

# The Effect of Permanent Ostomy on Body Image, Self-Esteem, Marital Adjustment, and Sexual Functioning

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## Abstract

**Objective:** The aim of this study was to investigate the effects of permanent ostomy on body image, sexual functioning, self-esteem, and marital adjustment.

**Method:** SCID-I outpatient forms were administered to 52 subsequent patients that underwent permanent colostomy or ileostomy operations, and 40 of them that did not fit any of the diagnostic criteria for psychiatric disorders were then administered a sociodemographic data questionnaire, and the Body Image Scale, Rosenberg Self-Esteem Scale, Dyadic Adjustment Scale, and Golombok Rust Sexual Functions scale. The control group consisted of 20 age- and gender-matched healthy volunteers.

**Results:** Body Image, Rosenberg Self-Esteem, and Dyadic Adjustment Scale scores were higher in permanent ostomy patients compared to controls, indicating more ostomy-related disturbance. Sexual functions were found to be impaired as well, except impotence and rapid ejaculation parameters. Complaints of anorgasmia were more frequent among female colostomy patients. Body image, and the touch, communication, and frequency parameters of sexual functioning were less disturbed in male patients than in females. Female patients with a psychiatric history experienced vaginismus problems more frequently. Patients with a history early childhood separation from parents had lower self-esteem scores and more frequently avoided sexual activity. Following ostomy surgery, the frequency of male impotence decreased over time.

**Conclusion:** Permanent ostomy causes impairment in perceived body image, dyadic adjustment, and sexual functioning.

**Key Words:** Ostomy, sexual dysfunction, body image, dyadic adjustment

## INTRODUCTION

Ostomy, meaning opening or mouth in ancient Greek, is the surgical creation of a stoma for the evacuation of bodily waste, which is necessitated by a variety of disease processes. Since the creation of ostomy leads to bypassing the sphincter, which enables voluntary control, bowel movements and excretion become involuntary, requiring the use of an extracorporeal pouch for collecting waste products. The most frequently created ostomy types are colostomy, ileostomy, and ureterostomy/urostomy, which in turn can be divided into 2 groups -transient/temporary and permanent. Temporary ostomies, as the name implies, can be closed after the resolution of the underlying disease process that required the ostomy; permanent ostomies are created to be permanent. The

majority of indications for intestinal ostomy consist of gastrointestinal malignancies and inflammatory bowel diseases (IBD) (ulcerative colitis, Crohn's disease, etc.) (Silva et al., 2003).

Whatever the indication might be, the creation of an ostomy leads to various physiological, psychological, and social problems for patients. In a study by Szczepkowski (2002), altered perception of body image, diminished self-esteem, sexual dysfunction, marital problems, and various psychiatric conditions, including depression, the most commonly seen, were among the aforementioned changes. Karadağ et al. (2003) reported that ostomy patients are apprehensive about leakage and odor from the ostomy, and might therefore avoid interactions with people, become introverted, and seek solitude. Over

time, this insecurity in social situations and lack of trust could lead to total social isolation. Blumenfield and Tiamson (2003) reported that in regard to disrupted body integrity the reactions of ostomy patients are similar to those of amputees.

In a study (Thomas et al., 1987) investigating the psychological impact of ostomy, 22% of patients had moderate to severe psychiatric symptoms, and among the factors that increased the risk of psychiatric disturbances were a previous history of a psychiatric illness, physical symptoms and complications after surgery, inadequate counseling, and anxiety. In another study (Thomas et al., 1979) 17% of male patients and 19% of female patients had moderate to severe psychiatric problems 3 months after ostomy surgery.

In another study conducted with 409 patients that underwent intestinal resection or ostomy secondary to colorectal cancer, ileitis, or colitis (Kuchenhoff et al., 1981), the patients that underwent ostomy had higher rates of depression and less involvement in social activities compared to those that underwent bowel resection for the same diagnoses. In the same study, cancer patients, compared to patients with ulcerative colitis or Crohn's disease, had lower rates of depression. Irrespective of the surgery performed, cancer patients tended to avoid sexual activity more often than the control group.

