

Original Article

The Effect of Gastrointestinal Symptoms on the Quality of Life of Patients Hospitalized in Internal Medicine Service

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Abstract

Background: Due to the long hospitalization periods in internal medicine services, there are increases in the gastrointestinal problems based on several reasons such as weakness in muscles, blunting in defecation desire, the use of disposable underpads or bedpans, having difficulty to express defecation desire, change in eating habits, medications, and increase in symptoms

Aims: This study was conducted to investigate the effect of the gastrointestinal symptoms on the quality of life of individuals.

Methods: The descriptive study was conducted in the City Hospital in Turkiye by employing the individuals hospitalized in internal medicine services between November 2019 and April 2020 (n= 500). The data were obtained through the Patient Information Form, Gastrointestinal Symptom Rating Scale (GSRs), and SF-36 Quality of Life Scale.

Results: In our study, 2,4% of the change in the abdominal pain score was resulted from pain and general health. It was seen that 1,4% of the change on the reflux score was due to the pain variable. A negative low relationship was found between the diarrhea symptom rate of the individuals and their health and physical functions as well as between reflux symptom rate and pain. It was further found that the quality of life of individuals was at moderate level, and gastrointestinal symptoms reduced the quality of life.

Conclusions: It is recommended that nursing care plans should be prepared and consultancy should be regularly provided to decrease the gastrointestinal symptoms of the individuals in the risk group.

Keywords: gastrointestinal symptom, patient, nursing, quality of life.

Introduction

Chronic diseases show that, for the last years, patients are not recovered completely and require an extensive care to weaken the symptoms (Reynolds et. al, 2018). When chronic diseases are analyzed, it is clear that 16.4% of them are hypertension, 10.2% are diabetes, 7.2% are coronary heart diseases, and 0,8% are stroke (TSI, 2019). Patients struggling with chronic diseases that require an intensive treatment and care such as diabetes mellitus, chronic obstructive respiratory disease, cancer, hypertension, and cardiovascular diseases are hospitalized in internal medicine services (Reynolds et. al,

2018). These intensive and long-lasting treatments influence the physiology and systems of the patients in a negative way.

One of the systems affected negatively is gastrointestinal system. Constipation, stomachache, reflux, indigestion, nausea, and vomiting are among the changes experienced in gastrointestinal systems (Siyah et. al, 2020). Due to the long hospitalization periods in internal medicine services, there are increases in the gastrointestinal problems based on several reasons such as weakness in muscles, blunting in defecation desire, the use of disposable underpads or bedpans, having difficulty to express defecation desire, change

in eating habits, medications, and increase in symptoms (Terzi and Kaya, 2017). Patients having a gastrointestinal symptom cannot express themselves to physicians or nurses since they feel stigmatized; therefore, their diseases might be diagnosed late, and this situation can affect their quality of life negatively (Siyah et. al, 2020). According to the literature, the prevalence of the patients' gastrointestinal symptom ranges between 6.9% and 42% (Clark, 2012; Salamon et. al, 2013; Dedeli et. al, 2015). In a study carried out by Dedeli et. al, it was indicated that the most frequent symptoms patients with diabetes experienced were abdominal swelling with the rate of 71.6%, gastroesophageal reflux prevalence was 60.1%, and the prevalence of constipation was 58.7% (Dedeli et. al, 2015). In the study that Haag et. al. conducted on 23.163 subjects between the ages 18-69, gastrointestinal symptom prevalence was found as 38% (Haag et. al, 2011). Symptoms such as indigestion, dysphagia, regurgitation and stomachache, and emotional problems resulted from these symptoms can reduce the quality of life (Brun et. al, 2010).

Gastrointestinal system symptoms in patients should be handled through comprehensive patient evaluation, and the quality of life of patients should be increased. Comprehensive patient evaluation is carried out by nurses who are responsible for gastrointestinal symptom evaluation, drug compliance, activity planning, and patient training. When these responsibilities are fulfilled, it is ensured that patients feel better and strengthen their lives in spite of drawbacks; their personal capacities are optimized in terms of psychological and social aspects; and the quality of life increases.

