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DATA SHEET

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Clinical Supervision of Nursing Students and Patient Safety – Reflection on an incident

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Abstract

This article presents a reflection on the care situation that involves the clinical supervision of nursing students. Bearing in mind that the main objective of clinical supervision is to allow the provision of quality and safe health care, an analysis of a critical incident is carried out that involved a situation of clinical supervision of a nursing student (undergraduate), in which patient safety was compromised, associated with clinical error related to unequivocal patient identification and medication safety. In the development of this reflection, a description of the care situation is presented, identifying the risk factors associated with the patient, finally exposing the proposal for an improvement plan.

Key-words

Clinical Supervision, Nursing Student, Patient Safety

Introduction

Clinical supervision in nursing has as its central objective the "structuring of learning, the construction of knowledge and the development of professional, analytical and reflective skills"[1(p16657)]. In which communication plays a central role, as it allows the creation of a pedagogical relationship between supervisor and supervisee, providing confidence and motivation, essential aspects for the development of learning.

In the exercise of clinical supervision, the supervising nurse must develop "a dynamic, interpersonal and formal support process, in the course of monitoring and developing the supervisee's professional competences, which aims at the personal and professional development of the supervisee and himself"[1(p16660)]. Nurse supervisors should therefore have a set of skills that facilitate the learning process of supervisees, through constructive guidance[2]. In which conditions are expected to be created to analyze, to discuss, to clarify and to reflect on various aspects related to the different situations experienced/experienced[1,3,3,4].

The learning environment and clinical supervision in nursing are crucial for the development of professional identity and posture, as well as for ensuring the quality of care provided and patient safety[5,6]. Quality in health and its improvement presents itself as a challenge for all health professionals and, according to the Quality Standards of the Ordem dos Enfermeiros[7] "in the permanent search for excellence in professional practice, the nurse contributes to maximum effectiveness in the organization of nursing care"[7(p18)]. At the same time, the Global Action Plan for Patient Safety 2021-2030 aims to eliminate avoidable damage to health care, making it possible to avoid damage or even stop the death of patients, as a result of unsafe health care[8]. Being currently recognized that, during the provision of care, the occurrence of security incidents is a reality, it is known that the "implementation of policies and strategies that reduce these incidents, a part of which is avoidable, is recognized, internationally and nationally", as leading to health gains and constitutes today an unequivocal bet on health"[9(p96)]. Hence, in the National Plan for Patient Safety 2021-2026, the strategic objective "implementing and consolidating safe practices in a health care environment" is listed as a strategic objective[9(p102)].

Based on a patient safety incident that occurred during a process of clinical supervision of a nursing student of the degree course, it is essential to reflect on the situation, in order to

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promote the learning of the health teams with the errors associated with health care. The incident that occurred will be framed and justified within the scope of clinical supervision, with this reflection as objectives:

1) Describe the incident where patient safety was compromised;
2) Identify the risk factors for the patient associated with the situation described;
3) Present the improvement plan.

Development

1. Situation Description

One day, after the transition period of care from the night shift to the morning, a nurse, who was performing clinical supervision (their first clinical supervision experience) of a nursing degree student (in the third week of teaching clinic), performed the care planning for the start of the shift. The patients assigned to him were all in the same room, allocated from bed 27 to bed 30. Two of them, patient A and patient B, who were next to each other (beds 27 and 28 respectively), were prescribed enoxaparin, with the following indications:

- Patient A would start enoxaparin 60mg sc at 10 am, and it would be necessary to teach the patient;
- Patient B autonomously administered enoxaparin 40mg sc, the time of administration being at 12:00. However, there was a note in the prescription notes that on that day, the internal medicine doctor would come to re-evaluate the patient to decide whether to continue to administer enoxaparin or not.

The shift went on and at 10 am, the supervising nurse and student prepared the medication for patient A, taught the patient about the new medication and enoxaparin was administered at the scheduled time without incidents.

At 11 am, the internal medicine doctor came to observe patient B, having decided that it would be to continue administering enoxaparin for another 3 days, without changing the dosage or administration schedule, the supervising nurse and nursing student were with the doctor, when the communicated this information to patient B, and the electronic prescription was rectified.

Around 12:00, the supervising nurse was admitting another patient, in another room, so she asked the nursing student if she could go and prepare the medication for patient B and supervise the administration of the same by the patient, having the student accepted.

The shift continued and, at 1:00 pm, patient B rings the bell and calls the nurse to ask for enoxaparin, as the time for administration has already passed. It was with this call that the supervising nurse and the student herself realized that the enoxaparin that the student prepared at 12:00 was delivered and administered under supervision by patient A, instead of patient B. The nurse contacts internal medicine to inform about the error of medication, patient A was informed of the situation and monitoring/surveillance of possible adverse events related to drug overdose was carried out.

2. Identification of Risk Factors

In the situation described above, two of the biggest challenges for patient safety can be found: unequivocal patient identification and medication safety[10] and, in this case, the failure to correctly identify the patient led to an incident, a medication error.

Regarding the identification of risk factors for the patient associated with the situation described, it can be indicated that, for patient A, there was an overdose of a drug, which implied monitoring for possible adverse events and, until the day of discharge, no harm was found to the patient. In addition, it was necessary to invest in terms of health literacy, reinforcing all the teachings given to the patient, so that there is greater security in the provision of care, explaining, on the one hand, the importance of the patient being involved in the identification process. , clarifying how this measure contributes to ensuring their safety and, on the other hand, aspects related to the drugs they have prescribed (doses, routes of administration, frequency, care in administration and monitoring of warning signs). As for patient B, it involved a delay in the administration of a medication, without any damage being recorded until the day of discharge.

3. Improvement Plan

In the situation described, with regard to patient safety, there are two practices in which failures occurred, being the unequivocal identification of patients and medication safety, two of the practices evidenced there.

The unequivocal identification of the patient is identified as one of the safety goals of the health care provided, being a very important step towards patient safety. There is a diverse set of factors that can contribute to the occurrence of errors in this process, at the level of the health system, the professional and the patient[11]. In this specific incident, the patient had an identification bracelet properly placed and there are internal procedures related to this topic, however they did not serve as a barrier. Because, in practice, the existing recommendations were not fulfilled, namely the positive identification of the patient and the lack of perception of the inherent risks of not using these safe practices, given the inexperience of the student and the clinical supervisor. On the other hand, the patient herself, probably due to low health literacy, was also unable to question the reason for repeating the administration of the drug, given that she had administered a similar drug 2 hours before.

The unequivocal identification of patients is one of the essential measures to ensure medication safety, in all its stages, considered as "one of the golden rules in the prevention of medication error"[12(p167)]. For this reason, it is always necessary to confirm the identification of patients, using at least two identification data, using positive identification, that is, asking patients about their data and validating it with the information available on the identification bracelet[10]. On the other hand, in the context of drug safety, in order to increase safety barriers, contributing to the literacy of patients, it is essential to involve them in the process, not only in the process of safe identification, but also in all related knowledge. with the medications you are given. Therefore, it is necessary to sensitize the entire team to the importance of creating these safety barriers, which will allow "the right medicine to be administered to the right person, by the right route, at the right time and dose"[13(p.251)].

Despite the fact that there are several constraints on safe practices/ environments of care provision, as was observed in this situation, as a strategy for the prevention of incidents, the promotion of training of health professionals in the field of patient safety is highlighted in the literature, as well as the promotion of continuous learning

through the reporting/notification of incidents[9,12,13]. Therefore, it is suggested to include in the in-service training plan the theme of unequivocal identification of the patient, safety in medication administration and incident reporting.

This situation also requires looking at it from another perspective/dimension, given that a clinical supervisor nurse and a nursing student were involved, so I consider that, in macro terms, this situation was primarily related to issues associated with clinical supervision, the which in turn is closely related to the safety and quality of care provided. As Davis and Beddoe[14] indicate, the main objective of supervision is to enable the provision of quality and safe health care. At the same time, the Ordem dos Enfermeiros[1] states that the clinical supervision process values "[…] the protection of the person, safety and quality of care."[1(p16657)].