Ostomy, in addition to causing changes in the perception of body image, might also lead to feelings of inadequacy, thoughts of no longer being a normal human, and fears of not being able to lead a normal life. In a study by Piwonka and Merino (1999), the extent of alteration in the perception of body image was reported to be an important determinant in adaptation to life with an ostomy. For successful adaptation, the need to provide psychological assistance to help patients combine their new physical characteristics with a healthy body image and to provide adequate information necessary for independent self-care were emphasized. Jenks et al. (1997) investigated the impact of ostomy on body image in patients diagnosed with cancer and reported that in the post-ostomy period the perception of body image improved with time.

Ostomy patients, in an attempt to conceal their situation and make a more favorable impression on others, may lie to people and invest great effort to disguise their situation. Internal questions/debates about who should know about their ostomy and the stress that arises from the conflict of appearing normal while not being normal might not only damage self-esteem, but also lead to psychological problems. In such situations, rage, depression, and anxiety

can be frequently observed. Strong negative feelings usually tend to subside as the patient gains technical expertise regarding ostomy management. The breach of the social order by uncontrolled bowel movements is viewed as embarrassing and shameful, and might result in avoidance and social withdrawal. In a study by Szczepkowski (2002), depression, solitude, and grief stemming from low self-esteem and undesired changes in body image were more frequently seen in younger patients and females.

Persson and Hellstromm (2002) reported that the majority of the ostomy patients had concerns about sexuality. Changes in body appearance, interference by the ostomy apparatus during sexual activity, and a diminished sense of hygiene could contribute to this state. In a study on the physical impact ostomy has on sexuality, Cavdar (1999) reported impotence, orgasmic disorders, deficiency of ejaculation, and sterility in male patients after removal of the rectum or bladder. In particular, for patients undergoing extensive lymph node dissection, sexual dysfunction is a possible adverse outcome of the surgery. In females, it is reported that unless the vagina is partially or completely removed, pelvic surgery should not affect the stimulation of sexual feelings. Eti et al. (1995) reported that the wider pelvis structure in female patients decreases the chances of nerve injury; however, in cases in which the vagina becomes shorter due to a partial removal or because vaginectomy is performed, decreased vaginal lubrication and the presence of scar tissue in the pelvis might lead to pain during intercourse.

Perssons and Hellstroms (2002) found that all patients believe their sexual desirability decreases after ostomy. In another study that supports this finding, Salter (1992) reported that ostomy patients feel sexually less attractive, whereas their spouses do not share this view.

Persson et al. (1983) performed a study on the spouses of patients who underwent ostomy surgery after a diagnosis of rectal cancer, reporting that the spouses have problems related to feelings of uncertainty while learning and adapting to a new life style and a changing body. Ostomy has been shown to affect and restrict both family and social life. In one study (Oberst and Scott, 1998) the levels of anxiety in the spouses of ostomy patients decreased to the lowest levels 10 days after the patients come home from the hospital; however, there was a high risk of subsequent conversion to depression by the 90th and 180th day.

To date, no study had investigated the psychological effects of ostomy on Turkish patients.

