

Preferences of patients with inflammatory bowel disease for receiving specialized health services using technology: the role of Internet and other sources of medical information

Authors' Contribution:

A – Study Design
B – Data Collection
C – Statistical Analysis
D – Data Interpretation
E – Manuscript Preparation
F – Literature Search
G – Funds Collection

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Article history: Received: 09.11.2018 Accepted: 07.01.2019 Published: 07.02.2019

ABSTRACT:

Introduction: It is notable that patients with inflammatory bowel disease (IBD) have insufficient knowledge about their disease and are willing to be more involved in their treatment. Nowadays medical information is easily available and health-related topics state the third most frequent reason for using the Internet. Therefore, patient's health-related self-awareness and willingness to take part in medical decisions have improved. The possibility of choice of specialized health services may have positive effect on patient's satisfaction. The aim of the study was to characterize the extent of Internet use for health information among a representative sample of IBD patients and to examine the effects that Internet and other sources of information about specialized health services have on patients' choices of a doctor and hospital department.

Materials and methods: In total, 135 IBD patients admitted to the Department of General and Colorectal Surgery at Medical University of Lodz were asked to complete an anonymous questionnaire. Only 123 fully completed questionnaires were included for analysis. The study group involved 68 women and 55 men.

Results: A total of 85.4% IBD patients used Internet in order to gather medical information about their disease. Age of those patients was significantly lower than of those patients who did not use Internet. The most reliable source of information about physicians was Internet. Opinions and recommendations gathered from the Internet have a notable influence on patients' preference of hospital department and attending physician.

Conclusions: A majority of patients used Internet as a source of medical information related to IBD. Opinions obtained from the Internet seem to be the most reliable regarding attending physicians treating IBD patients.

KEYWORDS:

patients' preferences, inflammatory bowel disease, Internet, medical information

INTRODUCTION

Ulcerative colitis and Crohn's disease belong to a group of disorders known as non-specific inflammatory bowel disease (IBD). Although the etiology of those disorders has not been elucidated to this day [1] it is thought that immunological and environmental factors might have impact on disease development. It is estimated that in Europe the diagnosis of IBD has been made in over 3 million patients [2]. There are alarming reports of a growing number of new cases, also in Poland [3]. Such disorders, despite many differences, may present similarly through abdominal pain, vomiting, diarrhea, or even gastrointestinal bleeding [4].

In the recent years medical care over patients with IBD improved significantly; however, actions are still directed at symptom control, not treatment of the primary causes [5]. As a result, patients struggle with intermittent periods of remission and relapse throughout their lives. Potent immunosuppressive drugs, which may be associated with a number of adverse effects, constitute the basis of treatment. Some of the most commonly used medication include 5-aminosalicylic acid (5-ASA) and its derivatives, thiopurines, methotrexate, corticosteroids, antibiotics, such as metronidazole and ciprofloxacin, as well as biological agents [6]. Unfortunately, in some cases complex pharmacotherapy appears to be insufficient.

Surgical intervention may be necessary if there is no response to conservative treatment or complications occur [7]. Personalized diet plan and lifestyle modifications are considered important aspects of IBD management [8].

Recent studies show that the majority of IBD patients consider their knowledge of the disorder insufficient and would like to be more involved in the therapeutic process. This finding, in combination with the chronic nature of those disorders, prompts patients to seek information regarding the course and symptoms of their illness [9].

Medical information is widely available and health-related issues are the third most common topic of Internet inquiries. As a result, the level of patient awareness and their active participation in decision-making has risen [10]. Unfortunately, the information available to patients on Internet sites are frequently not validated and thus, unreliable [9]. It may lead to patients' independent attempts at finding a cure to their ailments, which often produces opposite to expected results. Health-related Internet portals filled with information and opinions about medical centers and doctors are becoming increasingly more popular. Patient's capacity to choose the facility to provide his/her care could potentially have positive impact on treatment effects and his/her wellbeing [11].

Tab. I. Characteristics of the study subject according to sex.

