

THE EFFECT OF PSYCHOLOGICAL RESILIENCE ON ADAPTATION TO OSTOMY IN INDIVIDUALS WITH OSTOMY

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Abstract

This research was conducted with a descriptive design to determine the impact of psychological resilience levels on adaptation to ostomy in individuals with ostomies. The sample of the study consisted of 134 patients with ostomy who applied to the General Surgery clinics and polyclinics of a Hospital in Afyon between December 1, 2021, and September 30, 2022. Data were collected using the "Resilience Scale (RS)" and "Ostomy Adjustment Scale (OAS)". Data analysis involved the use of Mann Whitney U Test, Kruskal Wallis H Test, correlation, and simple linear regression analyses. Of the participants, 72.4% had a ostomy due to colorectal cancer, and 60.4% had a colostomy. The scores of the OAS differed according to factors such as ostomy type, treatment status (chemotherapy/radiotherapy), preoperative ostomy information, ostomy site marking, and self-ostomy care ($p<0.05$). There was a positive, strong, and significant relationship between the mean scores of the RS and the OAS. Each unit increase in RS scores was associated with a 0.419 unit increase in OAS scores, and the RS scores explained 91.6% of the variance in the OAS scores ($R^2=0.916$). These findings indicate that the psychological resilience level of individuals with ostomy significantly influences their adaptation to ostomy.

Keywords: Ostomy, Psychological Resilience, Adaptation, Nursing.

OSTOMİLİ BİREYLERDE PSİKOLOJİK SAĞLAMLIĞIN OSTOMİYE UYUM ÜZERİNE ETKİSİ

Öz

Bu araştırma, ostomili bireylerde psikolojik sağlamlık düzeyinin ostomiye uyum üzerine etkisini belirlemek amacıyla, tanımlayıcı tipte yapıldı. Araştırmanın örneklemini 1 Aralık 2021- 30 Eylül 2022 tarihlerinde Afyon'da bir hastanenin Genel Cerrahi klinik ve polikliniklerine başvuran, 134 ostomili hasta oluşturdu. Veriler "Yılmazlık Ölçeği" ve "Ostomi Uyum Ölçeği" ile toplandı. Verilerin değerlendirilmesinde, Mann Whitney U Testi, Kruskal Wallis H Testi, korelasyon ve basit doğrusal regresyon analizleri kullanıldı. Araştırmaya katılan hastaların %72,4'üne kolorektal kanser nedeniyle ostomi açılmıştı ve %60,4'ünün kolostomisi vardı. Hastaların ostomi uyum ölçeği puanları, ostomi tipi, ostomi türü, kemoterapi/radyoterapi gibi tedavi alma, ameliyat öncesi ostomi hakkında bilgi alma, ostomi yeri işaretlemesi yapılması ve ostomi bakımını kendi yapması durumlarına göre farklılık göstermekteydi. ($p<0,05$). Hastaların Yılmazlık Ölçeği puan ortalamaları ile Ostomi Uyum Ölçeği puan ortalamaları arasında pozitif yönlü, güçlü ve anlamlı bir ilişki olduğu, yılmazlık ölçeği puanlarındaki her bir birimlik artışın, ostomi uyum ölçeği puanlarını 0,419 birim arttırmaya etkisi olduğu, bireylerin yılmazlık ölçeği puanının, ostomi uyum ölçeği puanındaki değişimin %91,6'sını açıkladığı ($R^2=0,916$) belirlendi. Bu bulgular doğrultusunda, ostomili bireylerin psikolojik sağlamlık düzeyinin ostomiye uyumunu önemli ölçüde etkilediği bulundu.

Anahtar Kelimeler: Ostomi, Psikolojik Sağlamlık, Uyum, Hemşirelik

1. INTRODUCTION

Patients with ostomy formation experience physical, psychological, and social changes in their lives due to the ostomy opening, and these changes lead to various issues (1,2). After the ostomy is created, individuals may experience involuntary gas and stool discharge, odor, leakage from the stoma, and these physical problems can cause psychosocial issues in patients such as loneliness, depression, anxiety, and decreased social activities (3,4). In a study conducted by Osborne et al. with patients who have had an ostomy for more than five years (n:301), it was determined that 70% of the patients experienced leakage, 82% experienced peristomal skin problems, and due to these reasons, the patients' quality of life was negatively affected (5). In the study by Zewude et al., it was found that involuntary gas discharge, changes in diet and clothing styles reduced the patients' quality of life (6). In the study by Silva et al., it was observed that patients experienced issues like insomnia and sexual function loss after ostomy creation, and these problems negatively impacted their quality of life (7). Martins et al., in a study conducted online in 17 countries (n:5187), identified that 62% of patients avoided physical and social activities due to their ostomies (8). In a study by Haviland et al. (n:857), it was determined that 52% of patients had less interaction with family members compared to before, and 47% had either quit their jobs or changed their occupation (9). In a study by Polat et al., it was determined that patients with ostomies experienced decreased self-esteem, sexual issues, restrictions in social activities, and these problems led to various psychiatric disorders in patients, including depression and anxiety (10). These issues cause difficulties for patients in accepting their new lives with an ostomy and in adapting to ostomy care (11). The potential of patients with ostomy to cope with these challenges depends on several factors (12). The ability of patients to manage these issues and adapt to living with an ostomy is influenced by factors such as an individual's life experience, emotional adaptation capacity, the potential of the current situation to threaten life goals, psychosocial and environmental support, and many other factors (13,14). When reviewing the literature, Akıl and Taylan's study reported that factors influencing ostomy adaptation include social support, patients' optimistic approach to the situation, and their use of emotional coping strategies (15). In a study by Göçmen Baykara et al., it was determined that perceived social support, the duration after surgery, and the planned nature of the surgery affected ostomy adaptation (16). Zhang et al.'s study revealed a positive relationship between quality of life and ostomy adaptation, with education level, peristomal complications, leakage, and patients' self-care closely associated with quality of life (13). As evident from the literature, ostomy adaptation is influenced by various factors. During this process, the level of psychological resilience in ostomized patients is also believed to play a role in facilitating or hindering an individual's ostomy adaptation.

