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Araştırma Makalesi / Research Article

Palyatif Bakım Hastalarında Abdominal Masajın Konstipasyonu Yönetmeye Etkisi: Randomize Kontrollü Çalışma

The Effect of Abdominal Massage on Constipation Management in Palliative Care Patients: A Randomized Controlled Trial

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ÖZET

Amaç: Araştırmanın amacı, abdominal masajın palyatif hastalarda konstipasyonu yönetmeye etkisini incelemektir.

Yöntem: Bu çalışma tek merkezli, randomize kontrollü deneysel tasarımdadır. Araştırmaya 45 müdahale grubu ve 45 kontrol grubu olmak üzere toplam 90 palyatif bakım hastaları dahil edildi. Bilgi formu, Bristol Gaita Ölçeği, Gastrointestinal Semptom Değerlendirme Ölçeği ve Konstipasyon Değerlendirme Ölçeği kullanıldı. Veriler SPSS25 programında Ki-kare testi, Fisher's Exact testi, McNemar testi, Paired sample t testi ve Independent sample t testi ile analiz edildi. Çalışma yöntemleri ve sonuçları CONSORT raporlama sistemine uygun olarak raporlandı.

Bulgular: Müdahale grubundaki hastaların gastrointestinal semptom derecelendirme ölçeği puanları arasında istatistiksel olarak anlamlı farklılık bulundu ($p<0.001$). Kontrol grubunun sonuçları arasında istatistiksel olarak fark görülmedi ($p>0.05$). Müdahale grubundaki hastaların kabızlık değerlendirme puanlarının arasın da anlamlı fark saptanırken ($p<0.001$), kontrol grubunda anlamlı fark belirlenmedi ($p>0.05$).

Sonuç ve Öneriler: Palyatif hastalarda abdominal masaj ile konstipasyon etkili bir şekilde yönetilebilmektedir. Bu nedenle, palyatif kliniklerde verilen bakımda konstipayson riski ve öyküsü olan hastalara hemşireler tarafından abdominal masaj uygulanabilir. Ayrıca hastalara ve yakınlarına karın masajını da içeren eğitim ve bakım desteği verilmesi önerilmektedir.

Anahtar kelimeler: Abdominal masaj, Hemşirelik Bakımı, Konstipasyon, Palyatif bakım

ABSTRACT

Objective: To examine the impact of abdominal massage on individuals receiving palliative care in the management of constipation.

Methods: This study is a single-centre, randomised controlled trial. A total of 90 palliative patients participated, with 45 in the experimental group and 45 in the control group. The following instruments were used: the Information Form, Bristol Stool Scale, Gastrointestinal Symptom Rating Scale, and Constipation Assessment Scale. Data were analysed using SPSS version 25, and statistical tests including the Chi-square test, Fisher's Exact test, McNemar test, paired sample t-test, and independent sample t-test were applied. The study methods and results were reported in accordance with the CONSORT Statement.

Results: The gastrointestinal symptom ratings of patients in the experimental group showed a significant difference before and after the intervention ($p<0.001$). In contrast, the control group's results did not change over the study period ($p>0.05$). Constipation evaluation ratings in the experimental group also differed significantly ($p<0.001$), whereas no significant changes were observed in the control group's ratings ($p>0.05$).

Conclusions: This study demonstrates that abdominal massage can effectively manage constipation in palliative patients. Therefore, nurses may consider recommending abdominal massage for patients at risk of or with a history of constipation in palliative care settings. Additionally, it is recommended that patients and their families receive education and support that includes abdominal massage as part of their care.

Keywords: Abdominal massage, Constipation, Nursing care, Palliative care

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INTRODUCTION

The term "constipation" refers to infrequent or difficult bowel movements and difficulty passing gas. It is associated with several symptoms, including bloating, abdominal pain, anorectal obstruction, hard stools, and straining (Jani & Marsicano, 2018). Constipation can be caused by various factors, including aging, being female, living in low-income areas, having low levels of education, lack of physical activity, certain medications, high stress, and depression (Bharucha & Wald, 2019).