A nursing student administered a medication without supervision by the clinical supervising nurse and this resulted in a patient safety incident, associated with safe identification and subsequent medication error, as described above. With the nurse admitting a patient to another room, it would have been safer to have waited for the end of this procedure, which the student could have followed and then proceeded to administer the medication to patient B, in the process of effective clinical supervision. Therefore, ensuring that direct supervision is carried out at all times must be an urgent priority for clinical supervision of undergraduate nursing students[10]. Authors such as Reid-Searl, Moxham and Happell[15] suggest that nursing students are at risk of making errors when administering medication to patients during clinical teaching and, in their study, in all real medication errors analyzed, inadequate supervision was present. Reid-Searl, Moxham and Happell[15] concluded that adequate supervision contributed to error prevention, clearly indicating that supervision is an essential component for the safe administration of medication by nursing students. Effective supervision is thus important for quality learning experiences for students, but it also has significant implications for the provision of safe and effective health care[15].

As indicated by Davis and Beddoe[14], the clinical supervisor nurse must have competences in the scope of clinical supervision in nursing, being considered as an important prerequisite for those who assume the role of supervisor of students and, in this specific case, it was the first supervisory experience of the nurse, not having any type of previous specific training in clinical supervision in nursing. I believe that the trend of the future will be that only nurses trained in clinical supervision in nursing will supervise nursing students. However, until then, it will be necessary to offer the best possible conditions to nurses who perform clinical supervision of nursing students, given the challenges that supervision represents, being evident "a need to support supervisors, to enable them to meet these challenges"[16(p7)]. Whether through in-service training on clinical supervision, through service meetings on the supervision processes that are taking place in the service, or through closer monitoring/supervision by other more experienced nurses and/or team leaders present in the different shifts in which nursing students are present.

Conclusion

Reflection on professional practice is considered one of the ways to contribute to the quality of care provided[7], promoting the learning of health teams with, in this case, the errors associated with health care.

In the situation described, there were several risk factors for the patient that were associated with it, and an improvement plan was presented, which includes issues associated with the unequivocal identification of patients and safety in the administration of medication.

To conclude this reflection, I could not fail to mention that it is essential to create favorable environments for reporting, sharing and subsequent learning of health teams with errors associated with health care. Given that the units/organizations where a safety culture is promoted, where learning from safety incidents and supporting professionals, patients and families is a constant premise, are better prepared to promote patient safety on an ongoing and provide quality care[17].

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Interventions to facilitate the transition of children with Type 1 Diabetes Mellitus into the community: a scoping review

Abstract

Objective
This review aims to map and identify in the scientific evidence the facilitating interventions in the transition to the community of school-age children with Type 1 Diabetes Mellitus.

Method
This scoping review is based on Joanna Briggs Institute's methodology. Published studies of a quantitative, qualitative, or mixed nature, as well as grey literature in Portuguese, English, Spanish, or French, produced between 2016 and 2021, were included. Eight studies were included in this review, selected from the following databases: CINHAL; MEDLINE; MedicLatina; Eric; Cochrane CRCT; Cochrane CA; Cochrane DSR; Cochrane MR; Nursing Reference; JBI. Results were extracted using an instrument constructed by the authors, aligned with the question/objective, and expressed in a narrative summary, including areas of emphasis for future research.

Results
We identified three major categories of facilitating interventions in transitioning school-age children with Type 1 Diabetes Mellitus into the community; the existence of resources and support systems, the development of disease management skills (knowledge, modeling, and training), communication, and continuity of care.

Conclusions
actors related to environmental, professional, organizational, and family conditions, influence the transition of school-age children with Type 1 Diabetes Mellitus into the community. They highlighted support systems, the development of Type 1 Diabetes Mellitus management skills (knowledge and training), and communication/continuity as a focus of attention in developing interventions promoting a safe transition.

Keywords
Diabeltes Mellitus Type 1; Transitional Care; Child; Family.

Introduction

Type 1 Diabetes Mellitus (T1DM) is an autoimmune disease in which the immune system destroys the pancreas's insulin-producing beta cells[1]. Insulin is the hormone that controls glucose levels in the blood, which is necessary for the functioning of cells and energy production and is also essential for the metabolism of fats and proteins[1-2]. Insulin deficit causes a metabolic disorder characterized by hyperglycemia, ketoacidosis, and death if not detected and corrected. It is considered the most common chronic disease in childhood, with an increasing incidence rate worldwide[1]. Europe has one of the highest prevalence rates in the world[1], with a rate of 0.16%[3] in Portugal. Multifactorial causes justify these numbers, including genetic vulnerability, environmental influence, lifestyles, and health behaviors[1].

Inappropriate management of the T1DM therapeutic regimen may, in the long term, re-

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sult in microvascular and macrovascular comorbidities, autoimmune diseases, changes in child development and growth, and neurological and mental health changes[4]. Thus, adequate therapeutic management of T1DM is essential for metabolic control, maintaining the quality of life of children with T1DM, preventing comorbidities, and reducing hospitalizations[4]. This therapeutic management implies education, support, and promotion of a healthy diet, physical activity, and mental health[4], in addition to therapeutic and insulin adherence and glycemic control[5].

School-aged children (6-11 years old) are in the concrete-operational stage of Piaget's cognitive development[6], so they do not yet have the mental capacity to visualize the sequelae and consequences related to inadequate therapeutic management[7]. Thus, the family also assumes the role of a therapeutic manager; therefore, T1DM is considered a family disease[8]. The concept of family has undergone a series of changes in its structure and dynamics in the last decades. However, regardless of its number of elements, it can be defined as a fundamental unit for health promotion and maintenance since it is in the family that behaviors and lifestyles are acquired[9]. The diagnosis of T1DM involves a significant change in family routines, making the family vulnerable to stress and emotional disorders related to anguish, fear of complications, and often the difficulty of managing diabetes outside the family environment[10-11]. They add responsibilities related to the therapeutic management of T1DM, and its adaptive process in the family, namely with capillary blood glucose monitoring, multiple insulin administrations, accounting, and surveillance of carbohydrate intake[10].

A multidisciplinary intervention is necessary, in which family-centered care is the priority[4,12]. Empowering the family to manage the child's T1DM according to their needs, family structure, and dynamics facilitates the adaptation process to T1DM and decision-making[11]. Family empowerment aims to recognize their needs and increase the management competence of T1DM, its supervision, support, and education, and progressively promote the child's involvement according to its developmental stage[11]. Family becomes expert caregiver-child with T1DM and a crucial partner of nurses in care during hospitalization and after discharge.

The school-age child is at the beginning of socialization and schooling. Therefore the adaptation and therapeutic management of T1DM is more vulnerable to the influences of the school context and peers[6]. Experiencing at the moment of hospital discharge are feelings of helplessness, isolation, fear, depression, insecurity, lack of knowledge, and doubts regarding the possibility of returning to their jobs, of the child returning to school and socializing with friends[13,14].

A community comprises individuals with common characteristics and interests, including the child, family, neighborhood, friends, the physical environment, educational services, health and social services, and leisure spaces[15]. A partnership s built in each interaction between the nurse and the child and family[16], articulating with the community to promote health, and quality of life, identifying and mobilizing support resources[16]. School-age children with T1DM and their families experience periods of transition related to the development process and the diagnosis of a chronic disease that destabilizes the family routine and dynamics. A transition concerns the transfer of care responsibilities from professionals to caregivers to promote continuity and safety[17]. The passage from a state of stability to another equally stable condition is characterized by a transition, which can be expected or unexpected and cause

vulnerability and insecurity[18]. Studies that identify the factors involved in a safe transition in individuals with chronic conditions highlight the continuity of care, the relationship between health professionals and family members, and the knowledge and involvement in therapeutic management[19].

According to the World Health Organization[20], an inadequate transition to home is responsible for increased: mortality, morbidity, adverse events, lack of support, delay in access to adequate care and community support systems, need for health services, and the number of emergency episodes, need for additional examinations, avoidable hospital readmissions, pain, emotional and physical suffering for the child and family, as well as their dissatisfaction.

The promotion of continuity care for children and families with T1DM, with timely discharge planning, contributes to the quality of life, support perception, therapeutic adherence, and minimization of health costs, representing a strategy and health policy to be followed by health services[21-22]. Still, and despite the above, the transition from hospital to the community is only sometimes carried out efficiently, ensuring support for the adaptive process and the needs felt at discharge[22].

Thus, this review aims to map and identify the available scientific evidence in the literature about the interventions that facilitate the transition to the community of school-age children with hospitalized T1DM.