Psychological resilience is defined as an individual's ability to cope with negative and stressful events such as death, loss, trauma, despite experiencing intense negative emotional burden; it represents the flexibility of individuals in the face of challenging circumstances (17). It refers to an individual's capacity to navigate physical discomfort, depression, adverse changes, or difficult situations with minimal harm. Patients with high levels of psychological resilience have a greater potential for recovery, self-renewal, and returning to their previous state (18). Therefore, patients with high levels of psychological resilience are better equipped to recover and return to their previous routines in the face of challenging life experiences. Additionally, their heightened psychological resilience helps them experience less stress during difficult times and facilitates a smoother adaptation to the circumstances they are in (19,20). Upon reviewing the literature, Çakır et al. investigated the relationship between social support and psychological resilience in patients who underwent surgical treatment for colorectal cancer. They found a positive correlation between social support and psychological resilience, highlighting the significant role of social support in enhancing psychological resilience (21). In a study by Mohamed et al., involving patients with permanent colostomies, it was observed that patients with lower levels of psychological resilience also had lower quality of life (22). A study by Dong et al. reported that patients with higher levels of psychological

resilience had higher levels of post-traumatic growth/maturity and better social adjustment (23). Hwang et al. found a negative correlation between depression and psychological resilience in their study involving ostomized patients (24). In a study by Chou et al. with colorectal cancer patients, it was determined that patients' levels of psychological resilience affected their quality of life. The study recommended that healthcare professionals working in oncology clinics and polyclinics should assist patients in improving their psychological resilience to help them navigate the process more smoothly (25). Scardillo et al. reported that patients with permanent ostomies who had high levels of psychological resilience found ostomy adaptation easier (26). In this context, determining the psychological resilience level of patients with ostomy is important for planning and implementing nursing interventions to facilitate their adaptation to a new life with an ostomy. Additionally, while literature reviews reveal studies examining the relationship between psychological resilience, quality of life, and emotional states in patients with ostomy, only one study evaluating its impact on ostomy adaptation was found. Therefore, this study is expected to contribute to the literature by addressing this gap. This study aims to determine the impact of patients' levels of psychological resilience on their adaptation to ostomy. It is believed that the findings will contribute to increasing nurses' awareness when planning care, especially in terms of incorporating patients' psychological resilience levels. Additionally, the results can aid in the planning and implementation of patient education processes, encouraging consideration of patients' psychological resilience levels. Moreover, it is anticipated that this study will provide valuable insights for nurses and researchers, inspiring comprehensive experimental studies aimed at enhancing psychological resilience in patient.

The Purpose of The Study

The purpose of the study is to determine the impact of psychological resilience levels on ostomy adaptation in patients with ostomy.

Research Questions:

- What are the levels of adaptation to ostomy and psychological resilience among patients with ostomies?
- Is there a statistically significant difference in the level of adaptation to ostomy among patients with ostomies based on sociodemographic and clinical variables?
- Is there a relationship between psychological resilience and adaptation to ostomy among patients with ostomies?
- Does the level of psychological resilience among patients with ostomies have an impact on their adaptation to the ostomy?

2. MATERIALS AND METHOD

This study has been conducted in a descriptive and correlational research type.

Study Population and Sample

The research population comprises patients with ostomy admitted to the General Surgery department and attending outpatient clinics of a hospital in Afyon Province in Turkey between December 2021 and September 2022. The sample size of the study was determined using the G-Power program. Referring to a previous study (26), the aim was to reach 134 individuals in the research with a statistical power level of 80% and a significance level of 5%. The targeted sample size has been reached.

Inclusion Criteria:

- Ability to speak and understand Turkish
- Age of 18 years and above

- Having an ostomy for 2–6 months

Exclusion Criteria:

- First-time ostomy creation
- Lack of full person, place, and time orientation
- Presence of a psychiatric disorder and a neurological condition (such as Alzheimer's) affecting cognitive status

Data Collection Instruments

As data collection instruments, the "Patient Identification and Clinical Characteristics Form" was used to obtain sociodemographic and clinical information. The "Resilience Scale" was used to determine patients' levels of psychological resilience, and the "Ostomy Adjustment Scale" was used to assess their adaptation to ostomy.

Patient Identification and Clinical Characteristics Form

The form developed by the researchers contains a total of 15 closed-ended questions focusing on patients' sociodemographic and clinical characteristics, including age, gender, marital status, education level, employment status, ostomy type, duration of ostomy, reason for ostomy creation, and whether they have received chemotherapy or radiotherapy (13,15,27,28).