Constipation is a condition that many individuals attempt to manage independently, but 22% regularly report it to primary care physicians, leading to costly diagnostic tests and treatments. In addition to negatively impacting the individual's quality of life, this condition imposes a significant economic burden, including both direct healthcare costs and indirect costs (Bharucha & Lacy, 2020; Bharucha & Wald, 2019).

Epidemiological studies indicate that the prevalence of constipation varies between 14% and 30% in the population (Ueki & Nakashima, 2019). Studies conducted in our country indicate that the incidence of constipation ranges from 22% to 40%, with a prevalence of 79% among hospitalized patients (Durmuş İskender & Çalışkan, 2020). These results highlight the prevalence of constipation. The literature indicates that over one million patients in the USA are hospitalized annually due to constipation (Bouchoucha et al., 2018). The incidence of colon cancer is also higher in individuals who are frequently constipated (Abraham & Taylor, 2017). Constipation is estimated to cost the medical system over $230 million annually (Bouchoucha et al., 2018). A recent study found that gastrointestinal problems related to constipation account for 33% of all annual medical expenses for individuals with health insurance (Bharucha & Lacy, 2020; Bouchoucha et al., 2018).

Constipation is one of the most common complaints in hospitals, managed through both pharmaceutical and non-pharmacological approaches. Treatment typically includes education, dietary changes, lifestyle modifications, laxatives, suppositories, bulking agents, and other therapeutic options (Özdemir Dağ & Akman Yılmaz, 2023; Durmuş İskender & Çalışkan, 2020). The cost of laxatives and the potential risks of improper use, including electrolyte loss, fluid imbalance, and acid-base disturbances, underscore the importance of utilizing non-pharmacological approaches. While some non-pharmacological interventions are already part of nursing practice, others require specialized training. Constipation is a common symptom in hospitals that nurses should be familiar with and equipped to manage without relying on pharmaceuticals (Durmuş İskender & Çalışkan, 2020).

The Nursing Interventions Classification (NIC) includes abdominal massage as a therapeutic intervention. It involves applying pressure and friction to specific areas of the body to relieve pain, promote relaxation, reduce nausea, and prevent constipation. When performed correctly, abdominal massage is used in the management of constipation due to its ability to enhance gastrointestinal motility, increase digestive fluids, and stimulate the sacral nerve, which regulates defecation (Ren et al., 2012).

Abdominal massage has traditionally been used to treat constipation. It is often preferred over other techniques due to its lack of negative side effects. Evidence supports the effectiveness of abdominal massage in managing and preventing constipation (Drouin et al., 2020). Expert abdominal massage directly stimulates the digestive system by increasing intra-abdominal pressure and enhancing intestinal activity. The massage activates rectal muscle contractions, which aid in rectal loading and peristalsis, by stimulating the somato-autonomic reflex and bowel sensation (McClurg et al., 2018). Abdominal massage has been shown to relieve constipation in the elderly, individuals with multiple sclerosis (MS), those with spinal cord injuries, and people with severe disabilities (Kosasih et al., 2019; McClurg et al., 2018).

Constipation is one of the most common medical issues faced by individuals receiving palliative care (Skjoedt et al., 2021). Despite preventive measures, constipation remains a significant concern for these patients. A

review of international literature reveals that the optimal management of constipation in palliative care patients is still unclear (Alexander et al., 2016; Skjoedt et al., 2021). If left untreated, constipation can lead to abdominal pain, nausea, vomiting, psychological disturbances, intestinal obstruction, and perforation. Pharmacological treatments are primarily used to manage constipation in this patient population. However, while bowel movements may be induced by these treatments, they can cause side effects such as abdominal bloating, increased gas, and distension in the short term, as well as hepatotoxicity and metabolic disorders with long-term use (Bouchoucha et al., 2018; Lämås et al., 2009). The causes of constipation in palliative care patients include opioid use, dietary changes, lack of physical activity, medications, mechanical obstruction, neurological disorders, endocrine disorders, and metabolic disorders. However, there are no randomized controlled studies in the literature specifically addressing the management of constipation in palliative care patients, despite the constant risk of constipation in this population. Abdominal massage is an effective non-invasive treatment for constipation that causes no discomfort or negative side effects (Lämås et al., 2009). Health policies in our country and across Europe emphasize the importance of palliative care and prioritize non-pharmacological treatments on a daily basis. Given these factors, it is clear that there is a need for experimental studies focusing on palliative care patients who consistently face the problem of constipation. Therefore, the aim of this research was to investigate how abdominal massage can assist patients receiving palliative care who are experiencing constipation.

