

The academic education in nursing and multiple-victim incidents: an integrative review

A FORMAÇÃO ACADÊMICA DE ENFERMAGEM E OS INCIDENTES COM MÚLTIPLAS VÍTIMAS: REVISÃO INTEGRATIVA

LA FORMACIÓN ACADÉMICA DE ENFERMERÍA Y LOS INCIDENTES CON MÚLTIPLES VÍTIMAS: REVISIÓN INTEGRAL

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ABSTRACT

The objective of this study is to reflect on the knowledge, competencies and skill that must be promoted during the academic education of nurses for an effective professional practice in view of a multiple-victim incident (MVI). This is an integrative literature review regarding academic nursing education. The literature survey was performed on the BDNF, LILACS, SciELO, MEDLINE, Web of Knowledge and HighWire Press databases, using the following descriptors: higher education; nursing education; emergency nursing; and mass casualty incidents. The publications permitted considerations regarding the following themes: particularities; competencies and skills essential in nursing practice in view of multiple-victim incidents; and the professors' strategies to promote those competencies and skills. The literature analysis demonstrated that nursing education should be configured as a space to develop critical thinking skills, which requires professors to have an eclectic educational background.

DESCRIPTORS

Education, nursing
Emergency nursing
Professional competence
Mass casualty incidents

RESUMO

O estudo objetiva refletir acerca dos saberes, competências e habilidades que devem ser fomentados durante a formação acadêmica de enfermagem para uma atuação profissional eficaz perante um incidente com múltiplas vítimas (IMV). Trata-se de uma revisão integrativa da literatura acerca da formação dos acadêmicos de enfermagem. O levantamento bibliográfico foi efetuado nas bases de dados BDNF, LILACS, SciELO, MEDLINE, Web of Knowledge e HighWire Press, utilizando os descritores: educação superior; educação em enfermagem; enfermagem em emergência; e acidentes com feridos em massa. As produções proporcionaram tecer considerações nos pilares temáticos: peculiaridades; competências e habilidades que são essenciais à atuação do enfermeiro diante de um acidente com múltiplas vítimas e as estratégias docentes para o fomento de tais competências e habilidades. A análise literária denotou que o ensino da enfermagem deve configurar-se como um espaço de construção do senso crítico, o que exige uma prática pedagógica docente eclética.

DESCRITORES

Educação em enfermagem
Enfermagem em emergência
Competência profissional
Incidentes com feridos em massa

RESUMEN

Se objetiva reflexionar sobre conocimientos, competencias y habilidades que deben fomentarse durante la formación académica de enfermería para una actuación profesional eficaz frente a un incidente con múltiples víctimas (IMV). Revisión integral de la literatura al respecto de la formación académica de los profesionales de enfermería. El relevamiento bibliográfico se efectuó en las bases de datos BDNF, LILACS, SciELO, MEDLINE, Web of Knowledge y High Wire Press, utilizando los descriptores: educación superior; educación en enfermería; enfermería en emergencias y accidentes con heridos en masa. La producción facilitó entretejer consideraciones en los pilares temáticos: peculiaridades; competencias y habilidades esenciales en la actuación del enfermero frente a accidente con múltiples víctimas y las estrategias docentes para fomentar tales competencias y habilidades. El análisis literario demostró que la enseñanza de enfermería debe configurarse como un espacio de construcción de sentido crítico, lo cual exige una práctica pedagógica docente eclética.

DESCRIPTORES

Educación en enfermería
Enfermería de urgencia
Competencia profesional
Accidentales casuales masivas

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INTRODUCTION

In the Brazilian context, violence and traffic accidents have represented one of the main public health problems in the country since the end of the 1970's⁽¹⁾. As a part of this problem, Multiple Casualty Incidents (MCI), which produce more than five victims, reveal a disequilibrium between available resources and demands, but whose needs can be attended to when protocols are put in practice⁽²⁻³⁾. These complex events demand combined efforts with a view to effective health care.

In this study, the terminology of the American College of Surgeons' Committee on Trauma is used, with a view to universally standardizing the terms used in care delivery to trauma victims, i.e.: Multiple Casualty Incidents (MCI) for events that result in more than five victims, and Mass Casualty Events (MCE), in case of natural or man-produced disasters, involving 20 or more victims⁽⁴⁾.

These events are included in the International Classification of Diseases (ICD) under the title external causes, which cover accidental events and environmental circumstances as causes of injuries, poisonings and other adverse effects⁽⁵⁾. According to data from the Informatics Department of the Brazilian Unified Health System (DATASUS) for 2006, external causes were responsible for about 14% of deaths in the country, totaling 128,388 fatal victims⁽⁶⁾. Concerning the Years of Potential Life Lost (YPLL), an important health indicator, it is noteworthy that, in the particular case of accidents and violence, the indicator increased by about 30% in recent years⁽⁷⁾.

