

CUIDADO É FUNDAMENTAL

Escola de Enfermagem Alfredo Pinto – UNIRIO

RESEARCH

DOI: 10.9789/2175-5361.rpcfo.v15.11724

TEACHING THE SYSTEMATIZATION OF THE NURSING CARE IN AN UNDERGRADUATE COURSE

O ensino sobre a sistematização da assistência de enfermagem em um curso de graduação
Enseñanza sobre la sistematización de la asistencia de enfermería en un curso de pregrado

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ABSTRACT

Objective: to understand the perception of undergraduate nursing students about teaching the systematization of nursing care. **Method:** mixed methods research, carried out with 156 students from an undergraduate nursing course at a private institution in Belo Horizonte, Minas Gerais, Brazil. A structured questionnaire was used and, later, ten randomly selected students were interviewed, using a semi-structured script. **Results:** the students showed confidence and knowledge to implement the systematization of nursing care and understand its importance for autonomy, security and professional visibility, in addition to positively evaluating the way in which teaching on the subject is developed in the institution. **Conclusion:** it is understood that positive practices and active methodologies should be strengthened during graduation, requiring a collective effort to provide means for the development of the systematization of nursing care.

DESCRIPTORS: Students nursing; Nursing education; Nursing process; Nursing care.

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Received: 02/15/2022; Accepted: 01/06/2023; Published online: 03/08/2023

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How cited: Silva PGO, Tavares MLO, Pinheiro AMF, Reis DL, Silva APR. Teaching the systematization of the nursing care in an undergraduate course. *R Pesq Cuid Fundam* [Internet]. 2023 [cited year month day];15:e11724. Available from: <https://doi.org/10.9789/2175-5361.rpcfo.v15.11724>



RESUMO

Objetivo: compreender a percepção de estudantes de um curso de graduação em enfermagem sobre o ensino da sistematização da assistência de enfermagem. **Método:** pesquisa de métodos mistos, realizada com 156 estudantes de um curso de graduação em enfermagem de uma instituição privada de Belo Horizonte, Minas Gerais, Brasil. Foi utilizado um questionário estruturado e, posteriormente, dez estudantes selecionados aleatoriamente foram entrevistados, sendo utilizado um roteiro semiestruturado. **Resultados:** os estudantes revelaram ter segurança e conhecimento para implementar a sistematização da assistência de enfermagem e entendem sua importância para a autonomia, segurança e visibilidade profissional, além de avaliar positivamente a forma com que o ensino sobre a temática é desenvolvido na instituição. **Conclusão:** compreende-se que práticas positivas e metodologias ativas devem ser potencializadas durante a graduação, sendo necessário esforço coletivo que forneça meios para o desenvolvimento da sistematização da assistência de enfermagem.

DESCRIPTORIOS: Estudantes de enfermagem; Educação em enfermagem; Processo de enfermagem; Cuidados de enfermagem.

RESUMEN

Objetivo: comprender la percepción de los estudiantes de un curso de graduación en enfermería sobre la enseñanza de la sistematización de la asistencia de enfermería. **Método:** investigación de métodos mixtos, realizada con 156 estudiantes del curso de graduación en enfermería de una institución privada en Belo Horizonte, Minas Gerais, Brasil. Se utilizó un cuestionario estructurado y, posteriormente, se entrevistó a diez estudiantes seleccionados al azar, utilizando un guión semiestructurado. **Resultados:** los estudiantes mostraron confianza y conocimiento para implementar la sistematización de la asistencia de enfermería y comprender su importancia para la autonomía, seguridad y visibilidad profesional, además de evaluar positivamente la forma en que se desarrolla la enseñanza sobre el tema en la institución. **Conclusión:** se entiende que las prácticas positivas y las metodologías activas deben ser fortalecidas durante la graduación, requiriendo un esfuerzo colectivo para proporcionar medios para el desarrollo de la sistematización de la asistencia de enfermería.

DESCRIPTORIOS: Estudiantes de enfermería; Educación en enfermería; Proceso de enfermería; Cuidado de enfermera.

