








KNOWLEDGE OF NURSING STUDENTS ABOUT INTESTINAL ELIMINATION STOMAS

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ABSTRACT

Objective: To investigate the knowledge of nursing students about intestinal elimination stomas. **Method:** Descriptive, exploratory, analytical study, with a quantitative approach, carried out in a public higher education institution in Piauí, Brazil, with 115 nursing students between the eighth and the tenth period of the course. The data collection was carried out through an online questionnaire composed of two instruments, one about the sociodemographic and school profile of the students, and the other about knowledge on intestinal ostomies for elimination. Data analysis was carried out through descriptive analysis (absolute and relative frequencies, means and standard deviation) and inferential analysis, in order to verify association between variables, with χ^2 and Fisher's exact tests. **Results:** Most nursing students have a deficit regarding aspects related to preoperative and immediate and mediate postoperative care. There was a statistically significant difference in the academic performance index variable, and it was observed that students with academic performance greater than 9 obtained a higher number of correct answers compared to the others. **Conclusion:** There are knowledge gaps among nursing students, especially in nursing care in preoperative care, and in the immediate and mediate postoperative period, which in turn can compromise the quality of care provided.


DESCRIPTORS: Knowledge. Students, Nursing. Ostomy. Nursing care.

CONHECIMENTO DE ESTUDANTES DE ENFERMAGEM SOBRE ESTOMIAS INTESTINAIS DE ELIMINAÇÃO

RESUMO

Objetivo: Investigar o conhecimento de estudantes de Enfermagem sobre estomias intestinais de eliminação. **Método:** Estudo descritivo, exploratório, analítico, com abordagem quantitativa, realizado em instituição de ensino superior pública do Piauí, com 115 estudantes de Enfermagem entre o oitavo e o 10º período do curso. A coleta foi realizada por meio de questionário *online* composto de dois instrumentos, um sobre o perfil sociodemográfico e escolar dos estudantes, e o outro, acerca do conhecimento sobre estomias intestinais de eliminação. A análise dos dados deu-se por meio de análises descritivas (frequências absolutas e relativas, médias e desvio padrão) e inferenciais, a fim de verificar associação entre as variáveis, com os testes χ^2 e exato de Fisher. **Resultados:** A maioria dos estudantes de Enfermagem possui déficit quanto aos aspectos relacionados às assistências pré-operatória e pós-operatória imediata e mediata. Observou-se diferença significativamente estatística na variável

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índice de rendimento acadêmico, e viu-se que os estudantes com rendimento acadêmico superior a 9 obtiveram maior número de acertos em comparação aos demais. **Conclusão:** Existem lacunas de conhecimento entre os estudantes de Enfermagem, sobretudo na assistência de enfermagem nos cuidados pré-operatório e no pós-operatório imediato e mediato, o que por sua vez pode comprometer a qualidade da assistência prestada.

DESCRITORES: Conhecimento. Estudantes de Enfermagem. Estomia. Cuidados de enfermagem.

CONOCIMIENTO DE ESTUDIANTES DE ENFERMERÍA SOBRE ESTOMAS DE ELIMINACIÓN INTESTINAL

RESUMEN

Objetivo: Investigar el conocimiento de estudiantes de enfermería sobre estomas de eliminación intestinal. **Método:** Estudio descriptivo-exploratorio, analítico, con abordaje cuantitativo, realizado en una Institución de Enseñanza Superior (IES) pública de Piauí, con 115 estudiantes de enfermería, entre el octavo y décimo período del curso. La recolección se realizó a través de un cuestionario en línea compuesto por dos instrumentos, uno sobre el perfil sociodemográfico y escolar de los estudiantes, y otro, un instrumento validado sobre conocimientos sobre ostomías intestinales para eliminación. El análisis de los datos se realizó mediante análisis descriptivo (frecuencias absolutas y relativas, medias y desviación estándar) e inferencial, con el fin de verificar la asociación entre las variables, con las pruebas Chi-cuadrado y exacta de Fisher. **Resultados:** La mayoría de los estudiantes de enfermería presentan un déficit en los aspectos relacionados con los cuidados preoperatorios y postoperatorios inmediatos y medios. Hubo diferencia estadísticamente significativa en la variable índice de rendimiento académico, y se observó que los estudiantes con rendimiento académico superior a 9,0 obtuvieron mayor número de respuestas correctas en comparación con los demás. **Conclusión:** Existen lagunas de conocimiento entre los estudiantes de enfermería, especialmente en el cuidado de enfermería en el preoperatorio, y en el postoperatorio inmediato y mediato, lo que a su vez puede comprometer la calidad de la atención prestada.

