Epidemiological Characterization of Patients with Intestinal Stomas

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Abstract

Objective To characterize the sociodemographic and clinical variables of people with intestinal stomas.

Materials and Methods We conducted a cross-sectional study with 47 patients of a Specialized Rehabilitation Center (CER II/APAE) in the municipality of Três Lagoas, state of Mato Grosso do Sul, Midwestern Brazil, from December 2019 to June 2020. Data was analyzed using inferential descriptive statistics (Anderson-Darling, Chi-squared, and Mann-Whitney normality tests).

Results Regarding the patients, 87.23% were from Três Lagoas, 51.06% were female, 40.43% were aged from 60 to 69 years, 59.57% were married, 53.19% were brown, 59.57% were catholic, 36.17% finished elementary school, 46.81% were retired, and 57.45% earned a monthly income below 1 minimum wage. Moreover, 61.70% had undergone terminal colostomy (61.70%), 61.70% had received guidance about its placing, 57.45% had it placed due to situations of urgency, 74.47% had a stoma installed due to a neoplasia, 38.30% were permanent, with 46.81% located in the inferior left quadrant (ILQ), 59.57% presented pasty effluent, 63.83% had a circular diameter, 53.19% had pouches with 2 pieces and 57.45%, with a flexible base, 87.23% had other adjunct equipment, and 95.74% had been trained in self-care. The most common complication was skin/peristomal irritant contact dermatitis (59,57%), and 65,95% of these cases were solved by teaching self-care. The type of stoma was significantly associated with the consistency of the effluent and the size of the protrusion ($p > 0.05$).

Conclusion The results found can support strategies to implement practices to promote health, develop new public policies, to provide training in self-care, and prevent and treat complications.

Keywords
- ostomy
- intestinal elimination
- health profile
- self-care

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Introduction

In Brazil, approximately 1.4 million ostomies are installed every year.[1–3] Epidemiological data from ostomates are still scarce in the country, and studies to characterize this population are mostly about local and unconnected realities.[4]

Intestinal stomas can be performed due to benign or malign diseases, in elective or emergency procedures in the small and large bowels, and they can be temporary or permanent. Furthermore, they can be used as a curative or palliative measure, and they are caused by trauma, congenital and inflammatory diseases (Crohn disease, ulcerative rectocolitis, and diverticulitis), tumors, and bowel cancer.[5]

After the procedure, countless changes take place in the life of the, such as the fact that ostomates view themselves as abnormal because they do not present characteristics and attributes considered normal by society.

In this regard, the patients face a challenge: self-care, process that is part of accepting the stoma and its physical and physiological conditions.

In face of this context, it is essential to get to know the profile of these patients to provide better clinical care to them. The lack of epidemiological data can influence measures that aim to provide direct assistance to ostomates. In medical records, for example, there are no data regarding the clinical evolution of the patient, and information is only inserted when the ostomate is to be registered in an information system.[5] Health managers should have all data pertaining to ostomates so they can implement effective health public policies for these patients.

Objective

Considering the aforementioned information, the present study aimed to characterize the sociodemographic and clinical variables of patients with intestinal stomas.

Materials and Methods

The present is a cross-sectional, descriptive study, with a non-probabilistic sample by convenience, formed by patients with intestinal ostomies registered in a public Specialized Rehabilitation Center (Centro Especializado em Reabilitação/Associação de Pais e Amigos dos Excepcionais, CER II/APAE, in Portuguese), in the municipality of Três Lagoas state of Mato Grosso do Sul, Midwestern Brazil. The clinical and sociodemographic data of the patients was collected from the records of CER II/APAE,. followed by an analysis of the records, medical history, and a physical examination. A data collection instrument developed by the researchers was also used, after an evaluation by seven stomatherapist nurses, who assessed its clarity, content, and organization. After the patient provided consent, data were collected in the service itself and in the homes of the patients through an interview and a physical examination, all of which took approximately 30 minutes. Visits were scheduled earlier, according with the demands of the services in the town in question, and with home visits in nearby towns in the macro-region being discussed.