INTRODUCTION

The Sistematização da Assistência de Enfermagem (SAE) is a scientific method that provides safety and quality of care, as well as autonomy to nursing professionals, enabling nurses to develop their technical and scientific knowledge. In 2009, through Resolution No. 358, the Federal Council of Nursing (COFEN) determined the mandatory implementation of the SAE in all health institutions that offer nursing care.¹⁻²

The legislation defines the SAE as a mechanism for the organization of work, which in turn makes possible the operationalization of the Nursing Process (NP), of which the nurse is responsible for leading its implementation.²⁻³ The NP provides structure for decision making, making it more scientific and less intuitive.⁴ This method involves a sequence of five interdependent phases (research, nursing diagnosis, planning, implementation and evaluation) in order to provide professional care to the human being, be it the individual, family or collectivity.^{1,5}

The Diretrizes Curriculares Nacionais (DCN) for undergraduate nursing courses guide the curricular organization of higher education institutions (IES), defining principles, foundations, conditions, and procedures for training nurses who are responsible for leading the execution and assessment of NP. Among other qualifications, they advocate the formation of a critical, reflective professional who practices nursing based on scientific and intellectual rigor.¹

Resolution number 03/2001, from the Conselho Nacional de Educação (CNE), determines that the training of nurses should

promote decision-making, health problem solving, communication, management, leadership, and continuing education. In this context, it is clear that teaching about the SNC is essential in the formation of nurses, and its integration into the basic curriculum in the training of these professionals is important, because it permeates the organization of work.^{2,6}

Thus, the undergraduate courses are charged with fostering in students technical and scientific capabilities for the exercise of the profession with ethics and engagement, thus realizing the relevance of teaching the SNC in professional training, enabling the construction of an autonomous nursing, visible and professionally recognized.^{2,7}

The teaching of SAE is sometimes considered a challenge due to the low involvement of health institutions for the applicability of this learning in practice, which promotes, in students, the erroneous perception that this content has no importance in professional routine. Moreover, teachers report that they had contact with the content only during their graduation, a factor that hinders teaching.⁷ In this context, it is important to investigate how the teaching of SAE has been developed in higher education institutions, because it is during academic life that nursing students have the opportunity to articulate the different theoretical content and foster clinical reasoning.

Understanding the perception of students about the teaching of SAE allows us to reflect on how teaching and learning on the subject has occurred, enabling the recognition of weaknesses and potentialities, with a focus on the direction of pedagogical actions aimed at improving teaching. Given this, this study aimed

to understand the perception of undergraduate nursing students about the teaching of the Systematization of Nursing Care.

METHOD

This is mixed methods research, with a sequential explanatory strategy (quantitative→ qualitative), in which quantitative data are collected at first and the results obtained guide the collection of qualitative data.⁸ The quantitative study was cross-sectional and the qualitative research was descriptive-exploratory.

Undergraduate nursing students from a private higher education institution in Belo Horizonte, Minas Gerais, were invited to participate in the study. This institution has offered the nursing course for 16 years. The method of teaching about the SAE is based on the promotion of clinical reasoning (critical thinking) contained in the Nursing Process as a foundation for learning the professional disciplines of the course curriculum.

The study was carried out in two stages, one quantitative and the other qualitative. The study population comprised all students who took the discipline Systematization of Nursing Care, which included a total of 263 students. The sample size calculation was performed considering a 95% confidence interval and a 5% sampling error, resulting in a minimum sample size of 156 students. All students who attended the SAE course were included and those on maternity leave, not frequent in the course or those who attended the SAE course, or equivalent, in another educational institution were excluded.

The data related to the quantitative stage were collected in March and April, through a structured questionnaire, prepared by the researchers, and included questions for socio-demographic characterization and academic career. This questionnaire was made available through the Google Forms platform and the link was sent via e-mail. To reach the minimum population, emails were sent on three occasions: one at the beginning of the collection period, another after 20 days, and a third 30 days after the beginning. For the quantitative analysis, the Data Analysis and Statistical Software (Stata – 14.0) was used. Qualitative information was captured by means of individual interviews. Students who participated in the quantitative stage were randomly selected, and were contacted via phone call or e-mail. We randomly selected 25 students, of which 15 refused or did not get a response. A date and time for the interview was scheduled with 10 students. The saturation criterion was used to define the end of the survey, when the interviews did not add any new content; thus, the interviews ended with 10 students, with no need to draw new participants.

The interviews took place from April to May 2021 and were guided by a semi-structured script with questions about the teaching and learning processes about SAE. They were conducted by two researchers, a scientific initiation student, attending the 8th period of the nursing course, and a researcher, a nurse, professor of the undergraduate nursing course. All interviews were recorded and lasted an average of 10 minutes.

