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OstomySkinStudy: a study of peristomal skin disorders in patients with permanent stomas

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There are approximately 102 000 individuals in the UK living with a permanent stoma (Boston Consulting Group (BCG), 2005). These estimates are based on data from the IMS Hospital Group. A colostomy is a surgically created opening into the colon (large intestines) (Broadwell and Jackson, 1982) and colostomies account for around 49% of all permanent stomas within the UK (BCG, 2005). The less frequent types of stomas – ileostomies and urostomies – are openings into the ileum (small intestine) and into the urinary tract, respectively. Ileostomies and urostomies have been estimated to account for 39% and 12%, respectively, of permanent stomas in the UK.

It is essential that individuals with stomas maintain healthy peristomal skin. The stoma effluent (output from a colostomy, ileostomy or urostomy) is collected in an ostomy bag that is attached to the peristomal skin by an adhesive. Consequently, peristomal skin integrity is vital for successful adhesion (Rolstad and Erwin-Toth, 2004). When the skin is damaged, adhesion is reduced and a cyclical pattern of increased risk of leakage and further skin damage is generated (Rothstein, 1986; Broadwell, 1987; Rolstad and Erwin-Toth, 2004). As a result, a mild skin disorder involving only a small portion of the skin which is left unattended can progress and give rise to a severe disorder requiring immediate medical attention. Living with a peristomal skin disorder can be so unpleasant that the individual's quality of life may be affected. A recently published instrument to measure quality of life in individuals with stomas reported that anxiety about skin disorders in the peristomal area was one of 37 factors associated with quality of life (Prieto et al, 2005).

Only a few other studies to date have examined the frequency of peristomal skin disorders in individuals with stomas and the results are inconsistent. In individuals with a colostomy, for example, studies have reported that from 1%–13% have skin disorders (Ratcliff and Donovan, 2001; Ratcliff et al, 2005). For

Abstract

The aim of this article was to investigate the frequency, severity and diversity of peristomal skin disorders among individuals with a permanent stoma in a community population. All individuals with a permanent stoma (n=630) in a Danish community population were invited to participate in a cross-sectional study. A total of 202 individuals (101 men; 101 women) agreed to participate. Data were collected through questionnaires and clinical examinations. It was found that peristomal skin disorders were higher for participants with an ileostomy (57%) and urostomy (48%) than in those with a colostomy (35%). Of the diagnoses of skin disorders, 77% could be related to contact with stoma effluent. Only 38% of diagnosed participants agreed that they had a skin disorder and more than 80% did not seek professional health care. The study revealed a high frequency of peristomal skin disorders. Participants frequently failed to perceive that they had a skin irritation and did not seek help. This suggests that more education and perhaps regular, annual follow-up visits at local stoma care clinics are needed.

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Key words: Skin and skin disorders ■ Stoma care ■ Epidemiology

those with an ileostomy, 9%–21% have skin disorders (Ratcliff and Donovan, 2001; Ratcliff et al, 2005), while 15%–65% of those with urostomies have skin disorders (Nordström et al, 1990; Ratcliff and Donovan, 2001; Ratcliff et al, 2005). In addition, these studies examined very different populations: two-month postoperative follow-up visits or individuals with one type of stoma. This makes the application of the data limited, as they are not representative of community populations.

Background

The main reason for skin disorders in the peristomal area appears to be chemical irritants, mainly effluent from the stoma (Broadwell, 1987; Lyon et al, 2000; Rolstad and Erwin-Toth, 2004). In addition to chemical irritants, other important reasons for loss of skin integrity seem to be: 1) mechanical injuries, e.g. stripping of skin during removal of an ostomy bag adhesive, 2) infections, such as folliculitis, 3) underlying skin diseases, such as psoriasis and eczema