Methods

Study Design

This scoping review was conducted following the JBI methodology for scoping reviews. An initial search was done in the Joanna Briggs Institute Database of Systematic Reviews and Implementation Reports and MEDLINE and CINAHL databases. No Systematic Review of the Literature carried out or under development on the topic was found in the scientific evidence. An initial research question was defined for its implementation, following the Participants, Concept, and Context (PCC) model, which also guided the inclusion criteria. The protocol of this review was not registered or published.

Objective/Research Question

This review aims to identify and map in the scientific evidence the facilitative interventions for the school-aged child with T1DM.
What interventions facilitate the transition to the community of the school-aged child with T1DM?

Research Questions

What interventions do nurses perform to facilitate the transition to the community of the school-aged child with T1DM?
What strategies are used by health care professionals that facilitate the transition of the school-aged child with T1DM to the community?
What are support systems described as facilitators in transitioning the school-aged child with T1DM to the community?

Selection Criteria

The present scoping review had as inclusion criteria all qualitative and quantitative studies and all types of Systematic Literature Reviews published in Portuguese, English, Spanish, or French. We defined the studies published in the last five years (2016 to 2021) as inclusion criteria to search for the most recent and innovative interventions (telemedicine/videoconferencing/Apps).

Regarding participants, as an inclusion criterion, we considered all studies involving school-aged children with T1DM. About the concept, the requirements were all studies that addressed the transition to home/community. Regarding the context, we considered studies that involved transitioning school-age children with T1DM to the community, whether in hospital settings, pediatric services (inpatient and outpatient specialty consultations), or at home.

Studies that did not include school-age children with T1DM among the target population were excluded.

Data Collection

The research strategy was based on the inclusion criteria defined in the PCC and was performed in three stages, following the Joanna Briggs Institute (JBI)[23] methodology.

Step 1- An initial search of the MEDLINE (Medical Literature Analysis and Retrieval System Online) (via EBSCO) and CINAHL (Cumulative Index to Nursing and Allied Health Literature Complete) (via EBSCO) databases was performed using natural language terms. Natural language terms in the title and abstract and index terms describing the resulting articles were analyzed. Based on the identified natural language and indexed terms, the concepts that correspond to the definition of Participants, Concept, and Context (PCC) were grouped using the Boolean operator OR between the terms that define the critical concept and the Boolean operator AND between the terms that describe the participants, concept, and context.

Search Expression:

((((child* [title/abstract] AND (diabetes [title/abstract] OR diabetes mellitus type 1[title/abstract] OR diabetes mellitus type I [title/abstract] OR "diabetes mellitus type 1" [MeSH term])) AND ((community [title/abstract] OR home [title/abstract] OR "community integration" [MeSH term] OR "community reintegration" [CSH term]) AND (transition* [title/abstract] OR continuity care [title/abstract] OR discharge transition [title/abstract] OR coordination[title/abstract] OR transitional care [title/abstract] OR safe transition [title/abstract] OR "continuity of patient care" [MeSH term] OR "transitional care" [MeSH term])) AND ((hospital [title/abstract] OR pediatric hospital [title/abstract] OR hospital units [title/abstract] OR pediatric unit [title/abstract] OR pediatric nursery [title/abstract] OR hospital discharge[title/abstract] OR "hospital units" [MeSH term] OR "pediatric hospital" [MeSH term] OR "pediatric units" [CSH term])))

Step 2 - Subsequently, an extensive search was conducted in April 2021 for all selected natural language and indexed terms in the databases CINHAL complete, Medline complete, JBI, Cochrane, Eric, MedicLatina, and Nursing Reference.

Google Scholar and RCAAP - Open Access Scientific Repository of Portugal was used to search for articles in grey literature.

Step 3- In this stage, the references of the identified articles were searched to find additional sources.

From the retrieved articles, duplicates were excluded. Two independent reviewers analyzed the remaining articles based on the relevance of the title and abstract, keywords, and MeSH indexing terms. In case of doubt, the full text was read.

After selecting all publications, the articles were considered for reading in full and evaluated in detail against the inclusion criteria. In case of disagreement, it was resolved with recourse to a third reviewer to determine publication eligibility.

Data Analysis

For the studies meeting the inclusion criteria were extracted data relevant to answering the research question and objectives of this scoping review. A data extraction tool was developed to facilitate consultation of the study's-specific characteristics, population, concept, context, and study methods. The results were grouped concerning facilitative interventions in the transition to the community of the school-aged child with T1DM. Data were extracted by two reviewers independently. Disagreements that arose were resolved through discussion or using a third reviewer. The authors of the articles were contacted to request missing or additional data when necessary.

Because this was a scoping review, no quality assessment of the articles was carried out.

Results

As shown in the flowchart (Figure 1), 162 potentially relevant articles were identified in the databases above, and two were removed because they were duplicates. The title and abstract were analyzed according to the inclusion and indexing criteria, and 146 were excluded. Fourteen articles were left for full-text reading, and one was excluded because it was incomplete and impossible to acquire, which we consider a limitation. After reading the full text of the thirteen articles, we proceeded to their analysis, excluding seven articles for not meeting the inclusion criteria. We added two articles from the gray literature to the remaining six and analyzed them for compliance with the inclusion criteria. Finally, eight articles were included in this scoping review, which is summarized in table 1. The countries of origin, types of studies, professionals involved, and interventions identified are described in narrative form.
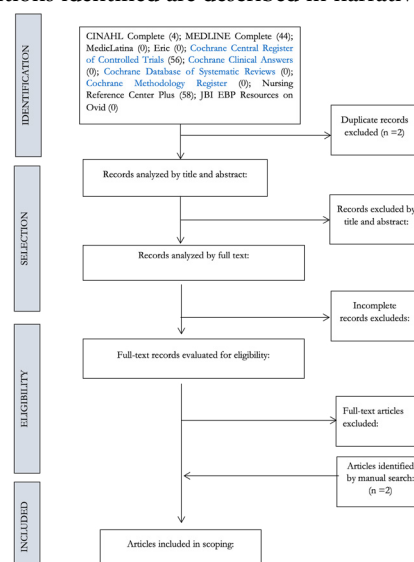
Figure 1 – PRISMA flowchart (adapted) of the study selection process (Tetzlaff & Altman, 2009).
Font: Moher, Tetzlaff, and Altman (2009).

Autor/Ano	Objetivo (S)	População	Conceito	Contexto
1. Sparud-Lundin, C e Hallström, I, 2016 [24]	To explore parents' experience of two approaches to care: hospital-based care and home care.	Thirty-six dyads: seventeen in the hospital care group and nineteen in the hospital-based home care group. Fourteen were school-aged children.	Environmental and learning conditions for returning home were analyzed.	Hospital Hospital Home Care
2. Schub T e Smith N, 2017[25]	Develop an intervention program that promotes the empowerment and adaptation of children, adolescents with DM1, and families.	School-aged children, adolescents, and families.	Identified interventions promote empowerment for therapeutic management of DM1 beginning at hospital admission and possible resources in the community.	Hospital
3. Pennafort VPS, Queiroz MVO, Nascimento LC e Guedes MVC, 2017[26]	To understand the influence of the child and family's way of life, and their social support networks, to guide the child's care with DM1.	Twenty-six mother-school-age child dyads were identified.	The support networks identified were family, friends, school, living with other families of children with DM1, spiritual beliefs, and health professionals.	A referral ambulatory specialized in the treatment of Diabetes.
4. Wolkers PCB, Pina JC, Wernet M, Furtado MCC e Mello DF, 2019[27]	To study the trajectory and follow-up of children with DM1 by the health services, the coordination between the services, the child, and their families.	46 Mothers, eight fathers, and two grandparents (of the 56 children with DM1 involved, 46 were aged between 6 and 11 years)	The data were categorized with the lack of qualified professionals; difficulties in access; communication deficit between health services; insecurity in other services; excessive bureaucracy; the need for humanization, and individualization in care and coordination.	Outpatient Clinic of the Municipal Center for Diabetic Care of Minas Gerais and the Pediatric Outpatient Clinic of the University Hospital
5.Schiaffini R, Barbetti F, Rapini N, et al., 2020[28]	To evaluate the effectiveness of exclusive return to parental care in preschool and school-age children with DM1 with the Tandem Basal IQ system during the COVID-19 pandemic.	22 dyads (parents - children aged 3 to 10.5 years) All children had Tandem Basal IQ technology for metabolic management and control.	Metabolic control through MCG was compared between the last two weeks of the end of the pandemic and the two weeks of pandemic confinement to COVID-19.	Diabetes Unit of Bambino Gesú Children's Hospital
6. Klee, K, Thomas, K, Atkins D e Ness K, 2020[29]	To explore the families' perceptions of children with DM1 about the training received and their ability to transfer learning to the home to improve educational content.	Families of children (3 - 16 years) with DM1 native to an East African country	Defined two related categories one related to the empowerment process obtained at the time of hospitalization, the other associated with the transition of knowledge to the home.	Hospital endocrinology consultation
7. Braune K, Boss K, Schmidt-Herzel J, Gajewska KA, Thieffry A, Schulze L, et al., 2021[30]	To evaluate and analyze the success factors and barriers in transitioning from conventional to digital care in children with DM1 and their families.	Twenty-eight children (3-12 years) with DM1 were on an insulin pump and their caregivers.	Remote consultations, with clinical data access through digital tools: analyzed satisfaction and possible inclusion of this type of follow-up.	University Hospital
8. Tong H-J, Qiu F e Fan L, 2021[31]	To explore the influence of the hospital discharge plan based on the parental care needs of children with DM1.	One hundred two dyads: children (59 school-aged) with DM1 and family members.	Implemented a transition plan to promote continuity of care after discharge.	Hospital nursery

