Nursing Techniques in the Training Process: The Perspective of Medical Technology Students.

Técnicas de Enfermería en el proceso formativo: mirada del estudiante de Tecnología Médica.

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Abstract: Basic nursing techniques are not only applied by nurses but also by other professions. **Objective:** To explore the opinions of Medical Technology students regarding nursing techniques for their professional and disciplinary development, taught in the subject "Nursing and Infections Associated with Health Care." **Methods** : Qualitative, descriptive, and interpretive research with a phenomenological approach. The sample consisted of 12 second-year students. Inclusion criteria: students with current curricular requirements in the second semester of 2024, enrolled in the subject for the first time, with available time. Data collection was carried out through two focus groups. The speeches were processed using the Bardin method, which was carried out manually. As a criterion of Guba's rigor, transferability is highlighted. Ethical rigor criterion: Declaration of Helsinki of the World Medical Association. It was approved by the scientific ethics committee of the degree. **English: Results:** Three categories emerged: " Academic Representation ", " Practical Dimension ", and "Proposals for Improvement". **Conclusions:** The teacher must convey confidence and provide effective feedback when evaluating techniques. These techniques facilitate the understanding and approach to subjects and content in higher education courses for students in training. In the disciplinary field, it reinforces the professional role and allows the use of clinical reasoning for clinical decision-making. The application of techniques in the personal and family environment is valued, especially in situations that require first aid. Regarding the implementation of these activities in practice laboratories, those interviewed made recommendations focused on increasing the number of assistants per laboratory, improving the physical space, evaluating the duration of the laboratory since they consider having a lot of time for it to be a stressful factor, and improving the quality and quantity of technical resources and supplies.

Keywords: Laboratory and Field Analysis Methods; Use of Procedures and Techniques; Motor Skills; Clinical Laboratory Techniques; Academics; Competency-Based Education

Resumen: Las técnicas básicas de enfermería no solo son aplicadas por las/los enfermeras/os sino que también por otras profesiones. **Objetivo:** explorar en los estudiantes de Tecnología Médica su opinión en relación a las técnicas de enfermería para su desarrollo profesional y disciplinar impartidas en la asignatura "Enfermería e Infecciones Asociadas a la Atención en Salud". **Métodos**: investigación cualitativa, descriptiva e interpretativa con enfoque fenomenológico, la muestra estuvo conformada por 12 estudiantes de segundo año, criterios de inclusión: estudiantes curricularmente al día en el segundo semestre del año 2024, inscritos por primera vez en la asignatura, con disponibilidad horaria. Recolección de datos fue mediante 2 grupos focales, los discursos fueron tratados mediante el método de Bardin la que se realizó en forma manual, como criterio de rigor de Guba se destaca la transferibilidad; criterio de rigor ética: Declaración de Helsinki de la Asociación Médica Mundial, fue aprobado por el comité de ética científica de la carrera. **Resultados:** emergieron 3 categorías: "Representación Académica", "Dimensión Práctica", y "Propuestas de mejora". **Conclusiones:** La figura del docente debe transmitir confianza y proporcionar una retroalimentación efectiva al evaluar las técnicas, las mismas facilitan la comprensión y el abordaje de las materias y

contenidos en cursos superiores a los estudiantes en formación, en el ámbito disciplinar refuerza el rol profesional y permite utilizar el razonamiento clínico para la toma de decisiones clínicas, se valora la aplicación de las técnicas en el entorno personal y familiar, especialmente en situaciones que requieran primeros auxilios. Respecto a la implementación de estas actividades en laboratorios de práctica, los entrevistados hicieron recomendaciones enfocadas a aumentar el número de ayudantes por laboratorio, mejorar el espacio físico, evaluar duración del laboratorio ya que consideran como factor estresante disponer de mucho tiempo para ello, mejorar en calidad y cantidad recursos técnicos e insumos.

Palabras clave: Métodos de análisis de Laboratorio y de Campo; Utilización de Procedimientos y de Técnicas; Destrezas Motoras; Técnicas de Laboratorio Clínico; Academia; Educación Basada en Competencias.

