


Nursing Diagnoses in People with Digestive Stoma and their Association with Sociodemographic and Clinical Factors

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PURPOSE: To determine nursing diagnoses in people with a digestive stoma and their relationship with sociodemographic and clinical variables.

METHOD: A cross-sectional descriptive study of 102 subjects in the General Surgery Unit of a first-level hospital (Granada, Spain) was conducted. Data were collected on the presence of nursing diagnoses, sociodemographic and clinical variables.

RESULTS: NANDA-I: "Deficient knowledge (00126)" and "Readiness for enhanced health management (00162)" were present in the entire sample studied. The period of care (postoperative vs. follow-up) was the most common significant variable among diagnoses.

CONCLUSIONS: This work contributes to the determination of NANDA-I diagnoses in people with digestive stomas.

IMPLICATIONS FOR NURSING PRACTICE: The results provide a guide to help nursing professionals develop individual care plans.

There is an estimated incidence of 2-4 ostomy patients per 1,000 adults in Western countries (Collado-Boira, 2014). Colorectal cancer is the main indication for stomas, followed by inflammatory bowel disease (IBD). Colorectal cancer has the highest incidence and is the second leading cause of mortality in Europe, regardless of sex, with 446,000 new cases diagnosed each year (Siegel, Desantis, & Jemal, 2014). Its operability rate is over 90%; thus, many people with the diagnosis undergo surgery resulting in a temporary or permanent stoma.

The change in body image caused by stoma creation in these patients can lead to environmental and social interaction problems, which can even cause physiological, psychological, and social difficulties. The consequences are broad and range from social isolation and the alteration of sexual

activity to changes in how they dress (arising from insecurity) and fear of bowel incontinence. These factors lead to low self-esteem, which slows down and disrupts the adaptive process (Mota & Gomes 2013).

Some studies propose continuous counseling—conducted by nursing professionals—in the preoperative period (stoma-site marking, information, assessment, etc.), the postoperative period (detection of complications, information on devices, self-care approach, etc.) (Pat-Castillo et al., 2010), and after hospital discharge, with the aim of experiencing fewer complications and creating better stoma management (Black, 2009; Zhang et al., 2012).

Good practices by nursing staff require a systematic method. This implies applying nursing taxonomies that help monitor and record the care provided through the

implementation of nursing care plans. A universal language should be used, and some objectives should be determined to evaluate and implement that care. The aim is to ensure the quality and continuity of care in people with digestive stoma (Bueno-Cardona, Pelegrina-Bone, & Jiménez-Vinuesa, 2015; Coca-Pereira, Fernández-de-Larrinoa-Arcal, & Serrano-Gómez, 2014).

Current Spanish regulations on the minimum data set of clinical reports in the National Health System (RD 1093/2010) include NANDA-I taxonomy as the recording language to be used in nursing care plans. In this line, this study aims to determine which NANDA-I diagnoses can be considered in patients with digestive stoma and analyzes which sociodemographic and clinical factors are associated with these diagnoses.

Method

Design

Cross-sectional descriptive study.

Setting

The Unit of General Surgery at the first-level University Hospital Complex in Granada (Spain) was the study site. This unit includes 82 beds for hospitalization and 5 theatres (two for surgical emergencies). Patients who will undergo either scheduled or urgent ostomy surgery are cared for at this site, which also includes a follow-up care unit after discharge.

Sample

The study population included patients with an intestinal stoma who were treated at the above mentioned unit and were admitted for surgical intervention or were receiving continued care. Minors were excluded because the prevalence of intestinal stomas is very low in this age group, and this study focused on the adult population. Patients with cognitive problems that hindered their assessment and those who did not agree to participate in this study were also excluded. Consecutive sampling was performed until 102 subjects were enrolled. Data were collected between February and April 2017.

Main Research Variables

The following sociodemographic and clinical variables were collected: age (years), sex (male/female), membership in a patient association (yes/no), family member wearing an ostomy (yes/no), stoma-site marking (yes/no), and period of care (patients were divided into two groups, those who were in postoperative care, with the period of care beginning at the conclusion of surgery and ending at the time of discharge, and patients who were in follow-up care, consisting

of continued care starting after discharge and including follow-up visits).