Table 1 – Selection and description of the articles

Countries of origin

Of the included articles, 2 originated in Brazil[26-27], 1 in China[31], 1 in Italy[28], 1 in Sweden[24], 1 in Canada[30], and 2 in the United States of America[29, 25].

Study Types

Of the eight articles, two are quantitative studies[28, 31], three are qualitative studies[26-27, 29], two are mixed methods[24, 30], and one concerns a procedure/guideline manual[25].
Of the quantitative studies, one uses the retrospective observational method[28], and the other uses quasi-experimental research using a prospective clinical trial[31].
One of the three qualitative studies uses a phenomenological approach[26].
Of the two mixed studies, both use the interview in the qualitative strand; in the quantitative strand, one presents a longitudinal prospective cohort design, and the other a randomized controlled clinical trial[24, 30].

Professionals Involved

Of the eight articles, five studies were conducted by nurses[25-27,29, 31], two by physicians[24,28], and one by a multidisciplinary team consisting of physicians, nurses, nutritionists, psychologists, and social workers[30]. It can be seen that most of the studies were conducted by nursing professionals.

Intervention and Evaluation

One of the studies refers to developing a care plan focused on the child with T1DM and the family to support professional practice[25]. In turn, it is highlighted as a facilitating intervention for the transition and the decision-making and therapeutic adherence; individualized care focused on the needs and the environmental/cultural context where the child and family are inserted to facilitate[26,28-29]. The study by Tong, Qiu, and Fan[31] presents a facilitating intervention for the transition of a hospital discharge plan with continuity after discharge through follow-up consultations via telephone or WeChat. Another study shows that Hospital Home Care proved to be an essential facilitating intervention for the transition to the community due to its real character to the empowerment process[24].

Promoting a fluid intersectoral communication that ensures the continuity of care among the various health institutions and professionals was pointed out as an intervention that fosters satisfaction, safety, and confidence for adequate therapeutic management[27].

The social support network for families and the technological social support tools are also described as facilitating interventions[26], as well as the support given by the school community to families of children with T1DM regarding adequate therapeutic management of T1DM during the school period[28]. In the latter, it is essential to highlight the empowerment of the school community and the adoption of new interventions, such as telemedicine, focused on supporting the school community[25]. As new interventions allied to technology and adaptation to a digital context, remote consultations through digital platforms are identified as facilitators of the transition[30].

Summary of Results

Considering the results that emerged to answer the research question, we can group them into three categories, the resources/support Systems that facilitate the transition, skill development (knowledge, modeling, and training), and communication.

The Transition Support Systems/Resources

Several support systems/resources were pointed out as facilitators indicate the transition process of the child and family to the home. At the moment of diagnosis and return home, the family feels fear and overload related to the complex care that the health condition requires, even before understanding and adapting to it. They reveal the importance of tailoring information to the family's needs and cultural specificities to reduce the negative impact. It also shows that the presence of interpreters in health education sessions is a favorable factor, even though it can sometimes be confusing because it is subject to the interpreter's interpretation[29].

The school community is considered a supportive factor in the transition[26,28], with lower metabolic control in this setting compared to exclusively parental care[28] in the period of confinement due to the COVID-19 pandemic. As well as school, religion, friends, other caregivers, and the health team contribute to the development of coping strategies and resolution of adversities related to child care. It should involve, in addition to the family, other caregivers, friends of the child, and the school community, so the promotion of culturally sensitive care is an essential contribution to the quality of life of children with T1D and their families[26, 25].

Informal support groups have proven to be an essential support strategy in the context of knowledge about T1DM and sharing of experiences in which families/caregivers demonstrate the need to develop formal actions in this area[26].

Using technologies and remote consultations (virtual) are considered beneficial for children and families, promoting involvement and decision-making[30].

Hospital-based home care, which consists of home assistance by the hospital team, is considered a resource more oriented to the family and its needs, giving the family a feeling of greater preparedness and confidence in returning home. It promotes situational learning, as it is more similar to daily life and requires reflection and decision-making, although supported by the nurse (telephone contact and visit)[24].

The involvement of the multidisciplinary team (doctor, nurse, nutritionist, and psychologist) in caring for the child with diabetes and his family is also pointed out as essential in the care during the transition process[25,30-31].

Skills Development (Knowledge, Modeling, and Training)

The family and caregiver's knowledge about T1DM (pathophysiology, signs, symptoms, clinical manifestations, and its treatment) is fundamental for acquiring autonomy in therapeutic management. It is a determinant for a successful transition to home[24-26,28-29,31].

At this stage of development, school-aged children can initiate the process by manipulating equipment, and drawings and images can be used to integrate the educational message[25]. They also mention attending summer camps for children with T1DM as a facilitating strategy for developing skills in managing T1DM[25].

Adequacy of teaching plans for the child and family, considering their culture and lifestyle, is described[29] as a strategy to be integrated into care.

The development and implementation of a hospital discharge plan proved to be a strategy to improve discharge preparation, promote therapeutic adherence, decision-making at discharge, and better glycemic control. The elaboration of an empowerment plan adopted thematic education sessions for children with DM1 and their families, and skills training through the talk-back and demo-back teaching methods[31] was appointed as an effective strategy.

Related to professional empowerment, professionals need to improve their skills in caring for children with T1DM and their families in the various health services[27] as a way to promote safety care, the confidence of parents of children with T1DM when they need to use services that go beyond the specialty consultation.

Communication / Continuity

Family members and caregivers of the child with T1DM reported barriers to a successful transition: the poor communication between health institutions/health services, the fragility of the link with the specialized follow-up services for the child with T1DM and his family (endocrinology consultations), a health services approach very focused on the pathology as inefficient when facing the complexity of chronic conditions, compromising the safety and humanization of care, increasing vulnerability, accompaniment in decision making and misinformation. They highlight the need for intersectoral actions, social participation, and coordination of care networks, promoting access and inclusion[27] through:

- the training of the health services team in the care of children with DM1 and their families to organize, coordinate, and make expert care in this area; through health education practices for the child and family,

-the creation of reflective spaces with qualified listening, exchange of experiences, and valorization of knowledge;

- the possibility of telephone service for network referral, continuity of care, and support; through home visits for greater specificity in the face of the daily doubts, allowing a focused and humanized follow-up of the child with T1DM and its family.

Telephone follow-up and Wechat intervention (online) after discharge, gradually spaced (1 week, one month, three months), were strategies that facilitated a successful transition to metabolic control[31].

School-centered telemedicine, in which the multidisciplinary team (physician, nurse, psychologist, and nutritionist) remains in telephone contact with the school, in a perspective of support, support and empowerment for adequate therapeutic management of T1DM, was also pointed out as a strategy that facilitates the continuity of care of children with T1DM at school[25].

The remote follow-up consultations (online) performed during the pandemic by COVID-19 were also considered by families as a good strategy, increasing the proximity between professionals and families and improving the quality of life of children with T1DM. They suggest that they should be maintained in the future[30].