Data was collected from December 2019 to June 2020. The inclusion criteria were as follows: being and ostomate, with an intestinal elimination stoma, registered in the CER II/APAE, in addition to being aged 18 years or more and able to communicate verbally and understand the questions. Patients who did not accept participation and those who passed away were excluded from the study.

The sample was composed of 47 ostomates (N = 47). The study followed the ethical principles of Resolution no. 466/2012 of the Brazilian National Health Council, and was approved under opinion 3.723.375, CAAE: 22845519.4.0000.0021.

The data collected was organized and submitted to a descriptive statistical analysis, through which we calculated relative values, as well as central tendency and dispersion measures using the Microsoft Excel 2010 (Microsoft Corp., Redmond, WA, United states) software. To perform the statistical analyses (Anderson-Darling, Chi-squared, and Mann-Whitney tests), we used the Minitab (Minitab, LLC, State College, PA, United States) software, version 18, in addition to using bar and interval graphs, always considering the significance level of 0.05, or 5%.

Results

The analysis of the sociodemographic characteristics of the population studied indicated that most participants (41; 87.23%) were from Três Lagoas. Regarding sex, 24 were female (51.06%), with 19 patients (40.43%) aged from 60 to 69 years. Most participants were married (28; 59.57%), brown (25; 53.19%), and catholic (28; 59.57%). Regarding their level of schooling, 17 (36.17%) had complete elementary education; most patients were retired (46.81%), with a monthly family income below 1 minimum wage (27; 57.45%), not sexually active (27; 57.45%), and did not practice physical activities (37; 78.72%). This data is presented on ►**Table 1**.

The analysis of the clinical data indicated a prevalence of 29 patients (61.70%) with terminal colostomy. Among them, 27 (57.45%) had their stoma installed due to an urgency, and 29 patients (61.70%) reported that they received guidance regarding the creation of the stoma. The previous demarcation of the preoperative stoma was not carried out for 37 patients (78.72%), and for 22 (46.81%), the stoma was in the inferior left quadrant (ILQ)/descending colon.

Regarding the characteristics of the stoma, 42 patients (89.36%) had a bright-red stoma, mostly ranging from 20 mm to 40 mm in size (33; 71.21%). Regarding the equipment to collect the effluent, 25 (53.19%) used a 2-piece equipment, with a flexible base (27; 57.45%). Most used auxiliary equipment (41; 87.23%).

Regarding self-care, most patients cleaned the stoma (35; 74.47%), emptied the equipment (37; 78.72%), and replaced it (29; 61.70%) themselves. The equipment was most often replaced every 3 to 5 days (35; 74.47%). The main cause for the installation of the stoma was neoplasia, affecting 35 patients (74.47%).

Table 1 Sociodemographic data of the study sample (N = 47)

Sample characterization variables	n	%
Hometown		
Bataguassu	4	(8.51)
Brasilândia	1	(2.13)
Ribas do Rio Pardo	1	(2.13)
Três Lagoas	41	(87.23)
Sex		
Female	24	(51.06)
Male	23	(48.94)
Age group		
20-29 years	4	(8.51)
30-39 years	2	(4.26)
40-49 years	7	(14.89)
50-59 years	6	(12.77)
60-69 years	19	(40.43)
70-79 years	6	(12.77)
> 80 years	3	(6.38)
Marital status		
Married	28	(59.57)
Divorced	5	(10.64)
Single	11	(23.40)
Widow/widower	3	(6.38)
Skin color		
White	19	(40.43)
Brown	25	(53.19)
Black	3	(6.38)
Religion		
Catholic	28	(59.57)
Spiritist	1	(2.13)
Evangelical	13	(27.66)
No religion	5	(10.64)
Level of schooling		
Illiterate	5	(10.64)
Semi-illiterate	4	(8.51)
Elementary school	17	(36.17)
High school	16	(34.04)
Higher education	5	(10.64)
Occupation		
Removed from work by the Brazilian National Institute of Social Security	20	(42.55)
Retired	22	(46.81)
Unemployed	1	(2.13)
Homemaker	1	(2.13)
Employed	3	(6.38)
Family income (in minimum wages)		