NANDA-I was used to collect data on nursing diagnoses (Herdman & Kamitsuru, 2014). The presence or absence of diagnoses was recorded based on a previously prepared list of 21 diagnoses. The selection process of these diagnoses was based on a previous study that is part of the larger research project that includes this study (Capilla-Díaz, 2017). In that study, a metasynthesis was first conducted that concluded with the proposal of 21 diagnoses. In a second phase, to evaluate its content validity, the list was reviewed by three experts in nursing methodology and a stomatherapy nurse. This previous study ended with a pilot study conducted in nine patients that tested the assessment process subsequently used on the research sample.

Data Collection

Each patient underwent an in situ assessment at the unit. To this end, a notebook was prepared that included a brief instruction sheet, documents related to ethical considerations, a form with sociodemographic and clinical variables, and a list of previously selected diagnoses. The data were collected via short questions during an interview by a graduate nurse with specialized training in stomatherapy and command of NANDA-I terminology. During data collection, the nurses introduced themselves to the patient, explained the objective of the study, and asked for patient participation and informed consent. No patient refused to collaborate. First, the sociodemographic and clinical data were obtained, and then, the presence of each diagnosis was examined using short questions regarding the definition, defining characteristics, and related factors. The responses to the questions and the clinical judgment of the nurse determined the presence or absence of the diagnosis. Once the patient was assessed by the first nurse, the list of diagnoses was examined by the supervisor of the Stomatherapy Unit (a stoma nurse) to verify the selected data. The supervisor was chosen because of her specialization and knowledge of the patients assessed due to her role in the department, in addition to being in charge of follow-up visits at the unit.

Data Analysis

The data were entered into a database created in Microsoft Excel and later exported to the R-commander software package. A univariate analysis of continuous variables was performed by calculating the mean and standard deviation, whereas categorical variables are expressed as absolute frequencies and percentages. A bivariate analysis was performed using Student's *t*-test to compare each diagnosis according to age (a normal distribution of variables was verified by the Kolmogorov-Smirnov test using IBM SPSS Statistics Base 22.0), and the Chi-square test (or Fisher's exact test when the conditions required for the previous test were not met) was used to compare each diagnosis with the other

factors. This analysis was performed in those diagnoses with a prevalence higher than 15% in the sample.

The previous analysis showed that the factor most significantly associated with more diagnoses was the period of care. The analysis was completed by designing multiple logistic regression models to confirm these associations, adjusting for age, sex, medical diagnosis, and stoma-site marking. These adjustment variables were chosen because of their relevance to the sociodemographic and clinical data. It was not possible to adjust for all the variables collected because with the inclusion of 102 subjects, multivariate models only allowed a maximum of five independent variables so that at least 20 cases were available per variable included in the model, as recommended for multivariate regression. For each variable included in the model, the odds ratio (OR) and corresponding 95% confidence interval (CI) were calculated.

Fit criteria were examined for each model: collinearity between variables was studied by calculating the variance inflation factor (VIF), with a VIF < 2.5 indicating no collinearity; linearity of the dependent variable was verified with the only continuous variable included in the model (age); and calibration was determined using the Hosmer-Lemeshow goodness-of-fit test. Finally, discrimination was determined based on the value of the area under the ROC curve, which was considered adequate when > 0.70. Models that did not meet the fit criteria were discarded.

In all analyses, $p < .05$ was considered significant.

Ethical Considerations

This study is part of a larger research project approved by the "Research Ethics Committee of the province of Granada" (Spain) under file number PI-0564-2011. Each patient was given a fact sheet with the research objectives, and all participants gave their consent before being included in the study. The data were treated with the utmost confidentiality, ensuring patient anonymity by using an identification code; the nurse in charge of collecting the data ensured the confidentiality of the information.

Findings

Sociodemographic and Clinical Characteristics of the Sample

The mean age of the patients studied was 62.57 years ($SD = 11.30$, min = 33, max = 84). The sample was distributed homogeneously by sex, with 52 (51%) males and 50 (49%) females. Seven (6.9%) patients belonged to an ostomy association. Sixteen (15.7%) patients had a family member with an intestinal stoma. Regarding the diagnostic indication for the stoma, 82 (80.4%) patients had cancer. Ninety (88.2%) patients had undergone ostomy surgery in the past year. Finally, 45 (44%) patients were in postoperative care, and 57 (56%) were in follow-up care. Stoma-site marking had been performed in 84 (82%) patients.

