

Relationship between Stress Perceived and Gastrointestinal Symptoms in Intensive Care Nurses During COVID-19 Pandemic: A Cross-Sectional Study

By Tuğba Menekli^{*}, Runida Doğan[±] & Erman Yıldız[°]

The purpose of this study is to determine the relationship between perceived stress and gastrointestinal (GI) symptoms during the COVID-19 outbreak in the intensive care unit (ICU) nurses. This cross-sectional study was conducted with 170 nurses working in the ICUs of a hospital in eastern Turkey. Descriptive, chi-square and multiple linear regression analyses were used to analyze data. In the last three months, 48.2% of the nurses had complaints such as heartburn, 44.1% abdominal distension, 41.7% diarrhea/constipation. The mean perceived stress level experienced by the nurses was found to be 29.30±5.73. Results from regression analysis included perceived stress score, gender, perceived health status, diet, having been infected with COVID-19 before and risk degree of the ICU in question in terms of COVID-19 revealed a statistically significant associated with scores obtained from GI symptoms. Perceived stress level, health perception status, having been infected with COVID-19 before and the high-risk status of the intensive care unit in question for COVID-19 were predictive factors for the occurrence of gastrointestinal symptoms. These findings may provide a basis for creating a healthy work environment where factors contributing to work-related stress are reduced and coping strategies are developed.

Keywords: gastrointestinal symptoms, intensive care, nurses, stress

Introduction

COVID-19 is an infectious disease that emerged in the city of Wuhan in China in late 2019 and caused a pandemic afterward (Bonilla-Aldana et al. 2020). Although most patients suffering from COVID-19 infection recover easily and without complications, it is reported that 14% of patients require hospitalization and oxygen support, and 5% require hospitalization at an intensive care unit (ICU). Therefore, ICUs are an important step in the fight against the COVID-19 pandemic which is rapidly enveloping the whole world (Bulut and Özyılmaz 2020, Rothan and Byrareddy 2020, Wang et al. 2020, Zhu et al. 2020). During the COVID-19 pandemic; Patients diagnosed with COVID-19 can be treated not only in COVID-19 ICUs, but also in other ICUs. Therefore, healthcare professionals working in all ICUs are at risk (Bulut and Özyılmaz 2020, Wang et al. 2020).

Among healthcare officials, nurses are professionals who communicate and spend time with patients most. Historically speaking, nurses are seen to be in the frontlines in the fight against all epidemics, not only in the fight against the

^{*} Assistant Professor, Department of Internal Medicine Nursing, Faculty of Health, Malatya Turgut Özal University, Turkey.

[±] Assistant Professor, Department of Surgical Nursing, Faculty of Nursing, İnönü University, Turkey.

[°] Assistant Professor, Department of Psychiatric Nursing, Faculty of Nursing, İnönü University, Turkey.

COVID-19 pandemic. In the fight against the pandemic, nurses are at risk while performing treatment and care, and therefore, they experience intense stress. ICU nurses, taking key roles and tasks in the fight against the pandemic, face many difficulties in this process (Choi et al. 2020, Kıraner and Terzi 2020, Kıraner et al. 2020, Wu et al. 2020). Wearing personal protective equipment during long working hours, lack of adequate equipment, fear of getting infected with the illness for themselves and their families, serious increase in workload, prolonged working hours, inability to meet/postpone their basic needs during working hours are some of the problems that ICU nurses are exposed to during this period (Greenberg et al. 2020, Kıraner and Terzi 2020, Kıraner et al. 2020). Moreover, many nurses have been infected with COVID-19 and died in this period (Kıraner and Terzi 2020, Kıraner et al. 2020). These problems are a serious source of stress for ICU nurses. Stress, defined as the reaction of the organism against any change that puts pressure on the organism, appears as a factor that causes especially functional diseases of the gastrointestinal system, triggers these diseases and sometimes makes them chronic (Kim et al. 2017, Lee et al. 2011, Spoorthy et al. 2020, Turan et al. 2017). While experiencing stress, changes also occur in relation to a decrease in upper gastrointestinal system motility and an increase in acid secretion and lower gastrointestinal system motility (Gao et al. 2020, Turan et al. 2017). Gastrointestinal symptoms (GI) have negative effects on daily routines and quality of life, and result in higher rates of utilization of healthcare (Lee et al. 2011, Turan et al. 2017).

