Determining the relationship between gastrointestinal symptoms and comfort in inflammatory bowel patients

İnflamatuvar bağırsak hastalarında gastrointestinal semptomlar ile konfor arasındaki ilişkinin belirlenmesi

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Abstract

Aim: This study aimed to reveal the effect of gastrointestinal symptoms on comfort levels in patients diagnosed with inflammatory bowel disease.

Methods: A cross-sectional study design was used. 115 patients diagnosed with inflammatory bowel disease between January 15, 2023, and May 15, 2023, were included in this study. Comfort level was evaluated using the General Comfort Scale Short Form. The data were analyzed using descriptive statistics, and regression analyses.

Results: The mean age in the study was The mean age in the study was 41.29 (standard deviation (SD)= 12.81) year. The mean comfort level was 98.93 (SD=19.06). There was a difference between gastrointestinal symptom burden scores according to gender (t = 3.048, p = 0.003), marital status There was a difference between gastrointestinal symptom burden scores according to gender (independent sample t-test (t) = 3.048, p = 0.003), and the presence of chronic disease (t = -4.115, p < 0.001). There is a weak negative relationship between age and comfort level There is a weak negative relationship between age and comfort level (pearson correlation (r) = -0.191, p = 0.041).

Conclusion: This study emphasized that gastrointestinal symptom burden is an important determinant of comfort level in patients diagnosed with inflammatory bowel disease and comfort decreases as gastrointestinal symptom load increases.

Keywords: Crohn disease; inflammatory bowel diseases; patient comfort; symptom assessment; ulcerative colitis

Öz

Amaç: Bu çalışma, inflamatuar bağırsak hastalığı tanısı olan hastalarda gastrointestinal semptomların konfor düzeyine etkisini ortaya koymayı amaçladı.

Yöntemler: Kesitsel bir çalışma tasarımı kullanıldı. 15 Ocak 2023 ile 15 Mayıs 2023 tarihleri arasında inflamatuar bağırsak hastalığı tanısı almış 115 hasta bu çalışmaya dahil edildi. Konfor düzeyi, Genel Konfor Ölçeği Kısa Formu kullanılarak değerlendirildi. Veriler, tanımlayıcı istatistikler ve regresyon analizleri kullanılarak analiz edildi.

Bulgular: Çalışmada yaş ortalaması 41,29 (standart sapma (SD)= 12,81) idi. Ortalama konfor düzeyi 98.93 (SD=19.06) idi. Cinsiyet (bağımsız örneklem t testi (t)=3.048, p=0.003), medeni durum (t=-2.156, p=0.033) ve kronik hastalık varlığına (t=-4.115, p<0.001) göre gastrointestinal semptom yükü puanları arasında fark saptandı. Yaş ile konfor düzeyi arasında zayıf bir negatif ilişki bulundu Yaş ile konfor düzeyi arasında zayıf bir negatif ilişki bulundu (pearson korelasyon (r) = -0,191, p = 0,041).

Sonuç: Bu çalışmada inflamatuar bağırsak hastalığı tanısı olan hastalarda gastrointestinal semptom yükünün konfor düzeyinin önemli bir belirleyicisi olduğu ve gastrointestinal semptom yükü arttıkça konforun azaldığı vurgulanmıştır.

Anahtar Sözcükler: Crohn hastalığı; hasta konforu; inflamatuar bağırsak hastalıkları; semptom değerlendirmesi; ülseratif kolit

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INTRODUCTION

Inflammatory bowel disease is "a disease that develops as a result of uncontrolled inflammation of the intestinal mucosa with chronic, relapse (exacerbation) and remission (recovery) period"(1, 2). Inflammatory bowel disease caused by environmental and genetic factors is divided into two types: "ulcerative colitis and Crohn's disease" (1). Inflammatory response and involvement differ according to disease type (3). While the inflammatory response in ulcerative colitis is restricted to the submucosa and mucosa, inflammation in Crohn's disease spreads along the entire wall from mucosa to serosa (4). While Crohn's disease typically impacts the colon and the lower part of the small intestine, it can manifest in a segmental pattern anywhere within the gastrointestinal tract, extending from the oral cavity to the rectum (2). Although the inflammation in ulcerative colitis is generally restricted to the colon, it shows diffuse superficial involvement without leaving intact segments (2). Although inflammatory bowel diseases can be seen in all age groups, studies have reported that the frequency of diagnosis is more common between the ages of 20 and 30 (5). Moreover, among gastrointestinal diseases, inflammatory bowel diseases are increasing in frequency and have the potential to become a major public health problem in the future (4).