The aim of this study was to investigate the effects of

**Table I.** Sociodemographic characteristics of the ostomy group.

|                                             |             |          |                                                |                 |         |
|---------------------------------------------|-------------|----------|------------------------------------------------|-----------------|---------|
| <b>Age (years)</b>                          | 46.30±11.74 |          | <b>Family history of psychiatric disorders</b> |                 |         |
| <b>Gender</b>                               |             |          | Present                                        | n:15            | (37.5%) |
| Female                                      | n:20        | (50%)    | Absent                                         | n:25            | (62.5%) |
| Male                                        | n:20        | (50%)    | <b>Ostomy type</b>                             |                 |         |
| <b>Education</b>                            |             |          | Ileostomy                                      | n: 24           | (60%)   |
| Primary school                              | n:10        | (25%)    | Colostomy                                      | n: 16           | (40%)   |
| Junior high                                 | n: 10       | (25%)    | <b>Ostomy indication</b>                       |                 |         |
| Senior high                                 | n: 13       | (32.5%)  | Ulcerative colitis                             | n: 13           | (32.5%) |
| College                                     | n: 7        | (17.5%)  | Colon cancer                                   | n: 6            | (15%)   |
| <b>Income level</b>                         |             |          | Rectal cancer                                  | n: 10           | (25%)   |
| Good                                        | n: 4        | (10 %)   | Crohn's disease                                | n: 9            | (22.5%) |
| Moderate                                    | n: 27       | (67.5 %) | Ischemic colitis                               | n: 2            | (5%)    |
| Poor/Low                                    | n: 9        | (22.5 %) | <b>Time elapsed since diagnosis</b>            | 8.75±1.41 years |         |
| <b>History of a psychiatric disorder</b>    |             |          | <b>Time elapsed since surgery</b>              | 33±59.95 months |         |
| Present                                     | n: 11       | (27.5%)  | <b>Staging of cancer patients</b>              |                 |         |
| Absent                                      | n: 29       | (72.5%)  | Stage 3                                        | n: 9            | (22.5%) |
| <b>History of a major childhood illness</b> |             |          | Stage 4                                        | n: 7            | (17.5%) |
| Present                                     | n: 7        | (17.5 %) | <b>Chemotherapy/radiotherapy</b>               |                 |         |
| Absent                                      | n: 33       | (82.5 %) | <b>(within the last year)</b>                  |                 |         |
| <b>Childhood separation from parents</b>    |             |          | Present                                        | n: 9            | (22.5%) |
| Present                                     | n: 13       | %(32.5)  | Absent                                         | n: 7            | (17.5%) |
| Absent                                      | n: 27       | %(67.5)  | <b>Adequate information regarding</b>          |                 |         |
| <b>Parental divorce/separation</b>          |             |          | <b>the outcome of surgery</b>                  |                 |         |
| Present                                     | n: 8        | %(20)    | Provided                                       | n: 17           | (42.5%) |
| Absent                                      | n:32        | %(80)    | Not provided                                   | n: 23           | (57.5%) |

ostomy on body image, sexual functioning, self-esteem, and marital adjustment in patients that underwent ostomy secondary to gastrointestinal malignancies or inflammatory bowel disease.

## METHODS and MATERIAL

### Sampling

The study included 40 patients aged between 20 and 70 years that underwent permanent ileostomy or colostomy secondary to gastrointestinal malignancy or inflammatory bowel disease at least one month earlier and who were followed-up in a private outpatient ostomy center between March and December 2005. The control group was comprised of 20 age- and gender-matched healthy volunteers. Each patient provided written informed consent prior to study enrollment. In total, 52 consecutive patients were screened with the SCID-I outpatient/ambulatory patient scale to rule out psychiatric problems, and 40 patients without a psychiatric diagnosis were further screened with the scales listed below. Since the Golombok-Rust Inven-

tory of Sexual Satisfaction evaluates a monogamous and regular sexual relationship and the Dyadic Adjustment Scale evaluates the outcome of a long-term relationship, for practical reasons and ease of administration of the scales, only married patients were enrolled.

### Scales

1. Sociodemographic Data Questionnaire This tool collects, in addition to demographic information such as age, marital status, educational level, and income level, medical information, including pertinent past medical and family history, ostomy type and indication, length of time between diagnosis and surgery, stage of cancer, and whether the patient received chemotherapy or radiotherapy. It serves to investigate if the patient was adequately informed about the surgery and its outcome.

