



Importance of Web-Based Education in the Management of Inflammatory Bowel Disease

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Abstract

Patient education is a learning process which intends to determine the problems about health, to bring the health improvement behavior and to make a person in a state of exact well-being. There are many learning options for patient education. Patient education programs which have been conducted face to face until a few years ago are now conducted in a widespread way thanks to the developments in technology. Today, it is possible to reach large masses with web-based educations in individual and group education in patient education.

In this compilation, the importance, uses and limits of web-based education in the management of IBD whose prevalence gradually increases and which affects individuals of all ages in the World.

Keywords

IBD, Crohn's disease, Ulcerative colitis, Web based education, Patient education

Abbreviations

IBD: Inflammatory Bowel Disease; CD: Crohn's Disease; UC: Ulcerative Colitis

Introduction

Inflammatory Bowel Diseases named as Ulcerative colitis (UC) and Crohn Disease (CD) are inflammatory diseases which can hold various parts of the gastrointestinal canal and which progress with remission and inflammations. They are characterized by diarrhea, fever, extreme fatigue, abdominal pain, blood in feces and loss of appetite and weight. The disease displays itself with a stiffness of mucosa and submucosa in ulcerative colitis. The rectum is always stiff with ulcerative colitis and there are no healthy areas among the morbid areas in contrast to CD [1-4].

IBD which affects more than five million people in the World is seen approximately in 1.4 million people only in the USA. The highest IBD incidence together with the USA was reported in Northern Europe and Great Britain [5-7].

In parallel to the aging population and the elongating lifespan, chronic diseases have become the most

important problem of the health system. This problem has brought the concept "disease management" into the forefront. It is a systemic approach in which the health services and the related communication are coordinated and the patient has undertaken his own care. Chronic disease management comprises the patient's preparation and empowerment with various teaching methods for him to gain self-management skills [8,9]. One of the main processes of patient-focused disease management approach is the "patient education" and the patient is en-

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abled to reach correct information whenever he wants and to have extensive information about his illness. Patient education is an important topic which is used in a widespread way and considered as a need by the health personnel. Patients can understand their clinic status with a good education and they can manage their health.

As is the case in many chronic disease management, it is known that education has significant effects in the management of IBD. For this reason, the benefits, limitations and benefits of web based education that is one of the methods frequently used in patient education today will be explained in this review.

Literature Review

It is known that an informed patient profile will make positive contributions to the functional and clinic results. Moreover, the improvement of the patient's life quality, a decrease in his/her problems and his/her ability to manage his symptoms and medical treatment are provided with patient education. Since IBD starts in an early period and does not shorten the lifespan, the patients' knowing how to manage the disease and how they will be affected by the disease is important. The patient education to be given to these patients is conducted for the individuals to have information and providing their behavior change. Within the frame of this purpose, the priority in the management of the chronic diseases is to improve the patient's "awareness" and to give his/her "patient education".

Patient education, which is an inseparable part of patient management, is a learning and teaching process which intends to determine the problems of health and to bring the behavior to improve health. It also intends to make the individual become in an exact state of well-being physically, socially and psychologically. Many different learning and teaching methods are used while the patient education is being practiced. In the studies conducted, it was reported that the patients could remember the 20% of what they were told, 40% of what they read and 80% of what they saw [10-12].

In individual and group education, reaching large masses can be possible with television and radio programs and education given from on the internet (web-based education) beside face to face education. Methods frequently used in patient education can be sorted as verbal education model, written and multimedia (video, CD-ROM, DVD or internet) based education [10,13,14].

The verbal education model is still a frequently used education model because the information given by doctors or nurses are understood, the patient satisfaction increases, directions about treatment and care are practiced better and they are explained to the patients. Also, recovery quickens and costs during the treatment process decrease. In this method, learning needs of the in-

dividual and his family should be determined and their education should be planned considering their religious beliefs, culture, emotional situation and their desire for learning and their physical and cognitive limits and communicational barriers [10,15]. Although it is known that an effective verbal patient education improves care ability after discharge and decreases morbidity and mortality, it has many limits such as requiring more time for listening to the individual and his family to be educated and its special structuring for each individual. Its other limits are not being able to determine the individual's needs exactly, not being able to plan the education place and time and not being able to control if what is taught is understood by the individual and his family correctly [15].