DESCRIPTORES: Conocimiento. Estudiantes de Enfermería. Estomía. Atención de enfermería.

INTRODUCTION

The individual with a stoma presents several adaptation changes, mainly physiological and psychological, which directly affect their quality of life¹. Among them are those related to their social life, body image, loss of control over the body and emotional changes². One individual is estimated to have a stoma for every thousand inhabitants in countries with adequate health care³. In Brazil, it was estimated that in 2018 there would be approximately 207,000 people with elimination stomas⁴.

The nurse figure is highlighted when discussing health care for people with a stoma, given that their attribution in caring for people with a stoma is comprehensive and aims to provide them with quality of life⁵. Thus, it is understood that their work consists of defining the care that should be adopted for the patient, inspecting the integrity of the surrounding skin and cleaning, caring in touching, analyzing the treatment and adapting the available resources for better cost-effective convenience⁶. Also, guidance should be given on the use, exchange, correct installation and acquisition of the collection equipment, cleaning the peristomal region and self-irrigation, when indicated⁵.

The stoma therapist nurse stands out as a reference in the care of patients with stomas, who provide specialized assistance through health care planning and management tools to approach the individual with a stoma in the various complexities that may occur between the pre and post -Operation in different health care settings, such as wards, outpatient clinics or at home⁷.

For these needs to be met, it is necessary that during the training of the nurse, these precautions and an overview of the processes of construction of the stoma are addressed to provide more effective care for the ostomate^{8,9}. It is known that most clinical nurses acquire basic knowledge and skills about ostomy throughout the course. Therefore, it is essential

that, at graduation, they develop knowledge about their duties and responsibilities in caring for a person with a stoma and be aware of its physiological, psychological and social effects. Furthermore, it is essential to understand the feelings of ostomates and their difficulties, developing a humanized and empathetic care¹⁰.

Thus, it is considered reasonable to investigate nursing students' knowledge about stomas, considering that they will work as nurses in the future and, therefore, will need this knowledge to provide qualified assistance to individuals with a stoma. From this perspective, this study aimed to investigate nursing students' knowledge about intestinal elimination stomas.

METHOD

The present is a correlational, descriptive, cross-sectional study with a quantitative approach carried out in a public higher education institution in Piauí, which offers undergraduate courses, including a Bachelor's Degree in Nursing. It should be noted that the institution has 12 campuses, but this research only took place on the four campuses that offer the Bachelor of Nursing course.

The study population consisted of 141 students regularly enrolled in Bachelor of Nursing courses between the eighth and 10th periods. Students who were enrolled, attended classes regularly and had already participated in the discipline of Stomal Therapy Nursing were included. Those who were away from the institution, whether due to leave or medical certificates, who did not have access to the internet during the collection period, and who did not respond to the questionnaire after two attempts were excluded. The final sample consisted of 115 students.

The collection occurred from March to June 2022 through an online questionnaire consisting of a script and a knowledge instrument about intestinal elimination stomas. The script addressed questions related to the students' sociodemographic and school profile, had 18 questions and was based on the study by Saho et al.¹¹. The instrument for assessing knowledge about intestinal elimination stomas was validated in a previous study. It presents 43 items, constructed and divided into nine domains: concept (1, 2 and 3), indication (item 4), classification (items 5 and 6), nursing care in the preoperative period (items 7 to 17), immediate postoperative (items 18 to 32), intermediate (items 34 to 37), late (items 38, 40, 41 and 42), immediate and late complications (items 33 and 43) and rights of the person with a stoma (item 39). To respond to the instrument's items, students had three options: true (T), in case they agree with the item; false (F), in case of disagreeing with the item; and I don't know (NS), in the case they don't know how to respond to the item¹².