It is stated that the quality of life of individuals increases, some health problems can be prevented or decreased when efficient nursing interventions are performed for in-patients. Given the existing literature, to the knowledge of the researcher, no study focuses on the relationship between the gastrointestinal symptoms and the quality of life as well as their effects. Therefore, examining gastrointestinal symptoms and the quality of life of patients after hospitalization in our study might contribute to the literature.

This descriptive study was conducted to determine the relationship between gastrointestinal symptoms and the quality of life in the patients using to internal medicine.

The study questions are as follows:

1. What is the frequency of gastrointestinal system symptoms of the in-patients in the internal medicine service?
2. What is the level of the quality of life of the in-patients in the internal medicine service?
3. Is there a relationship between the gastrointestinal system symptoms and the quality of life of the in-patients in the internal medicine service?
4. Are the gastrointestinal system symptoms of the in-patients in the internal medicine service effective on the quality of life?

Methods

Sample and setting: A cross-sectional and descriptive design was adopted for the study. This manuscript was prepared in accordance with the STROBE Statement-Checklist of cross-sectional studies (von Elm et al., 2014). The target population of the study included the patients hospitalized in the internal medicine services in A City Hospital between the dates 11/11/2019 and 01/04/2020. There was a total of 3545 patient admissions to internal services. 1123 outpatients who had angiography, 29 patients who had speech disorder due to cerebrovascular disease in neurology service, and 604 outpatients hospitalized in the internal medicine service and discharged after having one-day treatment were excluded from the study. 1269 patients did not accept to participate in the study. The study was conducted with 500 people. According to the Post Hoc Power Analysis performed on G*Power (v3.1.7.9.4) software, margin of error was taken as $\alpha=0.05$, influence quantity as $d=0.20$, and the power of the test was calculated as $P(1-\beta \text{ error}) = 0.9982118$ in the study that included 500 people (Faul, et al., 2007).

The inclusion criteria were participants' age (18 and above), being hospitalized in internal medicine services for four days and above, participating in the study voluntarily, being able to answer the research questions, and giving oral and written consent. The exclusion criteria were having gastrointestinal bleeding

previously, having GIS cancer, being diagnosed with gastrointestinal disease previously (except for auxiliary organs (liver and pancreas), and having cognitive function loss.

Measurements. As data collection instruments, patient information form including socio-demographic and disease-related characteristics of patients, Gastrointestinal Symptom Rating Scale and Quality of Life Scale were used in the study.

Patient Information Form: The form, which was developed by the researchers based on literature review, includes two parts and 23 questions to reveal “Socio-Demographic Characteristics” and “Disease Characteristics” (Turan, Asti, and Kaya 2017a; Turan, Asti, and Kaya 2017b; Turan and Atabek Asti, 2016).

1. Socio-demographic characteristics include 10 questions for gender, age, marital status, educational status, smoking, and drinking habits and the reason of hospitalization.

2. Disease and Eating Characteristics include 11 questions for physical needs, medications, the existence of diagnosed chronic diseases, and laboratory findings. The results of laboratory tests that were applied in the hospital routinely were used for the study.

Pre-implementation was conducted with 10 individuals hospitalized in the internal medicine services of the City Hospital in order to check the intelligibility of the information form. The part related to the way how they come to the hospital (ambulance or on their own) was removed from the survey questions. As a result of the changes made, the questionnaire was finalized.

Gastrointestinal Symptom Rating Scale (GSRS) The scale was developed by Revicki et. al., (1997) to investigate the symptoms observed frequently in gastrointestinal system disorders, and the validity and reliability study of the scale in Turkish was performed by Turan and Asti (2011). It is a 7-point Likert scale that includes 15 items related to the options from “no discomfort” to “very strong discomfort.” The scale has 5 sub-dimensions as Abdominal Pain (1st, 4th and 5th questions), Reflux (2nd and 3rd questions), Diarrhea (11th, 12th and 14th questions), Indigestion (6th, 7th, 8th and 9th questions), and Constipation (10th, 13th and 15th questions). It is questioned in the scale how individuals feel in terms of

gastrointestinal problems in the last week. The higher the score on the scale, the greater the severity of the symptoms (Revicki et. al, 1998; Turan, Asti, and Kaya 2017a; Revicki et. al. 1997). In the study by Turan and Asti, the Cronbach Alpha of the scale was found as 0.83. In our study, the Cronbach Alpha is 0.71.