When the literature is examined, perceived stress is seen to be accepted as the most significant predictive factor for GI symptoms (Afshar et al. 2015, Lee et al. 2011, Turan et al. 2017). However, it is known that factors such as age, work-related stress and shift working also have an effect on GI symptoms (Eskin et al. 2013, Lee et al. 2011, Turan et al. 2017, Zandifar et al. 2020). Stress-related GI symptoms are common worldwide, and the incidence of GI symptoms varies between 35% and 70%. The most common GI symptoms are upper GI dysmotility symptoms (Çam and Nur 2015, Greenberg et al. 2020, Qin et al. 2014).

In this context, this study was conducted to determine the relationship between the perceived stress and GI symptoms during the COVID-19 outbreak in ICU nurses, who are in the frontlines in the fight against the pandemic. This study is unique in that it is the first study on this particular topic. It is believed that the results of this study will make a significant contribution to the literature.

Research Questions

1. What are the GI symptoms that ICU nurses experience during the COVID-19 pandemic?
2. Is the perceived stress in ICU nurses associated with GI symptoms during the COVID-19 pandemic?
3. What are the factors associated with GI symptoms that occur in ICU nurses during the COVID-19 pandemic?

Materials and Methods

Design

This cross-sectional study was performed in a hospital in eastern Turkey, providing health services. Reporting rigour was demonstrated using the Strengthening the Reporting of Observational Studies in Epidemiology (STROBE) checklist.

Population and Sample

While the population of the study was composed of all nurses working at the ICUs of the Malatya Research and Training Hospital, the sample of the study consisted of 200 nurses who agreed to participate in the study and met the inclusion criteria. No sampling method was used. The data collection instruments were applied to all nurses, and 85% (n: 170) of the population participated in the study. The data of the study were collected by the researchers between October 2020 and January 2021 by the face-to-face interview method. There wasn't any lockdown for nurses that could create a hassle to travel to the hospitals throughout the study.

Inclusion Criteria

All ICU Nurses

- No history of GIS disease (such as gastritis, ulcer, reflux, ulcerative colitis, Crohn's disease, irritable bowel syndrome and gastrointestinal cancers).
- Working on the day and hours of the study.
- Did not diagnosed with any psychological disorders or chronic diseases.
- Not on annual leave or on sick leave were included in the study.

Data Collection Tools

The data of the study were collected using a Personal Information Form, the Perceived Stress Scale (PSS) and the Gastrointestinal Symptoms Questionnaire.

Personal Information Form

In the form created by the researchers by reviewing the literature, the sociodemographic characteristics of the participants (age, gender, marital status, having or not having children, perceived health status, having been infected with COVID-19 before or not, diet) and information on their intensive care experience (ICU they worked for, duration of ICU experience, hours worked on a shift, number of patients cared for on a shift, risk degree of the ICU in question in terms of COVID-19, status of caring for individual diagnosed with COVID-19) were questioned, and the form consisted of 13 questions (Çam and Nur 2015, Lee et al., 2011, Zandifar et al. 2020).

Perceived Stress Scale (PSS)

This scale was developed by Cohen et al. (1983) to measure how stressful some situations in the last month of a person's life are perceived (Cohen et al. 1983). Feelings and thoughts in the last month are questioned by the scale. PSS has three forms consisting of 14, 10 and 4 items each. In this study, the 10-item PSS was used. Each item in the scale is evaluated with a 5-point Likert-type scoring ranging from "Never (0)" to "Very often (4)". PSS scores are obtained by reversing four positive items and then summing up all scale items. Possible PSS-10 scores are between 0 and 40. Higher scores indicate higher levels of perception of stress. In the adaptation of the scale into Turkish carried out by Eskin et al. (2013), the Cronbach's Alpha internal consistency coefficient of the scale was calculated as 0.84. The Cronbach's Alpha internal consistency coefficient in this study was determined to be 0.86.

Gastrointestinal Symptoms Questionnaire (GSQ)

GSQ consists of 16 items regarding the frequency of GI symptoms that may be disturbing in the last three months. The questionnaire is in the form of a 5-point Likert-type scale, and it is scored according to the frequency of symptoms ["Never (0)" – "Very often (4)"]. The symptoms consist of five categories as esophageal symptoms (heartburn and/or dysphagia), upper gastrointestinal dysmotility symptoms (at least one of the following symptoms: early feeling of satiety, postprandial bloating, abdominal distention, nausea or vomiting), intestinal symptoms (at least one of the following symptoms: diarrhea/constipation, more than 3 occasions of defecation per day, profuse or watery defecation, feeling of urgent need to defecate, fewer than 3 occasions of defecation per week, hard or lumpy defecation or feeling of stuffiness), diarrhea (more than 3 occasions of defecation per day, profuse or watery defecation or feeling an urgent need to defecate) and constipation (at least one of the following symptoms: fewer than 3 occasions of defecation per week, hard or lumpy defecation, feeling of anal obstruction) It is stated that the Cronbach Alpha internal consistency coefficient of the questionnaire is 0.75 (Drossman et al. 1993). The Cronbach Alpha internal consistency coefficient in this study was found to be 0.76.