		WOMEN (n = 68)	MEN (n = 55)	P
Age		33.7±12.8	40.0±15.5	0.0368
Education	Primary	4.4% (n = 3)	14.5% (n = 8)	0.0022
	Secondary	42.6% (n = 29)	61.8% (n = 34)	
	Tertiary	52.9% (n = 36)	23.6% (n = 13)	
Comorbidities	Crohn's disease	52.9% (n = 36)	60% (n = 33)	0.4328
	Ulcerative colitis	47.1% (n = 32)	40% (n = 22)	
Years from the diagnosis		5.1±6.4	5.6±5.9	0.2994

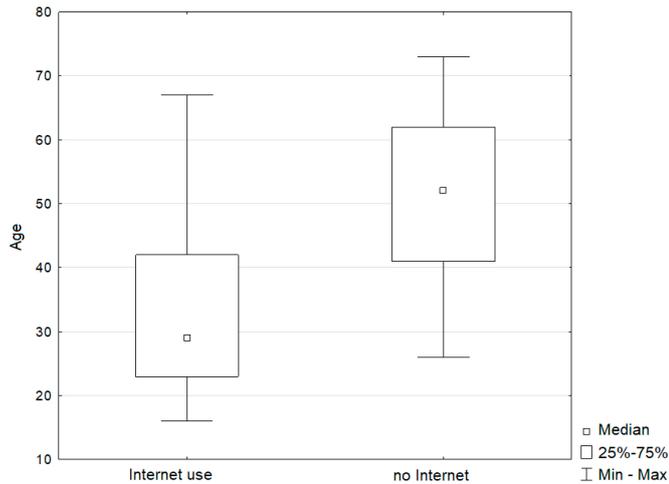


Fig. 1. Comparison of patients' age in terms of searching for medical information.

The aim of this study was to verify the impact of Internet and other sources of medical information on the choice of treatment facility by patients with non-specific inflammatory bowel diseases.

MATERIAL AND METHODS

The study included patients diagnosed with non-specific inflammatory bowel disease hospitalized at the Department of General and Colorectal Surgery of the Medical University of Lodz between November 2015 and April 2017. The study was conducted according to the ethical standards of the 1975 Declaration of Helsinki. The project of the study was approved by the Bioethical Committee of the Medical University of Lodz and all active participants declared their written consent before being included in the study.

All patients qualified to the study were asked to fill out a questionnaire consisting of 22 closed, single-choice questions and 2 open questions at the time of admission to the clinic. Prepared questions encompassed information regarding sex, age, and education of the respondents.

There were also questions regarding the diagnosis, the year of diagnosis, number of surgical procedures performed due to non-specific inflammatory bowel disease. In the third section of the questionnaire the patient was asked to specify preferences regarding treatment facility and attending physician, as well as the key source of information regarding the choice of physician and treatment facility, and to assess the accuracy and utility of this source. Only the correctly filled questionnaires were included in the study.

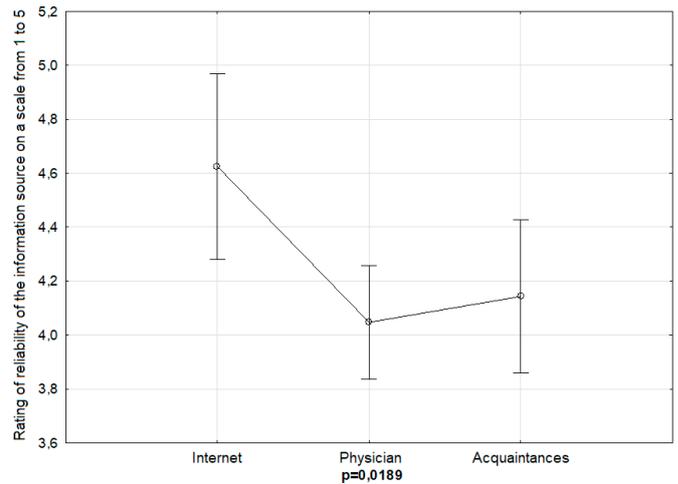


Fig. 2. Reliability of sources of medical information about a physician treating IBD.