The Quality of Life Scale (SF-36) The Quality of Life Scale (SF-36) is one of the common scales used to determine the quality of life. The Turkish validity and reliability of the scale, which was developed by Ware et. al (1992), was tested by Kocyigit et. al. The scale includes 36 items and 8 sub-dimensions. These sub-dimensions refer to social functioning (2 items), physical functioning (10 items), role-emotional (3 items), role-physical (4 items), mental health (5 items), vitality (4 items), bodily pain (2 items), and general health (5 items). While the second question of the scale evaluates the change perception in the last 1 year, other questions are evaluated by considering the last 1 month. The 1st, 6th, 7th, 8th, 9a, 9d, 9e, 9h, 11b, and 11d items of the scale are reverse items, and the score is calculated accordingly. While the fourth and fifth items are yes/no questions, other items are evaluated through a Likert type rating (3, 5, and 6-point Likert scale). The subscales are evaluated through a scoring in the range of 0-100. While 0 indicates bad health state, 100 indicates good health (Kocyigit, 2003). The Cronbach Alpha values of the subscales are found between the range of 0.73-0.76 in the Turkish validity and reliability study.

Data collection: The informed consents of the individuals accepting to participate in the study were obtained. The researcher met the patients, introduced himself, and informed them about the purpose of the study. Face-to-face interviews were carried out about the general situation, background, and diseases of the patients. The patient's questions, if any, were answered before the questionnaire was conducted. The data were collected through using face-to-face interviews in 20-30 minutes.

Data analysis: The data of the study were analyzed by using Statistical Package for Social Sciences (SPSS) (23.0). The independent variables of the study were the socio-demographic characteristics of the

patients such as gender, age, and educational status. The dependent variables of the study were Gastrointestinal Symptom Rating Scale (GSRS) and the Quality of Life Scale – SF-36. The normal distribution of the data was tested by Shapiro Wilk test. Descriptive statistics was used to unearth the socio-demographic characteristics. Additionally, in order to determine the averages of the Gastrointestinal Symptom Rating Scale (GSRS) and the Quality of Life Scale – SF-36, t test was used for two groups in independent groups, and One-Way ANOVA was used for more than two groups. If a difference was found as a result of the comparisons carried out in groups more than two, then Tukey test was performed as the post hoc analysis. Pearson Correlation Analysis was carried out to determine the correlation results of the Gastrointestinal Symptom Rating Scale (GSRS), the Quality of Life Scale – SF-36, the sub-dimensions, and the laboratory findings. Linear regression analysis was used to identify the effect size. In the comparisons, $p < 0.05$ was accepted significant in the 95% confidence interval.

Ethical approval: The study was conducted in accordance with the Declaration of Helsinki. Non-invasive Clinical Studies Ethical Committee Approval (2017-KAEK-189_2019.11.27_06) and a written permission from the institution in which the study would be conducted was received.

Results

It was found that 53.8% of the participants were female, and the average age was 60.48 ± 15.14 (18-90). Besides, 24.8% of them smoked, and 2.8% drank alcohol. It was found that 25.6% of the patients were primary school graduates, the incomes of 68% were medium, and 89% were hospitalized between the range of 4-7 days. The average BMI of the patients was determined as 27.60 ± 4.59 (16.53-47.66) (Table 1).

The average score the individuals received from the Physical Functioning sub-dimension of the Quality of Life Scale was 55.17 ± 28.71 , from the Role-Physical subdimension was 34.75 ± 37.23 , from the Role-Emotional subdimension was 36.29 ± 36.12 , from the Vitality subdimension was 47.84 ± 14.81 , from the Mental Health subdimension was 58.75 ± 14.77 , from the Social Functioning

subdimension was 49.85 ± 18.91 , from the Pain subdimension was 55.75 ± 19.73 , and from the General Health subdimension was 48.59 ± 14.94 .

Moreover it was revealed that the individuals received an average score of 2.72 ± 1.21 from the Abdominal Pain subdimension of the Gastrointestinal Symptom Rating Scale, 2.71 ± 1.50 from the Reflux subdimension, 1.67 ± 1.09 from the Diarrhea subdimension, 2.18 ± 0.99 from the Indigestion subdimension, and 2.36 ± 1.39 from the Constipation subdimension.

