

## Original Article

# Assessment of Peristomal Skin Complications in Turkish Individuals with in Intestinal Stoma: A Retrospective Study

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### Abstract

**Background:** Peristomal skin complications are a major problem for the patient with a intestinal stoma.

**Purpose:** The aim of this study was conducted to identify peristomal skin complications among patients with an intestinal stoma.

**Methods:** This was a descriptive, retrospective study. Data were obtained via medical/nursing records review of 164 intestinal stoma patients admitted to a Turkish university hospital's stomatherapy unit between January 2011 and December 2013. The data required for the study were obtained by way of a data collection form prepared by the researcher and based on the related literature. Demographic (age, gender, education), medical (diagnosis, comorbidities), and stomal characteristics (planned or urgent condition requiring surgery, presence of colostomy or ileostomy, and whether or not trauma induced the stoma) were evaluated along with stoma complications. Inclusion criteria were intestinal stoma presence,  $\geq 18$  years of age. Descriptive statistics, Fisher's exact test were used to evaluate the data.

**Results:** The mean age of the patients was  $55.24 \pm 15.24$  and 58.5% were males. It was determined that 79.3% of the patients were given stoma due to colorectal cancer, 74.7% of them underwent elective surgery and 66.5% of them had a colostomy. It was shown that 23.78% of the patients had peristomal complications. Irritant dermatitis was the most frequent complication, with a rate of 10.4%. Upon comparison of the patients' demographic and clinical characteristics, as well as their complication statuses, a significant relationship was revealed between onset of stoma due to cancer and frequency of irritant dermatitis; elective and emergency operation and the frequency of contact dermatitis ( $p < 0.05$ ).

**Conclusions:** It should be strongly emphasized that the patient must be informed adequately about stoma self-care in order to avoid irritant dermatitis and other complications.

**Key words:** stoma, peristomal complications, nursing care, retrospective study

### Introduction

The surgical implementation of a stoma is a widely applied procedure in bowel surgeries (Stelton et al.2015; Taneja et al.,2019). According to 2016 cancer statistics in Turkey, colorectal cancer is the third most commonly diagnosed type of cancer (Turkey Cancer Statistics 2016). Stoma creation is a procedure utilized in the treatment of gastrointestinal cancers, trauma and inflammatory intestinal

diseases. Stomas can lead to various physical, physiological and social problems for patients(Stelton et al., 2015; Karadag et al. 2015; Vural et al., 2016; Carlsson et al., 2016). Patients with stomas experience many complications that can vary depending on the surgical process, the pathology behind the reason for surgery, the sufficiency of preoperative preparation and the care they receive during the postoperative period (Almutairi et al., 2018; Danielsen et al., 2013; Cowell et al.,2017; O'Flynn 2019;). In the

literature, it was determined that stoma-related complications vary between 10% and 67% (Almutairi et al., 2018; Beitz & Cowell 2016; Salvadalena 2013; Stainhagen et al., 2017; Taneja et al., 2019). In the study by Persson et al., in which they observe patients for a two year period after undergoing planned surgery, it was asserted that 53% of patients with colostomy and 79% of patients with ileostomy develop some kind of complication, the most common one being skin problems (60%-73%) (Persson et al., 2010). Peristomal skin complications can occur in early- and late period and according to review and descriptive studies, they are the most frequently observed stoma complications (Cowell et al., 2017; Stelton 2019; Taneja et al. 2019). In another prospective study by Karadağ et al., patients were observed by five stomatherapy units; it was found that in 34.4% of the patients, stoma complications developed, and the most common complication was peristomal skin problems (Karadağ et al., 2015). A study by Sung et al. suggests that the most common type of peristomal complication is irritant contact dermatitis (%15.5) (Sung et al., 2010). Ratliff et al. identified the rate of complication for patients (n=122) with stoma as 16%. However, 68.6% of the complications consisted of dermatitis (Ratliff et al. 2005). Özyayın et al. suggested peristomal skin irritation occurrence rates are 63% and peristomal infection rates are 25% (Özyayın et al. 2013). Developing complications leads to prolongment of treatment duration, increases in cost of care, loss of work-force, as well as decreases in patient quality of life and the ability to participate in and enjoy common life activities. The role of a stoma-wound care nurse is crucial in reducing the incidence of such complications. For the prevention and treatment of complications, it is also recommended that the stoma area be marked during the preoperative period, that there is careful assessment of peristomal skin, that there is appropriate placement or removal of the stomal bag/adapter system, that patients with stoma are monitored closely, and, finally, that patients be well educated on their conditions (Colwell et al., 2017; Murker&Bleir 2019; Stelton 2019; Taneja et al., 2019; White&Evans 2019;).