The audios of the interviews were transcribed in full by the two researchers who participated in the interviews, separately, and then compared to avoid inconsistencies. Then, the content analysis technique was used,⁹ which resulted in three categories for discussion: Factors related to the promotion of teaching about SAE; Perceptions about SAE and strategies in the teaching and learning processes; and Barriers in the teaching and learning processes about SAE. Importantly, the speeches of the participants were identified, illustratively, by the last name of a nursing theorist, followed by the period that the student is enrolled, aiming to ensure anonymity and a better understanding of the discourse.

The study was approved by the Research Ethics Committee of the Hospital da Baleia/Fundação Benjamin Guimarães, under Opinion/CAAE no. 39770520.4.0000.5123. All participants were informed about the objectives, the confidentiality of the information, and the possibility of withdrawing consent if they did not wish to participate. The science and agreement of the students were formalized through the digital acceptance of the Informed Consent Form.

RESULTS

The descriptive analysis of the data can be seen in Table 1, which reveals a predominance of female participants 135 (86.5%), aged 20 to 29 years 91 (58.3%), single 102 (65.4%) and without children 101 (64.7%). Regarding occupation, there was a predominance of nursing technicians 55 (35.3%), besides that, 72 (46.2%) declared income of up to 1 minimum wage, mostly obtained through employment 92 (59%).

Table 2 shows a predominance of students enrolled in the 9th and 10th periods, who have already participated in scientific events 131 (84%), events about SAE 88 (56.4%), extension activities 80 (51.3%), who do not do or did extracurricular internships 96 (61.5%), and did not participate in research activities 127 (81.4%). The weekly study time, excluding classroom hours, is 2 to 5 hours 81 (51.9%).

Regarding the content about SAE, Table 3, points out that the level of health care whose implementation of SAE is considered more complex is in the Tertiary Care 43 (27.6%), in addition, the main complicating factor for implementing the SAE, in the students' perception, is the work overload of professionals 56 (35.9%). The establishment of nursing diagnoses is the phase of the NP in which students have the greatest difficulty 57 (36.5%).

Regarding the teaching and learning about SAE, on a scale ranging from 1 to 5, where 1 refers to low, little or bad, and 5, to high, very or great, all items were rated above the general average, especially the perception that SAE contributes to professional empowerment (mean = 4.9, SD = 0.03) and that the college offers good teaching about SAE (mean = 4.4, SD = 0.05). The remaining items can be seen in Table 4.

The thematic categories that emerged from the qualitative analysis will be discussed below.

Table 1 – Sociodemographic characterization of undergraduate nursing students from a private HEI, Belo Horizonte, MG, Brazil, 2021 (N=156)

Variable	n	%
Age group		
20-29	91	58,3
30-39	44	28,2
40-49	17	10,9
50-59	4	2,6
Gender		
Female	135	86,5
Male	21	13,5
Marital Status		
Single	102	65,4
Married/Stable Union	43	27,6
Separated/Divorced	11	7,0
Skin Color		
Brown	80	51,3
White	44	28,2
Black	30	19,2
Another	2	1,3
Children		
No	101	64,7
Yes	55	35,3
Occupation		
Unemployed	6	3,8
Student Only	30	19,2
Trainee	32	20,5
Nursing Technician	55	35,3
Other	33	21,2
Mental Income		
Up to 1.099,00	72	46,2
1.100,00 a 2.199,00	56	35,9
2.200,00 a 3.299,00	18	11,5
≥ 3.300,00	10	6,4
Origin of the income		
No income	11	7,0
Employment	92	59,0
Grant	27	17,3
Family Aid	20	12,8
Multiple Sources	4	2,6
Autonomous	2	1,3

Table 2 – Characterization of the academic profile of undergraduate nursing students from a private HEI, Belo Horizonte, MG, Brazil, 2021 (N=156)

Variable	n	%
Course Period		
4° – 6°	25	16,1
7° – 8°	61	39,0
9° – 10°	67	43,0
Irregular	3	1,9
Extracurricular Internship		
No	96	61,5
Yes	60	38,5
Research Activity		
No	127	81,4
Yes	29	18,6
Scientific Event Participation		
No	25	16,0

Table 2 – Cont.