After online collection, data were exported from Google Forms to the Statistical Package for the Social Sciences (SPSS) software, version 24.0. Descriptive analyses were performed, using absolute and relative frequencies in qualitative variables, means and standard deviation (SD) in quantitative variables, and applying the Shapiro-Wilk test to verify whether the data followed a normal distribution. The χ^2 test and Fisher's exact test were used to verify the association between the variables: the adopted significance level $p < 0.05$ and the confidence interval of 95%. As for the validated instrument on knowledge of intestinal elimination stomas, sufficient knowledge was considered when the correct score was equal to or greater than 80%¹².

The study was submitted to the Research Ethics Committee of the State University of Piauí and appreciated and approved by the body under opinion number 5,294,307. It should be noted that resolutions No. 580/2018¹³, No. 510/2016¹⁴ and No. 466/2012¹⁵ and Circular Letter No. 1/2021¹⁶, of the National Health Council, on research with human beings and in a virtual environment were respected.

RESULTS

Students attend the subject of Stomatherapy in the eighth period. The sample consisted of 115 students, predominantly female (80%), single (82.5%), mean age = 26.6 years (SD = 8.8), who were in the 10th period (39.1%) and only exercised the student occupation (85.2%). Furthermore, most had an income of one or two minimum wages (46.1%) and lived in neighborhoods far from the university (62.6%) (Table 1).

Table 1. Sociodemographic profile of Nursing students at a higher education institution in Piau . Floriano, Piau , Brasil, 2022.

Variables	n	%	Mean \pm Standard deviation
Course block/period			
8th period	36	31.3	
9th period	34	29.6	
10th period	45	39.1	
Age (years)			
Under 24	56	48.7	26.6 \pm 8.8
From 24 to 28	46	40	
Over 28	12	10.4	
Uninformed	1	0.9	
Gender			
Female	92	80	
Male	23	20	
Marital Status			
Single	98	85.2	
Married	11	9.6	
Divorced	1	0.9	
Widowed	5	4.3	
Family income			
Up to 1 minimum wage	24	20.9	
1 or 2 minimum wage	53	46.1	
2 to 5 minimum wages	34	29.6	
5 to 10 minimum wage	2	1.7	
Over 10 minimum wage	2	1.7	
Distance from the university			
Distant neighborhoods	72	62.6	
Nearby neighborhoods	33	28.7	
Nearby regions (inland)	10	8.7	

Most students dedicated three or four hours to the course outside the classroom (45.2%). Regarding the subject of Stomatherapy, 38.3% of the research participants studied the subject through articles, 68.7% had an expository class during the subject, 80.9% experienced the subject remotely, 62.6% had practices in healthcare environments, and 43.5% were approved with an average greater than 9. Regarding the academic performance index, it was observed that 33.9% of the total had a performance between 8 and 8.5 (Table 2).

Concerning the knowledge of Nursing students, errors in predominant questions of preoperative care were related to the marking (57.4%) and positioning of the stoma (60.9%), and the highest number of correct answers involved questions referring to preoperative consultation (89.6%), stoma construction (90.4%), collection equipment and adjuvants (94.8%) and impact on sexuality (87.8%). In the assistance in the immediate postoperative period, there was a predominance of correct answers to the question about the characteristics of the collection equipment (89.6%), and the errors were related to the question that covered the presence of the filter to prevent the release of odors from the flatus (53.9%). In the care provided in the immediate postoperative period, correct answers were predominant regarding the appearance of the peristomal skin

(71.3%) and errors in the questions regarding the amount of effluent disposal (57.4%) and the diameter of the ileostomy (57.4%). In the assistance provided in the late postoperative period, a lower number of correct answers related to colostomy irrigation (45.2%) and fewer correct answers at hospital discharge (89.3%) were observed (Table 3).

Table 2. School and discipline profile of Stomatherapy in Nursing in undergraduate Nursing courses at a higher education institution in Piauí. Floriano, Piauí, Brasil, 2022.