The aim of this study was conducted to identify peristomal skin complications among patients with an intestinal stoma.

## Methods

A retrospective analysis of data from a single university hospital institution was undertaken. The study was conducted retrospectively through examination of the medical/nursing records of 164 patients with intestinal stoma who were receiving follow-up care in the stomaterapy unit between 2011-2013. Required permission was obtained from related institution before commencement of the study.

**Data Collection:** The data collection form included records of patients' demographic characteristics, stomal characteristics and stomal/parastomal complications. Demographic characteristics included age, sex, education, whereas the stomal characteristics covered in the records included diagnosis, presence of any cancer diagnosis or nonmalignant inflammatory intestinal disease, presence of a chronic disease, planned or urgent condition requiring surgery, presence of colostomy or ileostomy, and whether or not trauma induced the stoma.

**Data Analysis:** Data were analyzed using SPSS for Windows, version 21.0. (SPSS Inc., Chicago, IL, USA). Descriptive data for patients were expressed as number, percentage, and mean values. Since the distribution of the data was not normal, non-parametric test (e.g. Fisher's exact test) were used. A  $p < 0.05$  value was considered statistically significant.

## Results

The demographic and stomal characteristics of patients are presented in Table 1. In total, 58% of the patients with the mean age of  $55 \pm 15.24$  were males and 53% of them were primary school graduates. 79.3% of them had stoma due to cancer and 74.7% of them underwent elective surgery. 66.5% of the patients in the study sample had undergone a colostomy and 33.5% of them had ileostomy. 8.5% of the patients suffered from diabetes mellitus. 8.5% of the participants were normal weight (18.5-24.9) according to categorization of the BMI (Table 1).

A total of 164 patient files, representing 39 peristomal complications were detected, were analyzed. In this study, in 76.22% of the cases, peristomal complications were not detected. In cases in which a complication was identified, the most common parastomal complication was irritant dermatitis (10.4%) (Table 2).

It was found that the frequency of complications was not statistically significantly related to gender, age, education, type of stoma, or presence of Diabetes Mellitus. The frequency of irritant dermatitis according to the diagnosis of cancer and the frequency of contact dermatitis according to the type of operation were statistically significantly related (Table 3).

Table 1. Sociodemographic and clinical characteristics of participants (N=164)

Sociodemographic and clinical characteristics		n	%
Age (Mean±SD)	55.24±15.24		
Gender	Women	68	41.5
	Men	96	58.5
Education level	Illiterate	13	7.9
	Primary school	94	57.4
	High school	42	25.6
	University	15	9.1
Diabetes Mellitus	Yes	14	8.5
	No	150	91.5
Type of operation	Elective surgery	122	74.7
	Emergency surgery	42	25.3
Ostomy	Colostomy	109	66.5
	Ileostomy	55	33.5
Malignancy at diagnosis	Yes	130	79.3
	No	34	20.7

Table 2. Frequency of Peristomal Complications

		n	%
Peristomal complications	Yes	39	23.78
	No	125	76.22
Peristomal complications*	Irritant dermatitis	17	10.4
	Allergic contact	9	5.5

ermatitis		
Pyoderma	2	1.2
Gangrenosum		
Mechanical trauma	8	4.9
Ulceration	5	3.0

\*Multiple choices were marked.

Table 3. Comparison of complications according to clinical characteristics

Clinical characteristics	Type of Complication	Complication		X <sup>2</sup> <sub>F</sub>	p
		No n %	Yes n %		
Malignancy at diagnosis	Yes	Irritant dermatitis 120 (92,3)	10 (7.7)	4.824	0.028*
	No	27 (79.4)	7 (20.6)		
Type of operation	Elective	Contact dermatitis 118 (96.7)	4 (3.3)	4.482	0.049*
	Emergency	37 (88.09)	5 (11.9)		