Yes	131	84,0
SAE Event Participation		
No	68	43,6
Yes	88	56,4
Participation Activity Extension		
No	76	48,7
Yes	80	51,3
Weekly Study Time		
1h	11	7,1
2h to 5h	81	51,9
6 to 10h	29	18,6
> 10h	35	22,4

Table 3 – Factors related to the content about Systematization of Nursing Care, Belo Horizonte, MG, Brazil, 2021 (N=156)

Variables	n	%
Level of care, whose implementation of SAE is more complicated		
None	24	15,4
Primary Care	38	24,3
Secondary Care	26	16,7
Tertiary Care	43	27,6
All	25	16,0
Factors hindering SAE implementation		
Lack of time	10	6,4
Lack of qualification	23	14,7
Prioritizing technical procedures over records	25	9,6
Work overload	56	35,9
Unawareness about the importance of SAE	43	27,6
Another	8	5,1
There are no hindering factors	1	0,7
Difficulty Phases of the Nursing Process		
Research	17	10,9
Nursing Diagnoses	57	36,5
Assistance Planning	36	23,1
Implementation of nursing care	38	24,4
Evaluation of nursing care	8	5,1

Factors related to promoting teaching about SAE

The speeches of this category translate important pillars that sustain a quality education. The first is related to the teaching and methodology that are developed, the second to human resources, and the third to the structural resources available to students. As far as teaching and methodology are concerned, the following reports demonstrate the students' perception.

In college they incorporate very well the SAE with the practical contents. (Peplau, 8th period)

[...] with my teaching in the 4th period I had all the support, I don't know if it is the right word, but I had the foundation and today it is very easy to apply the SAE.)

In relation to the human and structural resources pillars, we observed aspects that reveal the importance of teachers with

good didactics and, at the same time, committed to the causes of nursing.

I think the professors are extremely qualified, content-wise, very competent. (Henderson, 5th period)

And the way of teaching is totally different, the way of didactics is very good and it's very practice-oriented like that. (Orem, 8th period)

[...] the teacher at the time helped a lot, his didactics. (King, 10th period)

In clinical cases, classes in laboratories, then from the moment that the student has contact with the SAE. (Peplau, 8th period)

Peplau's speech also suggests the importance of investing in laboratories and other structural resources that provide students with opportunities to develop hands-on activities.

Table 4 – Distribution of means and standard deviations referring to the students' perception regarding teaching and learning about the Systematization of Nursing Care in a private HEI, Belo Horizonte, MG, Brazil, 2021 (N=156)

Item	Average (IC 95%)	SD
Knowledge about SAE	3,9 (3,8 – 4,0)	0,05
SAE education in college	4,4 (4,3 – 4,5)	0,05
Dedication to study about SAE	4,0 (3,9 – 4,2)	0,06
Preparation to develop SAE	3,9 (3,8 – 4,0)	0,05
Security to develop SAE	3,8 (3,7 – 3,9)	0,06
Contribution of SAE for professional empowerment	4,9 (4,8 – 4,9)	0,03

SD: Standard Deviation; **SAE:** Systematization of Nursing Care.

Perceptions about SAE and strategies in teaching and learning processes

This category reveals the students' perceptions about SAE, as well as strategies used to improve their knowledge through other sources of information, in addition to what is covered during the course.

The following account shows the importance and need to consider the transversality of teaching about SAE.

I think SAE will be present during the course, [...] for me it is the main subject of the course. (Roy, 8th period)

An important requirement for the student to be able to apply the SAE is a solid base of knowledge about physiology, pathology, pharmacology, semiology, semiotecnology and other content capable of supporting clinical reasoning and favoring decision making. For the student to obtain this knowledge, the use of extra resources was identified in the statements.

Well, I like to read books, look for articles in the literature, congresses. (Peplau, 8th period)

The extracurricular internship is an important opportunity for the student to apply the theory, since this experience provides a diversity of cases, preparing the student to deal with different situations.

In my internship I look for all the cases there are, when we pass theory to practice we learn more, so my strategy. (Orem, 8th period)

The need to apply theory into practice is also seen in Orem's account.

Barriers in teaching and learning processes about SAE

In addition to the strengths revealed in the previous categories, the speeches also pointed out weaknesses and barriers in the teaching and learning processes, as well as perceptions about difficulties encountered to implement SAE. Regarding weaknesses, students reported remote teaching, used during the Covid-19 pandemic as a barrier.