Ulcerative colitis and Crohn's disease can manifest with diverse symptoms. The intensity of these symptoms experienced by patients varies according to the severity of the inflammatory bowel disease (6). In addition to gastrointestinal symptoms such as blood in the stool, extreme fatigue, diarrhea, loss of appetite, abdominal pain and cramping, weight loss, and fever, symptoms that can affect all other systems can occur with different severity in each patient (7, 8). In addition to the physical symptoms, people with inflammatory bowel disease may also face psychological problems such as anxiety and depression (9). The quality of life of individuals is reduced due to all these problems and therefore symptom assessment becomes an important requirement for patients (10).

These physical and psychological problems experienced by patients can negatively affect their comfort (11). Comfort means "to strengthen" in Latin and is generally defined as ensuring the ease of the individual (12, 13). Comfort, which is an important component of the holistic nursing approach, was first defined in detail by Kolcaba in 2003 and the comfort theory was revealed (14). Kolcaba defines comfort as "an expected outcome with a complex structure in physical, psychospiritual, social and environmental integrity related to helping the individual's needs, providing peace of mind and overcoming problems" and defines it as "the current experience of meeting basic human needs for relief, peace of mind and overcoming problems"(12). Increased symptom severity leads to repeated hospitalizations and patients withdraw from social and professional life (11). All these problems affect patients in physical, socio-cultural, psychospiritual, and environmental aspects and negatively affect their comfort (12, 13). Considering this multifaceted nature of comfort and its effects on patients, it is essential to evaluate individuals with diagnosed inflammatory bowel disease in this respect. Nurses aim to relieve patients by controlling symptoms in chronic disease management (15). In addition, nurses take measures for comfort and provide care and assistance by encouraging the individual/family/society and supporting coping methods (16). However, there is no study in the literature addressing comfort in patients with inflammatory bowel disease. Accordingly, this study aims to reveal the effect of gastrointestinal symptoms on comfort levels in individuals diagnosed with inflammatory bowel disease. In this context, the following research questions were sought to be answered:

- What is the gastrointestinal symptom burden in individuals diagnosed with inflammatory bowel disease?
- What is the comfort level of individuals diagnosed with inflammatory bowel disease?
- What is the relationship between gastrointestinal symptom burden and comfort level in individuals diagnosed with inflammatory bowel disease?

MATERIAL AND METHODS

Study Design

A web-based descriptive study design was used. The study was reported according to the "Strengthening the Reporting of Observational Studies in Epidemiol-

ogy (STROBE) checklist" in reporting descriptive and correlational studies.

Setting

This research was conducted with the Inflammatory Bowel Diseases and Families Assistance Association (IBHAYD) through the Google Forms survey platform (Google LLC, Mountain View, California, USA) on online platforms (e-mail, social media, etc.). The research was conducted between January 15, 2023, and May 15, 2023.

Participants

Individuals with inflammatory bowel disease in Turkey comprise the study population. The sample of the study included individuals (a) over the age of 18, (b) who were diagnosed with inflammatory bowel disease, and (c) who voluntarily agreed to participate in the study. Snowball sampling method was used to form the sample group of the study. In the snowball sampling method, individuals who meet the inclusion criteria and are suitable for the purpose of the study were identified through the online platforms (phone, message, mail, social media, etc.) of the IBHAYD, and the snowball continued to grow if the people reached suggested other names (17). Throughout the data collection process of the study, the researchers reached the sample by identifying new individuals who met the inclusion criteria through online platforms (phone, message, mail, social media, etc.). For this study, the number of patients included in the sample was calculated in the G*Power version 3.1 program. Accordingly, 111 people were planned to be included in the sample, with an effect level of medium (0.3), a power level of 95%, and a significance level of 0.05. In this context, 186 patients were evaluated and 47 were excluded because they did not have inflammatory bowel disease and 24 were excluded because they were under 18 years of age. Therefore, the study was completed with 115 individuals with inflammatory bowel disease.

Measurement Tools

In the study, the "Personal Information Form" to obtain the socio-demographic data of the patients, the " Gastrointestinal Symptoms Rating Scale (GSRS)" to evaluate gastrointestinal symptom status, and the "General Comfort Scale Short Form (GCS-SF)" to determine the comfort level were used.

Personal Information Form: This form was developed by the researchers by scanning the literature, and includes questions such as marital status, educational status, age, gender, smoking status, presence of additional chronic diseases, and type of bowel disease (18-20).