Table 1. Distribution of NANDA-I

NANDA-I Code/label	f	Percentage
00162 Readiness for enhanced health management	102	100
00126 Deficient knowledge	102	100
00198 Disturbed sleep pattern	73	71.6
00047 Risk for impaired skin integrity	67	65.7
00118 Disturbed body image	50	49
00211 Risk for impaired resilience	34	33.3
00069 Ineffective coping	33	32.4
00094 Risk for ineffective activity planning	31	30.4
00120 Situational low self-esteem	30	29.4
00052 Impaired social interaction	26	25.5
00059 Sexual dysfunction	23	22.5
00002 Imbalanced nutrition, less than body requirements	22	21.6
00146 Anxiety	21	20.06
00060 Interrupted family processes	18	17.6
00014 Bowel incontinence	15	14.7
00136 Grieving	10	9.8
00066 Spiritual distress	8	7.8
00224 Risk for chronic low self-esteem	7	6.9
00124 Hopelessness	5	4.9
00148 Fear	4	3.9
00214 Impaired comfort	0	0

Source: own source.

NANDA-I and Associated Factors

Of the 21 NANDA-I diagnoses included in this study, "Readiness for enhanced health management (00162)" and "Deficient knowledge (00126)" were present in all cases, whereas "Impaired Comfort (00214)" was not present in any of the participants. Of the remainder of patients, more than 50% had "Disturbed sleep pattern (00198)" and "Risk for impaired skin integrity (00047)," whereas less than 15% had diagnoses of "Bowel Incontinence (00014)," "Spiritual distress (00066)," "Grieving (00136)," "Situational low self-esteem (00120)," "Hopelessness (00124)," and "Fear (00148)" (Table 1).

The bivariate analysis showed significant associations between sex and the diagnoses of "Sexual dysfunction (00059)," "Disturbed body image (00118)," and "Disturbed sleep pattern (00198)." Belonging to an ostomy association was significantly associated with the diagnosis of "Sexual dysfunction (00059)." An association was also found between the time elapsed after ostomy surgery and the diagnoses of "Risk for impaired resilience (00211)," "Ineffective coping (00069)," "Situational low self-esteem (00120)," "Risk for ineffective activity planning (00226)," and "Sexual dysfunction (00059)" (Table 2).

Regarding the multivariate models performed to confirm the associations observed between the diagnoses and period of care, valid models were obtained for the diagnoses of "Anxiety (00146)," "Situational low self-esteem (00120)," "Imbalanced nutrition, less than body requirements (00002)," and "Risk for impaired skin integrity (00047)" (Table 3). Thus, using the postoperative period