1. Introduction

Basic nursing techniques are not exclusive to nursing, but are also applied in careers such as medicine, physical therapy and medical technology among others (1-2) . They are essential for these professionals, since they provide them with the necessary knowledge and skills to guarantee comprehensive and safe patient care. The ability to perform nursing techniques is cultivated in the process of providing care to the user , after acquiring knowledge and skills in practice laboratories (3). These spaces allow the consolidation of technical, theoretical and practical learning, considering patient care, circumstances and ethical aspects (4-6). The perfection of these techniques is achieved with experience, trial and error, and constant practice, being essential to repeat them for their learning (7). Laboratory practices are essential for health science students to develop psychomotor skills through experiential learning (8-9). These must be well designed considering both the competencies to be acquired and the learning environment that must accompany this process of knowledge construction for its effectiveness in the intellectual and emotional functioning of the students (9-10) . In addition to improving nursing techniques, they allow students to better understand patients and develop other skills (3).

Teachers should foster not only technical knowledge and practical skills, but also values such as empathy, ethics, responsibility, and perseverance (11). These attitudes improve the relationship with patients and contribute to a more effective clinical practice, so it is recommended to promote both diagnostic skills and positive attitudes in students (11). University teachers, in addition to their clinical role, are trainers committed to teaching (12). Although there is little research on the learning of practical skills (13), this study focuses on the nursing techniques used by Medical Technologists in various clinical situations, such as blood sampling and peripheral venous catheter (PVC) placement , where they must interact with patients and demonstrate care skills. Several studies conclude that integrating these procedures into the curriculum strengthens the training of future physicians (14-15). In this regard, basic nursing techniques are essential for medical technologists, as they guarantee patient safety in diagnostic procedures, prevent cross-contamination through asepsis and antisepsis protocols, and promote a holistic approach by considering their physical and emotional needs during clinical studies (16).

Medical Technology training at a private university in southern Chile includes the subject Nursing and Healthcare-Associated Infections (HAIs) in the second semester of the second year, lasting 16 weeks. The objective is for students to acquire knowledge and skills in basic nursing techniques (handwashing, aseptic technique, universal and specific precautions based on transmission mechanisms, vital sign monitoring, venipuncture, peripheral venous catheter placement, intramuscular drug administration) and first aid (including cardiopulmonary resuscitation and basic wound healing). The methodology combines lectures, workshops with paper readings, bioinformatics tools, clinical case studies, and nursing laboratory practices (17). Given that there is little research on the usefulness of nursing techniques in the training of Medical Technologists, the teachers considered it relevant to conduct this study, whose objective is to explore the opinions of Medical Technology students regarding the nursing techniques taught in the subject "Nursing and Infections Associated with Health Care" for their professional and disciplinary development, in the second semester of 2024.

2. Methods

This work is a qualitative, descriptive and interpretive research with a phenomenological approach that addresses the meanings and educational experiences lived (vision of human reality) by the participants as subjects and not as objects of study in a unique and personal context (18-21). Given the nature of the study, where its purpose is the understanding of the phenomenon and not the generalization of the results, a non-probabilistic, intentional sample of cases was selected by criteria and for convenience. In other words, the units of analysis were collected using methods in which chance did not intervene, the researchers selected those they considered most appropriate and identified the most easily accessible individuals, who were also volunteers (22) of which 12 out of 18 showed interest in participating in the study, whose inclusion criteria were students curricularly up to date in the second semester of the year 2024, enrolled for the first time in the subject, with schedule availability, who agreed to participate voluntarily after signing the informed consent presented and clarified. The exclusion criteria were established as being a student of the same level as a student exchange student (23).