Gastrointestinal Symptoms Rating Scale (GSRS): It consists of 15 items related to the frequency of gastrointestinal symptoms that can be bothersome in the last three months by Revicki et al. (21). The symptoms in the questionnaire consisted of five categories: esophageal symptoms, upper dysmotility symptoms, intestinal symptoms, diarrhea, and constipation symptoms. The scale adopts a five-point Likert scale format, ranging from "Never (0)" to "Very often (4)," representing the frequency of symptoms. The total score achievable on the scale spans from 0 to 60 (21). Higher scores on the scale correspond to greater symptom burden and frequency. The Turkish validity and reliability study was conducted by Turan et al., who reported a Cronbach's alpha value of 0.82 (22). The Cronbach's alpha value was calculated as 0.887 in the present study sample, indicating strong internal consistency.

General Comfort Scale Short Form (GCS-SF): The form, developed by Kolcaba in 2006, consists of three sub-dimensions: refreshment (9 items), relaxation (9 items), and overcoming problems (10 items) (12). The scale comprises both negative and positive items, with the negative items being reverse-coded and then summed. Each item is rated on a six-point Likert scale. To obtain the total score, the scores for all items are summed, resulting in a range of 28 to 168. Higher scores indicate a higher level of comfort. The Turkish validity and reliability study was conducted by Çıtlık Sarıtaş et al. in 2018. The study reported a Cronbach's alpha reliability coefficient of 0.82 (23). The Cronbach's alpha value was calculated as 0.781 in the present study sample, indicating acceptable internal consistency.

Data Collection

Research data were collected in an online survey format. After reading the informed consent form, the participants accessed the research questions after clicking the "I have read the information and agree to par-

ticipate in the study of my own volition" button. The informed consent form, which included information about the aim of the study, the importance of answering the questions sincerely and honestly, and that the knowledge would be kept confidential, was given to the participants online. Additionally, participants were informed that they had the autonomy to discontinue their participation in the study at any given moment. Those who approved the informed consent form filled in the personal information form and scales sent via Google Forms and completed it with the submit button. Completing the Personal Information Form and scales took approximately 10 minutes depending on the speed at which the participants answered the questions.

Statistical Analysis

The data were subjected to statistical analysis using Statistical Package for the Social Sciences (SPSS) version 25.0 (IBM Corp, Armonk, New York). To assess the normality of the data, kurtosis and skewness values were examined, and the Shapiro-Wilk test was employed. A p-value greater than 0.05 was indicative of a normal distribution, whereas a p-value less than 0.05 indicated non-normality (24). Skewness and kurtosis values ranging from -1.5 to +1.5 were considered supportive of a normal distribution (25). Descriptive statistics, such as mean and standard deviation (SD), were employed for numerical variables, given that the data met the assumptions of normal distribution, e.g., age. Categorical variables, such as gender and educational status, were presented using frequency distributions in terms of count and percentage. Pearson correlation analysis was utilized to examine relationships between numerical variables and scales in the study. To explore the association between categorical variables and scales, a one-way analysis of variance and independent sample t-tests were conducted. Regression analyses were performed to assess the influence of gastrointestinal symptom burden on comfort. In this study, a p-value below 0.05 was considered statistically significant.

Ethical Considerations

Approval was obtained from the Ethics committee of Sakarya University of Applied Sciences for the conduct of the study (date: 02,01.2023, decision no: 27-21). Following the ethics committee approval, the necessary permission was obtained from the İBHAYD association to conduct the research. All articles of the Declaration of Helsinki were complied with in the study.

RESULTS

Participants Characteristics

The mean age of the participants included in the study was 41.29 (SD= 12.81) years. When gender distribution was analyzed, it was determined that 51.3% were female. The majority of the participants were undergraduates (34.8%) and high school graduates (33.9%). 70.4% of the participants were married. While 37.4% of the participants were current smokers, 34.8% had never smoked and 27.8% had quit smoking. Ulcerative colitis was present in 61.7% and Crohn's disease in 38.3% of the participants. When the presence of additional chronic diseases was evaluated, 53% of the patients had additional chronic diseases and the most common diseases were hypertension, diabetes, thyroid dysfunction, and ankylosing spondylitis (Table 1).