(*Continued*)

Table 1 (*Continued*)

Sample characterization variables	n	%
No income	2	(4.26)
Less than 1	27	(57.45)
2 to 5	17	(36.17)
More than 6	1	(2.13)
Active sex life		
No	27	(57.45)
Yes	20	(42.55)
Practice of physical activity		
No	37	(78.72)
Walks twice a week	6	(12.77)
Walks three times a week	1	(2.13)
Walks four times a week	3	(6.38)

Regarding complications, 28 (59,57%) of patients presented peristomal dermatitis and 31 (65,95%) used the knowledge they were taught to deal with the complications; 27 patients (57.45%) did not have comorbidities or needed chemotherapy or radiotherapy. Furthermore, 35 (74.47%) patients had preserved their self-esteem, 21 (44.68%) reported only partially accept their body self-image, and 30 (63.83%) had their family as a support network (►**Table 2**).

The statistical analyses (Anderson-Darling, Chi-squared, and Mann-Whitney tests) did not indicate significant associations involving the type of ostomy and sociodemographic variables such as sex ($p = 0.947$), age group ($p = 0.270$), and occupation ($p = 0.862$). These results suggest that the sociodemographic characteristics did not have a significant influence on the type of ostomy.

The other clinical variables analyzed did not present a significant association, since all p-values from the association test were higher than the significance level adopted by the test ($p > 0.05$).

We analyzed three continuous variables in the present study: time of permanence of the stoma (in days), size of the protrusion (in centimeters), mass of the patient (in kilos) (►**Table 3**). These analyses showed no significant differences when relating stoma permanence and patient mass with the type of ostomy ($p > 0.05$).

However, when the size of the protrusion was associated with the type of ostomy, there were significant differences ($p = 0.003$). In this case, protrusion size was significantly higher for patients submitted to ileostomy when compared to colostomy patients.

Discussion

In Brazil, the increase in the rate of malignant neoplasias has followed the increase in life expectancy and in the number of chronic diseases. Neoplasms are the main causes of surgeries for intestinal elimination, and advanced age is an important risk factor for their appearance.[4,6,7]

The causes that lead to intestinal ostomies tend to be diagnosed late as they are difficult to identify, leading to the current rate of elderly ostomates.[4,8,9]

Regarding marital status, we found that most participants had a partner, which coincides with results from other studies.[9,10] Support from a partner is an important factor that is essential for adaptation. Although most participants were married, the ostomates do not resume sexual activities due to fear, insecurity, embarrassment, lack of acceptance from the partner, or because they feel as if they were dirty. Health workers need training to be able to answer the doubts of the ostomates, since the domain of sexuality in these patients are little studied by health professionals. These issues facts must be addressed in such a way as to meet the needs of the patients.[11]

It stands out that there are few studies in the scientific literature on ostomates regarding their skin color, since this piece of information is not available in the form to evaluate people with stomas.[9]

In the present study, most participants were brown, corroborating a study carried out in the Center for the Prevention and Rehabilitation of Disabled Persons (Centro de Prevenção e Reabilitação da Pessoa com Deficiência, CEPRED, in Portuguese) in the capital city of Salvador, state of Bahia, Northeastern brazil.[12]

Regarding religion, most of the participants of the present study were catholic. This finding reflects Brazilian religiosity, since Brazil is the largest catholic country in the world according to data from the Brazilian Institute of Geography and Statistics (Instituto Brasileiro de Geografia e Estatística, IBGE, in Portuguese). This result is similar to that of other studies.[6,13] Faith, when allied with science, can provide substantial help for the patients to trust the physician and feel more hopeful regarding the treatment of the disease, which gives them strength in difficult times.[6,14]

It is also important to highlight that support from family, friends, neighbors, and from the multidisciplinary health team is extremely important to strengthen the ostomate so they can recover their independence, and improve their self-

Table 2 Characterization of clinical variables (N = 47)