Resilience Scale (RS)

Developed by Gürkan, this scale aims to measure the psychological resilience levels of patients. The scale consists of a total of 50 items and eight subscales (Strength, Initiative, Optimism, Communication, Foresight, Goal Achievement, Leadership, and Researcher). It is a five-point Likert-type scale (1: Not describing at all- 5: Describing very well). The minimum score that can be obtained from the scale is 50, and the maximum score is 250. Higher scores indicate higher levels of psychological resilience in patients. The Cronbach's Alpha value of the scale is 0.87 (29). In this study, the Cronbach's Alpha value of the scale was found to be 0.99.

Ostomy Adjustment Scale (OAS)

The scale, developed by Simmons and colleagues (30), has been adapted and validated into Turkish by Karadağ et al. It is a five-point Likert-type scale (Strongly Agree, Agree, Undecided, Disagree, Strongly Disagree), consisting of a total of 23 items and four subscales. The subscales of the scale include Acceptance, Anxiety/Worry, Social Adjustment and Anger. An increase in scores obtained from the scale indicates an improvement in patients' adaptation to ostomy. The minimum score that can be obtained from the scale is '0', and the maximum is 92. The original scale has a Cronbach's Alpha value of 0.93 (30). The Cronbach's Alpha value of the adapted Turkish version of the scale is 0.87 (31). In this study, the Cronbach's Alpha value of the scale was found to be 0.98.

Data Collection Process

The data for the research were collected between December 29, 2021, and October 10, 2022, through face-to-face interviews with patients who met the sample criteria and agreed to participate in the study at the General Surgery department and outpatient clinics of Afyon Health Sciences University Hospital. Patients were provided with explanations regarding the purpose of the research and data collection, and written consent was obtained. Data collection instruments were administered to patients in a private room through interviews lasting approximately 15-20 minutes each.

Statistical Analysis

The data were analyzed using IBM SPSS 26 (IBM Corp., Armonk, New York, USA) statistical software package. The normal distribution of numerical variables was evaluated using the Shapiro-Wilk normality test, and it was found that the scale scores were not normally distributed.

According to the Shapiro-Wilk test results, the scale scores are not normally distributed for sociodemographic and clinical variables ($p < 0.05$). In the literature, Skewness/Std Error and Kurtosis/Std Error values are considered acceptable within the range of -2 to +2 (32). However, the results of the current study do not fall within this range. Therefore, the Mann-Whitney U Test was used for comparing two groups, and the Kruskal-Wallis H Test was used for comparing more than two groups. Multiple comparisons were performed using the Bonferroni test. The relationships between numerical variables were evaluated using the Spearman correlation coefficient. The impact of the Resilience Scale score average on the Ostomy Adaptation Scale score average was evaluated using simple linear regression analysis.

Ethical Considerations

For the conduct of the research, permission was obtained from the Ethics Committee of a university with decision number 2021/25 on September 2, 2021. Subsequently, written permission was obtained from the Hospital's Directorate to carry out the research. Written and verbal consent was obtained from the patients included in the research scope. In the informed consent, it is explained to the participants that the purpose of the research is to inquire about their opinions, that no interventions will be applied to them within the scope of the research, and they will only be asked to answer the desired questions. It is also emphasized that there are no right or wrong answers to the questions and they can withdraw from the study at any time if they wish. Permission was obtained from the relevant authors to use the scales.

3. RESULTS

The mean age of the participating patients with ostomy was 59.86 ± 18.17 years. Among the patients, 61.9% were male, 38.8% completed primary education, and 80.6% were married. Furthermore, 62.7% of the patients were not employed (Table 1).

Table 1. Distribution of patients' sociodemographic characteristics (n=134)

	n	%
Age, $\bar{x} \pm SD$ (59.86\pm18.17)		
Under 39 years old	24	17.9
Between 40-59 years old	31	23.1
60 years and older	79	59.0
Gender		
Female	51	38.1
Male	83	61.9
Education status		
Literate	23	17.2
Primary school	52	38.8
High school	29	21.6
University	30	22.4
Marital status		
Married	108	80.6
Single	26	19.4
Employment status		
Yes	50	37.3
No	84	62.7

\bar{x} : Mean; SD: Standard Deviation

The patients' average ostomy duration was 4.04 ± 1.53 months. 72.4% of the patients had an ostomy due to colorectal cancer. 60.4% had a colostomy, 59% had a permanent ostomy, 44.1% were undergoing chemotherapy, 56.7% did not receive information about ostomy before surgery, 57.5% did not have their ostomy site marked before surgery, 72.4% received education about ostomy care. 47% of the patients' ostomy care was performed by their spouses (Table 2).

Table 2. Distribution of clinical characteristics of the patients (n=134)

	$\bar{x} \pm SD$	
	n	%
Ostomy Duration (Months)	4,04±1,53	
The reason of ostomy creation		
Inflammatory Bowel Diseases	35	26.1
Colorectal Cancer	97	72.4
Perforation	2	1.5
Type of ostomy		
Ileostomy	53	39.6
Colostomy	81	60.4
Time of ostomy		
Temporary	55	41.0
Permanent	79	59.0
Treatment status		
Chemotherapy	59	44.1
Radiotherapy	13	9.7
Chemotherapy + Radiotherapy	18	13.4
No Treatment	44	32.8
Preoperative training		
Yes	58	43.3
No	76	56.7
Preoperative ostomy site marking		
Yes	57	42.5
No	77	57.5
Receiving training related to ostomy care		
Yes	97	72.4
No	37	27.6
Making ostomy care		
Himself/Herself	45	33.6
Spouse	63	47.0
Children	20	14.9
Others (Caregiver, relations)	6	4.5