Data Analysis

The data were analyzed using the SPSS 25.0 package program. Conformity of measurable data to normal distribution was tested by using Shapiro-Wilk test. The data were expressed as frequency and percentage for the descriptive analyses. Comparison of the categorical variables between groups with and without GI symptoms was performed using Chi-squared test. The perceived stress quartiles of those with and without GI symptoms were analyzed using Chi-squares test for comparison of the categorical variables between groups. Pearson correlation analysis was used to measure the relationships between GI symptoms and perceived stress. Multiple linear regression analysis was performed to determine

predictors of GI symptoms. Linear regression analysis was applied on the variables found to be significant in the binary analyses. The results were considered statistically significant when $p < 0.05$.

Ethical Approval

In order to carry out the study, ethics committee approval was obtained from the İnönü University Non-Invasive Studies Ethics Committee (2020-08/15), and institutional permission was taken from the hospital where the study was carried out. Verbal consent was received from the individuals participating in the study, and the individuals were informed that their personal information would not be shared with others, they were free to participate in the study, and they could leave the study at any time.

Scientific Basis and Validity

In the literature, it is reported that infectious diseases are some of the important sources of stress faced by healthcare professionals (Greenberg et al. 2020, Kiraner and Terzi 2020, Kiraner et al. 2020). It is stated that there is a relationship between perceived stress and GIS symptoms. High perceived stress levels increase the incidence of GI symptoms (Babaoğlu and Özdenk 2017, Çam and Nur 2015).

Results

Descriptive Characteristics

Table 1. *Distribution of the Nurses' Sociodemographic Characteristics and Intensive Care Experience (N=170)*

Sociodemographic Characteristics	n (%)	Intensive Care Experience	n (%)
Age		Intensive care unit they worked at	
20-25	50 (29.4)	Reanimation ICU	40 (23.5)
26-31	100 (58.8)	Cardiology ICU	32 (18.8)
32-37	20 (11.8)	Internal Medicine ICU	19 (11.2)
Gender		Cardiovascular Surgery ICU	25 (14.7)
Male	60 (35.3)	COVID-19 ICU	54 (31.8)
Female	110 (64.7)	Duration of intensive care unit experience	
Marital status		1-5 years	47 (27.7)
Married	75 (44.2)	6-10 years	98 (57.6)
Single	95 (55.8)	11-15 years	25 (14.7)
Having children		Hours worked on a shift	
Yes	50 (29.4)	8 hours	102 (60.0)
No	120 (70.6)	24 hours	68 (40.0)
Perceived health status		Number of patients cared for on a shift	
Good	50 (29.4)	1-5 individuals	98 (57.6)
Moderate	95 (55.8)	5-9 individuals	72 (42.4)

Bad	25 (14.8)	Risk degree of the intensive care unit in question in terms of COVID-19	
Infected with COVID-19 before		High risk	60 (35.3)
Yes	70 (41.2)	Moderately risky	78 (45.9)
No	100 (58.8)	Low risk	32 (18.8)
Diet		Status of caring for COVID-19 patients	
Adequate-Balanced Diet	73 (42.9)	Yes	78 (45.9)
Fast food diet	97 (57.1)	No	92 (54.1)
Total	170 (100.0)	Total	170 (100.0)

It was found that 58.8% of the nurses were at the ages of 26-31, 64.7% were female, 55.8% were single, 70.6% did not have any children, 55.8% stated their perceived health status as moderate, 58.8% had not been infected with COVID-19 before, and 57.1% adopted a fast-food diet. It was also found that 31.8% of the nurses worked at COVID-19 ICUs, 57.6% had 6-10 years of working experience, 60.0% had 8 hours of work on a shift, 57.6% cared for 1-5 patients on a shift, 45.9% stated that the ICU where they were working was moderately risky in terms of COVID-19, and 54.1% had provided care to individual diagnosed with COVID-19. The mean perceived stress level of the nurses was found to be 29.30 ± 5.73 (Table 1).