Written materials and brochures intend to inform, consult and lead the individual and his family about the diagnosis and treatment process but they are used for intensifying the verbal education model. In this method, the related materials should be understandable and legible, and also should be written by doctors or nurses. The written materials contain topics formed according to the needs of the individual and the information given is reinforced with written materials following the verbal education but they do not have an education characteristic which is structured/individualized for the individual [16,17].

Multimedia-based education is a method which is started to be used in a widespread way in patient education because of the developments in information technologies in the World recently. The internet has become a frequently consulted education channel in order to give education and information about health. Today, multimedia-based education programs (web-based education) are used by the health personnel much more effectively because they are easy to use. They can also be used whenever wanted and they provide a cost-effective chronic disease management process beside technology getting more widespread and they give chance to reach many people [18-21].

It is known that, among the multimedia-based education methods, the education method conducted as a web-based one has important effects in IBD management like in the management of many chronic diseases. Because of this reason, the importance, uses, and limits of web-based education in IBD management are explained in this review.

Web based education

The term of web based education: Among modern communication tools, internet technology appears as the most powerful tool of fast mass communication and it increases the spreading of knowledge at a great rate. Internet technology is used for different purposes in many

fields today. One of the fields where internet is used most frequently is searching information about health. The number of the patients looking for health information through the internet increase every day [19,22,23].

Web-based education programs, which are one of the fields getting more widespread in the recent years in patient education, have made people accustomed to using the internet because of the internet getting widespread in people's houses and work environments and the hospitals' being crowded. Getting in line in hospitals can be made through the internet and test results can be reached through the internet. Getting an appointment for a visit to the doctor can also be made through the internet. All these reasons have made patients and their families accustomed to use the internet for their health problems [18].

Standard educations conducted with various materials such as brochures and educational books may be insufficient in supporting the individuals' decision making about their health and helping them to gain positive health behavior. From these points of view, technology-based educations become prevalent for the individuals to be supported and empowered. Today, one of the most important tools used for this purpose is web-based education. Many different concepts such as web-based teaching, web-based learning, internet-based education, electronic learning and online learning are used instead of web-based education in the literature. Although all of them are presented within the frame of same purposes, the concept "web-based education" is used in this compilation.

Web-based education, as something different from traditional education, is defined as an educational method which is separated from the limitedness of being actualized at a definite place and time and conducted with an approach based on "learning every time, learning everywhere" [24]. The most important characteristics of this education method are comprising the consulting group in order to give information about the disease and bring correct behavior about it and presentation at the web environment. Thus, the web environment will be used in carrying information to the family and society for bringing behavior about health [18,23,25-27]. But web-based education programs have some uses and limits.

The benefits of web based education: Web based education has many advantages such as the developments in information technologies, the existence of many web pages about health and the patients' requirements of having more information and responsibility about topics concerning patients' health. Also, the patients' asking the health providers more conscious questions with the information they learn from the internet is an advantage. The internet providing unrivaled opportunities for the

individuals who have no time to ask what they learn in a limited time also increase the importance of web-based education [18].

The most important uses of web-based education are its low cost, its reliability in terms of transmitting electronic messages, its interactivity and providing the user a continuous communication. Moreover, web-based educations can be useful in terms of the individual's having a high-quality education wherever and whenever he wants and the possibility to repeat the topic whenever he wants. It is useful also because the individuals can have education without neglecting their work and social life and they can decide how much work they want. They can also determine the listening intervals and review what they learned before. Web-based education is regarded as one of the irreplaceable elements of the health system with these uses of it. The most important characteristic of web-based education is comprising the group consulting for gaining health behavior and being presented at the web environment. Thus, web environment is used in order to bring behaviour about health and carrying information to the individual, family and the society [28-30].