For data collection, the qualitative technique of focus groups was used (24), forming two groups made up of 6 students each, a guideline-script was used with guiding and open questions to avoid biases so as not to induce desired responses (18, 22). The sessions were held in university facilities and lasted approximately 70 minutes each. The narratives were anonymized using a code to identify the participants, the data were collected until reaching the saturation point, in other words, when sufficient evidence and proof were gathered to guarantee the credibility of the research (25), which occurred when the informants agreed in their observations or appreciations, reaching redundancy or duplication of ideas, obtaining the same or similar information when repeating the inquiries and there were no longer any new findings. Prior to the analysis, the data was transcribed to create a thematic content scheme where significant discursive relationships were sought according to the methodology proposed by Bardin (26), using the following stages: reading, determination of the recording units and meanings, coding and classification. Through reading, the recording units were identified, which were coded and organized by themes deductively and through approximations considering the object of study, however, others emerged inductively, then analysis categories were constructed, that is, the construction of the nuclear ideas from the process of categorization of the discourses.

The rigor of the study was determined by the criteria of credibility and transferability. Credibility was achieved through observations and extensive conversations with participants, information was collected whose findings were recognized by the informants as a true approximation of what they thought and felt (27). Specifically, it was given by "extended work in the field" (duration of 5 months), which translates into an extended stay to capture the confidence and spontaneity of the informants in their natural environment, "expert judgment" to ensure the consistency of the descriptions of reality and that the results were not the product of a single source or researcher bias (we worked with two professors belonging to the Medical Technology Program at other universities, who participated as experts in the study), "triangulation by researcher", where three professors participated in the different stages of the study: two Nurses and a Medical Technologist. To ensure consistency, detailed data collection and analysis techniques were recorded. Finally, for this criterion, a "participant check" was conducted after data transcription (written and recorded). This criterion allowed participants to compare different perspectives on reality through debate, contrast, and discussion of the findings. Finally, the final information set was created, reflecting the participants' shared understandings of the process. Regarding transferability, abundant information was collected, and detailed and comprehensive descriptions of the object of study were developed. Material was also available in a form that allowed for external verification by other researchers as a form of follow-up (27). Thus, the degree of transferability in this study directly depends on the similarity between the contexts where other research is to be conducted. This would allow the scientific community to contribute to generating knowledge in the training process of Medical Technology students related to Nursing techniques. The study respected the ethical principles in research on human beings of the Declaration of Helsinki of the World Medical Association (28) and

was approved by the Scientific Ethics Committee of the Medical Technology Career (Minutes A 13, December 2024).

3. Results

Three categories emerged in this research: " Academic Representation ," " Practical Dimension ," and "Proposals for Improvement." Each category was composed of subcategories, which in turn were made up of codes.

Category 1 "Academic Representation"

In this category, the speeches focused on two subcategories: "theoretical application" and "professional usefulness." In the "theoretical application" category, students referred to the importance of the teacher's attitude, both in providing a trusting learning environment and in preparing them for the course evaluation. They also emphasized the human aspect of the profession and their readiness to face the demands of advanced courses. Some representative speeches regarding the teacher's attitude:

E 3 "(…) *the teacher gave confidence to learn (…)*".
E 8 "(…) and *I find that the teacher gave us the space to be in confidence, as well as if we made mistakes, learn from it and not challenge us directly (…)*".

Regarding evaluation, some of the significant speeches are:

E 1 "(…) *I think it was good because the teacher also gives us an example before each evaluation and that makes the knowledge super fresh (…)*".
E 12 "(…) *the positive feedback from the teacher helps a lot to lose the fear of making mistakes (…)*".

In the human aspect of the profession they mentioned:

E 6 "(…) *the techniques beyond everything that is a microscope and everything that is technology, are like the most human thing you see. Because one, as a technologist, handles machines more than anything, but doing this is like being closer to the patient (…).*"
E 3 "(…) *apart from learning techniques, we learned how to treat the patient, for example, when taking samples, asking for information and how they feel (…)*".