Findings Related to GSRS and GCS-SF

When the normal distribution assumptions regarding the scales are examined, according to Shapiro's test, since the p-value is greater than 0.05, it is seen that it is suitable for normal distribution ($p = 0.063$ for symptom scale; $p = 0.270$ for comfort scale). In addition, in this study, skewness values ranged between 0.421 and 0.206, and kurtosis values ranged between -0.735 and -0.562. Skewness and kurtosis coefficients between -1.5 and +1.5 supported the assumptions of normal distribution. The mean gastrointestinal symptom burden score was 46.79 (SD=17.70). The mean comfort level was 98.93 (SD=19.06) (Table 2).

Relationship Between GSRS and GCS-SF and Socio-demographic Variables

When gastrointestinal symptom burden and socio-demographic variables were analyzed, it was determined that there was a difference between gastrointestinal symptom burden scores according to gender ($t = 3.048$, $p = 0.003$), marital status ($t = -2.156$, $p = 0.033$), and presence of chronic disease ($t = -4.115$, $p < 0.001$). However, there was no difference between gastrointestinal

Table 1. The characteristics of the participants

	n	%	Gastrointestinal symptom burden			Comfort level		
			Mean±SD	Test statistic	*p*	Mean±SD	Test statistic	*p*
Age (Mean±SD)	41.29±12.81		-	-0.020*	0.830	-	-0.191*	***0.041***
Gender								
Female	59	51.3	51.52± 19.03	3.048**	***0.003***	98.86±19.16	-0.043**	0.966
Male	56	48.7	41.80±14.77			99.01± 19.13		
Education level								
Primary school	13	11.3	56.07± 18.86			92.61±15.43		
High school	39	33.9	43.20±16.72			94.15±17.89		
Associate's degree	14	12.2	44.92± 14.16	1.872***	0.120	99.57± 19.18	2.014***	0.097
License	40	34.8	49.32±18.86			103.87±20.01		
postgraduate	9	7.8	40.55±16.11			105.88± 19.92		
Marital status								
Single	34	29.6	41.38±17.01	-2.156**	***0.033***	96.67 (19.83)	-0.823**	0.412
Married	81	70.4	49.06±17.59			99.88 (18.77)		
Smoking status								
Never smoked	40	34.8	45.55±17.45			97.05 (20.40)		
Ex-smoker	32	27.8	45.06± 16.09	1.065***	0.348	98.81 (19.34)	0.475***	0.623
Current Smoker	43	37.4	50.65± 20.09			101.46 (17.16)		
Type of bowel disease								
Ulcerative colitis	71	61.7	47.60±18.96	0.625**	0.533	99.53 (19.75)	0.424**	0.672
Crohn's disease	44	38.3	45.47±15.58			97.97 (18.07)		
Presence of additional chronic disease								
No	61	53.0	40.80± 15.47	-4.115**	***0.000***	101.16 (19.85)	1.335**	0.185
Yes	54	47.0	53.5±17.98			96.42 (17.98)		

SD: Standard deviation

* Pearson correlation, ** Independent sample t-test, *** One-way ANOVA

Table 2. Findings related to scales

				Skewness		Kurtosis		Shapiro-Wilk Test	
	Minimum	Maximum	Mean±SD	Test statistic	*p*	Test statistic	*p*	Test statistic	*p*
Gastrointestinal symptom burden	16	91	46.79± 17.70	0.421	0.226	-0.735	0.447	0.981	0.063
Comfort level	60.0	142.0	98.93± 19.06	0.206	0.226	-0.562	0.447	0.986	0.270

* SD: Standard deviation, **Normality tests

Table 3. Association and regression between comfort and gastrointestinal symptom burden

		Gastrointestinal symptom burden
Comfort level	**Pearson correlation**	-0.298
	p	***0.001***
	n	115
	Non-standardized beta	-0.321
	Standard error	0.097
	Standardized beta	-0.298
	T -value	-3.324
	p	***0.001***

symptoms according to educational status (F = 1.872, p = 0.120), smoking status (F = 1.065, p = 0.348), and type of bowel disease (t = 0.625, p = 0.533). In addition, there was no association between age and gastrointestinal symptoms (r = -0.020, p = 0.830) (Table 1).

When comfort level and socio-demographic variables are analyzed, there is a weak negative relationship between age and comfort level (r = -0.191, p = 0.041). However, no significant difference was found in comfort level according to other socio-demographic variables (p > 0.005) (Table 1).

Association and Regression Between Comfort and Gastrointestinal Symptom Burden

It was determined that there was a statistically significant negative, weak relationship between comfort level and gastrointestinal symptom burden. In addition, regression was performed to reveal the effect. When the beta coefficient and t-test results of the participants were analyzed, it was determined that gastrointestinal symptom burden was a significant predictor in affecting the comfort level of patients (Table 3).