Table 2. NANDA-I vs. Factors

NANDA-I	$\bar{X} \pm SD$	Sex Age			Ostomy association			Ostomy in the family			Medical diagnosis			Time (years)			Stoma marking			Period of care		p	
		f	f		f	f		f	f		f	f		f	f		f	f		f	f		
		M	W	P	Y	N	P	Y	N	P	O	NoO	P	<1	>1	P	Y	N	P	P	F		
00198	Y	63.97 ± 10.76	32	41	.022	4	69	.402	12	61	1.000	58	15	.704	67	6	.09	60	13	.946	35	38	.217
	N	59.03 ± 12.01	20	9		3	26		4	25		24	5		23	6		24	5		10	19	
00047	Y	62.69 ± 11.65	35	32	.725	5	62	1.000	11	56	.779	56	11	.262	62	5	.102	56	11	.785	20	47	<.001
	N	62.34 ± 10.75	17	18		2	33		5	30		26	9		28	7		28	7		25	10	
00118	Y	63.10 ± 11.75	20	30	.030	4	46	.713	6	44	.315	38	12	.273	45	5	.761	43	7	.343	16	34	.016
	N	62.06 ± 10.93	32	20		3	49		10	42		44	8		45	7		41	11		29	23	
00211	Y	61.24 ± 10.54	16	18	.575	2	32	1.000	3	31	.178	27	7	.860	34	0	.008	29	5	.582	25	9	.000
	N	63.24 ± 11.67	36	32		5	63		13	55		55	13		56	12		55	13		20	48	
00069	Y	63.33 ± 10.73	15	18	.440	2	31	1.000	5	28	.918	25	8	.434	33	0	.008	26	7	.514	16	17	.539
	N	62.20 ± 11.62	37	32		5	64		11	58		57	12		57	12		58	11		29	40	
00120	Y	61.90 ± 12.11	11	19	.062	1	29	.670	6	24	.551	26	4	.303	30	0	.017	24	6	.687	18	12	.037
	N	62.85 ± 11.02	41	31		6	66		10	62		56	16		60	12		60	12		27	45	
00094	Y	60.58 ± 13.15	12	19	.101	2	29	1.000	3	28	.379	23	8	.416	31	0	.016	26	5	1.000	19	12	.021
	N	63.44 ± 10.37	40	31		5	66		13	58		59	12		59	12		58	13		26	45	
00052	Y	65.54 ± 10.64	11	15	.305	4	22	.068	4	22	1.000	23	3	.230	21	5	.177	22	4	1.000	3	23	<.001
	N	61.55 ± 11.40	41	35		3	73		12	64		59	17		69	7		62	14		42	34	
00059	Y	63.70 ± 9.10	16	7	.043	5	18	.006	4	19	.754	20	3	.552	16	7	.005	19	4	1.000	0	23	<.001
	N	62.24 ± 11.89	36	43		2	77		12	67		62	17		74	5		65	14		45	34	
00060	Y	62.89 ± 9.68	10	8	.669	1	17	1.000	2	16	.731	13	5	.339	18	0	.119	14	4	.518	8	10	.975
	N	62.50 ± 11.66	42	42		6	78		14	70		69	15		72	12		70	14		37	47	
00002	Y	59.73 ± 14.49	8	14	.121	1	21	1.000	2	20	.512	17	5	.763	2	1	.454	20	2	.348	15	7	.010
	N	63.35 ± 10.22	44	36		6	74		14	66		65	15		69	11		64	16		30	50	
00146	Y	62.86 ± 8.77	10	11	.730	1	20	1.000	4	17	.737	16	5	.553	21	0	.068	20	1	.111	18	3	<.001
	N	62.49 ± 11.91	42	39		6	75		12	69		66	15		69	12		64	17		27	54	

M, man; W, woman; Y, yes; N, no; O, oncology; NoO; no oncology, P, postoperative care; F, follow-up care. Source: own source.

with respect to that of follow-up care as a reference, the probability of presence was greater for the diagnoses of "Anxiety (00146)" (OR = 0.07), "Situational low self-esteem (00120)," (OR = 0.37), "Imbalanced nutrition, less than body requirements (00002)" (OR = 0.31), "Risk for impaired resilience (00211)" (OR = 0.14), and "Risk for ineffective activity planning (00226)" (OR = 0.37); however, the probability of presence was lower for the diagnoses of "Risk for impaired skin integrity (00047)" (OR = 6.83) and "Disturbed body image (00118)" (OR = 3.14).

Discussion

The aim of this study was to determine NANDA-I diagnoses in patients with intestinal stoma and to identify associations with sociodemographic and clinical variables. Two diagnoses present in all subjects studied should be noted: "Deficient knowledge (00126)" and "Readiness for enhanced health management (00162)." It seems reasonable that nursing care plans intended for patients with digestive stoma should include these diagnoses because it is a very specific process and completely unknown to the individual. In line with other studies, despite the change in health status of these subjects, they have an adequate disposition to acquire knowledge to learn skills that allow them to provide self-care (Lalón & Molina-Llivicota, 2016). However, this

disposition may not be exclusive to the subject; it may include the family support network and even in some cases may be exclusive to this network.

In any case, nursing professionals should act as educators to support the individual's adaptation efforts. Recent studies have confirmed that if patients have questions at discharge, they will have more complications in terms of hygiene, nutrition, mobility, and social integration; furthermore, preoperative education has been shown to decrease the length of hospital stay (Coca-Pereira et al., 2014; Montenegro-Vélez, 2016).

Regarding the diagnosis of "Readiness for enhanced health management (00162)," a positive attitude is a key factor in empowerment or willingness to adapt. In this sense, patients appreciate the understanding and acceptance of the new situation and increase the predisposition to communicate their emotional and spiritual needs (Bulkley et al., 2013).