As for what they should be prepared for to face the demands of the higher courses, the speeches focused mainly on:

E 11 "(…) *I think it is good because as we advance, when we reach higher courses, the teachers expect us to already know the techniques they are teaching us (…)*".
E 5 "(…) *The technique we learned in the course is useful for advanced courses, because the same teaching assistants told us that, for example, in blood banks or similar settings, we had to take our own blood samples. And, in addition, the techniques helped us learn the procedures and how to carry them out safely, both for the patient and for us (…).*"

Regarding the "professional utility" subcategory, the speeches focused on the positive assessment that Medical Technology students place on learning nursing techniques for their professional competence in providing patient care, as well as developing clinical judgment or clinical reasoning and decision-making. The following are the most representative speeches regarding the professional perspective of learning basic nursing techniques and their practical applicability:

E 4 "(…) *I believe that professional usefulness lies in knowing nursing techniques to provide good care with practical knowledge (…)*".
E 7 "(…) *That in the infirmary they taught us how to use the butterfly, the syringe and the vacutainer* [*Vacuum blood collection tube*] . *And often in our careers, it requires the Vacutainer to always be used. But there are situations where the Vacutainer isn't always available, and you have to use what's available at the*

time, which could be a syringe, a butterfly, or just the Vacutainer. So it's still important to learn more than we already wanted to know (…)."

E 2 "(…) *"Knowing the theoretical techniques before the laboratory seems very good to me and it makes more sense to go and rehearse, I like it!!! (…)".*

E 10 "(…) *I think that the techniques are personal and to be performed with patients (…)".*

Regarding clinical reasoning and decision-making, some emerging discourses were:

E 12 "(…) they have *also taught us to put ourselves in the situation of, for example, if there is not something in the laboratory we can use Plan B. And in one way or another that also helps us to be more attentive to the things that we have to make visible later (…)".*

E 2 "(…) *if there is a thick vein or a thin vein, for example, when taking a sample, one has to evaluate whether I need a larger or smaller needle depending on the gauge (…)".*

Category 2 "Practical Dimension"

In the second category, "Practical Dimension," only one subcategory emerged, "personal and family utility," mainly oriented toward Having learned aspects of first aid, which helps them act knowledgeably and calmly when their participation is required, whether on the street or in the family setting. In a few speeches, but no less significant, they allude to the importance of knowing how to administer intramuscular injections, which, in addition to helping a family member if necessary, allows them to avoid incurring expenses for these purposes. Below are some of the most representative speeches regarding first aid and intramuscular drug administration:

E 2 "(…) *These techniques can also be applied in our daily lives. Because it's also true that accidents can happen in our homes and families, not only at work but also in our personal lives (…)."*

E 7 "(…) *even on the same street, an accident happens, and some people panic and stand and watch. And I said in class that one thing about providing first aid is staying calm. So, if everyone is like that, desperate, scared, you have to know what to do at that moment (…)."*

E 9 "(…) *I think that the case of CPR* [cardiopulmonary resuscitation] *was something super important because any person, for example, in the case of a family, can go through something like that at any time and not have clear knowledge, I mean, one already knows something, they are very important (…)".*

E 12 "(…) *to be able to perform in areas other than just Medical Technology. To have the basic knowledge to be able to save a person's life in any situation (…)."*

E 1 "(…) it helps *us in our daily lives, because, for example, learning how to give an intramuscular injection will help us make it easier to use so as not to hire a TENS.* [Higher Level Nursing Technicians] *or something like that. And not spend money on it. Just like CPR, if something happens to a family member, we'll be able to know how (…)."*

E 7 "(…) *I wanted to learn that technique, it interested me, because now I can help my grandmother with the injections or maybe later my family in general, as my friend says, you also save money… hahaha (…)".*

Category 3 " Proposals for improvement"

Finally, in the "Proposals for Improvement" category , the " Recommendations for Future Implementation" subcategory was revealed . In this subcategory, the majority of the speeches pointed out that, in order to optimize the learning of the techniques, while it is certainly positive to have student assistants, it would be necessary to increase their number, as well as the duration of the laboratory hours and improve the physical distribution. In turn, it is important for students that the material resources are in good condition and are updated. With respect to the importance of student assistants in facilitating the process of learning the techniques, some significant speeches are presented below:

E 3 "(…) *having assistant or assistants in some cases was positive, it should continue like this (…)".*

E 2 "(…) *also that they continue the subject with an assistant in the laboratories because it is good that we are learning and that we should know these techniques, but it also helps us not to have more accidents (…)".*

E 9 "(…) *complementing what interviewee number 2 said, I think it's necessary to include more assistants because there can't be one assistant for 20 students. I mean, at least in our lab, where there are very few of us—less than 10—one assistant is enough. But for 20 people, one assistant isn't enough (…)."*

Regarding the physical layout of the laboratory, some relevant speeches:

E 4 "(…) *the fact that there are many people in the laboratory, we could also consider adding more work stations, just like when we drew blood, adding more tables for people, more supplies, materials such as tables, drawers where the supplies are stored (…)*".