Distribution of Gastrointestinal Symptoms

Table 2. *Distribution of Gastrointestinal Symptoms (N=170)*

Gastrointestinal Symptoms	Never n (%)	Rarely – Sometimes n (%)	Often – Very Often n (%)
Abdominal Pain	27 (15.9)	100 (58.8)	43 (25.3)
Esophageal Symptoms			
Dysphagia	49 (28.8)	77 (45.3)	44 (25.9)
Heartburn	37 (21.8)	51 (30.0)	82 (48.2)
Upper GI Dysmotility Symptoms			
Early Feeling of Satiety	69 (40.6)	65 (38.2)	36 (21.2)
Postprandial Bloating	35 (20.6)	78 (45.9)	57 (33.5)
Abdominal Distention	30 (17.7)	65 (38.2)	75 (44.1)
Nausea	43 (25.3)	98 (57.6)	29 (17.1)
Vomiting	61 (35.9)	94 (55.3)	15 (8.8)
Intestinal Symptoms			
Diarrhea / Constipation	19 (11.2)	80 (47.1)	71 (41.7)
Number of Daily Defecations >3	95 (55.9)	50 (29.4)	25 (14.7)
Profuse or Watery Defecation	71 (41.8)	79 (46.5)	20 (11.7)
Feeling of Urgent Need to Defecate	66 (38.8)	81 (47.6)	23 (13.6)
Number of Weekly Defecations <3	74 (43.5)	53 (31.2)	43 (25.3)

Hard or Lumpy Defecation	45 (26.5)	86 (50.6)	39 (22.9)
Feeling of Anal Obstruction	99 (58.2)	60 (35.3)	11 (6.5)
Fecal Incontinence	102 (60.0)	59 (34.7)	9 (5.3)

It was found that, in the last three months, 48.2% of the nurses had heartburn, 41.7% had diarrhea/constipation, 44.1% had abdominal distention, 33.5% had postprandial bloating, 25.9% had dysphagia, 25.3% had abdominal pain and fewer than 3 weekly defecations, 22.9% had hard or lumpy defecation, 21.2% had early feeling of satiety, 17.1% had nausea, 14.7% more than 3 defecations per day, 13.6% had a feeling of urgent need to defecate, 11.7% had profuse or watery defecation, 8.8% had vomiting, 6.5% had feeling of anal obstruction, and 5.3% had fecal incontinence problems often or very often (Table 2).

The Occurrence of Gastrointestinal Symptoms

Table 3. *The Occurrence of Gastrointestinal Symptoms (N=170)*

	Items	No Symptoms n (%)	1-2 Symptoms n (%)	≥3 Symptoms n (%)
GI Symptoms	16	33 (19.4)	95 (55.9)	42 (24.7)
Esophageal Symptoms	2	39 (22.9)	109 (64.1)	22 (13.0)
Upper GI Dysmotility Symptoms	5	57 (33.5)	94 (55.3)	19 (11.2)
Intestinal Symptoms	8	21 (12.4)	104 (61.2)	45 (26.4)
Diarrhea Symptoms	3	58 (34.1)	70 (41.2)	42 (24.7)
Constipation Symptoms	3	35 (20.6)	82 (48.2)	53 (31.2)

*All symptoms counted if reported to occur often or very often.

Among the nurses, 137 (80.6%) reported multiple GI symptoms. Among these nurses, 42 (24.7) nurses reported over three GI symptoms. In particular, 149 (87.6%) nurses reported bowel symptoms, 131 (77.1%) reported esophageal symptoms, and 113 (66.5%) reported upper GI dysmotility symptoms (Table 3).

Comparison of Gastrointestinal Symptoms by Perceived Stress Levels

Table 4. *The Relationship between Gastrointestinal Symptoms and Perceived Stress Levels (n=170)*

	r *	p **
GI Symptoms	0.780	0.021
Esophageal Symptoms	0.756	0.019
Upper GI Dysmotility Symptoms	0.881	0.034
Intestinal Symptoms	0.748	0.015
Diarrhea Symptoms	0.843	0.040
Constipation Symptoms	0.802	0.016

*Pearson correlation test; ** <0.05.

There was statistically significant relationship between GI symptoms and Perceived stress scores obtained from the participants ($p > 0.05$) (Table 4).