Another prevalent diagnosis is "Disturbed sleep pattern (00198)." Most of the population in our study had an oncological indication for ostomy surgery. In this sense, scientific evidence associates this sleep disorder with the particular characteristics of the oncological process, usually colorectal cancer. Programs based on positive psychology and cognitive-behavioral therapy that improve quality of life and reduce insomnia in this type of patient are being developed (Louro, Fernández-Castro, & Blasco, 2016).

Table 3. NANDA-I Diagnoses vs. State of Health Care: Multiple Logistic Regression

	NANDA-I																				
	00146			00120			00002			00211			00047			00094			00118		
	OR	CI	p	OR	CI	p	OR	CI	p	OR	CI	p	OR	CI	p	OR	CI	p	OR	CI	p
Age	1.03	0.98	.18	0.98	0.94	.50	0.97	0.93	.33	0.99 ^a	0.95	.80 ^a	0.98	0.94	.44	0.97	0.93	.34	0.96	0.07	.97
		1.09			1.02			1.02			1.04 ^a			1.02			1.02			1.3	
Sex																					
M	Ref.		.93	Ref.		.04	Ref.		.12	Ref.		.54	Ref.		.54	Ref.		.05	Ref.		.03
W	0.95	0.30		2.74	1.06		2.29	0.81		1.33	0.52		0.74	0.28		2.56	1.01		2.59	1.09	
		3.01			7.48			6.82			3.48			1.91			6.87			6.38	
Medical diagnosis																					
O	Ref.		.75	Ref.		.29	Ref.		.83	Ref.		.97	Ref.		.23	Ref.		.34	Ref.		.14
NoO	1.24	0.29		0.50	0.12		1.13	0.30		0.98	0.29		0.50	0.16		1.70	0.55		2.23	0.76	
		4.84			1.67			3.81			3.10			1.57			5.07			6.93	
Stoma marking																					
Y	Ref.		.13	Ref.		.26	Ref.		.57	Ref.		.99	Ref.		.31	Ref.		.57	Ref.		.44
No	0.17	0.01		2.02	0.57		0.62	0.08		0.99	0.25		0.99	0.25		1.42	0.38		0.63	0.18	
		1.19			6.92			2.79			3.56			3.56			4.87			2.01	
Period of care																					
P	Ref.		<0.001	Ref.		0.03	Ref.		.02	Ref.		<0.001	Ref.		<0.001	Ref.		.03	Ref.		0.01
F	0.07	0.01		0.37	0.14		0.31	0.10		0.14	0.05		6.83	2.70		0.37	0.14		3.14	1.33	
		0.24			0.93			0.85			0.37			18.95			0.93			7.79	

M, man; W, woman; Y, yes; N, no; O, oncology; NoO, no oncology; P, postoperative care; F, follow-up care. There was no collinearity between variables, verified with VIF <2.5. Calibration (Hosmer-Lemeshow test): 00146: $\chi^2 = 5.02$, df = 8, p-value = .75/00120: $\chi^2 = 9.23$, df = 8, p-value = .322/00002: $\chi^2 = 9.93$, df = 8, p-value = .27/00211: $\chi^2 = 5.39$, df = 8, p-value = .71/00047: $\chi^2 = 5.75$, df = 8, p-value = .67/00094: $\chi^2 = 5.9$, df = 8, p-value = .65/00118: $\chi^2 = 7.9$, df = 8, p-value = .44. Discrimination (ROC curve): area under the curve: 00146: 0.82 (95% CI: 0.71-0.91)/00120: 0.706 (95% CI: 0.60-0.80)/00002: 0.73 (95% CI: 0.63-0.83)/00211: 0.746 (95% CI: 0.64-0.83)/00047: 0.74 (95% CI: 0.64-0.84)/00094: 0.70 (95% CI: 0.59-0.80)/00118: 0.69 (95% CI: 0.58-0.79).

Source: own source.

^aValues for Log (n) age.

Once patients undergo ostomy surgery, sleep problems continue due to sleep interruptions for reasons such as emptying the pouch, leaks, and concerns about those events occurring (Jansen et al., 2015).