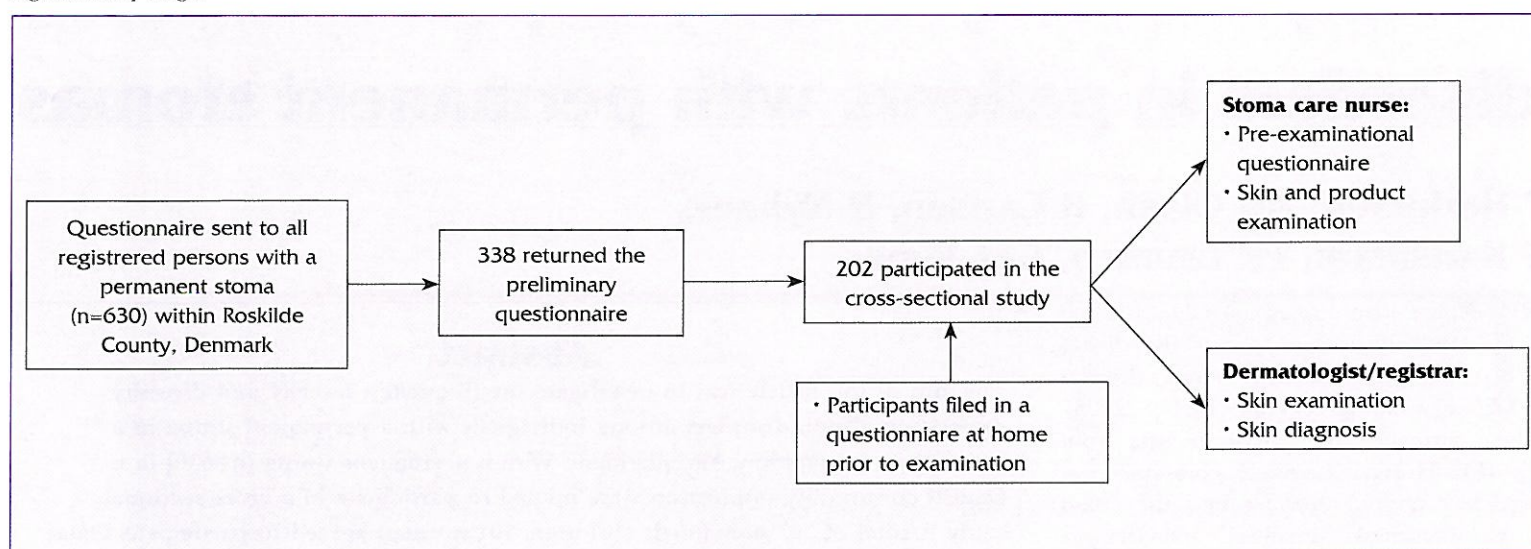
and, 4) immunological disorders, such as allergic contact dermatitis to a skin care product used under the adhesive (Broadwell, 1987; Rolstad and Erwin-Toth, 2004). Skin disorders may also be related to the primary abdominal disease (e.g. malignancy or Crohn's disease).

In a study examining 147 participants with peristomal skin disorders, the most

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Figure 1. Study design.



frequent skin disorders were irritant contact dermatitis (42%), followed by pre-existing skin diseases, such as psoriasis and eczema (20%), and infections (6%) (Lyon et al, 2000). Allergic contact dermatitis occurred in only 0.7% of cases even though 89% of patients felt that their skin disorder was the result of an allergy to their ostomy appliance. This study provided important information about the spectrum of peristomal skin disorders, however, the clinic only evaluated participants known to have skin disorders and it is therefore inappropriate to use the results as a basis for discussing skin disorder frequencies in community populations.

Although information is available on peristomal skin disorders in very specific populations, there is a clear lack of information about the frequency of peristomal skin disorders in a general population of individuals living with stomas in the community. The present study was designed to be more representative of community populations with stomas in the hope that the data would be relevant to use as a basis for improving evidence-based stoma care treatment strategies in communities.

The study

Aims

The aims of the present study were to investigate the frequency, severity (mild, moderate or severe) and the diversity of the peristomal skin disorders among individuals with a permanent colostomy, ileostomy or urostomy. In addition, the authors also investigated how healthy skin was perceived among the participants and how this agreed with the results of the skin examinations performed by the investigators.

Ethical considerations

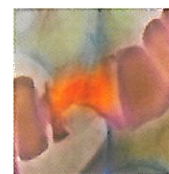
The study was conducted in accordance with the Declaration of Helsinki II 1964, last edited in Tokyo 2004, and in accordance with Council Directive 93/42/EEC of 14 June 1993 concerning medical devices (the Medical Device Directive) and the International ISO standard ISO/DIS 14155-1:2000 Clinical investigation of medical devices for human participants.

The regional ethical committee East Hillerød, Denmark and the Danish data

protection agency approved the clinical investigation plan before the study was initiated. Participation in the study was not expected to include any risks, as the study was not interventional. The participants received an information folder entitled 'Before You Decide', which is published by the Danish Ministry for Research and is aimed at individuals participating in clinical studies. Participants who were diagnosed with a skin disorder were offered help and guidance to obtain treatment from their local stoma

Table 1. Comparison of participants and non-participants in the cross-sectional study with regard to demographics and frequency of self-reported skin disorders.