Hospital home care was another highly valued strategy. It offers a more gradual transition home, with the possibility of moving to a hospital home, with supervision by health professionals, and returning home during periods of the day (e.g., the child and family stay at the hospital home during the day and going to sleep at home)[24].

Discussion

Eight studies were found in the last five years, answering the initial research question, "What interventions facilitate the transition to the community of the school-aged child with T1DM and their families?".

The extensive and available evidence mapped in this scoping review indicates that support systems, such as health professionals, the community, an educational plan, and a hospital discharge plan, are essential focuses for the development of transition-facilitating strategies.

The studies found that the promotion of empowerment of school-age children with T1DM and their families for therapeutic management, autonomy, and decision-making was the most valued intervention for a safe transition from hospital to home. Tong, Qiu, and Fan[31] reported that educational interventions directed at parents of children with T1DM to promote the acquisition of skills and abilities before hospital discharge, with a focus on problem-solving and self-management skills, are fundamental for the transition from hospital to home. A high-quality education in preparation for hospital discharge is essential to ensure that care continues to be provided after discharge, prevent complications, and reduce rates of hospital readmissions for complications[31]. Sy[32] reports that effectively empowering the child with DM1 and the family decreases healthcare costs and increases satisfaction with the healthcare provider. The results show that nurses feel insecure, related to a deficit in the knowledge needed to promote empowerment, so she developed a training plan directed to nurses, facilitating the process of acquiring skills focused on the professional and the family. This training plan included, in addition to the theoretical component, the training of simulations in professionals. Include instruments development and support resources for the professional, such as an educational plan to be implemented in the child and family, from admission to discharge. It should be flexible to the needs and individualities of the client[32].

Empowerment and expertise of the professional are described in one of the studies as a facilitator of access to health care and follow-up of children with T1DM in the various public services[27]. Results corroborated by the findings of the study by Sparud-Lundin and Hallström[24], where they refer that family members feel insecurity and frustration when they perceive that the nurse is not an expert in T1DM. This feeling of doubt and insecurity may be a barrier to developing T1DM management skills.

The child with T1DM and family empowerment process begins in the hospital immediately after the diagnosis and completed in an average of three days[31]. Hence, caregivers describe the learning process as "overwhelming and complex"[29]. In this sense, the same author, corroborated by Pennafort et al.[26], refer that it is necessary to adjust the rhythm of training and empowerment by the process of adaptation to the diagnosis, to the changes in lifestyle, to the emotional state and availability for learning of the child with DM1 and his family.

It is also relevant in this domain that the care provided be culturally competent and appropriate to the individuality of each child with T1DM and their family. One of the studies with caregivers and families from East Africa revealed a dissonance in the adequacy of culturally competent teaching and cared when the carbohydrate counting training in the hospital was done with foods and meals significantly different from their habits at home[29]. However, the authors mention a limitation of the small number of participants in the sample; the results alert the need to consider immigrant families' culture, religion, traditions, and eating habits in these training programs for managing T1DM[29].

Communication is another aspect mentioned as a facilitating intervention in the transition of the child with T1DM and their family from hospital to home, the accessibility to information on health and respective care. It is related to the health professional's understanding and mastery of their language. Cultural differences interfere with the knowledge of the orientations given and, when not perceived, make these families more vulnerable and at risk. Families need a health professional who speaks their mother's language so that during the training process and access to care, the information is not subject to the translator's interpretation[29].

Good inter-sectoral communication and articulation are highlighted as fundamental conditions for a safe transition. One of the studies refers to a barrier to the care of the child with T1DM, the fact that health care is fragmented and organized into isolated points of care with no communication between them, which puts safety and continuity care at risk[27]. This study reveals that the communication deficit between professionals compromises the critical health care of these children and families. The family members and caregivers described as facilitating intervention a telephone contact available continuously and home visits, in addition to greater specialization in care and monitoring[27].

The results of this Scoping Review highlight that the community, such as school, friends, social support network, family members, and health services, are the focus of attention for developing transition-facilitating strategies. However, one of the studies reveals that only sometimes the school community has the necessary knowledge for the appropriate therapeutic management of a child with DM1[28]. Since school is a context where children spend much of their day, it is essential that the educational community has the necessary skills and training to promote a safe environment for children with T1DM and to maintain their glycemic control. The lack of knowledge to provide continuity of care in the therapeutic management of a child with T1DM may jeopardize the trust and safety felt by parents[28]. School and friends represent essential social support for diabetes control.

On the one hand, friends can play a facilitating role in the process of adaptation to the condition, management, and care in situations of intercurrence or, on the other hand, negatively influence food

choices[26]. Schiaffini et al.[28] reinforce the need to strengthen the skills in managing T1DM in this context when they refer to their results that the glycemic levels of children were more controlled during the confinement caused by the COVID-19 pandemic, a period in which parents were the only caregivers when compared to the values in the previous period. School-centered telemedicine emerges as a way to promote effective articulation with the school and facilitate the child with T1DM transition to the community[25]. Informal social networks between mothers and caregivers are described as favoring the transition process to home, constituting necessary support, promoting confidence, and adapting to the child's disease. The importance of developing formal actions by professionals that enable the mothers of children with T1DM to meet others to share and make visible sociocultural issues[26].

The construction of an inpatient discharge plan proved to be an essential intervention to be integrated at the institutional level. Promotes the transition from a hospital setting to the community, starting at admission and continuing until after discharge, through telephone consultation and intervention by WeChat. Family and the child with T1DM show satisfaction when the health professionals prepare the discharge plan adjusted to their needs[31].

The adoption of hospital home care, in which the child and family, after clinical stability, are transferred (hospital house). With the support of nurses and the remaining multidisciplinary team, the empowerment process is developed and proved to be an effective intervention facilitating the transition and effective empowerment regarding glycemic control. Parents reported greater satisfaction, confidence in returning home, more knowledge, and greater involvement in decision-making. It was an intervention in an environment similar to their home and normal daily activities compared to the hospital environment and its stressors[24]. More personalized to the difficulties experienced in everyday life and focused on solving concrete problems, facilitate the adaptation to home care and consequent receptiveness to learning. During the COVID-19 period, an online consultation using digital platforms was highlighted by family members as stress-reducing. The possibility of being in a more comfortable, safe, and familiar context increased commitment[30]. However, they mention the constraint of dependence on technology (insulin pumps, continuous glucose monitoring, electronic health records, computer, and internet connection) and the necessary technological literacy[30].

The emphasis given to the contribution of the multidisciplinary team involved in the transition process with the training for the therapeutic management of T1DM was noteworthy. That affects not only glycemic and insulin control but also dietary adequacy, physical exercise, prevention, and management of complications, in addition to the necessary intervention of psychology for developing coping strategies and emotional control[25, 30-31].

Conclusions

This Scoping Review allowed mapping of the available scientific evidence on the interventions facilitating the transition to the community in school-age children with T1DM and providing an effective response to the proposed objective and research question. The strategies found in this review are interconnected, and the transition to the community implies a complex and multidimensional response.

The following strategies emerged as facilitating a safe transition: the individualization and culturally competent care; the development of a transition plan for discharge with continuity after the hospital; the need to formally create support groups to share knowledge and experiences among caregivers; effective communication and articulation of care between services for a comprehensive follow-up of the health of the chronically ill child, with emphasis on digital/virtual solutions; monitoring by a reference professional, an expert in T1DM was considered fundamental to transmit safety, trust, and quality in the process of empowering parents; the involvement of the school community, suggesting the use of telemedicine focused on the school; online consultations, as a strategy to reduce the hospitalization stress and promote the continuity of care at home; the creation of a telephone helpline to support the family of the child with chronic disease, and finally the emphasis on hospital home care as a hospital care that promotes the transition and easier return home. The support systems, the development of T1DM management skills (knowledge and training), and communication/continuity are highlighted as a focus of attention in developing interventions promoting a safe transition. We can conclude that the transition is influenced by environmental, professional, organizational, and family factors.

It is essential to highlight the new forms of care allied to technological development that have emerged with the pandemic by COVID-19 and may be crucial solutions that facilitate a safe transition for children with T1DM and their families.

The exclusion of one article because it was impossible to acquire it was a limitation of this review.

Implications For Research

Future primary studies should seek to know the transition strategies toward promoting continuity of care and intersectoral articulation since it was one of the gaps we identified in this scoping review.