I see my difficulty with this remote teaching, that we are not having access to this practical part. (Henderson, 5th period)

The speeches also point to difficulties in implementing the SAE, in practice. The steps of the NP were mentioned by some students, especially the formulation of nursing diagnoses.

[...] when relating the diagnoses I had a little difficulty. (Roy, 8th period)

I think that the biggest difficulty, in fact, is in practice. It is when I need to take all that theoretical knowledge and apply it in my day to day life. (Peplau, 8th period)

The biggest difficulty is the formation of the diagnosis itself. (Neuman, 8th period)

In addition to the factors pointed out above, there was one student who pointed out the importance of extra courses that help in the immersion of the content about SAE, beyond what is covered during graduation.

I see that the [educational institution], it invests a lot in SAE. But I miss an immersion course, because I have a lot of problem with SAE, a course like an extracurricular course. (Rogers, 10th period)

The analyzed speeches point out potentialities and weaknesses that can be worked on and improved, in order to give more safety to the student and autonomy for professional practice. In addition, the good practices identified can be replicated in other places, with the purpose of improving the teaching about SAE in educational institutions.

DISCUSSION

It is known that the SAE is a legal determination and indispensable for the exercise of nursing², in this study, it was identified that it is recognized as a tool that contributes to the empowerment of the profession. The teaching of the SAE should be consistent and interconnected between the professionalizing disciplines of the curricular matrix, so that institutions offer society professionals capable of implementing practice based on scientific evidence and clinical reasoning in nursing care.^{7,10-11} The formation of critical, creative, ethical and political nurses who are able, through work relationships, to discover new ways of producing services with resoluteness and effectiveness, overcoming the obstacles to the organization of a user-centered work process, thus becomes the great challenge of educational processes.^{1,12}

The profile of nursing students (female, single, up to 29 years old) is corroborated by other studies, including census surveys.¹³⁻¹⁵ We verified that students participate or have participated in extracurricular internships, which is pointed out as an opportunity to develop the content that is taught during graduation. The internship allows the insertion of students in the professional field, under supervision of nurses, providing opportunities for the acquisition of skills and the development of activities inherent to professional practice, although limited to what is allowed to students.¹⁶ For the teaching and learning processes about the SAE, the realization of extracurricular internships is an important moment, because in addition to promoting autonomy, it offers the opportunity to apply, in practice, methods and tools in different contexts, given the diversity of cases and situations that can be identified in the internship fields. In addition, it is necessary to awaken in professionals who supervise the activities of trainees, feelings of appropriation for the SAE and make them aware of the weaknesses that students may have, since they are still in the process of formation, so it is common to present difficulties, requiring differentiated attention and to be encouraged to appropriate the only scientific method specific to nurses and able to consolidate the profession.^{1,17}

Participation in scientific events and research activities, as well as internship activities, is important during graduation. In this study, it was identified that most students have participated in scientific events and, following this trend, also in events about SAE. The reading of books, scientific articles and other activities beyond the class moments were also indicated by the students as learning strategies. These practices, considered complementary activities, should be widely encouraged throughout the training process, which is determined by the DCN of the undergraduate course in nursing.⁶ This enables the student to develop technical and scientific skills, because these activities break with fixed teaching models, which consider that the training process occurs only within the educational institutions, offering various possibilities such as exchange of experiences with professionals and researchers from other places.

Nurses have difficulties to implement the SAE in hospital environments due to lack of human and structural resources, lack of qualification, work overload, prioritization of technical procedures in front of the nursing process, and sometimes, the lack of knowledge.¹⁸ The tertiary care was indicated as the most complex environment for implementation of the SAE, concerning this, work overload, lack of knowledge about the importance of SAE and lack of qualification were highlighted as major barriers by students. In this context, it is perceived that during graduation, the student who performs extracurricular internship or works in another occupation in the health area, already experiences these difficulties that professionals present, thus it is necessary to break the theoretical field and lead the student to clinical reasoning, so that his performance is permeated in a technical-scientific thinking. However, it is noted that institutions and health services sometimes lack resources and tools for nurses to perform the SAE in its entirety.¹⁹⁻²⁰

Another important point to be highlighted is the need to understand the NP as an integral part of the SAE, being a private instrument of the nurse and one of the main tools to guide nursing care and provide professional autonomy. It was verified that the elaboration of nursing diagnoses is perceived by students as the most difficult phase of the NP, sometimes together with the occurrence of disagreements among teachers. The literature recognizes the unpreparedness of nurses to prepare nursing diagnoses, as it is a complex stage of the nursing process that requires interpretation of collected data through critical thinking and technical-scientific knowledge.²¹