In this context, the following hypotheses were tested

H0: There is no difference in gastrointestinal functions in palliative care patients with abdominal massage compared to those without abdominal massage

H1: Gastrointestinal functions are normal in palliative care patients who receive abdominal massage compared to those who do not receive massage

H1: Palliative care patients who receive abdominal massage have better constipation management than those who do not receive abdominal massage.

METHODS

Study Design, Participants and Setting

The study was conducted in 2021–2022 with palliative care patients receiving treatment at the Palliative Care Service of a state hospital in Turkey, using a single-center, parallel-group randomized controlled experimental design. A total of 90 patients were included in the sample, with a calculated effect size of 0.6, a 0.05 type 1 error rate, and 80% power, as determined by a similar study in the literature, using the G Power software (Lämås et al., 2009). Patients were randomly assigned to either the experimental group (n = 45) or the control group (n = 45) through block randomization (1:1), using the randomization tool (www.randomizer.org) by the researcher. Inclusion criteria included being a volunteer, over 18 years of age, without a history of gastrointestinal cancer, abdominal surgery, or abdominal hernia, not using medication for constipation, and expected to receive treatment in the clinic for at least 7 days. During the study, 5 patients were transferred to the intensive care unit, 3 patients withdrew, and 7 were excluded due to the use of medication for constipation. The study was completed with 45 participants in the intervention group and 45 in the control group (Figure 1).

Data Collection Tools: A sociodemographic information form, the Bristol Stool Consistency Scale, the Gastrointestinal Symptom Rating Scale, and the Constipation Rating Scale were used.

The Information Form: This form included questions assessing patients' age, gender, weight, activity level, mobility, dietary habits, and defecation patterns.

Gastrointestinal Symptom Rating Scale (GSRS): Turan and Aştı (2011) evaluated the validity and reliability of the Revicki et al. (1998) scale in Turkish for assessing symptoms commonly observed in gastrointestinal system disorders. The 15-item GSRS is a 5-point Likert-type scale with response options ranging from 'no discomfort' to 'very severe discomfort.' Factor analysis identified five sub-dimensions within the GSRS: abdominal pain, reflux, diarrhea, indigestion, and constipation. The GSRS includes questions about the respondent's recent experiences with gastrointestinal symptoms. Higher scores on the GSRS indicate more severe symptoms (Revicki et al., 1998; Turan et al., 2017). The Cronbach's alpha value for all items was 0.82 (Revicki et al., 1998; Turan et al., 2017). In this study, the Cronbach's alpha value for the scale was 0.81.

The Constipation Assessment Scale (CAS): Demir Doğan and Aktuğ (2017) assessed the validity and reliability of the McMillan and Williams (1989) scale in Turkey to measure the presence and severity of constipation. This scale, used by nurses to evaluate patients' constipation levels, consists of eight items scored on a 3-point Likert-type scale. Each item on the scale is scored from 0 to 2, and the total score is calculated by summing the scores of all items. Higher scores indicate greater severity of constipation, with the total score ranging from 0 (no constipation) to 16 (severe constipation). The scale demonstrated an internal consistency coefficient of 0.784 (Aktuğ & Demir Doğan, 2017; McMillan & Williams, 1989). In this study, the Cronbach's alpha value for the scale was determined to be 0.95.