Table 5. The Results of the Multiple Regression Model Created with Perceived Stress Level and Some Variables that Affect the Occurrence of GI Symptoms (n=170)

Variables	β	t	p	VIF
Constant	0.914	0.604	0.025	
Stress	0.823	1.236	0.016	1.003
Gender (female)	0.520	0.689	0.019	1.082
Perceived health status (bad)	0.705	1.310	0.037	1.304
Diet (Fast food diet)	0.632	1.020	0.042	0.952
Previous COVID-19 infection status (yes)	0.468	0.735	0.010	0.866
Risk degree of the intensive care unit in question in terms of risk (high)	0.767	0.301	0.023	1.283

R=0.818; R²=0.704; F=29.216; p<0.05.

Multiple linear regression analysis was performed to explain the predictive effect of some descriptive features of individuals participating in the study on GI symptoms. The model was found to be statistically significant in terms of the significance level corresponding to the F value (F=29.216; p<0.05). When the t coefficient and significance levels of the independent variables were examined; perceived stress score (p=0.016), gender (p=0.019), perceived health status (p=0.037), diet (p=0.042), having been infected with COVID-19 before (p=0.010) and risk degree of the ICU in question in terms of COVID-19 (p=0.023) appear to have a statistically significant effect on scores obtained by GI symptoms. It was seen that 62.4% of the change on the scores obtained with GI symptoms was explained by the scores obtained in nurses' these features (R=0.818; R²=0.704) (Table 5).

Discussion

Although there are many studies in the literature examining the effects of perceived stress on GI symptoms (Babaoglu and Özdenk 2017, Çam and Nur 2015, Lee et al. 2011, Özdenk and Kazım 2019), there is no study examining the effects of perceived stress experienced by nurses and some factors on GI symptoms during the COVID-19 pandemic period. Therefore, the findings of the study are discussed here along with the results of other similar studies.

It was seen that the majority of the nurses participating in this study were 26-31 years old, female and single, did not have any children, and approximately half of them stated their perceived health status as moderate and had not been infected with COVID-19 before. In a study examining the perceived stress levels experienced by oncology nurses, it was seen that almost all nurses were male, their mean age was 34.94±9.00, and approximately half of them were married (Onan et al. 2015). The reason why some sociodemographic characteristics of nurses differ from each other in studies is thought to be the fact that mostly young nurses work at ICUs in Turkey.

In our study, it was found that 80.6% of the nurses experienced at least one GI symptom, and 24.7% experienced at least three GI symptoms in the last three months. It was determined that the vast majority of the nurses experienced the

symptoms of heartburn, diarrhea/constipation and abdominal distension, respectively, often or very often in the last three months. When the literature was examined, studies on this topic carried out mostly on students were found. In these studies, it was found that 70.2% of nursing students, 78.7% of nursing/midwifery students and 65% of students of schools of education experienced at least one GI symptom (Babaoğlu and Özdenk 2017, Çam and Nur 2015, Lee et al. 2011). Previous studies have reported that upper GI dysmotility symptoms are the most common type of GI symptoms (Babaoğlu and Özdenk 2017, Çam and Nur 2015, Lee et al. 2011). The difference in the results of the studies is thought to have been caused by the difficulty in ICU working conditions during the COVID-19 process and different personal characteristics. As a matter of fact, 40% of the nurses are on duty for 24 hours in this study. This condition is thought to affect feeding, toilet habits and increase gastrointestinal symptoms.

According to this study, the perceived stress level was determined to be high. When a nursing study conducted before the COVID-19 pandemic period was examined, it was seen that the perceived stress experienced by nurses was much lower (Onan et al. 2015). When studies carried out during the pandemic period were examined, it was seen in a study conducted with healthcare workers that 81.7% of the participants reported moderate or high levels of perceived stress (Chekole et al. 2020). Likewise, in a study conducted with healthcare workers, the highest stress levels were found to be among nurses (Babore et al. 2020). Again, in a study conducted by Pasay during the pandemic period, it was determined that a moderate level of stress was perceived by the participants (Pasay-An 2020). The COVID-19 pandemic period has caused physical, psychosocial and politico-economic effects on ICU nurses. Nurses firstly had to manage an epidemic whose nursing management they had never experienced before, and they were also exposed to a high risk of contamination from nursing interventions with the highest risk of droplet spread (Benke et al. 2020, Kıraner and Terzi 2020, Kıraner et al. 2020, Pasay-An 2020). The results of this study and other studies conducted during the pandemic period were similar. It is thought that the increase in the perceived stress level experienced by nurses in studies is related to the difficulties that ICU nurses experience during this period.