2. Golombok-Rust Inventory of Sexual Satisfaction (GRISS)

The Golombok-Rust Inventory of Sexual Satisfac-

**Table II.** Comparison of the scale scores between the ostomy and control groups.

|                            | Ostomy<br>n = 40 | Healthy control<br>n = 20 | Statistical evaluation       |
|----------------------------|------------------|---------------------------|------------------------------|
| BIS                        | 86.10 ± 16.57    | 105.70 ± 11.99            | F = 2.03, df = 58, P = 0.000 |
| RSES                       | 18.22 ± 3.61     | 22.45 ± 4.26              | F = 2.07, df = 58, P = 0.000 |
| GRISS                      | 96.52 ± 15.23    | 114.05 ± 16.10            | F = 0.20, df = 58, P = 0.000 |
| Touch                      | 5.57 ± 1.70      | 3.15 ± 1.46               | F = 2.04, df = 58, P = 0.000 |
| Avoidance                  | 6.02 ± 1.40      | 3.00 ± 1.48               | F = 0.24, df = 58, P = 0.000 |
| Satisfaction               | 4.52 ± 1.24      | 3.05 ± 1.14               | F = 1.33, df = 58, P = 0.000 |
| Frequency<br>Communication | 5.35 ± 1.57      | 4.35 ± 1.13               | F = 3.98, df = 58, P = 0.014 |
| Raw Score                  | 5.72 ± 1.56      | 4.25 ± 1.29               | F = 2.07, df = 58, P = 0.001 |
| ConvertedRaw               | 43.45 ± 13.16    | 24.05 ± 6.95              | F = 8.13, df = 57, P = 0.000 |
| Score                      | 39.20 ± 7.62     | 26.05 ± 5.83              | F = 1.60, df = 58, P = 0.000 |
| DAS                        | 97.28 ± 15.24    | 114.05 ± 16.10            | F = 0.21, df = 58, P = 0.000 |

BIS: Body Image Scale; RSES: Rosenberg Self Esteem Scale; GRISS: Golombok–Rust Inventory of Sexual Satisfaction; DAS: Dyadic Adjustment Scale.

tion (Rust and Golombok, 1986) is a 28-item questionnaire used to evaluate the presence and extent of sexual problems. It includes 12 subscales evaluating impotence, premature ejaculation, orgasmic disorder, vaginismus, lack of communication, avoidance in males and females, insensitivity in males and females, and dissatisfaction in males and females. A score of 5 points or higher in any category indicates sexual dysfunction. Tuğrul et al. (1993) reported that GRISS is valid and reliable for the Turkish population.

### 3. Body Image Scale (BIS)

This scale developed by Secord and Jourard (1953) measures the level of satisfaction with various body parts. Lower scores on this 40-item scale point to higher levels of dissatisfaction. There is no cut-off score. In Turkey, the validity and reliability study of the scale was performed by Hovardaoğlu (1993).

### 4. Rosenberg Self-Esteem Scale (RSES)

This scale developed by Rosenberg (1965) to measure self-esteem includes 10 items. Higher total scores indicate higher self-esteem. In Turkey the validity and reliability study of the scale was carried out by Çuhadaroglu (1986).

### 5. Dyadic Adjustment Scale (DAS)

This scale was developed by Spanier (1976) to meas-

ure the adjustment of couples using subscales such as satisfaction, fidelity, and expression of feelings. Scores can vary from zero to 151 points and high scores denote good adjustment, whereas scores of 100 points or lower indicate the presence of a problem in the relationship. In Turkey, the validity and reliability study of the scale was conducted by Fişiloğlu and Demir (2000).

6. SCID-NP For identification of DSM-III R Axis I disorders, the ambulatory patient scale SCID-I was used.

### Statistical Analyses

The parametric data were tested using Pearson's correlations and the non-parametric data were tested using Kendal Taub correlation tests. Occurrence rates and percentages of different groups were compared using the chi-square test. Independent groups were compared using Student's t-test.

## RESULTS

In total, 60 subjects, 40 in the ostomy group and 20 in the control group, participated in the study. The mean age of the healthy control group (n = 20) was 44.15 ± 11.54 years; the mean age of the ostomy group (n = 40) was 46.30 ± 11.74 years. The mean elapsed time since ostomy surgery was 33 months (SD = 59.95).

Table I summarizes the sociodemographic and medical characteristics of the ostomy group. Table II shows the different tools used to compare the patient and control groups.

Among the 40 ostomy patients, 57.5% ( $n = 23$ ) did not think they were adequately informed about the surgery and the outcome. There were no differences in sexual functioning, perception of body image, self-esteem, and dyadic adjustment between the patients who were informed about the outcome of the surgery and those who were not.