Variables	n	%	Mean ± Standard deviation
Time dedicated to the course outside the classroom (hours)			
Less than 1	2	1.7	
1 or 2	27	23.5	
3 or 4	52	45.2	
More than 4	34	29.6	
Materials used for studies in the discipline of Stomatherapy			
Sites	40	34.8	
Books	23	20	
Articles	44	38.3	
Others	8	7	
Teaching techniques experienced in the discipline of Stomatherapy			
Seminar	23	20	
Expositive class	79	68.7	
Group discussion	6	5.2	
Group dynamics	2	1.7	
Others	5	4.3	
Practical activities experienced in the discipline of Stomatherapy			
Educational lectures for the external community	18	15.7	
Healthcare services	72	62.6	
Technical visits	8	7	
Laboratory practices	17	14.8	
Academic performance Index			
Under 8	7	6.1	8.5 ± 0.6
From 8 to 8,5	39	33.9	
From 8,6 to 9	38	33	
Greater than 9	26	22.6	
Uninformed	5	4.3	
The discipline of Stomatherapy was taught:			
In-person	22	19.1	
Online	93	80.9	
Approval average in the subject of Stomatherapy			
Under 8	13	11.3	8.8 ± 1.0
From 8 to 8,5	26	22.6	
From 8,6 to 9	25	21.7	
Greater than 9	50	43.5	
Uninformed	1	0.9	

Table 3. Frequency distribution of right and wrong answers about the knowledge of intestinal stoma for elimination by nursing students from a higher education institution in Piauí, Floriano, Piauí, Brasil, 2022.

Questions	Errors n (%)	Hits n (%)
Concept		
Intestinal elimination stomas	7 (6.1)	108 (93.9)
Colostomy	28 (24.3)	87 (75.7)
Ileostomy	31 (27)	84 (73)
Recommendation		
Most frequent causes of confection	19 (16.5)	96 (83.5)
Classification		
Temporary	47 (40.9)	68 (59.1)
Definitive	48 (41.7)	67 (58.3)
Nursing care in the preoperative period		
Preoperative consultation	12 (10.4)	103 (89.6)
Stoma confection	11 (9.6)	104 (90.4)
Characteristic of the stoma	20 (17.4)	95 (82.6)
Collector and adjuvant equipment	6 (5.2)	109 (94.8)
Impact on sexuality	14 (12.2)	101 (87.8)
Stoma site marking	66 (57.4)	49 (42.6)
Stoma positioning	70 (60.9)	45 (39.1)
Marking and complications	26 (22.6)	89 (77.4)
Qualified professional for marking	42 (36.5)	73 (63.5)
Stoma site	37 (32.2)	78 (67.8)
Sensitivity test	15 (13)	100 (87)
Nursing care in the immediate postoperative period		
Collector equipment application	18 (15.7)	97 (84.3)
Stoma assessment	11 (9.6)	104 (90.4)
Characteristics of the collecting equipment	12 (10.4)	103 (89.6)
Presence of a filter to prevent odor escape	62 (53.9)	53 (46.1)
Stoma edema	47 (40.9)	68 (59.1)
Stoma color	24 (20.9)	91 (79.1)
Stoma shape	25 (21.7)	90 (78.3)
Flatus escape	40 (34.8)	75 (65.2)
First eliminations	53 (46.1)	62 (53.9)
Aspect of the effluents in descending and sigmoid colostomies	55 (47.8)	60 (52.2)
Aspect of the effluent in the ileostomy	24 (20.9)	91 (79.1)
Nursing care in the intermediate postoperative period		
Amount of effluent elimination	66 (57.4)	49 (42.6)
Peristomal skin appearance	33 (28.7)	82 (71.3)
Colostomy diameter	59 (51.3)	56 (48.7)
Diameter of the ileostomy	66 (57.4)	49 (42.6)

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Table 3. Continuation...

Questions	Errors n (%)	Hits n (%)
Complications		
Immediate complications	36 (31.3)	79 (68.7)
Nursing care in the intermediate postoperative period		
Stoma diameter	18 (15.7)	97 (84.3)
Skin protective barrier	40 (34.8)	75 (65.2)
Selection of collector equipment	28 (24.3)	87 (75.7)
One or two-piece of equipment	45 (39.1)	70 (60.9)
Nursing care in the late postoperative period		
Hospital discharge	12 (10.4)	103 (89.6)
Ordinance No. 400	17 (14.8)	98 (85.2)
Customer referencing	12 (10.4)	103 (89.6)
Associations of ostomates	17 (14.8)	98 (85.2)
Colostomy irrigation	52 (45.2)	63 (54.8)
Late complications	18 (15.7)	97 (84.3)

It is observed that there was a statistically significant difference between the general result and the academic performance index ($p < 0.001$). (Table 4)

Table 4. Association between the general result about knowledge on intestinal elimination stomas of Nursing students from a higher education institution in Piauí and the school profile. Florianópolis, Piauí, Brasil, 2022.