		Ostomy				
Clinical variables		**Colostomy (n = 39)**		**Ileostomy (n = 8)**		***p*-value[a]**
		N	**%**	**N**	**%**	
Type of surgery	Elective	16	41.03	4	50.00	0.641
	Urgency	23	58.97	4	50.00	
Previous guidance about the installation of the stoma	No	14	35.90	4	50.00	0.460
	Yes	25	64.10	4	50.00	
Preoperative stoma demarcation	No	31	79.49	6	75.00	0.759
	Yes	7	17.95	2	25.00	
	Did not know	1	2.56	0	0.00	
Permanence of the stoma	Permanent	11	28.21	4	50.00	0.200
	Temporary	11	28.21	3	37.50	
	No information	17	43.59	1	12.50	
Anatomical placement	IRQ/ascending colon	8	20.51	0	0.00	<**0.001**
	IRQ/ileum	0	0.00	**8**	**100**	
	ILQ/descending colon	**22**	**56.41**	0	0.00	
	ILQ/sigmoid colon	3	7.69	0	0.00	
	URQ/transverse colon	2	5.13	0	0.00	
	ULQ/transverse colon	4	10.26	0	0.00	
Color of the ostomy	Dark red	4	10.26	0	0.00	0.370
	Pale red	1	2.56	0	0.00	
	Bright red	34	87.18	8	100	
Humidity of the stoma	Dry	3	7.69	1	12.50	0.672
	Humid	36	92.31	7	87.50	
Protrusion	No	1	2.56	0	0.00	0.538
	Yes	38	97.44	8	100	
Diameter	Circular	23	58.97	7	87.50	0.101
	Oval	16	41.03	1	12.50	
Size (in mm)	0 to 20	8	20.51	1	12.50	0.475
	20 to 40	26	66.67	7	87.50	
	40 to 60	3	7.69	0	0.00	
	60 to 80	2	5.13	0	0.00	
Skin/peristomal allergy	No	38	97.44	8	100	0.538
	Yes	1	2.56	0	0.00	
Type of pouch	Single piece	18	46.15	4	50.00	0.843
	Two pieces	21	53.85	4	50.00	
Base	Flexible	23	58.97	4	50.00	0.641
	Rigid	16	41.03	4	50.00	
Effluent consistency	Liquid	3	7.69	**5**	**62.50**	<**0.001**
	Pasty	**28**	**71.79**	0	0.00	
	Semi-liquid	8	20.51	3	37.50	
	Gray	0	0.00	**2**	**25.00**	
	Brown	**34**	**87.18**	**6**	**75.00**	
	Green	4	10.26	0	0.00	

(*Continued*)

Table 2 (*Continued*)

		Ostomy				
Clinical variables		**Colostomy (n = 39)**		**Ileostomy (n = 8)**		***p*-value[a]**
		N	**%**	**N**	**%**	
Auxiliary equipment	No	6	15.38	0	0.00	0.120
	Yes	33	84.62	8	100	
Self-care training	No	2	5.13	0	0.00	0.382
	Yes	37	94.87	8	100	
Hygiene (stoma)	Caregiver	1	2.56	0	0.00	0.561
	Relative	10	25.64	1	12.50	
	Patient	28	71.79	7	87.50	
Equipment emptying	Caregiver	1	2.56	0	0.00	0.700
	Relative	8	20.51	1	12.50	
	Patient	30	76.92	7	87.50	
Equipment replacement	Caregiver	1	2.56	0	0.00	0.606
	Relative	15	38.46	2	25.00	
	Patient	23	58.97	6	75.00	
Replacement frequency	Daily	4	10.26	1	12.50	0.939
	Every 2 days	5	12.82	1	12.50	
	3 to 5 days	29	74.36	6	75.00	
	More than 5 days	1	2.56	0	0.00	
Reason for the ostomy	Diverticulitis	7	17.95	0	0.00	0.240
	Neoplasia	28	71.79	7	87.50	
	Other	4	10.26	1	12.50	
Skin/peristomal complications	No	14	35.90	4	50.00	0.654
	Candidiasis	1	2.56	0	0.00	
	Dermatitis	24	61.54	4	50.00	
Stoma-related complications	No	27	69.23	6	75.00	0.742
	Yes	12	30.77	2	25.00	
Resolution of complications	Absence	11	28.21	4	50.00	0.439
	Surgical	1	2.56	0	0.00	
	Self-care teaching	27	69.23	4	50.00	
Comorbidities	No	22	56.41	5	62.50	0.750
	Yes	17	43.59	3	37.50	
Treatment with chemo/radiotherapy	No	22	56.41	5	62.50	0.750
	Yes	17	43.59	3	37.50	
Self-esteem	Not preserved	10	25.64	2	25.00	0.970
	Preserved	29	74.36	6	75.00	
Body self-image	Partial acceptance	17	43.59	4	50.00	0.856
	Complete acceptance	14	35.90	3	37.50	
	Non-acceptance	8	20.51	1	12.50	
Support network	Family	24	61.54	6	75.00	0.460
	Family and others	15	38.46	2	25.00	

