedias, and viewing pictures and videos.[29] In 2013, Social Touch surveyed 8.001 subjects about their use of the internet for health-related purposes. Their results showed that 78.77% of the respondents had consulted the internet about a health-related issue. Their study revealed that people used the internet primarily for researching topics about health and disease (89.73%), obtaining information about drugs (55.92%), learning about healthcare services (44.12%), and making appointments to see physicians (42.03%).[29] Another study performed in 2016 focusing on individuals' reasons for using the internet determined that 65.9% used the internet for researching health-related information.[26] In a study by Görkemli,[5] the internet emerged as the preferred tool for finding information about how to maintain health (71.4%), with sources such as relatives (28.2%), television (24.3%), and printed materials (20.6%) following with similar rates. The same study indicated that, other than doctors, the internet was the most important means (69.7%) of obtaining information about treatment and drugs.[5]

Web-Based Patient Education

The aim of patient education is to identify health-related problems, promote healthy behaviors, and facilitate a holistic state of physical, social, and psychological wellness.[30] Patient education is an important part of health management.[31] There are many options for providing patient education; in addition to face-to-face education in individual and group training settings, large groups can be reached via television and radio programs and the internet (WBE).[23] With recent developments in internet technology, information is not available only as plain text, but also in the form of animations and videos, with the options of synchronous or asynchronous communication.[32] Currently, WBE is one of the most important tools used for this purpose.[33] WBE encompasses all aspects and processes of education provided via the "World Wide Web" using technology and communication tools.[34] In other words, WBE is a form of education provided over a network such as internet or intranet to support remote education and enable access regardless of time and place.[35] The WBE model has both benefits and limitations. These benefits and limitations can be categorized as logistical, educational, and economic, as summarized in Table 1.[32,36,37,38] Although WBE is often used interchangeably with terms such as distance

education, computer-assisted education, and internet-supported education, WBE is considered a form of internet-based distance education, which is a sub-branch of distance education in which education is provided through a digital environment (Figure 1).[32,39,40]

Certain points must be considered when designing health education using WBE:[23,41]

1. Who will be using the website (what topic, age, gender, and educational level is being targeted)?
2. How will access to the website be managed?
3. What will the scope of the subject be?
4. At what times does the target audience use the internet most?
5. Will feedback be accepted?
6. Will opportunities for interactive education such as webcam, forum page, and e-mail be provided?[23,41]

Other important factors in increasing the reliability of a website include citing the sources of the information provided on the site, ensuring the content of the website is informative and not commercial, educators providing personalized suggestions and feedback for the individuals, presenting information that is consistent with that

Table 1. Benefits and limitations of online education[32]

	Logistical	Educational	Economic
Benefits	• Not dependent on distance and time • Convenience • Ease of developing and storing the lessons	• Rich learning environment • Student control • Effective communication • Supporting formal and informal learning environments	• Cost-effective implementation
Limitations	• Requires robust technical infrastructure • Scheduled preparations	• Not dependent on distance and time • Convenience • Ease of developing and storing the lessons	• Financial burden