E 11 "(…) I think *that something negative could be that the laboratories have too many people and too little space because in a laboratory everyone is already very crowded, I think that, for example, in our laboratory, where there were fewer students, compared to the others, I think it is a good laboratory. I think that, for example, others that have too many people, may not be able to work at 100% (…)*".

Regarding the duration of laboratories and insufficient material resources, the most representative speeches are:

E 1 "(…) *perhaps the labs should last two hours. The more assistants, the better, because it makes it easier for one person to evaluate one part and another person to evaluate another (…)*".

E 8 "(…) *the laboratories should last less, more assistants since many students lose time between steps (…)*".

E 3 "(…) *they should evaluate the duration of the laboratory, one gets nervous and sometimes there are dead times, when evaluations are done for example (…)*".

E 9 "(…) *if the time in the laboratory is stressful, there are also classes before or after and one is not as calm as if it stresses you out (…)*".

E 5 "(…) *that the lab materials in general should be improved. Because many times we wanted to take the blood pressure and it seemed like everything was bad, and we had to wait for all our classmates, and well, we had to wait for everyone to finish before we could do the technique. And many times we couldn't practice the technique because the equipment didn't work for us (…).*"

E 12 "(…) *that the supplies aren't expired. Because most blood collection tubes, needles, and* peripheral venous catheters *have expiration dates, and so does the serum. Everything is expired (…).*"

It is important to highlight that the nursing techniques learned in order of choice by the students were: Peripheral Venous Catheter Administration, Simple Healing, Cardiopulmonary Resuscitation and finally Blood Sampling.

4. Discussion

The discussion was organized according to the categories found. In the first one, "Academic representation", in what refers to the subcategory "theoretical application" regarding the teaching figure, what was revealed in this study by the informants is consistent with what is stated in the literature that indicates that it must be competent, who must ensure that students acquire the necessary knowledge to learn and advance in the performance of their skills, that it is their duty to help them link scientific knowledge with action by providing feedback , hence the importance of previously acquiring theoretical knowledge to learn and advance in nursing techniques in addition to understanding the clinical environment (4-5).

In turn, students highlighted the teacher's attitude, both in creating an environment of trust for learning and in preparing for the assessment of the subject. In this sense, it has been shown that when a teacher places his or her trust in the students, a safe environment is created that favors learning, since the students will also trust the process, making the classroom a more favorable space for acquiring knowledge (12).

Regarding assessment, they positively valued the teacher's preparation for it, highlighting the importance of feedback as a tool that helps them overcome their fear of making mistakes. This assessment is consistent with what other authors have pointed out, who emphasize that feedback contributes to academic progress, allowing students to identify both their strengths and areas that require improvement (4, 7-8).

Regarding the discourses on the human aspect of the profession, what was revealed is linked to the importance students assign to the role of the teacher. Several authors have addressed the relevance of teaching (3, 5, 7, 11), as well as its role in theoretical connection. In this sense, they emphasize that humanized care acquires a special connotation, making it pertinent to address it

theoretically with students to broaden their understanding and strengthen its application in practice. Students also expressed their opinion in these terms, highlighting the importance of human value and its relationship to theoretical knowledge, which reinforces the need to integrate both aspects in professional training.