The knowledge base of biological sciences, semiology and semiotechnology, together with the use of diagnostic classifications such as NANDA International, support clinical reasoning, standardize terms, and are support tools for the development of NP. Thus, innovations in the method and tools for teaching the nursing process, as well as investment in the use of differentiated educational technologies are important for improvements in teaching and learning, which will reflect in the quality of care for users of health services.²² Clinical reasoning is a current issue that is present throughout the world in discussions of nursing curricula and clinical practice. To be able to reason appropriately and safely, nurses need to understand concepts important to nursing practice, as well as to evaluate, recognize and/or predict health phenomena.^{4,23}

The SARS-CoV-2 pandemic, the new coronavirus, which began in March 2020, surprised society with a series of restrictions, among them the need for social isolation/distancing; consequently, undergraduate courses were compelled to adopt remote teaching in an emergency way.²⁴ In this study, the sudden change in the educational structure that caused the distancing of the student from clinical practice was pointed out as an obstacle to the teaching and learning of SAE. However, it is verified that the teaching of SAE in the institution is incorporated in a continuous and interdisciplinary manner throughout the course, and evaluated as positive by the students, especially by those in the final periods. Still, there is a need to offer complementary courses on the subject, and that these seek to work on the main doubts inherent to the development of the methodology.^{8,19}

In a literature review study¹¹ it was identified that the transversal teaching of SAE should be implemented in undergraduate courses, as it allows the student to develop critical-reflective thinking, which in turn enables the incorporation of scientific knowledge to professional practice. Therefore, it is also necessary to understand that the teaching and learning processes depend on a constant exchange of knowledge and experiences between the teacher and the student, as well as the articulation and integration between the different disciplines of the course.²⁴⁻²⁵

The teaching of SAE in the institution was positively evaluated, obtaining a high average rating among the participants of this study, it was also identified that the didactics adopted by teachers, the physical structure of the institution and the development of SAE teaching throughout the course are seen as tools that enhance learning during graduation. A study carried

out with professors and students of the nursing course revealed the importance of implementing strategies that facilitate the teaching and learning of the SAE.⁸

It was found that, in general, students know the SAE, perceive the efforts of the educational institution to offer the necessary resources, and are dedicated to its learning, so that they revealed feeling safe and prepared to implement it, consequently, they recognize its importance for the empowerment of the profession. Nurses recognized that the SAE is a tool that improves the quality of care and boosts professional autonomy,¹⁹ thus, the development of this perception, even during graduation, allows the insertion in the labor market of professionals equipped with a technical and scientific thinking, essential for the promotion and development of a strong and autonomous nursing.

However, it is necessary to offer human and structural resources to nurses for the development of SAE and stimulate the teaching of SAE in all stages of training, for this, it is necessary to listen and identify the main barriers to learning during graduation, so as to offer society critical-reflective professionals with the necessary knowledge to implement a safe nursing care that acts under high performance.^{17,21}

Some of the limitations found in this study involve the fact that it was carried out in only one educational institution, thus expressing the scenario of this institution, not being able to establish comparisons with methods used in other places. In addition, the invitation to participate in the quantitative stage, when sent by e-mail, may not have the same scope when carried out in person. However, the findings of this study bring significant practical contributions by identifying strategies and aspects to be worked on in the teaching and learning processes of SAE.

CONCLUSION

This study aimed to understand the perception of students of an undergraduate course in nursing about the teaching of the SAE. It was perceived that nursing students recognize the importance of the SAE for the development of the profession, whether in terms of the need to comply with legislation, support care practices or promote professional autonomy. However, a collective effort is necessary for its teaching and learning processes to be effective on a daily basis.

The positive aspects pointed out by the students show that the teaching of SAE in the institution has provided security for the practice, being important to enhance the methodological tools used, to improve the existing weaknesses and, above all, to continue inserting the student in the practice, which favors the development of competencies and skills essential for its execution.

Although our results reveal important information, this study cannot be generalized, since the sample used only includes students from a private educational institution; however, we recommend the development of similar studies in other settings, in order to expand the knowledge and perception about the theme in different contexts.

THANKS

We thank the National Foundation for the Development of Private Higher Education – Funadesp, for the resources used in the project that culminated in this study.

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