	Those who declined participation in cross-sectional study 136		Participants in cross-sectional study 202		P-value
Total number of participants	136		202		
% of population (n=630 persons)	22		32		
Males (%)	44		50		0.2 ¹
Females (%)	56		50		0.2 ¹
	Mean ± SD	Range	Mean ± SD	Range	
Age, years	68 ± 16	(18–99)	63 ± 13	29–90	0.0003 ²
Weight, kg*	–	–	78 ± 17	41–140	–
Height, metres*	–	–	1.70 ± 0.10	1.50–1.97	–
	No. of non-participants	% of non-participants	No. of participants	% of participants	
Self-reported skin disorders at last change of adhesive	9	12	44	28	
Total number of answers	76		156		0.02 ¹
1: χ^2 test					
2: t-test					
*: Reported by SCN					
Data are based on non-participant and participant reports					



care clinic and were also offered a follow-up visit after they had completed the study. The participants received no payment for their participation, although transport expenses were covered.

Study design

The study consisted of two consecutive phases (Figure 1). In the first phase, an anonymous questionnaire was used to collect data. In the second phase, individuals who consented were included in a cross-sectional study. Data were collected from September 2003 to September 2004 via a clinical examination of the peristomal skin, a questionnaire completed by the participant prior to the clinical examination, and a registration form completed by the stoma care nurse (SCN) in relation to the clinical examination. Results from the cross-sectional study are reported here.

A pilot study with three participants was completed before beginning the cross-sectional study to test the procedures in practice and make appropriate adjustments. This allowed the investigators to time the examinations appropriately so that patients could spend a minimum amount of time without their ostomy appliance. It also gave the opportunity for the investigators to standardize their definitions of skin disorders.

Participants

Anonymous preliminary questionnaires were sent to 630 registered persons with a permanent stoma in the County of Roskilde, Denmark, and to some local communities in the County of Frederiksborg, Denmark. From the 630 questionnaires sent out, 338 replies were received, representing a response rate of 54%. Of those who responded, 202 individuals (32%; 101 men and 101 women) agreed to participate in the cross-sectional study. To be included in the study, participants had to be at least 18 years of age, living with a permanent stoma and be a resident of Roskilde or Frederiksborg counties. Individuals who were incapable of understanding written or verbal information about the study, or who could not provide informed consent, were excluded. Demographic data of those who declined and those who accepted further participation are reported in Table 1.

Data collection

No central records are available in Denmark for the direct identification of individuals with a permanent stoma. However, all of these individuals are entitled to free ostomy

care products from selected merchants and are thus registered with the local municipalities administering the aid. Therefore, the 11 municipalities within Roskilde and Frederiksborg counties were asked to help send out study material to registered individuals. This included a letter, an information folder about the study, a preliminary questionnaire asking for user patterns, skin conditions in the peristomal area evaluated by the participant and basic ostomy and ostomy care data. The SCNs were responsible for establishing a cooperative relationship with the local municipalities and for ensuring the anonymity of the participants.

The SCNs identified seven key issues that were evaluated in the cross-sectional study. The participants replied to four of the key issues in the questionnaire prior to the clinical examination:

- Are you attached to a stoma care clinic and when did you last visit the clinic?
- Who do you ask for assistance if you have a peristomal skin disorder? (Self management was a possible answer to this question.)

- How often do you change your appliance?
- Did you receive help from home care nurses to use your ostomy appliance?

The pre-examination questionnaire also included data on smoking and alcohol habits, medication, stoma operation, reason for change of appliance, functionality of appliance and peristomal skin conditions. The remaining three key issues were assessed by the SCNs in the registration form completed in relation to the clinical examination:

- What aids were used when washing the peristomal skin?
- What were the procedures for using the ostomy appliance (cleaning, adjustment of the bag to the stoma etc.)?
- How many participants used stoma care accessories and what kind of accessories?

The registration form also included data on the stoma, ostomy appliance, leakage, use of ostomy care accessories and details of the peristomal skin condition.

The clinical examinations took place twice a month (a weekday evening and a Saturday) and were performed by three SCNs, a registrar



Figure 2. Examples of normal skin (a), mild (b), moderate (c), and severe (d) skin disorders.

Table 2. Basic stoma data (n=202) reported by SCNs in relation to clinical examination

	Participants in cross-sectional study	
	Mean \pm standard deviation	Range
Year of creation of stoma	1996 \pm 9	1952–2003
Diameter of stoma at root:		
Width (mm)	30.2 \pm 8.5	3–62
Height (mm)	25.3 \pm 7.8	3–56
	Number of participants	% of participants
Type of stoma:		
Colostomy	100	49.5
Ileostomy	82	41
Urostomy	19	9.5
Main reasons for creation of stoma:		
Colostomy		
Rectal cancer	53	53
Colon cancer	17	17
Diverticulitis	12	12
Ileostomy		
Colitis ulcerosa	36	44
Morbus Crohn	26	32
Urostomy		
Cancer of bladder	10	53
Congenital deformities	4	11
Peristomal area		
Hernia		35
Skin retraction		33

and two dermatologists in a dermatological laboratory at Roskilde University Hospital, Denmark. The participants were scheduled at 15 minute intervals and the examinations took place simultaneously in three rooms. The SCNs received the participants, examined the peristomal skin and the stoma, and observed while each participant removed the ostomy appliance, cleaned the peristomal skin and applied a new appliance. The SCNs then photographed the ostomy appliance, the stoma, the peristomal skin and the abdominal skin. A dermatologist and a registrar circulated between the three rooms to examine the peristomal skin and diagnose skin disorders, if any. The complete examination of each participant lasted 40 minutes.