\bar{x} : Mean; SD: Standard Deviation

The mean total score of Ostomy Adaptation Scale (OAS) for the participating patients is 55.17 ± 31.11 , while the mean score for Resilience Scale (RS) is 136.37 ± 67.94 . The comparisons of the mean scores of OAS scale according to patients' sociodemographic and clinical characteristics are presented in Table 3. There is no statistically significant difference in the mean OAS scale scores based on the age variable (K-W=0.190, p=0.90). The OAS scores of females are significantly higher than males (Z=-5.383, p<0.00). Illiterate and primary school graduates have statistically lower OAS scores compared to high school and university graduates (K-W=21.626, p<0.00). When marital status is examined, it is observed that married patients have lower OAS scores than single patients (Z=-2.194, p=0.02). Regarding the employment status of patients, it is determined that the OAS scores of employed patients are statistically significantly higher than those who are unemployed (Z=-8.407, p<0.001). Patients with temporary ostomy were found to have significantly higher mean OAS scores compared to patients with permanent ostomy (Z=-7.170, p<0.00). It was determined that patients who received information about ostomy before surgery (Z=-8.960, p<0.00) and those whose stoma site was marked (Z=-8.335, p<0.00) had significantly higher mean OAS scores compared to patients who did not receive information about ostomy before surgery and whose stoma site was not marked. Patients who received education on ostomy care had significantly higher mean OAS scores compared to those who did not receive education (Z=29.194, p<0.00). Patients who performed their own ostomy

care had significantly higher mean OAS scores compared to those whose ostomy care was done by their spouse or children (K-W=57.12888, $p < 0.00$) (Table 3).

Table 3. Comparison of mean total OAS scores of patients according to sociodemographic and clinical characteristics (n=134)

	OAS		Test (p)	η^2
	$\bar{x} \pm SD$	Median (IQR)		
Gender				
Female	66.88±24.36 ^a	79 (36)	Z=-5.383 $p < 0.00$	0.23
Male	36.12±31.67 ^b	16 (60)		
Education status				
Literate	18.83±19.32 ^c	83 (28)	K-W=21.626 $p < 0.00$	0.53
Primary school	44.62±29.72 ^b	80.5 (14)		
High school	73.13±20.41 ^a	48 (63.5)		
University	74.08±17.23 ^a	12 (6)		
Marital status				
Married	45.31±33.22 ^b	52.5 (69)	Z=-2.194 $p = 0.02$	0.02
Single	57.55±30.26 ^a	74 (58.25)		
Employment status				
Yes	73.40±19.32 ^a	82 (11.75)	Z=-8.407 $p < 0.00$	0.58
No	24.54±21.61 ^b	13 (31.75)		
The reason of ostomy creation				
Inflammatory Bowel Diseases	36.00±8.49	67 (69)	K-W=2.970 $p = 0.22$	0.00
Colorectal Cancer	53.49±32.021	74 (43)		
Perforation	59.91±29.267	79 (32)		
Type of ostomy				
Ileostomy	53.28±32.73	70 (71)	Z=-1.414 $p = 0.15$	0.00
Colostomy	58.06±28.51	74 (45)		
Time of ostomy				
Temporary	72.05±21.63 ^a	82 (16)	Z=-7.170 $p < 0.00$	0.42
Permanent	30.93±26.32 ^b	16 (38)		
Treatment status				
Chemotherapy	58.52±33.72 ^b	73 (61)	K-W=4.227 $p = 0.23$	0.02
Radiotherapy	52.54±27.06 ^a	51 (49)		
Chemotherapy + Radiotherapy	42.83±33.23 ^a	43.5 (72.25)		
No Treatment	87.02±28.99 ^a	79 (72.75)		
Preoperative training				
Yes	76.08±15.89 ^a	83 (11.5)	Z=-8.960 $p < 0.00$	0.59
No	27.78±24.07 ^b	13.5 (36.25)		
Preoperative ostomy site marking				
Yes	74.27±19.40 ^a	83 (12)	Z=-8.335 $p < 0.00$	0.51
No	29.37±24.67 ^b	14 (37.5)		
Receiving training related to ostomy care				
Yes	78.32±14.46 ^a	84 (8)	Z=29.194 $p < 0.00$	0.21
No	46.34±31.26 ^b	47 (66.5)		
Making ostomy care				
Himself/Herself	77.36±14.57 ^b	83 (8.5)	K-W=57.1288 $p < 0.00$	0.47
Spouses	55.13±29.44 ^a	67 (62)		
Children	18.65±16.38 ^a	11.5 (27)		
Others (Caregiver, relations)	11.00±2.53 ^a	11 (4)		

Mann Whitney U Test (Z); Kruskal Wallis H Test (K-W); Effect size (η^2); Interquartile Range (IQR); Summary statistics are given as mean \pm standard deviation. The sections highlighted in bold are statistically significant ($p < 0.05$). $a > b$: Different letters or letter combinations in the same row indicate statistically significant differences ($p < 0.05$).

There is no statistically significant relationship between age and OAS score averages ($\rho=0.06$ $p=0.44$); however, a statistically significant positive moderate-level relationship has been observed between ostomy duration and OAS score averages ($\rho=0.56$; $p<0.00$).

There is a statistically significant positive correlation at a high level between total OAS, OAS acceptance, anxiety/distress, social adaptation, and anger subscale mean scores and RS total mean scores ($p<0.05$) (Table 4).