Within the "theoretical application" subcategory, informants highlighted the importance of being prepared to face the demands of advanced courses in relation to techniques. In this sense, the theoretical and practical nature of the subject allowed them not only to develop skills but also to link them to theoretical concepts (29). The theoretical dimension plays a fundamental role, as it provides the key principles and concepts necessary to progressively understand and address practical challenges in the workplace. Related to this, theoretical knowledge was widely mentioned by participants, which demonstrates their appreciation of these foundations as a basis for the practical application of nursing techniques. This knowledge, acquired in the classroom, is essential for students to develop and demonstrate their skills in the learning context (2, 4, 6, 7). Subsequently, when they put their skills into practice in front of the teacher, they can be evaluated, allowing them to progressively advance their training. Some notable statements regarding preparation for advanced courses include: *"Students are prepared to value learning as a permanent process in their training and to maintain a constant commitment to ethics, all within the necessary deepening of knowledge in the specific area"* (12). This statement highlights not only the importance of continuous learning, but also the integration of ethical principles in academic training. Along the same lines, Juárez (11) points out that *"theoretical aspects strengthen students' practical skills, since, in themselves, they contribute to improving their preparation to face subsequent academic challenges, guaranteeing a more complete and better prepared training to face professional challenges in the field of health"* .

Regarding the "professional usefulness" subcategory , respondents highlighted the importance of knowing nursing techniques for optimal professional development. This approach coincides with that indicated by various authors, who affirm that students value learning these techniques and their application in the professional field (9, 4, 15). This is also supported by the literature, which emphasizes that *"the importance of theoretical and practical knowledge for learning and advancing in venous cannulation has been demonstrated, and that students must acquire a solid theoretical foundation to develop competence in these skills"* (5). In this sense, students indicated that they intrinsically acquired competencies related to professional modeling, covering aspects such as effective communication, active listening, ethical commitment, as well as practical, affective and psychomotor skills, clinical judgment and social responsibility, among others (5, 7, 9, 11, 13). These competencies must be manifested throughout the teaching-learning process. Likewise, the literature supports that, for the optimal development of competencies, laboratory practices must not only be well planned, but also accompany the process of knowledge construction and take full advantage of the potential of physical environments (9). This shows that the teaching-learning process is not limited to the acquisition of technical knowledge, but is complemented by emotional and human aspects, thus favoring a holistic approach to professional training.

Interviewees also highlighted the importance of interprofessional and interdisciplinary work, which could be attributed to the fact that psychomotor skills are most effectively developed through collaboration between different disciplines (14). This aspect is significant in the students' academic lives, as it allows them to better prepare to join healthcare teams in their future professional practice. Undoubtedly, to strengthen this preparation, it is essential to have institutional support that facilitates collaborative work and learning in interprofessional settings. In turn, the interviewees' accounts revealed competencies related to clinical reasoning and decision-making. This suggests that the practice laboratory allowed them to apply significant knowledge, transferring it from theory to practice. This process contributed to the development of these skills, as the students were able to experience clinical situations that favored their learning and strengthened their decision-making capacity (1,3,11). In this regard, evidence indicates that, in the training processes of health science students, it is essential to strengthen those actions linked to clinical reasoning and decision-making (8). This not only improves their ability to solve problems arising from practice, but also contributes to

the quality of user care by integrating knowledge, skills, abilities and values essential for professional practice.

In the second category, "Practical Dimension," as already mentioned, only the "Personal and Family Usefulness" subcategory emerged **.** In this category, the interviewees considered it useful to have learned nursing techniques since they can apply them in special events and in different contexts. First aid techniques were widely valued; they recognized having acquired skills to identify clinical manifestations, analyze the event and its causes, and apply practical solutions in medical emergency situations (6). The findings coincide with what has been indicated by some research, which emphasizes the importance of developing these skills in health science students, since it allows them to face challenges in their future professional work as well as in their family and community life, combining theoretical and practical knowledge (4, 6). Other authors also affirm that the acquisition of these clinical skills will allow them to successfully face the challenges and situations that daily life presents to them (8). The above approaches highlight the importance that, in addition to their inclusion in the curriculum, educational institutions must actively participate in the comprehensive training of students, not only as future professionals, but also in their personal development (8).