Another diagnosis present in more than half of the subjects was "Risk for impaired skin integrity (00047)." Occasionally, stools are liquid or semiliquid and contain enzymes that irritate the skin. Pulling out the pouch or using aggressive washing materials are bad practices that must be avoided. Therefore, similar to other studies (Urruticochea et al., 2013, Valdiviezo & Chimbo-Avilés, 2016), we concluded that this problem becomes more common 2 months after surgery and has a greater probability of being present at follow-up care. This suggests that health education should be reinforced in this period to avoid complications associated with a peristomal skin condition.

One of the remarkable findings is the influence that the period of care has on the presence of some or other diagnoses. Significant differences were obtained in some diagnoses depending on whether the subject was in the postoperative period or in follow-up care, which is an interesting finding since it can more precisely guide the nursing care plans to be developed in clinical practice.

There is some contradiction regarding the diagnosis of "Deficient knowledge (00126)," since it seems reasonable to think that if patients receive adequate health education to promote their self-care in follow-up care, this diagnosis

should disappear once the subject attains autonomy in the process. This circumstance has most likely not occurred in any of the cases studied in our research. It is conceivable that experienced patients and likely the other patients analyzed would not present this diagnosis, which shows that they do not need follow-up care except for possible complications. These patients do not need to be part of the health-care circuit. It would be interesting to clarify their level of knowledge throughout the period and the time necessary to acquire that experience. However, while the patient is under follow-up care by professionals, it does seem appropriate to address the knowledge deficit in a standardized manner or as a real problem. Similarly, a recent review concludes that educational interventions in ostomy patients should be standardized in relation to the type of intervention, duration, and outcome indicators, while offering comprehensive care during the preoperative and postoperative periods (Faury, Koleck, Foucaud, M'Bailara, & Quintard, 2017). Additionally, there may be a permanent need on the part of the patients to know aspects of their process (new techniques, products, etc.) that are usually filtered by the professionals, justifying the presence of the diagnosis.

In the postoperative period, one of the highlighted diagnoses is "Anxiety (00146)." The duration of the preoperative period and the urgency of the intervention are additional factors that must be assessed. The greater the urgency of the operation, the less time there is for the patient to adjust

emotionally, causing anxiety attacks and many somatic and autonomic manifestations (Gordillo-León, Arana-Martinez, & Mestas-Hernandez, 2011).

Another psychosocial aspect with a greater probability of appearing before and/or during surgery is "Situational low self-esteem (00120)." Previous research justifies the latter, along the lines of the foregoing, with low self-esteem due to the change in body image, stress, and shame, highlighting the importance of bearing in mind that the presence of the device entails a period of adaptation to the accompanying events: bad body odor, flatulence, leaks, etc. (Gómez-del-Río et al., 2013).

The risk of the diagnosis of "Risk for impaired resilience (00211)" has also been shown to be greater in the postoperative period. The surgical environment, by definition, puts at risk trust in the individual and environmental levels since surgery is a stressful situation that limits optimism in the process. Optimism, a sense of humor, and the ability to develop projects, among others, have been described as strategies to achieve a dignified life in these patients in the long term (Martínez-Coronado, 2016; Pruden, Scocco, & Barbieri, 2012). Regarding the diagnosis of "Risk for ineffective activity planning (00226)," there is a tendency toward inactivity, which is also caused by the lack of knowledge about appropriate activities (Russell, 2017). Once again, information appears as a determining factor in process improvement. This diagnosis is not present in follow-up care, which is consistent with other studies confirming that the patient is usually independent after physical recovery (Hernando, 2013).

The diagnosis of "Imbalanced nutrition, less than body requirements (00002)" was common at the time of surgery, according to the results of this study. It is worth remembering that the fecal effluent increases during the first days after surgery, thus producing a high debt, although it diminishes after intestinal adaptation. Large fluid losses occur, which can lead to a state of chronic dehydration due to deficiencies of water, sodium, and magnesium, in addition to malnutrition and weight loss (Arenas-Villafraña, 2015). A collateral problem is the lack of adherence to perioperative nutrition guidelines; thus, a qualitative study warns that the main barrier to adherence was the scarce information provided, thereby providing specific and individualized information by a specialist nurse that was regarded by patients as a priority (Short et al., 2016).

New ostomy patients have lower physiological and psychological energy that prevents tolerating or completing desired activities due to the intervention, justifying the increased risk of the presence of activity intolerance. Therefore, it is important to intervene in this area by inviting family and friends to be part of the recovery period by supporting hygiene, food, and walking, to achieve complete autonomy. There is also a tendency toward inactivity due to the lack of knowledge about appropriate activities (Russell, 2017); therefore, information again appears to be a determining factor in the process of improvement.