Implications For Practice

Emerging from this scoping review is a set of interventions with the potential to be effective in facilitating the transition to the community of the school-aged child with T1DM. Because they were conducted in countries with different health policies, it suggests the need for primary studies evaluating the effectiveness of these strategies/interventions, such as hospital-based home care and school-centered telemedicine in Portugal. This scoping review allowed for the perspective of evolution in more person-environment-centered care.

Conflicts Of Interest

There are no conflicts of interest regarding this scoping review.

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Healthy work environments and nursing teaching-
-learning process: a scoping review

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Abstract

Background
The concept of Healthy Work Environments is part of the context of professional training in nursing as a reference for promoting the health of the subjects of this process.

Objective:
To identify how professors and students of undergraduate courses in Nursing perceive the "Healthy Work Environments" in the teaching-learning process.

Method
Scoping review performed in PubMed/MEDLINE, EMBASE, Scopus, Web of Science, CINAHL, LILACS and BDENF, considering studies regardless of type, language and year of publication. The guiding question was guided by the mnemonic strategy: Population, Concept, Context. The data underwent descriptive, bibliometric and exploratory analysis.

Results
386 references were identified, 83 were selected to be read in full, of which 56 were part of the final sample. Thus, two categories were created: "Healthy Work Environments: spaces for teaching and health services" and "Strategies for promoting a Healthy Environment".

Conclusion
The concepts under analysis show the experiences of students in environments of educational institutions and health services. Regarding the teachers' practices, working conditions emerged in areas of infrastructure, subjectivities and institutional organization and work policies.

Keywords
Workplace; Occupational Health; Working Conditions; Education, Nursing; Faculty; Review.

Introduction

Healthy Work Environments are those where all people involved collaborate for the continuous, effective improvement of health promotion and protection, while also contributing for the safety and wellbeing of all workers and guaranteeing the sustainability of the work environment itself.[1] Regarding this concept, the World Health Organization (WHO) recommends action to be taken in four great fields: the physical work environment, the psychosocial work environment, personal health resources, and the invovlment of the company in the community.[1]

When it comes to nursing, Healthy Work Environments are standards in place in the work process that put into evidence communication ability, collaboration between team members, effective decision making, an adequate sizing of personnel, and significant recognition of worker contribution, in addition to an authentic leadership.[2] The concept of a Healthy Work Environment in this field is also formed by the perspective of organizations

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and relationships that can promote quality health care, and good quality of life to workers.[3]

Considering the environment where nursing formation takes place, the perspectives of nursing professors and students must be articulated in regard to the experiences in the teaching-learning process. In the specific field of teaching by nurses, issues related with salary, benefits, workloads, faculty environments, preparing for the function, and professional development, as well as scholarips, recognition, institutional support, and leadership, all must be considered in an evaluation of whether it is a Healthy Work Environment.[4] Other studies also evaluate aspects such as infrastructure and teaching strategies whose influence on the formation of nurses is associated with the physical and mental health of professors and students.[5,6]

This work emerged on the interface between health work environments and nursing education, and the relationship between nursing professors and students. Its object, Healthy Work Environments, is part of the context of professional education. Also, considering the relevance of our theme, we aimed to identify how professors and students from nursing graduation courses perceive the "Healthy Work Environments" in the teaching-learning process.

Methods

This is a scoping review whose objective is mapping the concepts that are the base of a research field, as well as to clarify the definitions and/or limits of a topic. To develop this research, we followed recommendations from the Joanna Briggs Institute, updated in 2020, including the following stages: definition of the objective and question; selection of inclusion criteria; selection of an approach to search for evidence, selection, and data extraction, and presentation of evidence; analysis of data; synthesis; and presentation of results.[7]

The guiding question of this research was created following the mnemonic strategy PCC (Population, Concept, and Context), which, in this research, represented: P = nursing professors and graduation students, C = Healthy Work Environment, and C = nursing graduation courses (universities, schools). This led to the creation of the research question "How did students and professors from nursing graduation courses perceive the 'Healthy Work Environments' in the teaching-learning process?".

Evidence was extracted from the following databases: PubMed/MEDLINE, EMBASE, Scopus, Web of Science, LILACS/BDENF, CINAHL. The search was carried out in November 2020, and included studies published which contained the following search terms: ("Healthy Work Environment" OR "Favorable Practice Environment" OR "Positive Practice Environment") AND ("Education, Nursing"[Mesh]* OR "Nursing Learning" OR "Faculty, Nursing"[Mesh]* OR "Nursing teacher" OR "Nursing educator" OR "Students, Nursing"[Mesh]* OR "Pupil Nurse").

The exclusion criteria were: duplicate studies; studies that were not in accordance with the scope of this research; and studies unavailable in full.

To organize the inclusion and exclusion of studies, a flowchart (Figure 1) was organized according with the guidelines from the PRISMA Extension for Scoping Review (PRISMA-ScR).[8]
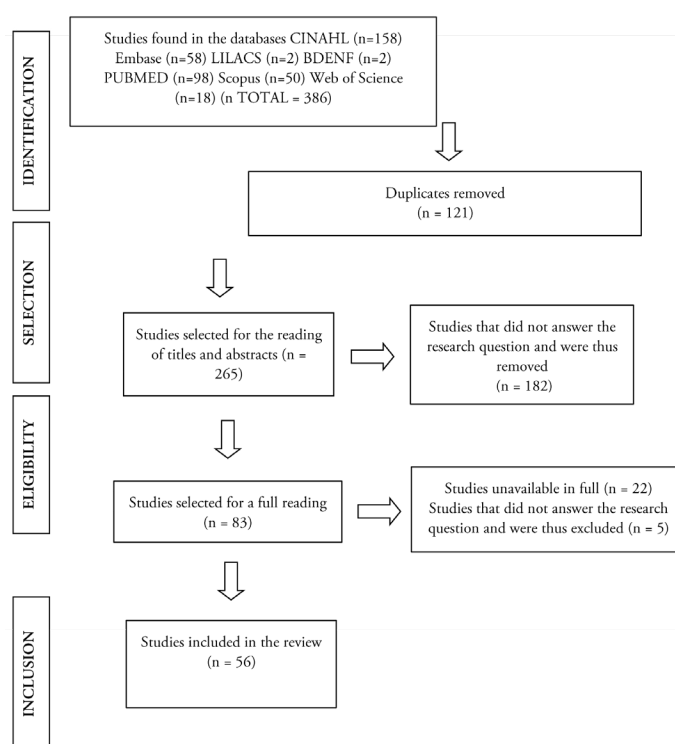
Figure 1 – Flow diagram of literature search and inclusion of articles.

The search protocol was elaborated with the aid of a librarian, who also contributed with the search in the databases mentioned above. After the search, the titles and abstracts were read by one of the authors. In the following stage, the studies were read in full, and the authors confirmed their adequacy to reach the objective of the research.

The studies selected were once again read carefully, so their relevant aspects could be highlighted and organized in a Microsoft Excel spreadsheet. The following characteristics were included: 1) Data base, Title, Authors, Country, Language, Year of publication, Type of publication, Nature of the research, Method, Population and/or sample size, and Descriptors, all of which were part of the results, considering a bibliometric perspective; 2) Objective of the study, Results, and Conclusions were the corpus of our content analysis, which was directed by the constructs that were the object of said analysis.[9] Data was coded according to contributions to the current study. The codes were grouped according with similarity of content, considering their potential responses for the guiding question. Finally, categories that represented the common grounds emerged from the inference and interpretation of results.

Results

386 references were found. 121 were duplicates, and therefore, excluded, leaving an initial sample of 265 indexed publications. After titles and abstracts were read, 182 were excluded because they were not in accordance with the topic of this study. 22 others were excluded because they were not available in full. The 61 references left were read in full. Nonetheless, 5 more were excluded after this

stage, as they did not answer the research question. As a result, our final sample was formed by 56 papers. The bibliometric perspective of the sample is presented in TABLE 1.