Ten of the participants in the study were not able to participate in the examinations at the hospital due to bad health and were examined by an SCN and a registrar in their homes.

Definitions of skin disorders

Before starting the study the investigators defined healthy peristomal skin as the complete absence of any visible skin change in the peristomal area. Peristomal skin disorders were classified as mild, moderate or severe (Figure 2). Mild skin disorders were slight

skin changes involving only a small portion of the skin, usually 0.1–0.5 cm requiring minor adjustment. Moderate skin disorders were definite skin changes, e.g. ulcers in the peristomal region, involving a larger area ($>2\text{ cm}^2$), adjustment of pouching system and/or a suggestion for treatment. Finally, severe skin disorders were conditions requiring immediate medical attention. These disorders could have substantial involvement of the whole skin surface beneath the ostomy appliance thus complicating adhesion of the pouch system to the skin.

Data analysis

All participants are described demographically. Results are reported as the distribution of percentage of answers and means/medians where appropriate with standard deviations or ranges. Comparisons of participants and non-participants in the cross-sectional study were made using χ^2 test for categorical data and t-tests for continuous data. No interim analyses were performed and there was no special treatment of missing data. All statistical analyses were performed with SAS statistical software package, version 9.1 (SAS Institute Inc., Cary, NC) after double data entry and data management.

Results

Stoma characteristics and care

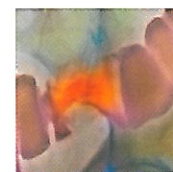
Basic stoma data are reported in Table 2: 49.5% of the participants had a colostomy, 41% had an ileostomy and 9.5% had a urostomy. Participants had lived with their stoma for a mean of 8 years. The main reason for creation of the stoma was cancer in participants with a colostomy or urostomy, and ulcerative colitis or Crohn's disease in patients with an ileostomy.

The use of two-piece ostomy appliances was more frequent (61%) than use of one-piece appliances (Table 3). The mean (\pm SD) change frequency was 10.6 ± 7.1 times a week for one-piece appliances and 3 ± 2 times a week for two-piece appliances. Almost half of the participants were using some type of accessory, the most common of which were skin care and skin protection products (39%). Almost all participants (90%) were good at cleaning their peristomal skin when evaluated by the SCNs and 0.5% were categorized as poor (Table 3). Water and gauze were used most frequently to clean the peristomal area. The majority of the participants changed their appliances themselves. However, 7% had their appliance changed by a home care nurse and 6% by their spouse.

Skin disorders

In total, 45% of participants had a peristomal skin disorder diagnosed by a dermatologist or a registrar (Figure 3). The skin disorders were categorized as mild in 57% of participants, moderate in 33% and severe in 10%. The most common skin disorder diagnosis was faeces-induced erosion (33% of cases), maceration (20%), erythema (16%) and contact dermatitis (8.5%) (Table 4). These four main diagnoses can all be related to contact with stoma effluent and account for 77% of all the diagnoses. The skin disorders lasted for more than 3 months in 76% of the cases (Table 3).

The frequency of skin disorders was highest in participants with an ileostomy (57%) or urostomy (48%), and lowest for those with a colostomy (35%) (Figure 4). The risk of suffering from a peristomal skin disorder was significantly related to the type of stoma and was 2.3 times higher for participants with an ileostomy compared to those with a colostomy. For all types of stomas, peristomal skin disorders categorized as severe were less common than those categorized as mild or moderate. Skin disorders around a colostomy were predominantly categorized as mild (65%). The frequency of moderate skin disorders was 29% and severe was 6% around a colostomy. In participants with an ileostomy or urostomy, the

**Table 3. Basic stoma appliance and stoma care data**

	Total no. of answers	Participants in cross-sectional study	
		Number	%
Usual stoma appliance ¹ :	201		
1-piece bag		79	39
2-piece bag		122	61
Both		–	–
Attachment to a stoma care clinic ²	200	116	58
Last visit at stoma care clinic more than 12 months ²	115	47	41
Would like to be attached to a stoma care clinic ²	200	153	77
The skin disorder lasted for more than 3 months ²	86	65	76
Use of cleaning equipment ¹ :	201		
Water		183	91
Gauze swab		118	59
Soap		46	23
Toilet tissue		40	20
Cotton wool		28	14
Tissue		21	10
Quality of cleaning of peristomal skin ¹ :	176		
Good		158	90
Average		17	9.5
Bad		1	0.5
Incorrect placement of stoma appliance ¹	202	74	37
Use of accessories	200	94	47
Paste		20	11
Ring		19	10
Skin care products		68	34
Belt		20	11
Who usually changes the appliance ²	324		
Participant		275	85
Home care nurse		24	7
Spouse		19	6

1: Reported by SCNs in registration form in relation to the skin examination.