Collected data were subject to analysis using STATISTICA 13 (StatSoft Inc., United States) software. Continuous data were expressed as means ± standard deviations and categorical data were expressed as numbers and percentages. The Shapiro-Wilk test was used to assess the normality of distribution of numerical parameters.

Inter-group comparisons were performed using Student's t-test (or non-parametric Mann-Whitney test depending on variable distribution) or χ^2 test (alternatively, exact Fisher's test). Comparisons between more than two variables with normal distributions and equal variances were made using ANOVA, otherwise Kruskal-Wallis test was used (as well as for categorical variables). In all analyses the probability value of $P < 0.05$ was considered statistically significant.

RESULTS

Study included 135 patients hospitalized at the Department of General and Colorectal surgery of the Medical University of Lodz, who gave written consent to participation in the study. However, 123 anonymous questionnaires that had been filled out properly and in full were included in the analysis. The analyzed group consisted of 68 women aged 33.7±12.8 and 55 men aged 40.0±15.5 years. Detailed characteristics of demographic data and basic parameters evaluated in the study are presented in Tab. I.

In the study group, 85.4% of patients (n = 105) used Internet to search for medical information regarding their disease. The remaining 14.6% patients (n = 18) never used Internet for that purpose. The analysis demonstrated that the age of patients with IBD who

searched for medical information on their illness on the Internet was significantly lower compared to patients who did not use Internet (34.2 ± 13.2 vs. 49.8 ± 14.3 ; $P < 0.001$) (Fig. 1).

When asked about the specialty of the attending physician the vast majority of respondents – 79.7% ($n = 98$) preferred a gastroenterologist, while 20.3% ($n = 25$) favored a surgeon. Surgeons were more often chosen by older patients (43.1 ± 11.3 vs. 34.8 ± 14.6 ; $P = 0.009$) and patients who had undergone more abdominal surgery in the past ($P = 0.002$).

Another analysis involved patients' subjective sentiments regarding attending physicians and hospital facilities, comparing their experiences with information they obtained from the Internet, the doctor or friends. ANOVA with post-hoc analysis demonstrated that, according to IBD patients, Internet was the most reliable source of information about the attending physician ($P = 0.0189$). The second most reliable information came from patient's acquaintances, while the opinion of another physician was considered least important (Fig. 2).

Analysis of dependability of different sources of information regarding individual hospital wards failed to reveal preferred sources of information ($P = 0.1599$).

The majority of surveyed patients (62.6%; $n = 77$) considered information regarding the attending physician, hospital or treatment very important – 5 points on a scale from 1 to 5, when obtained from a doctor. As much as 28.4% of patients ($n = 35$) considered the information obtained from the Internet equally valuable (5 points); most patients considered them important – 4 points (30.9%; $n = 38$). Information from friends was very important (5 points) for 32.5% of patients ($n = 40$), but an equal number of patients assigned this source only 3 points on the scale of importance. Averaged ratings for information obtained from the Internet, from the doctor and from friends amounted respectively to 3.54, 4.47 and 3.74 ($P < 0.001$). Detailed data are presented in Fig. 3.

DISCUSSION

Internet plays an increasingly important role in the society and everyday life nowadays. It offers great amount of information on various topics, including health-related issues and medicine. Already in 2001, 40% of Internet users searched for health-related information on the web [12]. Access to the data that had previously been only available to a small group of physicians and medical personnel enables patients to educate themselves regarding their disease and allows them to make informed decisions concerning their health and treatment process [13, 14]. The same applies to the choice of medical facilities and physicians conducting the diagnostic and treatment process. As demonstrated in our study, over 85% of patients with IBS used the Internet to seek information about the disease as well as to search for opinions about doctors and hospitals dealing with inflammatory bowel diseases. This data is concordant with the results of another study showing Internet as a source of medical information for 74% of patients with IBD [15]. This group consists primarily of younger people, for whom the access and use of Internet is a commonplace. Based on the available literature, this proportion may be higher compared to general population of patients, since chronically ill patients rely on the Internet as the primary source of medical information