When the ostomy group was divided in two according to the type of ostomy [ileostomy ( $n = 24$ ) and colostomy ( $n = 16$ )], the colostomy group was older than the ileostomy group and the difference in the mean ages was statistically significant ( $F = 0.002$ ;  $df = 38$ ;  $P = 0.000$ ). In addition, anorgasmia scores were also statistically different between the 2 groups ( $F = 0.764$ ;  $df = 18$ ;  $P = 0.036$ ). According to this finding, colostomy patients more frequently had problems with anorgasmia compared to ileostomy patients. There were no differences in the remainder of the scales' scores between the 2 groups.

#### Findings related to sexual functioning

In the present study, female patients scored higher on the GRISS touch, avoidance, communication, and frequency subscales compared to men, and the differences were statistically significant. According to these results, women had a higher rate of sexual dysfunction compared to men. The scores on the sexual functions subscales were as follows: touch ( $F = 2.044$ ;  $df = 58$ ;  $P = 0.000$ ), avoidance ( $F = 0.247$ ;  $df = 58$ ;  $P = 0.000$ ), satisfaction ( $F = 1.334$ ;  $df = 58$ ;  $P = 0.000$ ), frequency ( $F = 3.984$ ;  $df = 58$ ;  $P = 0.014$ ), communication ( $F = 2.078$ ;  $df = 58$ ;  $P = 0.001$ ), and total score ( $F = 8.132$ ;  $df = 57.7$ ;  $P = 0.000$ ), vaginismus. Vaginismus ( $F = 2.296$ ;  $df = 30$ ;  $P = 0.000$ ) and anorgasmy/anorgasmia ( $F = 1.882$ ;  $df = 30$ ;  $P = 0.000$ ) scores were higher in the ostomy group than in the ileostomy group and the differences were statistically significant. No such difference was observed in the parameters of impotence and premature ejaculation (Table II). In ostomy patients, except for impotence and premature ejaculation, sexual dysfunction was significantly more pronounced compared to the control group. There was a weak and parallel correlation between a past history of a psychiatric disorder and the presence of vaginismus ( $r = 0.50$ ). Vaginismus was observed more frequently in female patients with a history of psychiatric disorders. Another finding was a moderate and inverse correlation

between impotence and the length of time after ostomy surgery ( $r = -0.67$ ). As time goes by after ostomy surgery, a decrease in the frequency of impotence was observed. There was a weak and parallel correlation between a history of childhood parental separation and the sexual functions avoidance parameter ( $r = 0.32$ ) ( $P < 0.05$ ). Those patients with a childhood history of separation from parents were more likely to avoid sex.

#### Findings related to dyadic adjustment

There was a significant relationship between the total DAS and BIS scores, and the communication subscale of GRISS ( $F = 0.512$ ;  $df = 38$ ;  $P = 0.04$  and  $F = 0.424$ ;  $df = 38$ ;  $P = 0.047$ , respectively). The remainder of the items on the scales were not significantly different. This finding was interpreted to mean that ostomy patients with a higher degree of dyadic adjustment (spousal compatibility) had better body image perceptions and better sexual communication. On the other hand, when dyadic adjustment scores were compared between the ostomy and control groups, there was a statistically significant difference ( $F = 0.216$ ;  $df = 58$ ;  $P = 0.000$ ). Compared to the control group, ostomy patients had higher rates of problems with dyadic adjustment (Table II).

#### Findings about body image perception

There was a weak and parallel correlation between body image and gender ( $r = 0.40$ ), a weak and opposite relationship was found between the sexual functions subscales of touch, ( $r = -0.37$ ), avoidance ( $r = -0.34$ ), satisfaction ( $r = -0.42$ ), frequency ( $r = -0.33$ ), and communication ( $r = -0.40$ ), and body image. A moderate and inverse relationship was found between sexual functions total raw score and body image ( $r = -0.52$ ), and a very weak and inverse correlation was found between a history of childhood parental separation and body image ( $r = -0.32$ ). There were more disturbances in the perception of body image in females. Those patients with a better body image had better sexual functioning. The perception of body image was relatively more disturbed in patients with a history of childhood parental separation. Furthermore, there was a moderate and parallel correlation between RSES scores and body image ( $r = 0.58$ ). As expected, self-esteem and body image were correlated. When body image scores of the ostomy group were compared to those of the control group, they were significantly lower ( $F = 2.036$ ;  $df = 58$ ;  $P = 0.000$ ) (Table II). The perception of body image in the ostomy group was more disturbed compared to the controls.