A negative and very weakly significant relation was determined between the score average of the Physical Functioning subdimension of the Quality of Life Scale and that of the Diarrhea subdimension of the Gastrointestinal Symptom Rating Scale ($r = -0.116$; $p < 0.05$), between the score average of the Pain subdimension of the Quality of Life Scale and that of the Abdominal Pain ($r = -0.142$; $p < 0.05$) and Reflux ($r = -0.118$; $p < 0.05$) subdimensions of the Gastrointestinal Symptom Rating Scale and between the score average of the General Health subdimension of the Quality of Life Scale and that of the Abdominal Pain subdimension of the Gastrointestinal Symptom Rating Scale ($r = -0.103$; $p < 0.05$). There was no significant relation between the other subdimensions of the Quality of Life Scale and the Abdominal Pain, Reflux, Diarrhea, Indigestion, and Constipation subdimensions of the Gastrointestinal Symptom Rating Scale ($p > 0.05$) (Table 2).

The pain level subdimension of the Quality of Life Scale had a negative significant effect (0.003 times), and the general health level had a positive significant effect (0.004 times) on abdominal pain ($p < 0.05$). 2,4% of the change on abdominal pain was resulted from the variables of pain and general health. The pain level subdimension of the Quality of Life Scale had a negative (0.003 times) significant effect on reflux ($p < 0.05$). 1.4% of the change in the reflux score was resulted from the pain variable. The regression model created as a result of the variance analysis of the diarrhea of the variables of physical functioning and general health ($F = 1.086$; $p > 0.005$) was not statistically significant (Table 3).

Table 1. Distribution of Socio-Demographic Characteristics of Patients (n=500)

Properties	Number	Percent
Gender		
Woman	269	53.8
Male	231	46.2
Education		
Illiterate	103	20.2
Literate	101	20.6
Primary school graduate	128	25.6
Secondary School Graduate	60	12.0
High School Graduate	67	13.4
High school graduate and above	41	8.2
Income Status		
Less than revenue expense	157	31.4
Income equivalent to expense	340	68.0
Revenue more than expense	3	0.6
Smoking Status		
Yes	124	24.8
No	376	75.2
Alcohol Use Status		
Yes	14	2.8
No	486	97.2
Length of Hospitalization		
4-7 days	449	89.8
8-14 days	42	8.4
More than 14 days	9	1.8
Variable	Mean \pmSD	Min -Max
Age (years)	60.48 \pm 15.14	18-90
BKİ (Kg/m²)	27.60 \pm 4.59	16.53-47.66

Table 2: Relationships Between Patients' Quality of Life Scale Sub-Dimensions Score

Gastrointestinal Symptom Sub-Dimensions	Quality of Life Scale Sub-Dimensions						
		Physical Function	Role-Physical	Role-Emotional	Vitality	Mental Health	Social Function
Abdominal Pain	r^a	-0.052	-0.058	-0.058	-0.013	-0.012	-0.019
	p	0.244	0.194	0.194	0.774	0.795	0.665
Reflux	r^a	-0.015	-0.019	0.022	0.016	0.023	-0.002
	p	0.744	0.669	0.630	0.721	0.615	0.965
Diarrhea	r^a	-0.116	-0.046	-0.086	-0.058	-0.014	-0.037
	p	0.010*	0.301	0.055	0.195	0.754	0.407
Indigestion	r^a	0.011	0.019	0.031	0.076	-0.009	0.040
	p	0.801	0.677	0.496	0.091	0.832	0.374
Constipation	r^a	-0.029	-0.022	-0.010	-0.011	0.023	-0.015
	p	0.511	0.621	0.828	0.811	0.606	0.744

Average Gastrointestinal Symptom Rating Scale Sub-Dimensions Score Average r^a : Pearson correlation analysis was applied.