It is undeniable that, in the learning of these techniques with both personal and family utility, the role of the teacher acquires a fundamental importance, in addition to facilitating the acquisition of knowledge, he himself must contribute to the development of skills that allow students to face the challenges of society. Likewise, he has the responsibility of preparing them to solve problems in different areas, whether in daily life, in the social, family and work environment (12)

Finally, in category 3 " Proposals for Improvement," a subcategory " Recommendations for Future Implementation" also emerged. The first of these was related to the importance of having student assistants; however, it is considered necessary to increase their number. Various studies have indicated that peer teaching is a learning strategy that benefits both those who receive the help and those who provide it, since it allows structuring the assistantship as an environment conducive to the development of knowledge (30). To achieve this, the assistant must encourage more autonomous, collaborative, and meaningful learning, promote an environment of dialogue and collective construction of knowledge, as well as stimulate reflection and critical thinking (30). These qualities, highlighted by the interviewees in their speeches, contribute to strengthening both academic development and communication and interpersonal skills. Along the same lines, the interviewees also pointed out the need to increase the number of student assistants. In this regard, it is essential to recognize that effective learning not only requires the presence of a trained person, but also the availability of human and technical resources that guarantee the integrity of the educational process, both in quantity and quality (7, 8, 11).

Regarding opinions on the ideal duration of this laboratory, this is a relevant aspect to consider. According to the literature, the limited availability of time to complete assigned tasks, combined with the constant pressure of studying, is a significant factor contributing to stress in health science students, affecting their physical and emotional well-being and academic performance (31). These observations coincide with the accounts of the interviewees in this study, who emphasized the aforementioned repercussions, especially when the laboratories are of short duration.

Among their recommendations for future implementation, interviewees also mentioned the need to improve the laboratory's physical layout. Their statements echo the importance of designing and renovating work and learning environments, applying psychological and pedagogical knowledge to maximize their impact on student performance (9). Scientific evidence indicates that various factors in the physical environment of practice laboratories influence student academic performance, including a positive attitude among participants, appropriate time management, classroom conditions, and personalized learning experiences (3, 8, 11). The findings of this study are consistent with previous research that highlights physical space as a key factor in the learning process. It should be noted that, in order to strengthen motivation and foster authentic learning

situations, it is essential to consider student opinions in improvement initiatives. Their active participation is key, an aspect evident in this study (3, 8). In this sense, it is essential that educational institutions promote the creation of adequate environments in practice laboratories. To do so, they must consider key aspects such as the availability of clinical instruments in optimal condition, appropriate physical layout, adequate lighting, protective measures, and other essential factors that contribute to a conducive learning environment (7, 9, 11). The adequate condition and up-to-date nature of material resources is one of the main recommendations expressed by respondents, who pointed out deficiencies in the availability of supplies for the execution of practical activities. In this sense, having sufficient and updated resources is essential for the application of diverse methods and repetitions in clinical skills training, thus optimizing training environments. Conversely, the lack of resources, both technical and human, as well as the lack of specialized clinical equipment, hinders the objectivity of the teaching-learning process and affects students' ability to effectively acquire knowledge and skills (3, 4). This situation negatively impacts the quality of training, generating deficiencies in the development of essential competencies.

Limitations.

The authors point out that there is little information or literature available on the topic, and most sources are more than ten years old, which made it difficult to find up-to-date information. Although there could be potential bias in the students' responses, the subject matter was ruled out, as the focus group was conducted at the end of the course. The sample size is not a limitation in this qualitative research, as it does not seek to generalize results but rather to delve deeper into the case studies. This does not affect scientific rigor, as the objective is to understand the phenomenon and answer the research questions. Therefore, the authors do not consider it. Reproducing a social phenomenon is difficult due to the variability in data collection conditions and the impossibility of controlling all the variables that influence the findings.

5. Conclusions

- The teacher must instill confidence and provide effective feedback when evaluating techniques. Furthermore, it is essential that they integrate theoretical aspects with a humanized approach to practical training.
- This type of practical activity helps students understand and address subjects and content in higher-level courses.
- The application of nursing techniques in the disciplinary field reinforces the professional role and allows for the effective use of clinical reasoning for decision-making in direct patient care when necessary.
- Knowledge of nursing techniques not only facilitates their application in the professional field, but also in personal and family settings, especially in situations requiring first aid.
- To implement these practice labs, it is necessary to have a proportional number of assistants per student, as well as an adequate physical space equipped with sufficient supplies and technical resources, both in quantity and quality, commensurate with the number of students.

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