X<sup>2</sup><sub>F</sub>= Fisher's Exact Test \*p<0.05

## Discussion

This descriptive, retrospective study was performed to evaluate peristomal complications among patients with an intestinal stoma in a stomatherapy unit of a Turkish university hospital. Peristomal complications that occur following intestinal stoma surgery constitute an important problem for patients. Even though a comprehensive study of the prevalence of peristomal complications is not available in our country, institutions have their own studies. In this study, 23.78% of the patients with stoma had some peristomal complications. In previous studies, peristomal complications were the most common types of complications, and among the peristomal complications, irritant dermatitis was the most prevalent (Colwell et al., 2017; Taneja et al., 2019). A similar study by Karadag

suggested the peristomal skin irritation rate to be 17.9% (Karadag 2004). In a prospective and descriptive study conducted on 220 patients with stoma, Rattliff et al. found that 16% of the patients with stoma experienced complications and more than half of them experienced irritant dermatitis (Rattliff et al., 2005) In their study with 248 participants, Baykara et al. suggested the rate of peristomal skin problems to be 48.7% (Baykara et al., 2014) In addition, Ozaydin et al. determined the rate of complication to be 48%, and 63% of the patients who experienced complications suffered from skin irritations (Ozaydin et al., 2014). The findings of our study are similar to those of former studies. Prevention of peristomal skin complications is easier and cheaper than their treatment. Skin complications are directly related to marking the stoma area

during the preoperative period by a stoma care nurse and/or surgeon, the education of patients or family members during the preoperative period, appropriate skin care during the postoperative period and using proper ostomy products.

In this study, no statistically significant differences were detected between gender, age, education and the development of peristomal complications ( $p>0.05$ ). A prospective study by Salvadlena that monitored patients with stoma for 3 months reported that no significant relationship was found between demographic characteristics and stomal-peristomal complications (Salvadlena 2013). The frequency of irritant dermatitis was statistically significant in terms of the presence of cancer. In this study, development of complications was identified in patients with ileostomy; however, no statistically significant relationship was suggested between colostomy, ileostomy and complication development. In the study by Özeydin et al., it was suggested that the complication rate was 19.3% for patients with ileostomy (Ozeydin et al., 2013). Carlsson et al., on the other hand, stated in their study that the rate of peristomal skin complications was 6% for colostomy and 23% for ileostomy and that a statistically significant difference was presented between them (Carlsson et al., 2016). Literature on this issue remarks that peristomal skin problems occur more often in patients with ileostomy and that tissue damage emerges in different levels due to liquid fecal outcome. In this study, it was indicated that there was a significant relationship between emergency or elective operations and the frequency of contact dermatitis ( $p<0.05$ ). Baykara et al. specified in their study that patients who experienced emergency surgery related to stoma had higher rates of complications (31.1%) (Baykara et al., 2014). Arumugam et al. on the other hand put forth that there was not a significant difference in terms of development of complications between emergency and elective operations (Arumugam et al., 2003). Similarly, Robertson et al. reported in their prospective study that the rate of complications for elective and emergency stomas were very close to each other (Robertson et al. 2005). Many factors affect the development of complications in patients with stoma. Peristomal complications lead to many physiological and psychosocial problems, so compliance to the stoma is reduced and the quality of life is impaired. Therefore, stoma nurses should aim to

reduce the burden of these complications by providing timely patient education, advice and support.

**Conclusions:** In this study, creation of colostomy is often due to colorectal cancer. Peristomal complications are common, and irritant dermatitis, allergic contact dermatitis are observed in respective order. The frequency of complication development is such that a complication can be expected in one of every four patients. When the statistical relationship between demographic and clinical factors and development of peristomal complications are examined, a statistically significant relationship is determined between the frequency irritant dermatitis according to diagnosis of cancer; and the frequency of allergic contact dermatitis presence according to emergency or elective operation ( $p<0.05$ ). In compliance with those findings, it is recommended that the number of stomatherapy units that provide pre- and postoperative care, education, follow-up and counseling to patients should be increased together with the number of certificated stoma and wound caring nurses. Education programs and materials, such as CDs, should be prepared in order to increase the awareness, knowledge and skills of patients with stoma. In order to emphasize the importance of those recommendations, additional prospective and retrospective studies on stoma complications should be conducted with larger sample groups.

**Limitations:** This study has some limitations. The study was performed at a single center. The researchers did not directly observe the peristomal complications. Although nursing documentation in the stomatherapy unit is standardized, measurements and assessments of peristomal complication may vary.

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