2: Reported by participant in questionnaire prior to the skin examination.

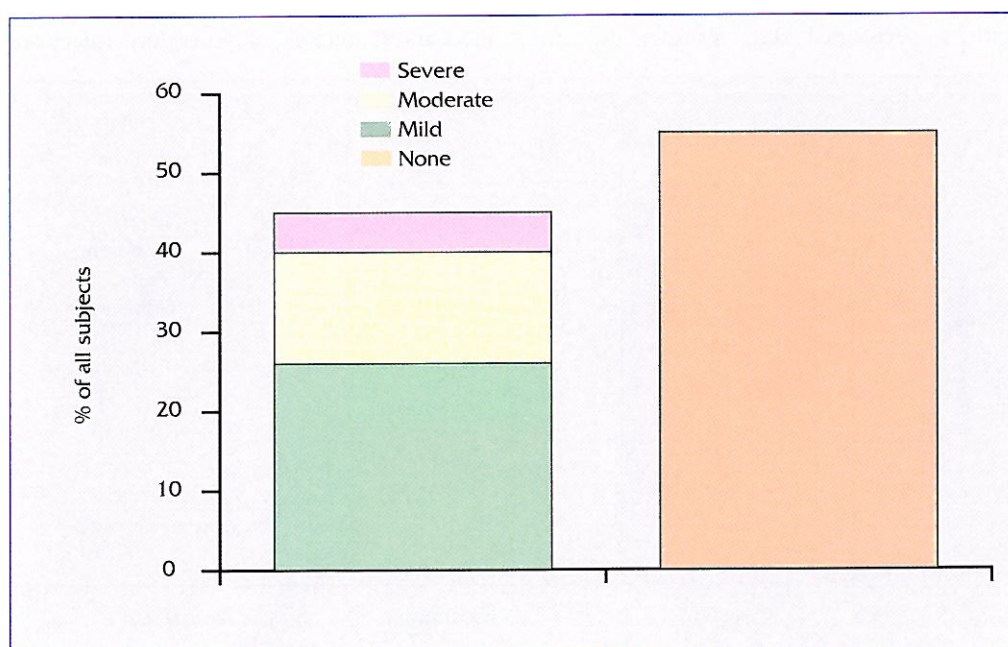


Figure 3. The severity of skin evaluations diagnosed by the dermatologists/registrars, $n=202$; 57% of skin disorders were categorized as 'mild', 33% as moderate, and 10% as severe.

fraction of moderate or severe disorders was greater than in participants with a colostomy; 56% of participants with an ileostomy had mild skin disorders, 33% had moderate and 11% had severe skin disorders. Similarly, it was 33%, 44% and 22% for participants with a urostomy.

Perception of skin disorders

The SCNs agreed with the dermatologists in diagnosing 87% of the cases of skin disorders. In contrast, only 38% of the participants diagnosed with skin disorders agreed that they had a skin disorder (Table 5). Of those diagnosed with a mild skin disorder, 67% did not recognize their disorder (Figure 5). Similarly, 41% of those with a moderate skin disorder and 56% with a severe skin disorder did not recognize the disorder.

More than 80% of the participants with a skin disorder did not seek professional health care (Figure 6). Although 58% of the participants were attached to a stoma care clinic, 41% of those had not visited the clinic within the last year (Table 3). This means that only 34% of the total population, also including those not attached to a stoma care clinic, actually visited a stoma care clinic within the year prior to the study. Among study participants, 77% wanted to be attached to a stoma care clinic in the future.

Participants versus non-participants

Some differences were seen between the 202 study participants and the 136 individuals who declined participation (Table 1). There were no statistical differences with regard to sex, however the mean age was significantly higher in the group that declined to participate ($p=0.003$). Also, a higher frequency of ileostomies was represented in this group, although it was non-significant ($p=0.07$). There were significantly more individuals with self-reported skin disorders in the group that participated compared with those who declined ($p=0.02$).