### Findings Related to Self-Esteem

There was a very weak and inverse relationship between self-esteem and avoidance, satisfaction, and frequency, and the total raw score for all sexual functions ( $r = -0.36$ ,  $r = -0.37$ ,  $r = -0.41$ , and  $r = -0.43$ , respectively). The self-esteem of the ostomy group was lower than that of controls and the difference was statistically significant. ( $F = 2.078$ ;  $df = 58$ ;  $P = 0.000$ ) (Table II).

## DISCUSSION

To the best of our knowledge the present study is the first of its kind to evaluate body image, self-esteem, marital adjustment, and sexual dysfunction in Turkish patients with permanent ostomies. When compared to the control group, the ostomy patients had higher levels of disturbances in body image, self-esteem, marital adjustment, and sexual functioning (except for impotence and premature ejaculation).

Our results revealed a moderate and inverse relationship between the time elapsed since surgery and impotence. Contrary to what was expected, there were no other relationships between time elapsed since ostomy and the other items investigated. This difference could be explained by the relatively shorter time elapsed since surgery in our study (mean: 33 months; SD: 59.95 months) compared to what was reported earlier (mean: 4.6 years; SD: 32.25).

In our study, female patients had more problems in overall sexual functioning as well as in the subscales of touch, avoidance, and satisfaction. A likely explanation for this is the shortening or removal of the vagina during ostomy surgery leading to decreased vaginal lubrication and the presence of pelvic scar tissue, which might lead to pain during intercourse. In fact, dyspareunia and vaginal dryness is more frequently reported in ostomy patients (Çavdar, 1999; Libman et al., 1991). In addition, as reported in another study (Mathias et al., 1999), the fact that males in general have difficulty discussing problems related to sexual functioning and usually tend to keep their problems to themselves, could have played a role in this result difference.

Different results are reported for ileostomy and colostomy patients, in terms of the frequency of sexual dysfunction. In one study, 43% of ileostomy patients and 45% of ostomy patients had problems following ostomy surgery (Bartha et al., 1992). McDonald et al. (1985) reported physical problems, such as urinary complaints,

flatulence, and bowel movements that create discomfort, in 63% of 420 patients that had undergone ostomy due to cancer of the rectum. They showed that sexual dysfunction was related more to decreased sexual capacity than to decreased libido.

Our study did not find statistically significant differences between the ileostomy and colostomy patients on the sexual functions subscales of touch, avoidance, communication, and vaginismus. However, both patient groups had significantly greater disturbances compared to the control group. On the other hand, another study (Keating 2004) reported a weak and inverse relationship with orgasmic disorders. Colostomized female patients were reported to have more problems with orgasmic disorders compared to female patients with ileostomy. In the classical colostomy surgery performed for rectal cancer, the higher likelihood of rectal excision and relatively higher frequency of hypogastric nerve injury might explain the more frequent occurrence of orgasmic disorders in these patients.

Other studies have shown that the past history of psychiatric problems is an important predictor of psychiatric problems after ostomy surgery (Thomas et al., 1987, 1979). In our study, among the investigated items, only vaginismus was more frequently seen in female patients with a psychiatric history; however, since no screening for the presence of vaginismus was carried out before surgery, it is difficult to fully evaluate the extent of the relationship of this very commonly observed problem in Turkey with ostomy surgery.

Other studies (Ramer, 1992; Gloeckner, 1984) have demonstrated a direct relationship between the adaptation that develops and the time lapsed after ostomy surgery. Gloeckner (1984) reported decreased feelings of sexual attractiveness in the first year after surgery that tended to improve over time in almost half of the 40 ostomy patients who were retrospectively evaluated in terms of their perception of attractiveness. Patients who had their ileostomies for approximately 10 years reported higher levels of perceived attractiveness compared to those with other types of ostomies and those that had their ostomy surgery more recently. This finding denotes that disturbances in the perception of body image is most prominent in the year immediately following surgery.