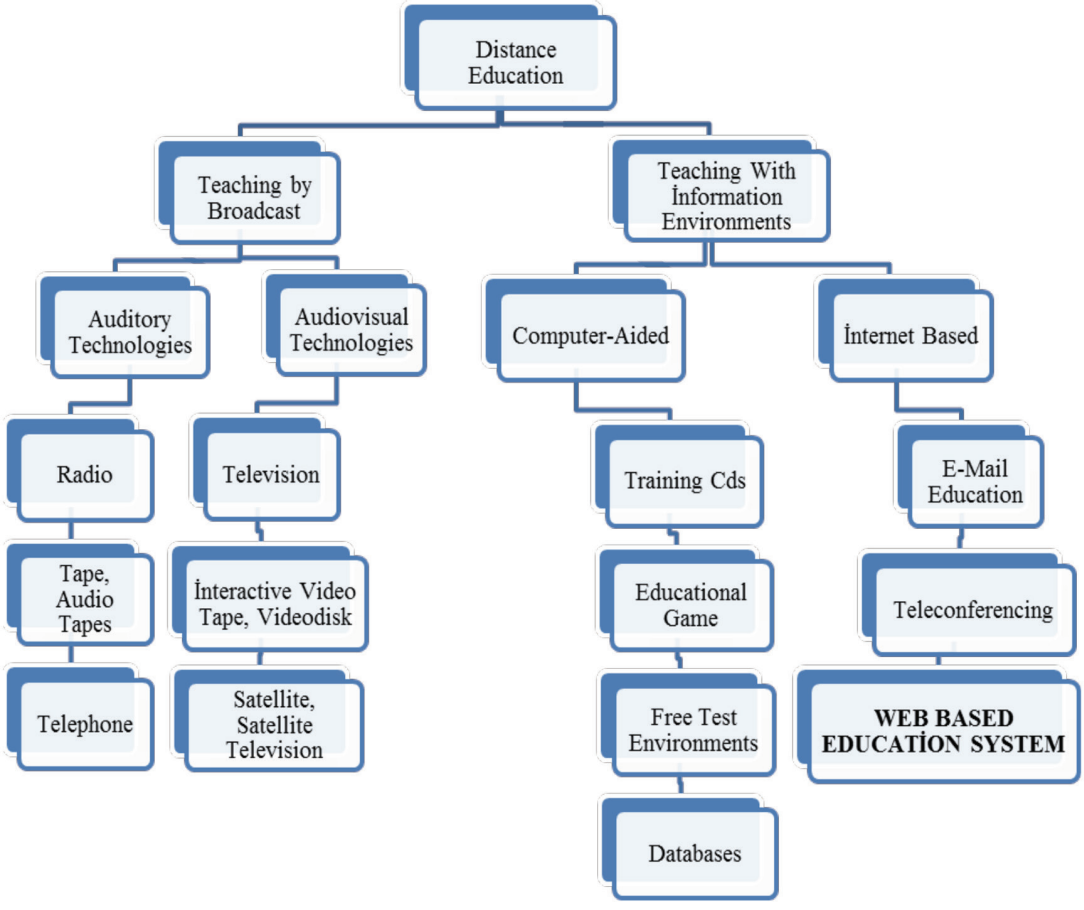


Figure 1. The place of the web-based education in distance education[32]

obtained from healthcare professionals, ensuring there is no misinformation on the website, and clearly identifying the persons or institutions responsible for creating the website.[8,23,42,43] Numerous studies have been conducted abroad on the effects of WBE interventions on patient outcomes. These studies were conducted mainly in areas such as diabetes,[35,44,45,46] breast cancer,[10,35,47] prostate cancer,[48] colorectal cancer,[49] heart failure,[50] asthma,[51] cardiovascular surgery,[52] weight control,[53,54] and stroke.[55] In most of these studies, the education and guidance given in relation to the health problem have had a positive impact on patient outcomes.[23] Studies conducted in Turkey have also shown that online health education and consulting increases patients' quality of life. There are numerous examples of studies in which web-based health education and consultation have led to favorable outcomes in various areas,[23] including the regular follow-up of pregnant women,[56] glycemic control and health responsibility in patients with type 2 diabetes,[57] promoting participation of adult males in prostate scans,[8] increasing quality of life for lung cancer patients,[24] shock anxiety levels and quality of life in patients with implantable cardioverter defibrillator,[58] and the quality of life and spouse relations of breast cancer patients.[59]