Discussion

The present study was undertaken to provide data on the frequency, severity and diversity of peristomal skin disorders in a community population of individuals with permanent stomas. This study demonstrated high frequencies of skin disorders, ranging from 57% for participants with ileostomies to 48% for those with urostomies and 35% for those with colostomies. This is well above the frequencies reported by Ratliff et al (2005) and Ratliff and Donovan (2001), who investigated individuals with 2-month old stomas in the US. However, it may be difficult

Table 4. Primary diagnoses of peristomal skin disorders, n=106 (distributed on 91 participants)

	No. of diagnoses	% of diagnoses	% of all participants
Faeces-induced erosion	35	31	17
Maceration	21	20	10
Erythema	17	16	8
Contact dermatitis	9	8.5	4.5
Folliculitis	4	4	2
Granulomatosis cutis	4	4	2
Ulcus cutis	3	3	1.5
Excoriation	2	2	1
Fistula	2	2	1
Nummulat eczema	2	2	1
Toxic contact dermatitis	1	1	0.5
Allergic to metal	1	1	0.5
Allergic contact dermatitis	1	1	0.5
Psoriasis	1	1	0.5
Fissura	1	1	0.5
Allergy	1	1	0.5
Pyoderma gangrenosum	1	1	0.5

to compare the studies due to their different designs. The frequency of skin disorders may be very different for a population examined only 2 months after their stoma surgery, compared with the population in our study, who had well-established stomas with a mean of approximately 8 years since surgery.

The results may also be influenced by the way in which skin disorders are defined. Dermatologists may diagnose a skin disorder in an early stage as a result of their specialist knowledge, whereas SCNs are used to dealing with peristomal skin disorders at a more advanced stage. The importance of recognizing peristomal skin disorders at an early stage should not be underestimated, as they may develop into more severe conditions if left untreated. A third study investigating individuals with urostomies reported a high frequency of skin disorders (65%) in a population of 66 Swedish individuals conducted between 1969 and 1981 (Nordström et al, 1990). Overall, it seems reasonable to assume that in general populations of individuals with stomas, skin disorders will be present in a maximum of approximately one-third of those with a colostomy and approximately half of those with ileostomies and urostomies.

One of the key findings of this study was that only 38% of individuals with a diagnosed peristomal skin disorder recognized that they had a skin disorder. In a questionnaire prior to the skin examination, not only did individuals with mild skin disorders fail to recognize these disorders, but 41% with

moderate and 56% of those with severe skin disorders reported that they did not suffer from any skin disorder. The reason for this low level of recognition remains unknown. However, it may be due to a change in the perception of normal skin as the skin disorder progresses. The interdisciplinary cooperation between dermatologists and SCNs in the present study and the set-up of a pilot study prior to the study resulted in a high level of agreement between dermatologists and SCNs with regard to skin disorders (87%).

More than 80% of participants diagnosed with a peristomal skin disorder did not

seek professional assistance. This finding is not entirely explained by the low level of recognition of skin disorders among the participants. Other possible explanations include the difficulties associated with seeking out a stoma care clinic. Given that the mean time since creation of the stoma was relatively long in the present study (8 years), many of the participants may have been out of touch with a stoma care clinic. Although all individuals with a stoma in Denmark have access to stoma care clinics, some may not be aware of this benefit. The majority of participants stated that they wanted to be attached to a stoma care clinic, but only 34% of the study population had actually visited a stoma care clinic within the year prior to the study. When considering the relationship between peristomal skin disorders and quality of life (Prieto et al, 2005), it may be worthwhile to invite all individuals with ostomies to have regular follow-up visits at their local stoma care clinic. Once per year may be a useful interval.

The four main diagnoses (faeces-induced erosion, maceration, erythema and contact dermatitis) could all be related to contact with stoma effluent, and accounted for 77% of all the diagnoses. Other studies also report contact with stoma effluent as the main reason for peristomal skin disorders (Nordström et al, 1990; Lyon et al, 2000; Ratliff and Donovan, 2001; Ratliff et al, 2005). The various reasons for contact between stoma effluent and the peristomal skin found in the present study will be discussed in a separate paper. Other frequently stated main reasons for peristomal skin disorders such as mechanical injuries, allergies, and infections