Szczepkowski et al. (2002) reported lower self-esteem and problems in body image more frequently in younger female ostomy patients. In accordance with this finding, there was a weak relationship between gender and perception of body image in our study. Female patients had

more disturbances in body image perception compared to male patients.

In patients with a history of childhood separation from parents, body image scores were lower. These individuals also tended to avoid sexual intercourse, as would be expected in persons with disturbed body image perception.

A direct correlation between body image and self-esteem is reported in the literature (Henriques and Calhoun, 1999). Similarly, in our study, as body image scale scores increased, there was a corresponding increase in self-esteem scores. Development of a healthy body image is only possible when a child completely internalizes a positive parental figure. It could be argued that parental separation during early childhood could lead to disturbances in self-perception and the integration of body image perception, self-esteem, and sexual functioning.

In patients that experienced parental separation in childhood, we found lower body image scores. One assumption that could be related to this finding is that deprivation of role models during childhood could lead to insecurities related to body image. We also found avoidance of sexual intercourse in these individuals. This is an expected finding since dissatisfaction with one's body and sexual avoidance are related issues. Stice (1994) reported that parents have an important role in conveying the sociocultural messages related to ideal body structure to their children. In one study, women who were hyperaware of their body image because of underlying dissatisfaction with their bodies had less self-confidence and displayed avoidance of sexual intercourse more frequently (Wiederman, 2000). In keeping with these findings, our study revealed more frequent avoidance of sexual intercourse and problems with touch in patients with low body image perception scores.

The significant and parallel correlation between body image and marital adjustment led us to conclude that individuals with an increased sense of body image are more compatible with their spouses, and since these findings can be reciprocal, individuals with better marital adjustment might also have a better sense of body image. There was also a parallel and significant relationship between marital adjustment and sexual communication. As expected, couples with better sexual communication were more compatible; hence, well-adjusted couples can establish better communication.

Even though a prior study (Lavery and Erwin-Toth, 1993) showed that providing information before and

after surgery could help decrease the fears related to the surgery and its outcome, as well as hasten the post-surgery adaptation process, we were not able to demonstrate any statistically significant impact of any of the items investigated. The percentage of patients who believed they did not receive adequate information in our study, while lower than previously reported, was still high (57.5%;  $n = 23$ ). This difference could be explained by the omnipotence granted to physicians and especially surgeons in Turkey, resulting in doctors rather than patients controlling the planning of interventions, and also patient reluctance to question the procedures to be performed on their bodies and thus not demanding information.

## CONCLUSION

Problems can occur in the adaptation process following ostomy surgery secondary to its negative physical and mental impacts. New ostomy pouches developed with advances in technology can decrease the problems of leakage, odor, and ballooning that interfered with the activities of daily living that ostomy patients endured in the past. In our study, ostomy patients, when compared to the control group, had disturbances in self-esteem, body image, marital adjustment, and sexual functioning (excluding impotence and premature ejaculation). Sexual dysfunction was especially prominent in females. Female patients with a psychiatric history had more frequent vaginismus. There were no differences found between ileostomy and colostomy patients in terms of sexual functioning; however, both groups had significant disturbances compared to the controls and the frequency of impotence decreased with time. In couples with higher levels of education, an increase in the frequency of sexual intercourse and improvement in sexual communication, as well as improvement in marital adjustment, was seen. Individuals with a better sense of body image were more compatible with their spouses. Being informed about the results of the surgery did not have a significant effect on sexual functioning, body image, self-esteem, or marital adjustment.

Our study is the first to evaluate body image, self-esteem, marital adjustment, and sexual functioning in permanent ostomy patients in Turkey; however, the lack of information regarding the presence of metastases in the postoperative period in cancer patients, which could affect the adaptive process, the lack of pre-operative assessment of the patients, the use of retrospective information that was quite old, and the lack of determining the age at which childhood parental separation occurred, as well as its duration, constitute some of the limits of our study.

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