The impact of education and consulting services on health results were searched with various studies and the impact of web education was emphasized in topics such as the individuals' accessing correct health information, managing their diseases and developing healthy life behavior in all fields of health, chronic diseases foremost.

In a few study, it was determined that the web based education affected patients' biological (A1c, lipids), behavioral (going for eye and feet examination, giving up smoking), psychological (self-efficacy, social support) results and adaptation to the diet positively and they became active in managing their own health [31-33].

In a study in which the consulting provided from on the web for protecting the health was evaluated, 60% of the patients evaluated the consulting service they took from on the internet as the same as the consulting they took from doctors or better than it. When they evaluated it as an information source, they stated that they found the information they found through the web usually good and only 6% of them found it weak as a source of information [34].

In a study conducted with patients who had rheumatoid arthritis, consulting service was given to daily symptom management through the internet. In conclusion, it was determined that there was a change in the positive direction in the patients' management of their symptoms [35].

In a qualitative study conducted by Colvin, et al. for determining the uses and limits of Internet-based social support, individuals who had to care one of the mem-

bers of their families sorted the uses of Internet-based social support. According to it, the individuals who were included in the study indicated these uses as the comfortability of being able to hide their real names, the comfortability of the caregiver and no obligation for answering immediately. These are programs which are also special for each individual and many people interact at web environments and solutions are always found for their problems [36].

In a meta-analysis in which 17 studies about web-based patient education were scrutinized, it was determined that Internet-based education had positive effects in terms of being able to be used by the patients and its utility [37].

In the literature review made by Lewis, 66 articles about education at web environment were reviewed and it was stated that computer-based education should be supported because the patients' need for information was quickly fulfilled in these studies [38].

In a study conducted by Adler and Zarchin, online communication model was used in order to provide social support for pregnant women who rested in bed at their home because of premature birth risk. In the study in which all contacts were made from on e-mail, all participants stated that this method helped them to deal with their situation at home [39].

The fact that between 1996 and 2003 with meta-analysis method; few people had online access must be taken into account in changing knowledge and behavior [40].

In other studies conducted, positive results of web-based education programs for the individuals were emphasized [41-48].

Today, internet reaching to masses, presenting learning opportunities for all segments of the society and continuous education are important for the individuals to access to interactive, effective and suitable content and have health education at the web environment. Moreover, when the accessibility and scope of the internet are considered, it is seen that it is effective on topics such as providing the patients' communication with health personnel in various health problems. It is also effective in monitoring and controlling the patients, solving the health problems, treatment options and how the patients are monitored, chronic cases foremost [13,37].

Web-based patient education is preferred because of reasons such as its positive effects on the recovery of the patients and patient care results and the individuals' gaining and developing healthy behavior. Moreover, it eliminates the obstacles of the individuals whose chance to access to information are low because of limited time or transport problems and it helps them to gain positive behavior change about their health. However, teaching-learning and

evaluation processes should be planned very well in order to take advantage of the educational opportunities offered by web-based education functionally.

The limitations of web based education: Web-based education can have some limits as it has many uses. The difficulty of group evaluation in the web environment, no physical or social interaction and not being able to solve the problems which can occur during the learning process can be sorted as these limits. No immediate help and the planning difficulties for individuals who have no habit of working alone can also be sorted as these limits [28-30].

Other than all these, one of the situations found important in learning environments is face to face interaction or eye contact. Although learning situation is a characteristic which has individual differences, the disease picture experienced by the patients may also make learning difficult. From this point of view, when the individuals' needs and learning skills are considered, web-based education is not effective.

In a study conducted by Colvin, et al. in a web-based education program conducted with individuals who had to look after one of their family members, the individuals expressed the limits of web-based education as lack of physical and social interaction [36].

In a study conducted, consulting service provided for the patients via e-mail and telephone in a thoracic clinic was evaluated. In conclusion, it was reported that the patients preferred face to face consulting [49].