Table 4. Relationship between OAS total and subscale mean scores and RS total mean scores (n=134)

	OAS	Acceptance	Anxiety/distress	Social Adaptation	Anger
RS	$\rho=0.84$ $p<0.00$	$\rho=0.84$ $p<0.00$	$\rho=0.78$ $p<0.00$	$\rho=0.85$ $p<0.00$	$\rho=0.87$ $p<0.00$

OAS: Ostomy Adaptation Scale; RS: Resilience Scale; ρ : Spearman's correlation coefficient

Regression analysis regarding the effect of patients' RS scores on OAS scores is presented in Table 5. The model for OAS is statistically significant and has satisfied the assumptions of linear regression analysis ($F=1444.091$; $p<0.00$). It has been shown that a one-unit increase in patients' RS scores is associated with a 0.419 unit increase in OAS scores. According to the established model, patients' RS scores account for 91.6% of the variation in OAS scores ($R^2=0.916$). Based on this result, it is determined that patients' RS scores significantly influence OAS scores.

Table 5. The effect of RS score average on OAS score average (n=134)

	B	Se	Z β	t	p	95% Confidence Interval for β	
						Lower limit	Upper limit
Model: Ostomy Adaptation Scale							
Constant	-0.014	1.689		-0.009	0.99	-3.355	3.326
Resilience Scale	0.419	0.011	0.957	37.766	<0.00	0.397	0.441

Model Significance: $F=1444.091$; $p<0.00$; $R^2=0.916$

β : Regression coefficient, Se: Standard error, $z\beta$: Standardized regression coefficient, R^2 : Coefficient of determination. Bold sections indicate statistically significant results ($p<0.05$).

4. DISCUSSION

In this study, our aim was to determine the impact of the level of psychological resilience on adaptation to ostomy among individuals with ostomies. The study found no significant relationship between age and Ostomy Adaptation Level among the participating patients. In a study conducted by Jayarajah and Samarasekera (33), it was determined that younger patients quickly accepted and adapted to the changes caused by ostomy formation. Similarly, a study by Son and Kang (34) found that younger patients were better at coping with the physical and psychological changes associated with ostomy creation. Contrarily, other studies in the literature highlight that older patients tend to experience higher levels of hopelessness, lower coping abilities, and increased prevalence of anxiety and depression compared to younger patients (35). The findings from the current study differ from those of other studies, which can be attributed to variations in participant characteristics, socio-cultural differences, and differing psychosocial support mechanisms.

When comparing the adaptation levels based on gender among the participants in the study, it was found that women's adaptation levels to ostomy were higher than those of men. A study by Duruk et al. also found that women had higher levels of adaptation to ostomy (36). Lima et al. investigated

the impact of sociodemographic and clinical factors on self-perception and self-esteem in intestinal ostomy patients, finding that women had higher self-esteem and were more likely to take on self-care responsibilities compared to men (37). Our study findings are in line with the literature, suggesting that men, due to the patriarchal societal structure, might find it more challenging to express the difficulties they face in their lives, while women may be more comfortable expressing and sharing their emotional states. This tendency among women to cope with stress and adapt might contribute to their higher levels of ostomy adaptation. Additionally, as supported by existing literature, women tend to take on more responsibility for their health and self-care. This can also be supportive of their ability to manage their ostomy care, thereby enhancing adaptation.

In present study, it is observed that patients with a high school education or higher have greater adaptation to ostomy. A study by Akıl and Taylan indicated that as patients' education levels increased, their adaptation to ostomy also increased (15). Zhang et al. found in their study that as patients' education levels increased, their adaptation to ostomy improved (13). Similarly, Sapilewska et al. determined in their study that patients with higher education levels had better well-being and adaptation to ostomy (38). When the literature is examined, it is evident that as education levels increase, patients tend to conduct more research on their health, benefit more from preventive diagnosis and treatments (36). As education levels increase, patients may conduct more research on health-related matters and make more informed decisions. Higher education levels among patients can also aid in understanding and developing self-care skills more quickly. It is believed that patients with lower levels of education regarding ostomy care can benefit from education more actively, and by establishing more effective communication with healthcare professionals, they can better manage the adaptation process.

Present study found that singles had a higher level of adaptation to ostomy compared to married individuals. In a study conducted by Su et al. investigating the determining factors of quality of life in ostomized patients, it was determined that single patients had higher self-efficacy levels (28). In a study by Bunkong et al. investigating the quality of life of permanent colostomized patients, it was determined that single patients had higher quality of life, self-care, and self-efficacy power compared to married individuals (27). Tonks explored body image and sexuality in patients with ostomy and found that single patients were less affected by changes in body image and had less anxiety about sexual life compared to married patients (39). Consistent with the literature, our study findings suggest that married patients experience anxiety about not being accepted by their spouses due to the physiological changes caused by ostomy and report decreased sexual satisfaction. It is believed that this situation negatively affects adaptation to ostomy. On the other hand, single patients may be more independent in managing their self-care. During the adaptation process to ostomy, the individual's ability to manage their own care and self-care skills are crucial. The ability of single patients to perform their own ostomy care and cope with potential issues may contribute to enhancing their adaptation to ostomy.