Table 3. The Effect of Some Gastrointestinal System Symptoms on Quality of Life Scale Sub-Dimension Scores of Patients

	Variable	B	Standard Error	Beta	t	p
Abdominal Pain	Constant	3.403	0.211		16.146	0.000
	Pain	-0.007	0.003	-0.122	-2.652	0.008
	General Health Perception	-0.006	0.004	-0.069	-1.484	0.138
		R=0.156, R ² =0.024, F _(2,497) =6.218, p=0.002*				
Reflux	Constant	3.209	0.200		16.084	0.000
	Pain	-0.009	0.003	-0.118	-2.657	0.008
		R=0.118, R ² =0.014, F _(1,498) =7.062, p=0.008*				
Diarrhea	Constant	1.834	0.167		10.961	0.000
	Physical Functions	0.002	0.002	0.061	1.085	0.278
	General Health	-0.006	0.004	-0.082	-1.452	0.147
		R=0.066, R ² =0.064, F _(2,497) =1.086, p=0.338				

-Linear regression analysis was applied.

Discussion

Although gastrointestinal symptoms are common diseases, their etiologies are not known completely (Turan, Asti, and Kaya 2017a). However, factors such as weakness in immune system, inflammatory response, stress, among many others, play a part in arising gastrointestinal symptoms (Caruso et. al, 2004). Constipation, abdominal pain, reflux, indigestion, nausea, and vomiting are among the changes occur in gastrointestinal system (Siyah et. al, 2020).

While some patients visiting the hospital with abdominal pain can have life-threatening diseases such as mesenteric ischemia, ileus, toxic megacolon, and rupture of aortic aneurysm, others can have gas pains, gastroenteritis, dysmenorrhea, and dyspepsia. Abdominal pain is one of the somatic gastrointestinal symptoms that occur in the general population (Walter et. al, 2013). It is clear that abdominal pain is the most common reason for the patients visiting the hospital (n=330, %15.7) (Bedel and Tomruk, 2018).

In our study, it was found that the patients hospitalized in internal services scored an average of 2.72 in the abdominal pain subdimension of the gastrointestinal symptom rating scale. Although there are no studies about the relationship between abdominal pain, intestinal habit and health perception, general health perception changes depending on the patient, and may not reflect the other accompanying symptom types of the general population (Lieb et. al, 2007). In our study, 2,4% of the change in the abdominal pain score was resulted from pain and general health. In a study, a relationship was found between the anxiety and depression levels and abdominal pain, and it was seen that as abdominal pain increased general health perception decreased and pain burden increased (Walter et. al, 2013).

In a study comparing abdominal pain and general pain, it was reported that the patients who had abdominal pain had the prevalence of poor functioning and depression when age, education, and marital status was examined (Townsend et. al, 2005). In our study, it was found that the general health perception of the patients with abdominal pain decreased, their pain became severe, and the quality of life

decreased considerably. The findings are similar to those in the literature.

When general population is analyzed, reflux is quite common and has an important effect on the daily activities of individuals (Wiklund, 2004). Since reflux interrupts sleep due to water brash or cough, fatigue and decrease in the quality of life can occur accordingly (S.-W. Lee and Chang, 2021).

In a study conducted in Sweden, it was reported that even if patients experienced very mild reflux, it caused a considerable decrease in the quality of life (Wiklund et. al, 2006). In another study, it was found that reflux led to a low quality of life, and the patients' daily life activities were seriously limited due to the severity of the pain (Artemieva et. al, 2021). In our study, it was seen that 1,4% of the change on the reflux score was due to the pain variable.

The results of the present study further indicated that the patients with reflux problem experienced more pain, which is the subdimension of the quality of life, and the results corroborated the previous studies.

Limitations: The individuals hospitalized in the internal services of the City Hospital of a city and suitable for the inclusion criteria were included in the sample. Therefore, the results obtained from the study can be generalized for the individuals hospitalized in the internal services of the City Hospital. Since only the patients hospitalized at least for four days for the observation of the gastrointestinal symptoms were included in the study, a great number of subjects cannot be included. While gastrointestinal system, which is a complex structure, is being examined, it should be remembered that patients' intestinal and dietical habits vary on the basis of day and duration as well as the severity of the underlying disease. This situation is thought to be among the uncontrollable factors of the study.

Conclusion: Gastrointestinal problems experienced by patients reduce quality of life. This study will contribute to the literature in order to improve the quality of life and gastrointestinal system states of the patients by not only determining the levels of the gastrointestinal symptom levels of the patients but also revealing the effects of the

gastrointestinal symptoms on the quality of life. When assessing quality of life, gastrointestinal symptoms experienced by patients should be carefully evaluated by nurses. Further studies should be carried out with a wider range of sample group.

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