Bristol Stool Scale: The Bristol Stool Scale was developed by a group of gastroenterologists at the University of Bristol in the United Kingdom to assess changes in bowel habits, intestinal pathology, and stool morphology. The scale categorizes stool into seven distinct types. According to the Bristol Stool Scale, Types 1 and 2 indicate constipation, Types 3 and 4 represent normal defecation, and Types 5 to 7 indicate diarrhea. It is recognized that the length of time stool remains in the colon is directly correlated with its form (Lewis & Heaton, 1997).

Data Collection: Data were collected between January 1, 2022, and January 6, 2022. Participants in the intervention group received abdominal massages administered by the researchers twice daily—at 10:00 a.m. and 4:00 p.m.—for 15 minutes, at least 30 minutes after meals, over a 7-day period. The abdominal massage incorporated Effleurage, Petrissage, and Vibration techniques. In the experimental group, medical liquid petroleum jelly was applied to the abdomen during the massage sessions.

Baseline data were collected from all patients on the first day before any interventions. The experimental group received abdominal massages, while the control group received standard care. On the seventh day, following the final massage, both groups were re-evaluated.

Application of abdominal massage:

- Hand hygiene was maintained,
- The patient and their relatives were informed about the procedure,
- The patient's abdominal area was assessed for pain, tenderness, tension, redness, skin integrity issues, and bladder fullness,
- The patient was placed in a supine position, or if necessary due to risk, the head of the bed was elevated to 30–45 degrees,
- The patient's privacy was ensured during abdominal exposure, and a towel was used to gently dry the skin,
- A small amount of liquid petroleum jelly is applied to the hands, massaged to warm them, and evenly distributed,
- Light pressure is applied to the patient's abdomen while gently patting from the upper epigastric area down across the iliac bones, and from both sides of the pelvis toward the groin. This patting technique helps prevent reactive abdominal wall tension that may

occur with initial contact,

- Once the patient's abdominal wall is relaxed,
  - Considering the anatomical area, which extends from the right anterior superior iliac spine to the left anterior superior iliac spine at the level of the costal margin, all movements are performed in a clockwise direction,
  - First, massage is applied to the right upper and lower quadrants, which contain the ascending colon; the left upper quadrant for the transverse colon; and the left upper and lower quadrants for the descending colon. The area at the level of the ribs on the left upper quadrant is also massaged for the transverse colon,
  - After the rubbing movement, kneading (petrissage) is performed with the palm of the hand, following the same sequence,
- The rubbing and kneading movements are applied consecutively for 15 minutes,
- Finally, the process is completed with a patting action after one minute of vibratory movement using only the fingertips,
- The patient is covered and placed in a comfortable position (Turan & Asti, 2016; Uysal et al., 2012)

Data Analysis: Descriptive statistics, including frequency, percentage, mean, and standard deviation, were used to analyze the collected data. The Kolmogorov-Smirnov (K-S) test was conducted to assess the normality of the data distribution, which was found to be normal. The Chi-square test, Fisher's Exact test, McNemar test, paired sample t-test, and independent sample t-test were applied to examine the data.

Ethical Consideration: The data collection process was approved by the Bartın University Social and Human Sciences Ethics Committee (decision dated December 6, 2021, and numbered 17). Written permission was obtained from the Bartın Provincial Health Directorate (decision dated December 22, 2021, and numbered 2100127404). Informed consent was obtained by explaining the purpose of the study, the use of data for scientific purposes, and the voluntary nature of participation. Additionally, a clinical trial approval number (NCT05580679) was obtained from ClinicalTrials.gov.

RESULTS

A total of 90 patients were included in the study, with a mean age of 61.06±15.84 years. Of the patients, 52.2% were female, and 50% were dependent. The mean height of the patients was 168.00±9.25 cm, and the mean weight was 78.22±13.95 kg. Additionally, 48.9% of the patients reported not having daily bowel movements. The mean GSRS score was 43.60±9.20, and the mean CAS score was 13.89±1.42 at the initial measurement. According to the Bristol Stool Scale, 82.2% of the patients were classified as constipated. The groups were homogeneous, and no statistically significant differences were found when comparing the descriptive characteristics of the experimental and control groups (Table 1).