Variables	N	Variables	N
Database		**Year of publication**	
CINAHL	32	≤2000	2
Embase	1	2001-2005	5
LILACS and BDENF	2	2006-2010	8
PUBMED	18	2011-2015	14
Scopus	2	2016-2020	27
Web of Science	1	**Type of study**	
Country of origin*		Articles	38
USA	20	Experience reports	7
Brazil	19	Opinion	4
United Kingdom	3	Reflection	3
Australia	3	Thesis, previous note, abstract in annals, continued education module	1 (each = 4 total)
New Zealand	2	**Language**	
Spain, Turkey, Iran, Finland, the Netherlands, Italy, Mexico, and Sweden.	1 (each = 8 total)	English	36
		Portuguese	19
Multicentric - Spain, Portugal, and Brazil	1	Spanish	1

Table 1 - Bibliometric characteristics of the publications of the sample (n=56), Florianópolis, SC, Brazil, 2021
Source: Authors.

Considering the content analysis of sample, we elaborated two categories representing the concept "Healthy Work Environments" in the context of formation in nursing higher education. The first category is called "Healthy Work Environment: spaces of education and health services". This category has three subcategories: "Institutional academic environment from the perspective of students" (six references); "Health care environments from the perspective of students" (nine references); "Professor work conditions" (22 references). The title of the second category was "Strategies to promote the a Healthy Environment" (30 references). Table 2 shows this distribution.

Category 1 - Healthy work environments: spaces of education and health services	Category 2 - Strategies to promote a Healthy Environment
Institutional environment from the perspective of students	Mussi, Pires, Carneiro, Costa, Ribeiro, Santos; 2019.[10]
Mussi, Pires, Carneiro, Costa, Ribeiro, Santos; 2019.[10]	Kerr, Ratcliff, Tabb, Walter; 2020.[11]
Kerr, Ratcliff, Tabb, Walter; 2020.[11]	Freeth, Fry; 2005.[12]
Freeth, Fry; 2005.[12]	Erlam, Smythe, Clair; 2018.[13]
Erlam, Smythe, Clair; 2018.[13]	Sundler, Pettersson, Berglund; 2015.[14]
Sundler, Pettersson, Berglund; 2015.[14]	Kox, Bakker, Bierma-Zeinstra, Runhaar, Miedema, Roelofs; 2020.[15]
Kox, Bakker, Bierma-Zeinstra, Runhaar, Miedema, Roelofs; 2020.[15]	Fontaine, Koh, Carroll; 2010.[25]
Health care environment from the perspective of students	Mintz-Binder; 2013.[26]
Rodríguez-García, Márquez-Hernández, Granados-Gámez, Aguilera-Manrique, Gutiérrez-Puertas; 2021.[16]	Kuehn; 2010.[28]
Serçekuş, Başkale; 2016.[17]	Gazza; 2009.[37]
Yousefy, Yazdannik, Mohammadi; 2015.[18]	Brady; 2010.[43]
Chan; 2001.[19]	Blevins; 2016.[47]
Decker, Shellenbarger; 2012.[20]	Harmon, DeGennaro, Norling, Kennedy, Fontaine; 2018.[48]
Gomes, Rodrigues, Pereira, Handem, Passos; 2015.[21]	Rocha, Greco, Moura, Godinho; 2017.[49]
James, Butterfield, Tuell; 2019.[22]	Azambuja, Kerber, Kirchhof; 2007.[50]
Boucaut, Cusack; 2016.[23]	Mosteiro-Díaz, Baldonedo-Mosteiro, Borges, Baptista, Queirós, Sánchez-Zaballos, et al; 2020.[51]
Reza, Ferreira, Silva, Gandarilla, Solano, Martínez; 2016.[24]	Soares, Albino Filho, Takeda, Pinheiro; 2016.[52]
Professor work conditions	Borges, da Silva, de Almeida, Rocha, Bonow, Cezar-Vaz; 2014.[53]
Fontaine, Koh, Carroll; 2010.[25]	Wood; 2014.[54]
Mintz-Binder; 2013.[26]	Whitaker, Wynn, Williams; 2002.[55]
Mixer, McFarland, Andrews, Strang; 2013.[27]	Franco, Bisio; 1996.[56]
Kuehn; 2010.[28]	Varn; 2016.[57]
Rudy; 2001.[29]	Blake, Collins; 2017.[58]
Botelho-Sampaio, Cardoso-Mourão, Vieira-de-Almeida; 2016.[30]	Collins, Berry, Graves, Engle; 2009.[59]
Pinto, Pintor, Detta; 2017.[31]	Bauer-Wu, Fontaine; 2015.[60]
D'Oliveira, Souza, Varella, Almeida; 2020.[32]	Ward, Scruth-Chavez, Yokum, Rossie, O'Leary-Kelley; 2008.[61]
D'Oliveira, Almeida, Souza, Pires, Madriaga, Varella; 2018.[33]	Freitas, Paixão, Santos, Meira, Carneiro; 2015.[62]
Corral-Mulato, Bueno, Franco; 2010.[34]	Bak, Hoyle, Mahoney, Kyle; 2020.[63]
Rocha, Felli; 2004.[35]	SMoreira, Dias, Silva, Souza, Beserra, Abreu, et al; 2013.[64]
Harri; 1993.[36]	Trinkoff AM; 2018.[65]
Gazza; 2009.[37]	
Madriaga, Souza, D'Oliveira, Carvalho, Lisboa, Andrade; 2019.[38]	
Soares, Zeitoune, Lisboa, Mauro; 2011.[39]	
Castner; 2019.[40]	
Sturgeon, Garrett-Wright, Main, Blackburn, Jones; 2017.[41]	
Tavares, Magnago, Beck, Silva, Prestes, Lautert; 2014.[42]	
Brady; 2010.[43]	
Kaylor, Johnson; 2019.[44]	
Moreira; 2018.[45]	
Souza, Prado, Monticelli, Radünz, Carraro; 2007.[46]	

Table 2 - Distribution of references of the sample according with categories and subcategories that result from content analysis, Florianópolis, SC, Brazil, 2021.
Source: Authors.

Healthy Work Environments: Spaces of Education and Health Services

This category has three subcategories regarding the perspective of students about their educational experiences in the education environment and in health work environments.
The third subcategory is related with the professors, whose experiences, despite travelling between the worlds of teaching and care, are suitable to their professional role, whether we consider the role of nurse professor or direct assistance nurse. In these two contexts, professors associate the concept of Healthy Work Environments to the conditions to develop their activities and work responsibilities.

Institutional Environment From the Perspective of Students

Work-related stress, in nursing, starts in graduation, and its presence is more clearly noted by students near the end of the course.[10] Studies have shown that the environments that simulate clinical situations cause suffering on the student, especially due to their evaluation process. These findings indicate that a pedagogical strategy molded in an environment of nursing care does not reach its goal effectively when these experiences become not healthy.[11-14]
Other factor attributed to unhealthy work environments, which has been noticed by students, are musculoskeletal complications caused by work activities. Since their professional formation, the students notice the unhealthy condition of the environments, including teaching environments[15].

Health Care Environment From the Perspective of Students

The expression "health care environment" refers to the work environment of nurses, where theoretical-practical experiences and stages of formation are processed.
Studies show that, although health services, which are the setting where the educational process takes place, are associated with the development of abilities and other professional competences, they are also environments recognized by their adversities, producing dissatisfaction and disease in the students. The work practices and conditions of nurses which are too distant from theory and from adequate conditions were highlighted, as they had a strong negative impact on the mental and physical health of students. As they discussed the distance between theory and practice, they reported experiences in the job market that were marked by the lack of resources, the overload of teams due to an insufficient number of workers, to work accidents, relationship conflicts in uncooperative teams, among other issues that take place in the daily life of health services. Still, the very condition of students causes feelings of exclusion, undervalorization, stress in evaluation processes, and lack of empathy and embracing from the professors. Due to these aspects, the nursing practice environments have not-healthy features, which are often noticed by the students.[16-24]

Professor Work Conditions

The work conditions of professors show whether the work environment in nursing teaching and learning are healthy or not.

On this topic, literature shows that the work conditions of professors is not conducive for the promotion of their health. The number of professors is smaller than the number that would be necessary to attend to all demands of the career of a professors, which include graduation and post-graduation teaching, research, extension, and administration, as well as the reality of countless higher education institutions. Other characteristics were also attributed to the disease-inducing environment of the work of professors, such as inadequate and insufficient material conditions, low wages, lack of technical-administrative support, competitive relationships with one's peers, demands of high academic productivity to be able to grow in the field and be recognized, and even harassment, among other ethical and moral conflicts resulting from the relationship between workers, managers, and students. As a result, it is evident that professor work conditions lead to occupation stress, moral suffering, depression, as well as physical and psychic health issues. In other words, this work environment is not health at all, interfering in the educational process.[25-46]

Strategies to promote healthy work environments

Despite gaining experience in education environments where factors are present that limit their practices and cause disease and dissatisfaction, professors and students constantly surpass expectations and overcome their limits.