In this study, it has been determined that non working patients have lower adaptation levels compared to working patients. A study conducted by Karadağ et al. also found that non-working patients have lower adaptation levels to ostomy (40). Eraydın and Sunal reported in their study that patients often quit their jobs or changed their working hours after ostomy surgery (2). In the study by Yaşar and Üstündağ, it was found that working ostomy patients had higher levels of psychological well-being (41). Additionally, a study in the literature, unlike other studies, found that post-ostomy surgery, working patients had better well-being and lower anxiety levels (12). As observed in the literature and in our current study, the lower adaptation levels of non-working patients compared to working individuals is an expected result. This is because an active lifestyle and occupational routine are believed to support adaptation to ostomy. However, it is also believed that a majority of non-working patients tend to isolate themselves socially, and due to high levels of depression and anxiety caused by ostomy, they may decide to quit their jobs.

In the current study, it is observed that as the duration of ostomy increases, patients' levels of adaptation to ostomy also increase. A study by Alenizi et al. determined that adaptation to ostomy occurs proportionally over time for ostomy patients (42). Another study by Duruk et al. identified that as the duration of ostomy increases, patients' feelings of anxiety, concern, and anger decrease (36). When reviewing the literature, it is reported that adaptation to ostomy increases over time. In this context, the literature results are consistent with the findings of the current study. Patients with ostomies may gain more experience in coping with ostomy care and related issues over time. Additionally, after the ostomy is created, patients experience living with the ostomy over time and may gradually accept the changes that come with it. This situation can enhance adaptation to ostomy.

In current study, it was determined that patients with temporary ostomies have higher levels of adaptation to ostomy compared to patients with permanent ostomies. A study by Su et al. found that patients with temporary ostomies have higher levels of self-efficacy and well-being (28). Another study by Song et al. indicated that patients with temporary ostomies have lower levels of depression and anxiety (34). Patients with temporary ostomies might have higher motivation as they view the ostomy as a process that will eventually be reversed. The belief that the physiological, social, and psychological changes resulting from the ostomy will come to an end when the ostomy is reversed could contribute to an increased adaptation to ostomy.

According to our research findings, patients who do not receive treatments such as chemotherapy or radiotherapy have significantly higher levels of adaptation to ostomy compared to those who receive treatment. Similar to our study findings, a study by Santos et al. found that patients receiving treatment participate less in ostomy care and that it negatively affects adaptation to ostomy (43). A study by Akıl and Taylan reported that patients undergoing chemotherapy and radiotherapy experience more psychological issues (15). Among the most common side effects of chemotherapy and radiotherapy are fatigue, weakness, nausea, vomiting, and loss of appetite (44). The emergence of side effects from chemotherapy and radiotherapy, in addition to the changes patients experience due to the ostomy, is believed to affect their coping abilities and adaptation to ostomy.

In current study, it was observed that patients who received information about Ostomy, underwent stoma site marking, and received stoma care education during the preoperative process exhibited higher levels of Ostomy adaptation. A study conducted by Zhang et al. determined that patients who received ostomy-related information from healthcare professionals showed higher levels of ostomy adaptation (13). In a study conducted by Koç et al. it was revealed that patients who underwent preoperative stoma site marking and received education had lower rates of depression and anxiety (45). As observed in the literature, performing preoperative stoma site marking and providing patients with information about ostomy not only reduces patients' anxiety levels but also enhances their self-care abilities and improves their quality of life. Indirectly, these factors positively influence patients' adaptation levels.

The relationship between the OAS scores and sub-dimensions and the RS scores of the patients participating in our study is positively significant. This indicates that as the RS score increases, the OAS score also increases. In the advanced analysis conducted, it was found that a one-unit increase in RS scores leads to a 0.419 increase in ostomy adaptation, explaining 91.6% of this change. After ostomy surgery, significant changes and challenges arise in the lives of patients (46). The creation of an ostomy can lead to not only physical and functional changes but also psychological effects. Patients may encounter difficulties such as changes in body image, stigma, limitations in daily activities, and loss of self-confidence (12). Psychological resilience refers to the ability of patients to cope with traumatic or challenging situations. When reviewing the literature, psychological resilience is noted to represent patients' ability to maintain hope, strength, coping, and adaptation in the face of difficult life conditions (47). Patients with high psychological resilience may be more flexible and adaptable during the ostomy process. According to the results of a study, there is a positive relationship between the quality of life and the level of psychological resilience of patients with

permanent colostomy, indicating that as the level of psychological resilience increases, the quality of life also improves (22). In a study from the literature, elderly patients with ostomies for less than three years and having social support were found to have higher levels of psychological resilience (48). Another study examined the concepts of psychological resilience and hope in patients with colorectal cancer through a pilot study, and it was determined that patients with higher psychological resilience had higher levels of hope (49). In a study by Bosnjak et al. (50), patients with high psychological resilience reported feeling stronger, having higher quality of life, and better ostomy adaptation. In the study conducted by Scardillo et al. (26), it was found that patients with a permanent ostomy have a high level of psychological resilience, which facilitates ostomy adaptation. Our research findings align with the literature. Based on the results from our study and the literature, it is believed that patients with high psychological resilience can effectively cope with stressors related to ostomy, possess better stress management and emotion-regulation skills, and demonstrate higher levels of adaptation. It is also thought that patients with high psychological resilience are more likely to maintain an optimistic outlook when facing adverse situations, exhibit a more positive body image, and are less affected by the negative opinions of others.

Limitations of the Study

The current study has a limitation. It was conducted in a single hospital, which means that the findings cannot be applied to the entire population. Therefore, it is suggested to design prospective studies on this topic in larger general surgery clinics and wound and ostomy outpatient clinics, involving a more extensive and diverse sample group for better generalizability.