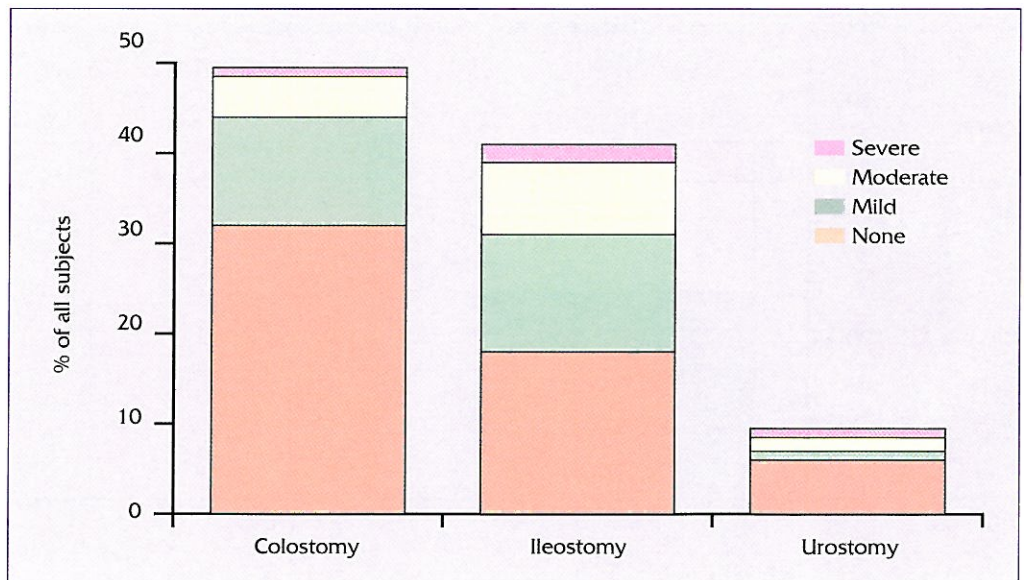


Figure 4. Skin disorders and their severity in different stoma types, n=202. The skin disorder frequency around a colostomy was 35%, it was 57% around an ileostomy and 48% around a urostomy.



Table 5. The frequency of skin disorders based on skin evaluations performed by the dermatologists (or registrar), the SCNs and the participants, n=202

	In total % of all subjects	Skin disorders identified		Agreement relative to dermatologists (%)
		In agreement with dermatologists % of all subjects	In disagreement with dermatologist % of all subjects	
Identified by:				
Dermatologists	45	45	–	100.0
SCNs	42	38.5	3.5	87.0
Participants	24	17	7	38.0

(Broadwell, 1987; Rolstad and Erwin-Toth, 2004) do not seem to be frequent reasons for skin disorders in the present study.

The risk of suffering from a skin disorder was 2.3 times higher for participants with an ileostomy compared with those who have a colostomy. This agrees well with the authors' experiences from daily practice, as well as with other studies (Ratcliff and Donovan, 2001; Ratcliff et al, 2005). The high skin disorder frequency associated with ileostomies is most likely explained by peristomal skin contact with the more liquid and corrosive output from an ileostomy, which is more alkaline and has a higher content of proteolytic enzymes compared to the colostomy output (Elcoat, 1986a).

The majority of participants cleaned their peristomal skin well between appliance changes, however many participants suffered from skin disorders caused by contact with stoma effluent. This means that thorough cleaning between changes was not enough to compensate for the skin being exposed to stoma effluent. The skin may be left exposed to stoma effluent for up to several days depending on the wear time of the appliance. To avoid this it is essential that the ostomy bag has an effective and skin-friendly adhesive. Adhesion to the peristomal skin should be firm enough to prevent leakage, yet be easy to remove, so that the user avoids pain and skin damage (Anazawa et al, 2001). High flexibility minimizes the risk of the adhesive loosening by conforming better to body movements. The adhesive should also have a high capacity to absorb excess liquids, including moisture and stoma effluent, and thus protect the skin. At the same time, it must be coherent enough to resist erosion (decomposition). If the adhesive erodes close to the stoma, the skin is left unprotected and can be exposed to stoma effluents.

Although the present study was designed to represent a community population of individuals living with ostomies, it is possible that recruitment bias affected the results.

There was an overrepresentation of older individuals and individuals with colostomies among those who declined to participate in

the cross-sectional study. Results from the preliminary questionnaire also showed that the frequency of self-reported skin disorders was significantly lower in the group who declined to participate ($p=0.02$). This fits well with the finding that individuals with colostomies suffer from fewer skin disorders than those with ileostomies and urostomies, as reported in the present study, and that their mean age is higher, especially compared to those with ileostomies (Elcoat, 1986b). Due to the higher frequency of self-reported skin disorders for those who participated in the cross-sectional study, the results reported here may represent a slight overestimation.

Evidence-based practice within the stoma care field is being requested more frequently (Gray, 1998). Therefore, the authors would like