When the limits expressed above are considered, the web-based education module planned should facilitate continuous communication between the patient and the health personnel besides being quite extensive, complete and understandable. Moreover, if web-based education will be used in patient education, the patient's being ready and accustomed to learning with this method are also important.

Web based education in IBD

Crohn Disease and UC are complicated diseases which affect life quality considerably, last a lifetime and because of this reason patient education is important to them. Hence, patient education should be an inseparable part of disease management. The patients need extensive information about the IBD diagnosis, etiologies, different treatment options, medicine use and the monitoring of the disease.

While the internet offers opportunities for the patients, families and health personnel for information exchange and communicating with each other easily, it supports easy access to information and the individuals' participation in the decisions about health.

Just as it is in the management of chronic diseases, the health team should work in a compatible way in the management of IBD. IBD patient who is in the center of this team and who is the most important member of this team should improve his disease information to be effective and he should be able to manage the symptoms. The basic purposes of the patient education to be planned in this scope can be summarized this way [36,50]:

- Enabling the patient and his family to participate in the treatment and management process
- Management of the IBD symptoms and preventing the complications
- Having information about IBD necessary for the treatment
- Reducing the IBD treatment cost and repeated stays at the hospital
- Regular nutrition and exercise
- Supporting regular health controls
- Elongating the remission process of IBD

In order to achieve these purposes, IBD patients should participate in patient education programs planned in a very good way and these education programs should be repeated at certain intervals. Knowles defines the education of the adults as "activities or programs organized to fulfill the educational needs of people who are out of compulsory education age and whose real occupation is not going to school, in any time in their life". He emphasizes on bringing the required behavior change [28-30].

Answering these questions in a patient education which will be made with the web-based education method is important for a successful education [23,26]:

1. Who will use the website? Who are the target audience? (Which topics, which age, which sex and which educational level are targeted?)
2. How will the accessibility of the website be?
3. What will be the scope of the topic?
4. When does the target audience use the web most?
5. Will any feedback be taken?
6. Will a webcam, forum page and, e-mail opportunities be provided for the interactive education?

Learning sources are continuously reviewed in terms of suitability and correctness and necessary changes are made in a short time and teaching methods are evaluated and documentation becomes easy thanks to web-based education. When it is evaluated from this point of view, especially in a World rapidly changing and developing, current developments in health can be integrated into

web-based patient education programs. The patients can be given feedback about various evaluation results about the disease in a much quicker and more effective way [51,52].

Since web-based education is individual-centered, it is defined as the individuals who will practice the education reaching the people who will have the education rather than the individuals reaching the person who provides education. It is intended to provide education for the individuals without place and time limit with this education method [19,20,22,53,54].

In a study conducted by Moser, et al. it was determined that the patients had worries about certain topics such as the probability of wearing stoma, need for an operation, side effects of the medicines and their effect on the state of well-being [55]. In the study conducted by Martin, et al. it was found that approximately 30% of the patients who had IBD had adequate knowledge about the disease [56].

European health authorities emphasize that e-health has increased. Deficiencies about easy access to the IBD clinics, education of the patients and their understanding the importance of early treatment in relapse state cause incoordination. In a randomized controlled study conducted in Denmark and Ireland, it was concluded that the self-participation, adaptation, and life quality of 333 patients with medium light level UC got better with web-based education and thus it provided economic advantages for the healthcare system. This concept increases the patients' adaptation, life quality and their empowering to practice their own treatment and reduce the health costs and the relapse process at a significant level [57].

Thanks to the web-based IBD educations, the period of transition from relapse to remission decrease and adaptation to the disease and life quality increase. Moreover, it helps young patients (10-17 ages) to adapt to their own disease processes and it motivates them about this topic [57,58].

In a study in which telemedicine practices and standard care were compared, it was determined that life quality in the group in which telehealth interventions for treatment were practiced was higher than the standard care group at a significant level [59].