Variables	Total hits		P value
	Sufficient n (%)	Insufficient n (%)	
Place of residence			
Neighborhoods away from the university	28 (38.9)	44 (61.1)	0.792 ^b
Neighborhoods close to the university	11 (33.3)	22 (66.7)	
Regions close to the university (inland)	3 (30)	7 (70)	
Time dedicated to the course outside the classroom (hours)			
Less than 1	1 (50)	1 (50)	0.582 ^b
1 or 2	8 (29.6)	19 (70.4)	
3 or 4	22 (42.3)	30 (57.7)	
More than 4	11 (32.4)	23 (67.6)	
Materials used for studies in the discipline of Stomatherapy			
Sites	10 (25)	30 (75)	0.059 ^b
Books	12 (52.2)	11 (47.8)	
Articles	19 (43.2)	25 (56.8)	
Others	1 (12.5)	7 (87.5)	

continue...

Table 4. Continuation...

Variables	Total hits		P value
	Sufficient n (%)	Insufficient n (%)	
Teaching techniques experienced in the discipline of Stomatherapy			
Seminar	9 (39.1)	14 (60.9)	0.400 ^b
Expository class	30 (38)	49 (62)	
Group discussion	-	6 (100)	
Group dynamic	1 (50)	1 (50)	
Others	2 (40)	3 (60)	
Practical activities experienced in the discipline of Stomatherapy			
Educational lectures for the external community	7 (38.9)	11 (61.1)	0.367 ^b
Healthcare services	29 (40.3)	43 (59.7)	
Technical visits	3 (37.5)	5 (62.5)	
Laboratory practices	3 (17.6)	14 (82.4)	
Academic performance Index			
Under 8	4 (57.1)	3 (42.9)	< 0.001 ^b
From 8 to 8.5	5 (12.8)	34 (87.2)	
From 8.6 to 9	14 (36.8)	24 (63.2)	
Greater than 9	16 (61.5)	10 (38.5)	
Uninformed	3 (60)	2 (40)	
The discipline of Stomatherapy was taught:			
In-person	10 (45.5)	12 (54.5)	0.333 ^a
Online	32 (34.4)	61 (65.6)	
Approval average in the subject of Stomatherapy			
Under 8	3 (23.1)	10 (76.9)	0.594 ^b
From 8 to 8,5	9 (34.6)	17 (65.4)	
From 8,6 to 9	8 (32)	17 (68)	
Greater than 9	22 (44)	28 (56)	
Uninformed	-	1 (100)	
Family income			
1 or 2 minimum wages	7 (29.2)	17 (70.8)	0.765 ^b
2 to 5 minimum wages	21 (39.6)	32 (60.4)	
5 to 10 minimum wages	13 (38.2)	21 (61.8)	
Above 10 minimum wages	1 (50)	1 (50)	
Up to 1 minimum wage	-	2 (100)	

^aTest χ^2 ; ^bFisher's exact test.

DISCUSSION

At graduation, knowledge about care for people with stomas can support the development of strategies and specialized and systematized assistance⁹. Fundamental aspects of caring for ostomates should be considered during nursing education¹⁷

because gaps in this period directly reflect the quality of care¹⁸. Thus, by identifying nursing students' knowledge about intestinal elimination stomata, this study may direct the practice of teaching in professional training.

Concerning the perioperative period of surgeries that generate the elimination of intestinal ostomies, it is necessary to carry out guidelines related to self-care¹⁷. Nursing actions in the pre- and postoperative periods contribute to the social reintegration and quality of life of people with stomas¹⁸. In this sense, determining the students' knowledge about the perioperative period can contribute to filling gaps in the training process and reflecting on the provision of qualified care.

In this study, the nursing students' knowledge about preoperative care showed lower scores of correct answers in the items marking and positioning of the stoma. Previous studies with Nursing students and nurses showed similar knowledge weaknesses^{8,9,18}.