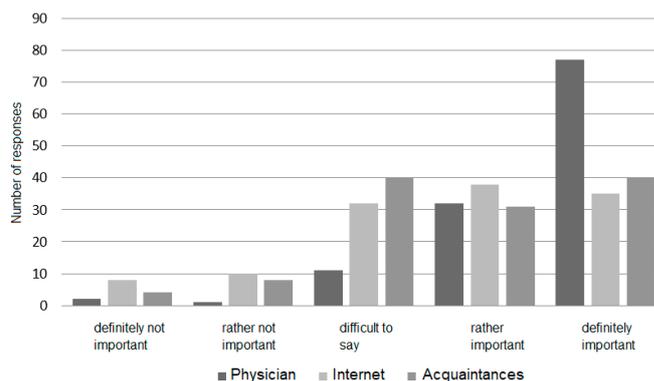


Fig. 3. Importance of medical information for IBD patients gathered from different sources.

[16]. Frequency of Internet searches correlated with the periods of disease exacerbations [17].

Recent studies suggest that patients with IBD feel insufficiently informed about their ailments. It is important for them to have access to larger volume of information that would allow them to take better care of their health on their own [18, 19]. Baars J. et al. demonstrated better treatment outcomes in patients with IBD who were actively involved in the therapeutic decision-making together with their physicians [20]. Shared decision-making regarding their therapeutic options was important for 98% of patients.

A study concerning the level of trust in medical information on cancer obtained from various sources showed that only 23.9% of respondents considered Internet a highly reliable source of information (4 on a 4-point scale). In the same publication a similar number of respondents (22.8%) distrusted information found on the Internet entirely [21]. In relation to our study, patients with IBD considered the Internet a significantly more reliable source of information. Over a half of patients (59.3%) rated it as important or very important and only 6.5% ($n = 8$) considered it completely insignificant.

Based on the available literature, patients aged 15-34 years most frequently use the Internet as the source of medical information [22]. Relatively young age of patients suffering from IBD may explain greater level of trust in Internet-based information observed in our study group.

Patients seek competent, knowledgeable doctors, who would listen to them in a respectful manner and provide medical advice with kindness [23]. Thanks to broad access to the media, they are able to easily find information about diseases, doctors and hospitals. There are numerous social networks and forums on the Internet, containing opinions and recommendations regarding individual hospital wards and doctors, such as e.g. support groups on websites for patients with inflammatory bowel disease. However, uncertain reliability of the information found on the Internet is an important drawback. They are frequently incomplete or have not been verified by professionals [13, 14]. Nevertheless, our study shows that patients consider Internet-based information the most trustworthy.

CONCLUSIONS

The majority of patients in our study used the Internet to seek medical information regarding inflammatory bowel disease. Opin-

ions and recommendations found on the Internet have significant impact on patient's choice of physician or hospital ward. It should be emphasized that patients with IBD still value the information received from the doctor the most. Nevertheless, patients consider Internet-based information the most reliable with regard to

the choice of physician dealing with IBD. It is necessary to implement control over the information concerning health- and medicine-related issues on the Internet. Importantly, scientific societies should support verification of Internet data and development of reliable Internet portals for patients.

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Word count: 2410 Page count: 5 Tables: 1 Figures: 3 References: 23

DOI: 10.5604/01.3001.0012.8555 Table of content: <https://ppch.pl/issue/11867>

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Competing interests: The authors declare that they have no competing interests.



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Cite this article as: Włodarczyk M., Włodarczyk J., Zalewska K., Olczyk M., Maryńczak K., Gajewski P., Malek Z., Cetnar-Sokolowska Z., Sobolewska-Włodarczyk A., Dziki A., Dziki L.: Preferences of patients with inflammatory bowel disease for receiving specialized health services using technology: the role of Internet and other sources of medical information; Pol Przegl Chir 2019; 91 (2): 1–5