In this study, it was determined that, as the perceived stress scores by the nurses increased, the incidence of GI symptoms also increased. A positive significant relationship was found in the correlation analysis conducted between perceived stress and GI symptoms. There are many studies in the literature indicating that there is a relationship between GI symptoms and perceived stress (Babaoğlu and Özdenk 2017, Çam and Nur 2015, Lee et al. 2011, Özdenk and Kazım 2019). Stress threatens homeostasis and consequently causes the balance of the GI system to deteriorate (Babaoğlu and Özdenk 2017, Lee et al. 2015, Özdenk and Kazım 2019, Pasay-An 2020). The similarity between this study and other studies in the literature confirmed that stress is a predictive factor for GI symptoms.

In the current study, some variables that may be determinant in predicting the GI symptoms of ICU nurses and their perceived stress were modeled by multiple linear regression Analysis. According to the regression analysis results, the

occurrence of GI symptoms was increased by the higher the average score, previous COVID-19 infection status, the high-risk status of the ICU in question for COVID-19, poor perceived health status, malnutrition and being female, respectively. Similar to this study, other studies have concluded that increased stress quartiles and poor health status were predictors of GI symptoms (Çam and Nur 2015, Lee et al. 2011, Özdenk and Kazım 2019). The perception of health is based on individuals' general evaluations of their own health conditions, and it is a simple but powerful indicator that reflects the multidimensionality of health and enables the individual to evaluate their biological, mental and social state by themselves (Altay et al. 2016). The result of this study supported this information. In the literature, it was reported that permanent damage occurred in many systems in those who underwent COVID-19, and as for the gastrointestinal system, GI symptoms such as diarrhea, vomiting and abdominal pain were observed in a considerable number of patients (Xiang et al. 2020, Xiao et al. 2020). Similarly, in this study, it was found that the nurses who had been infected with COVID-19 before had more GI symptoms. It is thought that the finding here that working at a highly risky ICU in terms of COVID-19 was a determining factor on GI symptoms may have been due to rush working hours, lack of adequate protective equipment, increased daily stress, inability to take care of one's personal health and the risk of disease transmission faced by loved ones (Kıraner and Terzi 2020, Kıraner et al. 2020). It has been reported that GI diseases often occur in individuals who adopt a fast-food diet (Bonham et al. 2016, Nea et al. 2018, Xiang et al. 2020). It is reported that nurses adopt a fast-food diet, a low-quality diet or irregular eating habits due to reasons such as prolonged standing, shift working, excessive workload, time pressure, difficult or complex tasks, insomnia and insufficient rest breaks on shifts depending on the intensity of service (Bonham et al. 2016, Nea et al. 2018). The result that GI symptoms were seen more frequently in the nurses who adopted a fast food diet, which was also concluded in this study, confirmed this information (Cho et al. 2013, Nea et al. 2018).

Limitations

The fact that the sample consisted of ICU nurses working at only one hospital was a limitation of the study. The result of the study may not be generalized to all ICU nurses. In addition, the cross-sectional design of the study did not allow the examination of causality and it was not possible to analyze the long-term evolution of specific changes. A longitudinal study can solve this problem. Other factors that could contribute to stress of the nurses were not evaluated in the study. There weren't any information regarding psychological, behavioral, cognitive, reactions occurring before, during, or after pandemic. There weren't any other psychological assessment for the nurses except for Perceived Stress Scale.

Conclusion

It was found that the incidence of GI symptoms and the incidence of perceived stress were high in the nurses who participated in this study. Perceived stress level, perceived health status, previous COVID-19 infection status and working at a highly risky ICU in terms of COVID-19 were found to be significant predictive variables in the occurrence of GI symptoms.

Implications for Nursing Practice

In line with these results, it is recommended to evaluate nurses in terms of GI symptoms, provide the necessary support for ICU nurses in stress management and coping strategies to reduce perceived stress, improve their working conditions and conduct studies in larger nurse groups. These findings may also provide a basis for creating a healthy work environment where factors contributing to work-related stress are reduced and coping strategies are developed. Improvement in the environment can be initiated by the nurse administrators by establishing policies and procedures. For ICU nurses, activities such as professional mediation and social support as well as increasing peer support systems at workplaces can be inexpensive measures to reduce perceived stress and associated GI symptoms (Yıldız 2021). In this context, consultation and liaison psychiatric nurses can develop a plan to increase nurse awareness on strategies for stress reduction and coping behaviors, as they have a deep-rooted knowledge of the nature of psychiatric dynamics (Alharbi and Alshehry 2019, Yıldız 2021).

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