In follow-up care, this study found significant differences in favor of the diagnoses of "Risk for impaired skin integrity

(00047)" and "Disturbed body image (00118)." "Regarding the diagnosis of Disturbed body image (00118)," in addition to being more likely in follow-up care, the multivariate analysis showed that the likelihood of this diagnosis was 2.59 times higher in women than in men. This aspect has been contrasted with the literature consulted, which supports that body modification due to the ostomy requires greater adaptation to the new condition by women (De-Sousa et al., 2014) and suggests the need to develop different strategies by sex, highlighting the role of information (Hueso-Montoro et al., 2016) and psychological support (Di-Preto, 2016).

This study is not exempt from limitations. Since this was an observational and cross-sectional study, we cannot verify whether the associations found reflect the true causality relationship between the variables, so they should be taken as causal hypotheses that require comparison with follow-up studies that include a larger sample size. Second, the study is based on a list of diagnoses developed from a previous study; therefore, relevant diagnoses might have been left out of the study. This is partly compensated by the revision performed by experts in the field of the 21 diagnoses submitted; moreover, in the study itself, the inclusion of diagnoses for each patient was supervised by a second observer, although it was not an in situ evaluation, which is an aspect we will improve in future research; finally, the previous study is based on a comprehensive review of the published scientific literature on the needs expressed by ostomy patients.

Another limitation is that the study focuses exclusively on the problem caused by an intestinal stoma. Stomas resulting from different diseases can generate different responses even in the management of the stoma itself, and other closely related processes, such as incontinence, should be addressed together if a comprehensive care plan is proposed.

Regarding the related factors, due to the sample size, it was not possible to develop multivariate models with more adjustment factors. In addition, some factors were left out that could be incorporated in future research. For example, stoma permanence is a relevant factor that was not explored in this study. Another outstanding aspect noted by other studies is the economic and educational level of the patients (De-Frutos-Muñoz et al., 2011; Leal-de-Alencar-Luz & Barros-Araújo-Luz, 2014), which may also be incorporated in future research.

Conclusions

The diagnoses identified with a greater presence in people with intestinal stomas are "Deficient knowledge (00126)" and "Readiness for enhanced health management (00162)." The predominance of diagnoses related to the psychosocial sphere of the person should be noted. Finally, the period of care in which the patient is at the time, classified as the postoperative period (period of hospitalization) or follow-up care (period after discharge), helps determine which diagnoses are present.

Implications for Language Development

This study joins the line of research that, under the need to establish an epidemiology of nursing care needs, determines the prevalence of diagnoses in a specific population and describes which factors are associated with their presence (Echevarría-Pérez, Romero-Sánchez, Giro-Formatger, & Giménez-Fernández, 2016).

Knowledge Translation

Determining NANDA-I diagnoses, in a context as specific as that of the person with an intestinal stoma, provides an orientation guide for nursing professionals who take care of this type of patient; this includes information about what care needs may be altered in the patient and at what time they may arise. As a result of applying these plans, the quality and continuity of care is ensured, favoring management of the disease process and producing benefits in the patient's situation (Bueno-Cardona et al., 2015). Nursing care for ostomy patients is considered in some regions a model of advanced practice (Agency for Health Quality of Andalusia, 2017). These models require clinical and research leadership and highly qualified care practice (Goodman, Morales-Asensio, & de-la-Torre-Aboki, 2013); therefore, the use of NANDA-I taxonomy is an opportunity for developing this at a professional level.

Contribution of Each Author

- *Noelia Moya-Muñoz*: acquisition of data, data entry, analysis, and interpretation of data.
- *Concepción Capilla-Díaz*: study supervision, analysis, and interpretation of data.
- *Marta Labella-Rodríguez*: acquisition of data, data entry, analysis, and interpretation of data.
- *Judit Gálvez-Cano*: acquisition of data, data entry, analysis, and interpretation of data.
- *Inmaculada Sánchez-Crisol*: study design, patient recruitment, analysis, and interpretation of data.
- *César Hueso-Montoro*: study concept, study design, study supervision, statistical analysis, analysis, and interpretation of data.

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