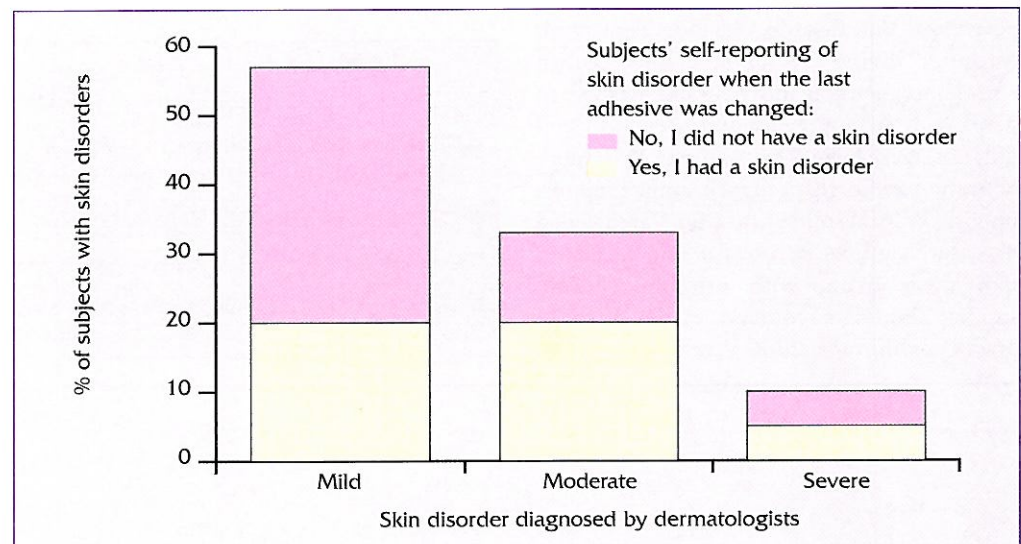


Figure 5. Participants' perception of their own skin condition prior to the clinical examination, n=89. Participants did not recognize their skin disorder in 67% (mild disorders), 41% (moderate disorders) and 56% (severe disorders) of cases.

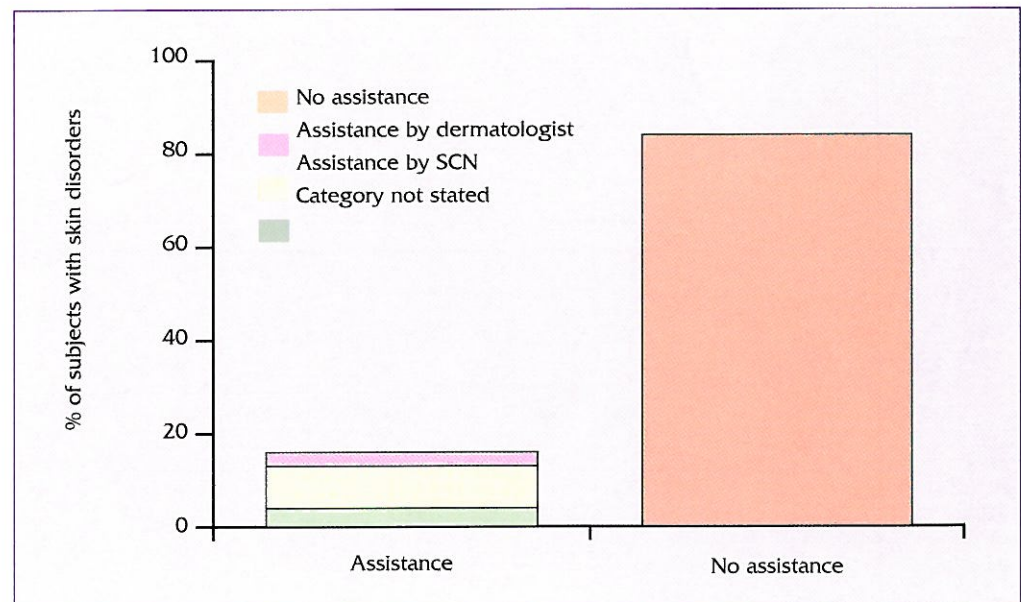


Figure 6. Participants with skin disorders who sought professional assistance and those who did not, n=92.

to encourage other SCNs and dermatologists to cooperate in interdisciplinary programmes and participate in similar studies to gain more knowledge in the field of stoma care. The professional benefits of participating in an interdisciplinary study are clear; in the present study, the investigators had different approaches to stoma care and to perceptions of skin disorders and sharing of knowledge between the investigators proved beneficial to all. Along with the knowledge gained from the results of the present study, this experience was useful in improving patient education in the daily stoma care practice of the investigators, particularly after stoma surgery and later on when the patient is rehabilitated and requires follow-up.

Conclusions

The study revealed a high frequency of peristomal skin disorders in individuals with ostomies living in a specific Danish community. Participants frequently failed to perceive that they had a skin irritation and did not seek help. This suggests that more education and perhaps regular, annual follow-up visits at local stoma care clinics are needed to ensure optimal peristomal skin health in individuals living with ostomies. Future studies should encourage evidence-based practice within the stoma care field. **BJN**

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KEY POINTS

- Peristomal skin disorder frequencies were higher than earlier reported; 57% for individuals with an ileostomy, 48% in relation to a urostomy and 35% in relation to a colostomy.
- 77% of the skin disorder diagnoses could be related to contact with stoma effluent.
- Only 38% of participants who were diagnosed agreed that they had a skin disorder.
- More than 80% diagnosed with a skin disorder did not seek professional health care.