A meta-analysis in which 17 studies in which e-health technologies (web-based interventions, smartphone applications, telemedicine, virtual clinics) were used in IBD management was made. It was concluded that the e-health technologies provided improvements in the relapse of the disease, disease activity, life quality, disease knowledge and cost-effective healthcare and they enabled the remote management of the disease [60].

In a study in which IBD patients who had psychological treatment with web-based and standard approach were compared, it was determined that the life quality of the patients in the web-based psychological intervention group was better than the patients in the standard treatment group [61].

In a meta-analysis in which six randomized controlled studies were analyzed, it was determined that IBD remote management with web based support reduced clinic visits but it did not provide a significant improvement in the patients' life quality, relapse rates and rates of stays at the hospital [62].

In a study in which web-based education and standard education were compared, it was determined that the life quality score averages of the web-based education group were higher and the disease activity in them was less [63].

In the studies conducted, it was determined that the IBD patients had knowledge gaps about the role of diet in pregnancy, cancer and the management of the disease and the necessity of giving information about the reasons of IBD, diet, symptoms and new treatments was emphasized.

The patients' needs of knowledge cannot be fulfilled exactly during polyclinic visits. In this case, the patients consult other sources for reaching knowledge. Websites are important means in terms of reaching knowledge about health for the patients and their families. However, although there are few proofs documented about the harm caused by the (wrong) knowledge learned from the internet, the patients have worries about the medical knowledge being wrong, not suitable or not updated to new evidence [64].

Suitable treatment, nutrition with the right food, doing regular exercise, managing the appearing symptoms and having all kinds of knowledge about the disease in every moment of inflammatory bowel diseases (in remission or relapse situations) are very important in terms of increasing life quality. The patients demand to have access to correct health information everywhere they want through a website designed for their illness in order to evaluate their symptoms and to be able to find solutions for these symptoms and have education about the topics they need. Because, since they do not want to have workforce loss because of frequent visits to the polyclinic or to be separated from their workplace/school because of their illnesses, the patients should be supported to have education through the web every time and everywhere they want. If it is considered that the patients cannot be given extensive education especially during visits to the polyclinic environment where time is limited, the patients should be enabled to take advantage of web-based

education and support programs. For the program to be successful in the long run, the patients' needs should be focused and they should be managed actively by a doctor or nurse who is an expert in the field of IBD. Consulting service should be given through the web and the patient should be enabled to ask questions to the specialist or the nurse. If the patient knows that he is not alone while having web-based education and there is a health personnel he can consult every time, it will enable him to take advantage of web-based education programs in a quick and cost-effective way.

Conclusion

Patient education is a quite important factor in IBD management like in the management of chronic diseases. An extensive chronic patient care includes a structured patient education. Knowledge about the disease can affect life quality in a positive way, it can encourage treatment adaptation and it can help to provide a suitable treatment with a patient-focused approach depending on collaboration.

The internet is a useful education tool for IBD patients as one of the cost-effective methods which are used in a most widespread way in providing patient education and support sources. Web-based education approaches represent a new approach to monitoring the illness, recognizing the symptoms, conducting the treatment practices in a correct way and the self-management of the patient. They are for patients who endeavor to have information about disease management and strategies for dealing with the disease by themselves. However, the education provided through the web to be accessible and to have correct content require much care in terms of its enabling the patients to have access to the health personnel everytime they need and providing the continuity of the education.

The modern patient education systems used today will come to a much more important point in fulfilling the patients' knowledge needs. In the light of technological developments and considering fundamental of effective time management, IBD educations are recommended to be accessible and everywhere and every time the patients need and to be conducted as web-based education programs because it has no time limitations. If web-based education is planned, high-level web programs providing effective data and information exchange should be formed. These programs should enable being interactive and self-monitoring, giving feedback and providing information exchange. Moreover, the education programs to be conducted as web-based programs should consist of contents focused on patient needs, bringing symptom management skills and so making positive contributions to the disease management process.

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