After seven days, the patients in the experimental and control groups were compared based on their gastrointestinal system ratings (Table 2). As a result, it was found that patients in the experimental group who received abdominal massage showed a significant difference in their GSRS scores before and after the intervention ($p<0.001$). In contrast, there was no significant change in the control group's GSRS scores over time ($p>0.05$). After seven days, the GSRS scores of the control group remained unchanged ($p>0.05$), while the mean GSRS scores of the experimental group decreased ($p<0.001$)(Table 2).

The constipation assessment scale (CAS) ratings at the end of seven days for patients in the experimental and control groups were compared in Table 3. In light of this. The CAS scores of the patients in the experimental group who received abdominal massage prior to and seven days following the intervention were found to differ significantly ($p<0.001$). Regarding time, there was no change in the control group's CAS results ($p> 0.05$). After seven days, the mean scores of the patients in the experimental group decreased ($p<0.05$), but the

Table 1. Comparison of descriptive characteristics of patients in the experimental and control groups

Variables		**Experimental group (n=45)**	**Control group (n=45)**	**Total**	**Test statistics**
		Mean ±Sd	**Mean± Sd**	**Mean± Sd**	
Age		62.18±17.38	59.93±14.23	61.06±15.84	t=-0.670 p=0.061
Height (cm)		167.96±9.19	168.04±9.42	168.00±9.25	t=-0.045 p=0.655
Weight (kg)		76.67±13.23	79.78±14.62	78.22±13.95	t=-1.058 p=0.673
GSRS		42.09±8.86	45.11±9.38	43.60±9.20	t=-1.571 p=0.723
CAS		13.73±1.49	14.04±1.34	13.89±1.42	t=-1.036 p=0.342
Variables		**n (%)**	**n (%)**	**n (%)**	**Test istatistiği**
Gender	Female	24 (53.3)	23 (51.1)	47 (52.2)	**χ^2=0.045
	Male	21(46.7)	22 (48.9)	43 (47.8)	p=0.833
Education	Illiterate	8(17.8)	8(17.8)	16 (17.8)	***χ^2=2.833
	Literate	10 (22.2)	2 (4.4)	12 (13.3)	p=0.092
	Primary school	8 (17.8)	7 (15.6)	15 (16.7)	
	Secondary school	7(15.6)	8 (17.8)	15 (16.7)	
	Highschool	7(15.6)	13(28.9)	20 (22.2)	
	Bachelor	5 (11.1)	7(15.6)	12(13.3)	
Proffession	Unemployed	4 (8.9)	5 (11.1)	9 (10.0)	***χ^2=3.018
	Housewife	14(31.1)	10(22.2)	24 (26.7)	p=0.807
	Officer	5 (11.1)	5 (11.1)	10 (11.1)	
	Worker	3 (6.7)	2 (4.4)	5 (5.6)	
	Self-employed	6(13.3)	10(22.2)	16 (17.8)	
	Student	1(1.1)	-	1 (1.1)	
	Retired	12(26.7)	13(28.9)	25 (27.8)	
Steroid usage	Yes	25 (55.6)	31(68.9)	56 (62.2)	***χ^2=1.702
	No	20 (44.4)	14(31.1)	34 (37.8)	p=0.192
Mobilisation	Dependent	26 (57.8)	19 (42.2)	45 (50.0)	***χ^2=2.178
	Independent	19 (42.2)	26 (57.8)	45 (50.0)	p=0.140
Daily defecation status	None	25 (55.6)	19 (42.2)	44 (48.9)	***χ^2=1.628
	One a week	18 (40.0)	23 (51.1)	41 (45.6)	p=0.443
	Twice a week	2 (4.4)	3(6.7)	5 (5.6)	
Dietary restrictions	Yes	21 (46.7)	24 (53.3)	45 (50.0)	***χ^2=0.400
	No	24 (53.3)	21 (46.7)	45 (50.0)	p=0.527
Number of meals	3 main meals	21(46.7)	24 (53.3)	45 (50.0)	***χ^2=2.229
	3 main and snacks	17(37.8)	18(40.0)	35 (38.9)	p=0.526
	2 main meals	1(2.2)	1(2.2)	2 (2.2)	
	2 main and snacks	6(13.3)	2(4.4)	8 (8.9)	
Pulp food consumption	Yes	14(31.1)	15(33.3)	29 (32.2)	***χ^2=0.051
	No	31(68.9)	30(66.7)	61 (67.8)	p=0.822
Surgery status	Yes	25(55.6)	26(57.8)	51 (56.7)	***χ^2=0.045
	No	20(44.4)	19(42.2)	39 (43.3)	p=0.832
Bristol stool scale	Constipated	39(52.7)	35(47.3)	74 (82.2)	***χ^2=1.216
	Not Constipated	6(37.5)	10(62.5)	16 (17.8)	p=0.204