5. CONCLUSION

The levels of ostomy adaptation and psychological resilience of the patients participating in our study were found to be at a moderate level. Sociodemographic and clinical variables such as gender, marital status, education level, stoma duration, employment status, receiving treatment, and receiving education about stoma have an impact on the level of ostomy adaptation. In the current study, it has been determined that the level of psychological resilience affects ostomy adaptation. As the patients' level of psychological resilience increases, their level of ostomy adaptation also increases. Nurses should consider the patients' levels of psychological resilience while planning care. To enhance patients' adaptation, it is recommended to facilitate their participation in individual therapy, group therapy, and support groups. Their coping strategies and approaches to managing the illness should be taken into account. It is suggested that patients be well-informed about the disease, engage in the treatment process, receive social support, and thus strengthen their psychological resilience.

Conflicts of Interest

There are no conflicts of interest. This study is a master's thesis project.

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REFERENCES

1. Claessens, I. et al. (2015). The ostomy life study: the everyday challenges faced by people living with a stoma in a snapshot. *Gastrointestinal Nursing*, 13(5), 18-25.
2. Eraydın, C. & Sunal, N. (2021). Self-Care ability and affecting factors in patients with stoma. *Akdeniz Medical Journal*, 7(1),57-64.
3. Krishnamurthy, D.M., Batnik, J., Mutch, M. (2017). Stoma complications. *Clinics in Colon and Rectal Surgery*, 30(3), 193-200.
4. Sayar, S. & Vural, F. (2019). Should Support *Group* Intervention be Implemented for Individuals with Stoma?. *Turkish Journal of Colorectal Disease*, 29(1),1-5.
5. Osborne, W. et al. (2022). Prevalence of leakage and its negative impact on quality of life in people living with a stoma in the UK. *British Journal of Nursing*, 31(16), 24-38.

6. Zewude, W.C., Derese, T., Suga, Y., Teklewold, B. (2021). Quality of life in patients living with stoma. *Ethiopian J Health Sci*, 31(5), 993-1000.
7. Silva, K.A. et al. (2020). Time after ostomy surgery and type of treatment are associated with quality of life changes in colorectal cancer patients with colostomy. *Plos One*, 15(12), 352-361.
8. Martins, L. et al. (2022). Challenges faced by people with a stoma: peristomal body profile risk factors and leakage. *British Journal of Nursing*, 31(7), 376-385.
9. Haviland, J. et al. (2017). Social support following diagnosis and treatment for colorectal cancer and associations with health-related quality of life: results from the UK ColoRectal Wellbeing (CREW) cohort study. *Psycho-Oncology*, 26(8), 1-9.
10. Polat, S., Cihan, R. & Akıl, Y. (2022). The relationship between the problems experienced by stoma patients problem- solving skills and depression. *Health Care Acad J*, 9(2), 157-164.
11. Shin, J. H., So, H. S. & Kim, E. A. (2017). Influence of post-traumatic stress disorders on quality of life among patients with ostomy: focused on the mediating effect of resilience. *Korean Journal of Adult Nursing*, 29(6), 657-666.
12. Çevik, B. et al. (2020). Determining the Adaptation of Individuals with Ostomy to Ostomy and Affecting Factors. *Journal of Hacettepe University Faculty of Nursing*, 7(2), 186-195.
13. Zhang, Y. et al. (2019). Relationship between psychosocial adaptation and health-related quality of life of patients with stoma: a descriptive, cross-sectional study. *Journal of Clinical Nursing*, 28(15), 2880-2888.
14. Dellafiore, F. et al. (2022). Predictors of adjustment to living with an ostomy: results of a cross-sectional study. *Advances in Skin & Wound Care*, 35(5), 1-6.
15. Akıl, Y. & Taylan, S., (2020). Factors affecting adaptation of patients with intestinal stoma: a relational study. *Cukurova Medical Journal*, 45(2), 428-438.
16. Göçmen Baykara, Z., Demir, S. & Karadağ, A. (2020). Family functioning, perceived social support and adaptation to a stoma: a descriptive cross-sectional survey. *Wound Manag Prev*, 66(1), 30-38
17. Polatçı, S. & Tınaz, Z.D. (2021). The effect of personality traits on psychological resilience. *International Journal of Society Researches*, 17(36), 2890-2917.
18. Broeke, G.T., Voorn, G.V., Ligtenberg, A., Molenaar, J. (2017). Resilience through adaptation. *Plus One*, 12(2), 1-21.
19. Burch, J., Sica, J., Swash, C. & Williams, I. (2023). Stoma Management. In: White & A. Perrin (Editors), *Stoma Care Specialist Nursing: A Guide for Clinical Practice*. Springer, pp. 163-193.
20. Ludolph, P. et al. (2019). Interventions to promote resilience in cancer patients. *Deutsches Arzteblatt International*, 116, 865-872.
21. Çakır, H., Küçükakça Çelik, G. & Çirpan, R. (2021). Correlation between social support and psychological resilience levels in patients undergoing colorectal cancer surgery: a descriptive study. *Psychol Health Med.*, 26(7), 899-910.
22. Mohamed, M.A.E-R., El-Ata, A. B. & Elezaby, H.H. (2022). Relationship between resilience and health-related quality of life among patients with a permanent colostomy. *British Journal of Nursing*, 31(6), 4-12.
23. Dong, X. et al. (2017). The mediating role of resilience in the relationship between social support and posttraumatic growth among colorectal cancer survivors with permanent intestinal ostomies: a structural equation model analysis. *European Journal of Oncology Nursing*, 29, 47-52.
24. Hwang, J.H. & Yu, C.S. (2019). Depression and resilience in ulcerative colitis and Crohn's disease patients with ostomy. *Int Wont J*, 16(1), 62-70.
25. Chou, Y.-J., Wang, Y.-C., Lin, B.-R. & Shun, S.-C. (2023). Resilience process in individuals with colorectal cancer: a qualitative study. *Quality of Life Research*, 32:681–690
26. Scardillo, J., Dunn, K. S. & Piscotty, R. (2016). Exploring the relationship between resilience and ostomy adjustment in adults with a permanent ostomy. *Journal of Wound Ostomy and Continence Nursing*, 43(3), 274-279.
27. Bunkong, S. et al. (2023). A model of factors influencing health-related quality of life among thais with colorectal cancer and a permanent colostomy. *Pacific Rim International Journal of Nursing Research*, 27(1), 185-199.
28. Su, X. et al. (2016). Self-efficacy and associated factors in patients with temporary ostomies. *Journal of Wound Ostomy and Continence Nursing*, 43(6), 623-629.
29. Gürgan, U. (2006). Resilincy Scale (RS): Scale Development, Reliability and Validity Study. *Ankara University Journal of Faculty of Education Sciences*, 39(2), 45-74.
30. Simmons, K. L., Smith, J. A. & Maekawa, A. (2009). Development and psychometric evaluation of the Ostomy Adjustment Inventory-23. *Journal Of Wound, Ostomy and Continence Nursing*, 36(1), 69-76.
31. Karadağ, A., Göçmen Baykara, Z., Korkut, H. & Çelik, H. (2011). Adaptation of the ostomy adjustment inventory into Turkish Language. *Journal of National Surgery*, 27(4), 206-211.
32. George, D. & Mallery, P. (2019). *IBM SPSS statistics 26 step by step: a simple guide and reference*. Routledge, 16 Edition, pp. 113-118.