DISCUSSION AND CONCLUSION

This study represents the inaugural exploration of the correlation between gastrointestinal symptoms and overall well-being in individuals diagnosed with inflammatory bowel disease. Our study results show that gastrointestinal symptom burden scores of individuals with inflammatory bowel disease are above average. In support of our study findings, a study reported that individuals diagnosed with inflammatory bowel disease face more gastrointestinal symptoms such as abdominal diarrhea, bloating, gas, pain, and bowel incontinence than the general population (26). When socio-demographic variables and gastrointestinal symptoms are considered, this study shows that women and married people have a higher gastrointestinal symptom burden. Although no study directly evaluating gastrointestinal symptom burden in individuals diagnosed with inflammatory bowel disease was found in the literature, our findings are supported by other studies. One study concluded that women with irritable bowel syndrome experienced more gastrointestinal symptoms than men (27). In another study, gastrointestinal symptoms experienced in the last two weeks in the general population were evaluated and it was determined that women experienced more symptoms than men (28). In a large-scale descriptive study conducted to determine the burden of gastrointestinal symptoms in the United States, it was determined that married individuals experienced more gastrointestinal symptoms (29). The main reason for these results may be that being married brings additional responsibilities related to the family process and psychosocial problems such as stress in case of illness are higher in women. In addition, this study shows that individuals with additional chronic diseases have a higher burden of gastrointestinal symptoms. Similarly, in a study conducted to determine the burden of gastrointestinal symptoms, it was found that individuals with chronic diseases and a higher number of chronic diseases experienced more gastrointestinal symptoms (29).

In addition to gastrointestinal symptom burden, the comfort level of individuals with inflammatory bowel disease was found to be moderate. In addition, when socio-demographic variables and comfort level were analyzed, it was observed that comfort level decreased with increasing age. The comfort level in patients diagnosed with inflammatory bowel disease has not been directly evaluated, and one study states that individuals describe their comfort level as deteriorating as age increases (11). In another study, a weak negative correlation was determined between age and comfort level, and it was determined that the comfort levels of patients decreased with increasing age (30). It is expected that the gastrointestinal functions, which decrease with the physiological changes that occur with increasing age, decrease more in comfort due to the symptom load brought by the disease. In addition, our study findings show that comfort level is not affected by variables such as educational status, marital status, gender, smoking status, and presence of additional chronic diseases. In a study conducted with individuals with chronic diseases, it was determined that educational status and marital status were not associated with comfort level. Similarly, another study reported that marital status, presence of additional chronic diseases, income status, and educational status did not affect the comfort level (31).

This study found a significant relationship between gastrointestinal symptom burden and comfort level and concluded that symptom burden is a predictor of comfort. In another study, it was reported that patients' comfort levels can be significantly increased by controlling the symptom states (32). The main reason why the symptom burden significantly affects the comfort level in patients may be due to the fact that the symptoms experienced severely limit the physical movements of the patients and bring additional psychological problems. Especially the physical limitation due to the symptom may have triggered a significant decrease in the comfort level (33).

This study concluded that gastrointestinal symptom burden is an important predictor of comfort level in patients diagnosed with inflammatory bowel disease and comfort decreases as gastrointestinal symptom burden increases. Gastrointestinal symptom burden is higher in women, married couples, and individuals with additional chronic diseases. The comfort level was found to be lower in elderly patients diagnosed with inflammatory bowel disease. To increase comfort in patients with inflammatory bowel disease, it is important requirement to include more emphasis on reducing the burden of symptoms in education and counseling programs. Considering that older individuals affect their comfort levels more, it should not be ignored that these groups need more support. Rehabilitation practices aiming to increase patients' quality of life and comfort should include symptom control.

Nurses, who constantly interact with individuals with chronic diseases throughout the disease process, have an important role in evaluating the symptom burden of patients. It should not be forgotten that any attempt made by nurses to alleviate the symptom burden by evaluating the symptoms will also have a significant effect on increasing the comfort level of the patients. An important result is that reducing the symptom burden within the scope of holistic nursing care unquestionably increases comfort.

Strengths and Limitations

This study has one limitation. The study was conducted online through an association. This may have limited the access of patients who need access to online platforms. The strongest aspect of this study is that the effect between comfort and gastrointestinal symptom burden was revealed by regression analysis in this study.

Conflict-of-interest and financial disclosure

The author declares that she has no conflict of interest to disclose. The author also declares that she did not receive any financial support for the study.

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