The preoperative demarcation consists of choosing the most suitable place for the exteriorization of the future ostomy, which must be performed by a trained professional, preferably a stoma nurse and/or surgeon, together with the patient.^{17,19,20}, given the need for knowledge regarding the surgical technique and the type of incision⁴. Proper positioning of the stoma prevents complications and is an impact factor in the patient's physical and emotional rehabilitation process, as it provides patients with independence for self-care, return to activities of daily living, reduction of postoperative complications and decline in the chance of leakage, which in turn prevents injury to the peristomal region^{20,21}.

Regarding assistance in the immediate postoperative period, the students had a significant percentage of correct answers in the question referring to the characteristics of the collection equipment. At the same time, more than half missed the question involving the presence of the filter to prevent the release of odors from the flatus. Collecting equipment must be addressed by nurses during the preoperative nursing consultation¹⁷. From this perspective, the professional must know how to indicate the necessary collector and adjuvant equipment²².

In the assistance provided in the intermediate postoperative period, the students had more knowledge about the appearance of the peristomal skin and errors in questions related to the amount of effluent disposal and the diameter of the ileostomy. Knowledge of peristomal skin is in which Nursing students, even with an online educational intervention, demonstrated a lack of knowledge related to this practice, which is, therefore, a relevant aspect in professional training since the reduction of this knowledge affects the quality of care provided, which can lead to complications^{9,22}. It is noteworthy that it is essential that nursing has knowledge about peristomal skin in an attempt to reduce and/or solve complications²².

In turn, nurses' knowledge of the amount of effluent disposal, ileostomy diameter and practice of emptying the collection equipment are crucial guidelines to prevent peristomal complications. Thus, the nurse must have knowledge about emptying the collection equipment with 1/3 of its capacity filled, as well as the need to measure the diameter of the ostomy and the protrusion, to prescribe the collection equipment and the products suitable adjuvants (when necessary), in addition to guiding their handling and use¹⁷. Furthermore, the need to recognize the characteristics of the effluents eliminated by the types of intestinal elimination stoma is understood individually to reduce complications and guide the patient.

In the late postoperative period, Nursing students demonstrated a need for more knowledge regarding colostomy irrigation, a mechanical method to control intestinal elimination that must be performed after medical indication²³. Other studies carried out with Nursing students⁹ and nurses^{8,18} presented similar findings. Considering the knowledge gap among Nursing students about colostomy irrigation, it is recommended to expand the discussion of the theme in the formative process for the acquisition of learning⁹ since patient training must be carried out by a stoma therapist or trained nurse.²³ Furthermore, it should be noted that irrigation is indicated for patients with terminal colostomy on the left, open in the descending or sigmoid colon and, preferably, definitive, without intestinal or associated diseases²³.

In this study, the prevalence of the online modality of the Stomatherapy discipline is due to the Covid-19 pandemic. Changes in the educational system occurred with this pandemic, with the adaptation of classes to digital information and communication technologies²⁴.

In addition, it was observed that students approved with an average greater than 9 obtained a higher frequency of correct answers when compared to those with lower averages. A study shows that the acquisition of knowledge in the professional training process is mainly focused on the theoretical approach and that it is only later complemented through practical

experiences of care in the hospital environment, in which the practical experiences are different, in most cases, from those of theoretical knowledge acquired during training²⁵.

It is understood that the theoretical knowledge added to the practice contributes to the teaching-learning process because, during graduation, nurses have access to several academic themes necessary for the execution of the procedure in different health environments, whose theoretical basis helps the organization and systematization of conduct performed with the patient, contributing to the quality of care provided²⁶.

CONCLUSION

When investigating the level of knowledge of Nursing students, it was possible to identify gaps in knowledge related to nursing care in preoperative care and in the immediate and intermediate postoperative periods regarding marking and positioning of the stoma, qualified professional for demarcation, amount of effluents eliminated and also the diameter of the colostomy and ileostomy. This fact, in turn, can compromise the quality of care provided, as the care provided to patients with ostomies is essential to avoid complications.

Considering the importance of caring for patients with a stoma and the lack of knowledge on the subject presented by Nursing students, it is suggested that educational institutions intensify the contents regarding stomatherapy during Nursing graduation and seek to adopt methodologies of teaching activities that provide better learning opportunities. It is also essential to emphasize encouraging students to strive to improve their knowledge, corroborating clinical practice and collaborating to improve the quality of care.

AUTHORS' CONTRIBUTION

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DATA AVAILABILITY STATEMENT

All data were generated and analyzed in this study.

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