33. Jayarajah, U. & Samarasekera, D. N. (2017). Psychological adaptation to alteration of body image among stoma patients: a descriptive study. *Indian J Psychol Med*, 39(1), 63-68.
34. Son, H. & Kang, Y. (2020). Coping processes of patients with ostomies in south Korea: a focus group study. *Healthcare*, 9(1),21.
35. Youngmi, K. & Heesook, S. (2019). Age differences in the coping strategies of patients with colorectal cancer. *Cancer Nursing*, 42(4), 286-294.
36. Duruk, N., Erek Kazan, E. Ünlüsoy Dinçer, N. (2020). Factors affecting stoma adjustment among the individuals with intestinal stoma: descriptive study. *Türkiye Klinikleri Journal of Nursing Sciences*, 13(3), 637-648.
37. Lima, J. A., Muniz, K. C., Salome, G. M. & Ferreira, L. M. (2018). Association of sociodemographic and clinical factors with self-image, self esteem and locus of health control in patients with an intestinal stoma. *Journal of coloproctology*, 38(1),56-64
38. Szpilewska, K. Et al. (2018). Acceptance of disease and the quality of life in patients with enteric stoma. *Pol Przegl Chir*, 90(1),13-17.
39. Tonks, N. (2023). Body image and sexuality. *Stoma Care Specialist Nursing: Clinical Practice Guide*, 287-299.
40. Karadağ, A. et al. (2015). A prospective, multicentered study to assess social adjustment in patients with an intestinal stoma in Turkey. *Ostomy Wound Management*, 61(10),16-29.
41. Yaşar, Z. & Üstündağ, H. (2021). The determination of self-efficacy and quality of life in patients with stoma. *Manisa Celal Bayar University Journal of Institute of Health Sciences*, 8(1), 107-115.
42. Alenizi, A., McGraht, I., Kimpton, A, Liveay, K.,(2021). Quality of life among ostomy patients: a narrative literature review. *Journal of Clinical Nursing*, 30 (22), 3111-3123.
43. Santos, R. P., Fava, S. M. & Dazio, E. M. (2019). Self-care of elderly people with ostomy by colorectal cancer. *Journal of Coloproctolog*, 39, 265-273.
44. Özçelik, H. & Fadıloğlu, Ç. (2009). Reasons for use of complementary and alternative medicine in cancer patients. *Turk Journal of Oncology*, 24(1),48-52.
45. Koç, M. et al. (2022). Effect of prehabilitation on stoma self-care anxiety depression and quality of life in stoma patients: a randomized controlled trial. *Diseases of the Colon & Rectum*, 1;66(1):138-147.
46. Ayık, C., Özden, D. & Cenan, D. (2020). Ostomy complications, risk factors and applied nursing care: a retrospective, descriptive study. *Wound Management&Prevention*, 66(9), 20-30.
47. Walker, B. (2020). Resilience: what it is and is not. *Ecology and Society* 25(2):11.
48. Sakurai, S., Mashimo, A. & Nishikido, N. (2021). Resilience and related factors in the elderly less than 3 years after ostomy. *Journal of Japanese Society of Wound, Ostomy and Continence Management*, 25(3), 555-565.
49. Solano, J. P. et al. (2016). Resilience and hope during advanced disease: a pilot study with metastatic colorectal cancer patients. *BMC Palliative Care*, 15(1),1-8.
50. Bosnjak, M. et al. (2022). Inflammatory bowel diseases and resilience. *Zdravstveni Glasnik*, 8(2), 34-45.