Need for Web-Based Education for Colorectal Cancer Patients

Of all the cancer types, the incidence of colorectal cancer is rising significantly worldwide. According to the American Cancer Association and a 2016 report from Turkish Cancer Statistics, colorectal cancer has been steadily increasing both globally and in Turkey, and is now the third most common cancer in both males and females.[12,60,61,62] Patients with colorectal cancer are particularly affected by and experience various problems due to surgical treatments and risk factors for later difficulties such as stoma. A study revealed that rectal cancer patients felt socially isolated and excluded, and quality of life was adversely affected, particularly for younger patients and those who underwent colostomy.[63] A study conducted in Brazil with 144 colorectal cancer patients investigated whether social support was a predictor of low stress, high quality of life and psychological resilience and the results revealed that psychological resilience positively affected quality of life, social support had a strong and direct effect on quality of life, and psychological resilience was negatively correlated with stress perception.[64] Russell et al.[65] determined that colorectal patients had declines in the roles, cognitive and social functions sub-dimensions of quality of life six months after the treatment, that they experienced fatigue, nausea/vomiting, loss of appetite, impotence, diarrhea, and constipation, and felt anxious about the future because of financial problems. In their qualitative study, Karaveli et al.[66] reported that in the periods before and after colorectal surgery individuals experienced "an inability to accept their illness, fear of the treatment process, dread being dependent on relatives, are embarrassed because of the illness, and regret what they are going through." Patients who undergo surgery for colorectal cancer experience dietary changes, stomal and peristomal problems, altered bowel movements, and sexual problems after discharge from the hospital.[67,68] Another qualitative study by Jonsson et al.[69] showed that patients who undergo colorectal cancer surgery are afraid of scarring, anastomosis leakage, and other complications that may develop after being discharged, and are not knowledgeable about what to do when faced with such complications. The results of the studies conducted on colorectal cancer patients reveal the extent of the problems faced by these patients both before and after surgery. These patients need support during the treatment process that is always accessible, regardless of time and place. This can be achieved using WBE, which has gained currency as the rate of internet use increases. Already in use in some other countries, this mode of education should also be implemented in Turkey to educate colorectal cancer patients. It is believed that WBE designed specifically for colorectal cancer patients will be useful in facilitating the postoperative care at the hospital and after discharge, thereby preventing readmission and reducing the economic burden of healthcare costs. WBE is expected to establish a new approach in nursing care and make scientific contributions to the literature. A website prepared specifically for colorectal cancer patients should include several important features, including a section with educational forms to assist patients and their relatives in the management of symptoms related to pain, nutrition, nausea/vomiting, constipation, sexuality, fatigue, worshipping, etc.; a video of a specialist describing colorectal cancer and treatment methods in a clear, simple way; a psychiatrist or senior psychologist who may be consulted about psychosocial problems; care training videos focusing on self-care; links to other websites giving information about care and products; a specialist doctor and a specialist nurse who can be available online at least once a week in order to answer any questions; a section of frequently asked questions; a section where questions are answered with current, evidence-based information; a section where the educator provides customized recommendations and feedback; a forum page where patients can communicate with each other; a test for evaluating patients and their families with regard to the information they have acquired; a scale for assessment at 1, 3, and 6 months after training; and a feedback form for patients to indicate how efficient they think the website is.

Conclusion

The objective of this study was to compile the scientific studies conducted in the world and in Turkey regarding use of the internet for health/disease-related purposes. The results indicate that there are a large number of people obtaining healthcare and disease-related information through the internet, and that cancer patients in particular believed that it strengthened their decision-making process and felt that the knowledge they gained from online sources was helpful during appointments with their physician. In light of this information, the importance of using WBE in colorectal cancer becomes more evident because it is among the most common cancer types and can have serious physical and psychosocial impacts on patients. Although WBE interventions have been implemented in various areas in our country, there is no WBE specifically for colorectal cancer patients and their care. Therefore, we recommend that focus be given to web-based studies providing individuals with colorectal cancer unobstructed access to evidence-based information.

Ethics

Peer-review: External and internal peer-reviewed.

Authorship Contributions

Concept: F.V., S.B.A., Design: F.V., S.B.A., Data Collection or Processing: F.V., S.B.A., Literature Search: F.V., S.B.A., Writing: F.V., S.B.A.

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