*t= Independent sample t test **χ^2= Fisher's Exact test ***χ^2= Chi square test

patients in the control group had an increased in mean scores (p>0.05) (Table 2).

When the Bristol Stool Scale was used to assess patients' constipation status during the study, the experimental group showed a significantly decreased rate of constipation on both the first and seventh days compared to the control group (p<0.05). A within-group analysis of the variation in constipation rates from the first to the seventh day revealed that, on the seventh day, the constipation rate of the experimental group had significantly decreased (p<0.05). In contrast, no significant change in the constipation rate was observed in the control group from the first to the seventh day (p>0.05) (Table 3).

Table 2. Comparison of the Gastrointestinal System Rating Scale (GSRS) scores and Constipation Assessment Scale (CAS) scores of the patients before and after the application(n=90)

Scale	Group	Day	Mean±Sd	Min-Max	t	p
GSRS	**Experimental (n=45)**	Before application (1st day)	42.09±8.86	23-60	**27.718**	**0.001***
		After application (7th day)	18.09±3.23	13-26		
	Control (n=45)	1st day	45.11±9.38	26-66	0.250	0.803
		7th day	45.02±9.57	26-66		
CAS	**Experimental (n=45)**	Before application (1st day)	13.73±1.49	10-16	**29.106**	**0.001***
		After application (7th day)	3.33±2.02	1-14		
	Control (n=45)	1st day	14.04±1.34	10-16	-1.370	0.178
		7th day	14.44±1.25	10-16		

t= Paired sample t testi. *Significance level =p<0.05

Table 3. Comparison of constipation according to Bristol Stool Scale in the experimental and control groups(n=90)

Constipation according to Bristol Stool Scale	Experimental group (n=45)		Control group (n=45)		**χ^2	p
	n	%	n	%		
1st day						
Constipated	39	52.7	35	47.3	1.216	0.204
Not constipated	6	37.5	10	62.5		
7th day						
Constipated	3	8.1	34	91.9	**44.305**	**0.001***
Not constipated	42	79.2	11	20.8		
Test for 1st and 7th day difference	***χ^2=1.113 p=0.001		***χ^2=0.215 p=0.465			

*Significance level =p<0.05 **χ^2= Chi square test ***McNemar test was used.

DISCUSSION

Constipation is a common issue among elderly and nursing patients. The control and intervention groups in the study showed a homogeneous distribution and had similar demographic characteristics in terms of steroid use, constipation, mobility, and intake of fiber-rich foods.