In studies about simulated practices as stress-inducing activities, certain coping strategies were detected. These were mostly used to minimize negative experiences in education environments, which could have repercussions throughout the professional life of the alumni.[10] Laboratory practices and simulations are strategies for nursing education which bring theory closer to practice. This is the first contact with care. Students who go through clinical simulations report that it raises their confidence and assertiveness for future practices in health services. As a result, to reach its objectives, this teaching-learning environment must be consolidated as a healthy one, especially considering the goal of overcoming the punitive aspect of evaluations.[11-14]

The association of the teaching-learning environment with musculoskeletal disorders works opposed to the positive perspective there is in an environment to promote health, suggesting the adoption of strategies to promote protective investments in ergonomics and biomechanics. These strategies should involve planning the environment and its material conditions, as well as pedagogical planning with cross-sectional syllabi involving moving, elevating, transferring, and handling people, as well as physical exercise programs.[15]

It is important to highlight that most references about this topic discussed the theme of education environments, focusing on strategies targeted at the work of professors. These strategies aimed to make work environments less unhealthy, and, consequently, more healthy. Certain studies were found that recommend the adoption Healthy Work Environment standards, including communication abilities, collaboration between team members, effective decision making, adequate number of professionals, and significant recognition of contributions, in addition to authentic leadership.[25,26,28,47,48]

Other studies were based on NLN standards, which consisted in wages, benefits, workloads, faculty environment, preparation to exercise the functions, and professional development, achieved using scholarships, recognition, institutional support, and leadership.[26,28,37,43,47]

Institutional support that adopts healthy work practices also promote health through self-care. These institutions broaden their capacity of forming a solid group of professors by providing them with better work conditions and actions that encourage healthy lifestyles. As a result, professors are satisfied with their activities and with the meaning of their work, which becomes more palpable.[25,26,28,37,43,48]

The relationship between professors and students also has interfaces which are often lost between the perspective of these actors in their roles as students, facilitators of the educational process, and health workers committed to teaching. Professors see their work process as the formation of work colleagues. Therefore, their pedagogical concerns are associated with the aspects implied by the concept of Healthy Work Environment. Studies have shown this preoccupation in syllabi with content about occupational health and worker health. Nonetheless, the presence of these issues in formal syllabi should go beyond approaches targeted at developing competences for the specialist nurses to work in the field of worker's health. Its desirable meaning is in the biopsychosocial expression of caring for oneself and promotion the care of one's peers in the professional environment.[49-60]

Still, both within and without classroom walls, the educational process of nurses in the university extension activities involving occupation health and worker's health assumed, in some studies, the features of cross-sectional strategies that relate healthy work environments with the education process. Especially, when extension actions are carried out with nursing workers, students get closer, especially in the context of real work, which, in time, will also be the context of their actions as professionals.[61-65]

Discussion

The teaching-learning process in nursing higher education takes place in Higher Education Institutions (HEI) and in the health services where theoretical-practical activities and internships are carried out, including hospitals, clinics, outpatient clinics, Primary Health Care Units, and others.

From the perspective of students, an immaterial component of the work environment in formative nursing processes, as demonstrated by literature, is the stress associated with the evaluation processes that are part of all education and characterized by their additive character, as opposed to its formative character. All educational activities, whether they are evaluations or not, are stressful requirements, especially simulations.[11,14] The use of simulations in the educational process is a form of active methodology, that is, a strategy to develop technical abilities in a controled environment, ensuring the safety of the students and safe care. The simulated practices also bridge the gap between theory and practice, promote clinical reasoning and reflection on the practices during debriefings. Nonetheless, there are biases in the implementation of proposed simulations which prevent them from reaching their goals when there are no advances into critical-reflective pedagogical practices, and evaluations that expose and embarrass students continue to be the most commonly used.[66,67]

In addition to the pedagogical practices that have a negative impact in the work environment, this scoping review carried out in tea-

ching and health care settings, revealed the presence of musculoske-letal diseases. These are reported since the formation of the nurse and become increasingly worrisome as the career of the student progresses, due to their constant exposure to repetitive movement and use of physical strength to transport and move people in their beds and carry out techniques such as bathing, wound dressing, and implanting tubes in adequate ergonomic conditions. Therefore, the cross-sectional teaching of body mechanics should be allied to better conditions of learning and work.[68,69]

Education in nursing brings together theoretical knowledge and technical abilities whose exercise takes place, mostly, in experiences that are both theoretical and practical. Some references indicate stressors associated to the practices, since students feel insecure and want to have the best performance possible in the provision of care. In addition, students report an overload of tasks that have an impact on the management of time for other daily life activities, including moving from their home to the teaching institution, social interactions, leisure, and caring for their mental and physical health.[70,71]

The studies highlighted the perspective of students about the environment of health services during the practical experiences in their formation as nurses. The experience of a nurse's work within settings of care represent, on one hand, a perfect opportunity to develop professional competences; on the other, however, these are spaces where many subjective and intersubjective conflicts must be dealt with. The environment of health services represent, for the students, a source of insecurity, due to their expectations with performance, their need for evaluation and responsibility regarding health care. There is also mention of health teams that are not welcoming of students, leading to conflictive relationships, which is associated with the suffering of the students.[16,72,73]

In the educational process there are, at least, two actors: a student and a professor. Therefore, the studies in this revision also highlighted the perspective of the professors regarding the work environment. In the light of the concept of "Healthy Work Environment", certain issues related with the work conditions of nurse professors emerged. These workers are exposed to many demands of productivity in health, research, and extension - the indissociable triad of university careers. Infrastructure conditions are associated with the physical and mental health of professors who perform their activities in classrooms of very poor conditions, often using instruments that are insufficient, inadequate, or in bad conditions. The academic environment is also the target of conflicts from processes that correlate work and subjectivity, and labor and organizational and policies.[74,75]

Up to this point, negative aspects of the environments involved in the teaching-learning process were mentioned, including as elements opposed to the Healthy Work Environments that are desirable, that is, that promote health. Nonetheless, this revision aimed to overcome these barriers despite recognizing them, in order to gather, from the studies, strategies aimed to leave behind the factors that promote disease. In addition to promoting pedagogical models based on punitive evaluation models, already experience in learning experiences prior to higher education[66,67], solid policies of investment on education, science and technology are necessary to promote better work conditions for the professors, which will reflect on the learning condition of the students.[76]

Studies are particularly targeted at the formation of the students as a privileged space to overcome the obstacles and promote healthy work environments for both professors and nurses. This can be understood as a return to these settings, because, as obstacles to consolidate critical, reflective, and especially, health practices to their actors, the studies return to the same settings in the search for strategies that can be proposed. The spaces in which the formation take place are (co)responsible for mobilizing plans and actions to this end. The health of the worker is an important guideline in syllabi.[77] In nurse education experiences, curricular practices, and extension activities, in health services and in the community, knowledge is constructed and consolidated that bridge the gap between theory and actual health needs. Thus, students and professors occupy the spaces of health promotion, protection, and recovery, gaining a perception of the concrete aspects of the relationships between environment and health, and work and health, while also connecting them.[78]

Conclusion

This review generated evidence about experiences and perceptions related with "Healthy Work Environments" in the teaching-learning process. Professors (nurses), as well as students in nursing graduation courses agree in their remarks about the influence of intra and interinstitutional political elements, infrastructure, work process organization, and intersubjective relationships in higher education institution, as well as on the integration with health services, which promote healthy environments.

It stands out that work environments are significantly present in discussions motivated by their negative aspects, that generate disease in the subjects involved. Considering Healthy Work Environments is a positive perspective to think about worker's health, which has repercussions on their being and their actions. Therefore, unveiling the associated elements enable actions to promote worker's health, to the detriment of occupational health perspective.

Limitations of this review include its cross-sectional approach of its object, and the inferential nature of the studies in the sample. Research that is effective in integrating the concept of Healthy Work environment in the settings of nurse formation will contribute for an understanding of the phenomenon of health promotion and protection at work, from the professional formation, including students, professors, and professionals, to the users of health services that integrate teaching and education.

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