Abbreviations: ILQ, inferior left quadrant; IRQ, inferior right quadrant; ULQ, upper left quadrant; URQ, upper right quadrant.
Note: [a]*p*-value from the Chi-squared test considering statistical significance at $p < 0.05$.

Table 3 Descriptive statistics of the continuous variables regarding ostomy type. Brazil, 2020. (N = 47)

Continuous variables	Descriptive statistics				*p*-value[a]
	Colostomy		Ileostomy		
	Mean ± SD	Md	Mean ± SD	Md	
Time of permanence of the stoma (days)	726 ± 952	259	557 ± 776	340	0.977
Protrusion size (cm)	0.91 ± 0.87	0.70	1.26 ± 0.23	1.30	**0.003**
Mass (Kg)	65.1 ± 17.8	63.0	69.7 ± 14.7	73.0	0.321

Abbreviations: Md, median; SD, standard deviation.
Note: [a]*p*-value of Mann-Whitney test considering statistical significance at $p < 0.05$.

esteem and social life, since the patient is in a vulnerable state and needs help.[13,15]

Regarding the level of schooling of the study sample, most had a complete elementary education. This should be regarded as a worrisome, since the lower the level of schooling of the ostomate, the worse they will be able to understand their disease, their treatment, the possibilities of self-care, and the harder it will be to detect complications early. This result is also in line with other studies.[10,14]

As a result, health education is an essential process in nursing care to the ostomate, since it requires multidisciplinary and individualized care, to help the patient cope with behavioral and psychological changes. To do so, the nurse must establish communication and assess the degree of understanding of each ostomate.[1,16]

Regarding the type of ostomy, colostomy was the most common, followed by ileostomy; similar results were found in other studies.[8,14]

The permanence or absence of ostomies is directly tied to their diagnosis. Permanent ostomies are usually associated with colorectal cancer, while temporary ostomies tend to be associated with trauma. When analyzing the population with permanent stomas, one must have in mind the need for continuous and prolonged care.[1,17]

Regarding the character of the surgery, most participants came to the hospital due to urgencies. The type of hospitalization is directly related to the causes that motivated the ostomies. A study carried out in a service dedicated to the care of type-II ostomates in the city of Natal in the state of Rio Grande do Norte, northeastern Brazil, is in accordance with this data.[18]

Regarding their location, most stomas were in the ILQ. The ostomies in the left quadrants explain the predominance of the cancer diagnosis and the pasty effluent, while the color of the effluent is related to the diet of the ostomate, the treatment, and ongoing medications.[1]

At time of data collection, the participants had been living with the ostomy from 18 days to 10.3 years. The time of permanence is a challenge to the patient regarding the process of accepting their current health state and the uncertainty about the future. Health services must have a multidisciplinary team and provide comprehensive, individualized, and, especially, continuous care.[18–20]

In most cases in the present study, the ostomy was round and bright red. The roundness reduces complications, as it makes the adaptation the pouch easier and prevents the overflow of effluent.[1]