The mean gastrointestinal system evaluation scores on the first and seventh days were compared between the intervention and control groups. It was observed that

the gastrointestinal system evaluation scores in the intervention group, which received abdominal massage, decreased, and symptoms were reduced. Similarly, in Faghi's study, abdominal massage reduced gastrointestinal symptoms and improved stool consistency (Faghihi et al., 2022). In an experimental study, Wang et al. found that abdominal massage significantly reduced patients' stomach residual volume, abdominal circumference, and all associated symptoms, including constipation, diarrhea, vomiting, abdominal distension, and gastric retention (J. Wang et al., 2023). In Wang's study of a patient who developed constipation following a lung transplant, it was found that abdominal massage significantly improved the patient's gastrointestinal dysfunction (L. N. Wang & He. 2022). According to Zhang et al., abdominal massage did not affect the incidence of vomiting, reflux, or diarrhea. However, it was effective in reducing gastric retention, abdominal distension, aspiration, gastric residual volume, and abdominal circumference (Zhang et al., 2023). Uğraş et al. concluded that abdominal massage applied to patients in the brain surgery intensive care unit shortened the recovery time of bowel sounds (Altun Ugras et al., 2022). In a randomized controlled experimental study, Li et al. reported that abdominal massage alleviated irritable bowel syndrome in 40 rats (H. Li et al., 2022). Hilal et al. also found that patients who received abdominal massage showed significant improvements in gastrointestinal functioning, gastric residual volume, and abdominal distension compared to those who did not (Hilal et al., 2023). Considering all these results, current research supports the existing literature

In current study, the intervention group showed a significant decline by the end of the seventh day, despite no difference between the groups on the first day. Similarly, in an experimental study involving elderly patients, it was reported that constipation evaluation scale scores decreased, and constipation problems were reduced in the group that received abdominal massage (K. Li., 2022). In another study conducted by Çevik et al. in a nursing home, it was reported that abdominal massage did not affect straining or stool volume but did reduce constipation symptoms (Çevik et al., 2018). According to a study conducted by Yıldırım et al. on 204 patients using opioids, abdominal massage led to a decrease in all constipation symptoms except for stool frequency (Yıldırım et al., 2019). In a study of sixty adult orthopedic patients, Nouhi et al. found that administering abdominal massages twice a day for fifteen minutes over three days reduced constipation in the intervention group by half compared to the control group (Nouhi et al., 2022). Similar findings were reported in a study by Denghan et al. on critically ill patients on mechanical ventilation. Abdominal massage increased fecal volume and reduced the severity of constipation. Constipation severity was 88.6% prior to the massage, but it decreased to 37.1% following the treatment (Dehghan et al., 2018). Current study yields results consistent with those in the literature regarding the effect of abdominal massage in reducing constipation.

According to the Bristol Stool Scale, the percentage of patients experiencing constipation in our study decreased from 52.7% in the experimental group to 8.1% following the intervention. Similarly, in a study by Patandung et al. on heart failure patients in Indonesia, the constipation score on the Bristol Stool Scale in the abdominal massage experimental group improved from 1 (severe constipation) to 4 (normal defecation) after three days (Patandung et al., 2021). Faghihi et al. conducted a randomized controlled study to assess the effects of oral almond oil ingestion, almond oil abdominal massage, and traditional care. According to the Bristol Stool Scale, 20 out of the 27 patients in the abdominal massage group had constipation before the study. Following the intervention, no patients in this group were constipated (Faghihi et al., 2022). According to Park et al., there was no difference in the Bristol Stool Scale scores for abdominal massage between the experimental and control groups among 84 Korean patients (Park et al., 2023).

Limitations of the study

The data were provided by patients receiving palliative care at a state hospital's palliative care clinic. The study included both patients with and without dietary restrictions due to chronic illnesses, which constitutes a limitation of the study. To make the findings more interpretable, it is recommended to repeat the study with individuals who have the same illness and are able to consume the same food group.

CONCLUSION

Patients receiving palliative care at a state hospital participated in this study. Therefore, it is recommended that future research be conducted with a larger sample size and a diverse range of patient groups. Additionally, it is important for future studies to account for patients' dietary restrictions when collecting data. However, regular abdominal massage is essential for managing gastrointestinal issues in patients. As a result, it is recommended that nurses and other healthcare providers receive training in abdominal massage and practice it regularly.

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Contributions

Study design: ÖU, NE; Data collection and analysis: ÖU, NE, EA, NÜ, İY; Manuscript preparation: ÖU

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