Most ostomies had a diameter ranging from 20 mm to 40 mm, which is in accordance with the results from another study.[21] It is well known that the diameter interferes in the form and adaptation of the pouch, but no information was found regarding an ideal stoma size. Identifying the diameter of the stoma is essential to choose the adequate plan of care and select the proper equipment and auxiliary equipment. This helps achieve an ideal adaptation of the adhesive base of the cutaneous barrier to the ostomy, preventing peristomal cutaneous lesions and providing more comfort to the ostomate.[9,22]

The main complications found in the present study were dermatitis, prolapse, retraction, stenosis, peristomal hernia, and edema. To reduce and prevent complications, assistance to the ostomate should be adequate, so these patients learn the necessary abilities for self-care.[7]

It is worth noting that, to avoid complications in the ostomy and the surrounding skin, it is essential to make plans of assistance that include the previous demarcation, on the surface of the abdomen, of the place where the bowel will exit the body, associating with it risk factors such as advanced age, weak abdominal muscles, high body mass in the postoperative stage, and the use of adequate ostomy systems.[23]

It should be noted that, when patients were asked about the demarcation in the preoperative stage, most stated that this procedure had not been performed. Other studies[14,21] found similar results. Demarcation is extremely important and should be performed in the preoperative period, since an adequate placement of the ostomy can prevent or reduce potential complications in the stoma and in the peristomal region, in addition to facilitating self-care and rehabilitation.[21]

Regarding the ostomy systems used by the patients, most used a two-piece pouch, which is in accordance with another study.[21] However, it disagrees with other studies,[8,14] in which most patients used one-piece pouches. Systems and appliances are recommended depending on the type of stoma and the consistency of the effluent. Other aspects that influence the recommendation are the surgical installation, complications, protrusion levels, capacity for self-care, and type of patient activity, protection barriers, or available cutaneous protectors. Therefore, collecting systems and appliances must be explained thoroughly to ostomates and be recommended according to their needs, but, with time, the systems can be replaced, and it is important to constantly reevaluate them.[1,9,21]

There is no need to standardize the number of times a system needs to be replaced, since the frequency of the replacement is individual and must respect the characteristics of the effluent, the stoma, and the skin of the individual. However, replacement must take place before any leakage can occur.[14]

The interview conducted in the present study showed that the participants had their self-esteem preserved and partial acceptance regarding their self-image. Self-esteem can be understood as psychological wellbeing, the satisfaction of a patient with their life. They can express positive affections related with their body as they reflect their acceptance of their self-image, as well as adapting to the processes resulting from its life cycle.[24] In this step, it is essential to assess the self-image and self-esteem of patients who undergo the procedure, since they will doubtlessly have to deal daily with a situation never before experienced, which will change the standards and the rhythm of their lives.[24]

Regarding self-care associated with hygiene, most participants of the present study were responsible for their own hygiene, and for the emptying and exchange of their pouches. This data is in accordance with the results from a study conducted in Salvador, Bahia.[12]

In this context, the health team, especially the nurse, must follow up on the recovery and adaptation of these patients, encouraging them to resume their activities of daily living. If the nurse has previous knowledge about health education, they can identify the difficulties ostomates are having to learn, and select methods, techniques, and strategies to facilitate the continuation of their self-care.[17,25,26]

It should be mentioned that the limitations of the present study include a small sample size and the restricted location of the research, which was conducted in a single reference center for the attention to patients with public ostomies. Nonetheless, its strengths include the description of the reality of a service targeted at a specific population, in Midwestern Brazilian, a region which was lacking in epidemiological studies on the topic.

Conclusion

The present study enabled the determination of the epidemiological profile of patients with intestinal elimination ostomies in the service analyzed. Other studies of similar size may be able to provide support to the professionals in the interdisciplinary team – especially the nurse – regarding a plan of assistance for the service, and to define and better understand the difficulties experienced by people with intestinal ostomies, providing them with an important form of care. This is important not only in self-care, but also in the prevention and treatment of disturbances and complications due to systems and appliances, according with individual needs or particularities.

Finally, the present study provides support to professionals involved in the assistance to patients with intestinal elimination ostomies, and its results can subsidize strategies to implement practices to promote health, develop new public policies, guide self-care, and prevent and treat complications.

Conflict of Interests
The authors have no conflict of interests to declare.

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