With regard to natural disasters, a unanimous consensus exists in literature that these are a global reality. In that context, between 1993 and 2002, the American continent was the second most affected by natural disasters. In this respect, the Brazilian reality can be characterized by the frequency of cyclical natural disasters, especially floods all over the country, and the relevance of draughts in the Northeast⁽⁵⁾.

A Californian study estimates that disasters affect more than 255 million people each year⁽⁸⁾. Estimates from a Canadian study appoint that, in 2003, a natural disaster affected one in every 25 people around the world. Besides, the exponential transportation and industrial growth in that period entailed greater technological risks. In combination with population growth, this enhances the risk of mass-casualty catastrophes⁽⁹⁾.

In view of these data, although there are no statistics for the actual proportion of Multiple Casualty Incidents in the Brazilian health context, these are frequent problems nowadays, in which traffic accidents, besides natural disasters, represent important etiologies of these events

and entail significant consequences for the Brazilian Unified Health System, from the viewpoint of human and material as well as financial resources. Therefore, this reality demands more in-depth studies, which can clarify the actual proportions of Multiple Casualty Incidents in the Brazilian health panorama.

In view of this epidemiologically relevant picture of Multiple Casualty Incidents (MCI), it is clear that the care delivered to the victims of these events is a decisive factor to minimize their catastrophic consequences, entailing an increase in the victims' survival rates. It is in this sense that education for nurses, as well as for the entire multi-professional health team, represents an essential factor, as the educative process constitutes a tool for training and to encourage protocols, in the scope of health professionals' continuous improvement. It is in this interim that the framework of this process is highlighted: the academic education process of nursing professionals.

It should be highlighted that we consider the essential nature of generalist education for nursing professionals. Consequently, we understand the impossibility (i.e. inadequacy) of preparing professionals with comprehensive and specific training for urgency and/or emergency care, and specifically for care delivery to Multiple Casualty Incidents. Nevertheless, we are convicted that comprehensive nursing education should cover the encouragement of knowledge, skills and competences required for nursing professionals' effective and problem-solving actions in view of Multiple Casualty Incidents (MCI).

In that context, the research question that is raised is: what knowledge, competences and skills should be encouraged during academic nursing education for effective professional actions in response to Multiple Casualty Incidents? And, therefore, what teaching strategies are put in practice in the academy to consolidate these skills?

In summary, our study aims to reflect on the knowledge, competences and skills that should be encouraged during academic nursing education for effective professional actions in response to Multiple Casualty Incidents (MCI).

METHOD

This is an integrative literature review about nursing students' education to act on Multiple Casualty Incidents (MCI). Bibliographic research is developed based on previously elaborated material, mainly comprising books and scientific papers, with a view to reviewing existing literature, identifying state-of-the-art knowledge on the theme under analysis, and therefore represents the framework for any scientific study⁽¹⁰⁾.

...what knowledge, competences and skills should be encouraged during academic nursing education for effective professional actions in response to Multiple Casualty Incidents?

To consolidate our work, we developed the bibliographic survey on the Internet, in the databases BDEF (*Banco de Dados em Enfermagem*), LILACS (Latin-American and Caribbean Health Science Literature), SciELO (Scientific Electronic Library Online), MEDLINE (Medical Literature Analysis and Retrieval System Online), Web of Knowledge and HighWire Press. The following descriptors were used to locate the studies: higher education, nursing education, emergency nursing, and mass casualty incidents. We developed the research in February and March 2011.

The literature review was structured in three phases, which were: first, we identified the controlled descriptors in BIREME (Virtual Health Library), through the DeCS (Descriptors in Health Sciences), selecting those descriptors that are considered pertinent to develop the research - Educação Superior/Education, Higher/Educación Superior, Educação em Enfermagem/Education, Nursing/Educación en Enfermería, Enfermagem em Emergência/Emergency Nursing/Enfermería de Urgencia and Incidentes com Feridos em Massa/Mass Casualty Incidents/Accidentales Casuales Masivas. The combination of these terms was used as a search strategy in the databases; in the second phase, the research was accomplished in the abovementioned databases, using these descriptors; and, finally, the studies were subject to critical analysis, excluding those studies that were not in line with the research scope or were repeated in different databases.

We attempted to select papers that addressed the following thematic pillars, which constituted the structural axis of our study: 1) the peculiarities of Multiple Casualty Incidents, including the characteristics that should guide care for these catastrophic events; 2) the competences and skills that should be developed through academic training and which are essential for nurses to act in cases of Multiple Casualty Incidents; and 3) teaching strategies to encourage these competences and skills that are put in practice and aimed for nowadays. In this interval, we selected Brazilian scientific production, available in full text, which addressed these pillars as a whole or independently. These productions furthered considerations about the abovementioned thematic pillars, which will be addressed in this study.

As inclusion/exclusion criteria, we selected those studies in line with the theme, available in full text and published between 2000 and 2011.

RESULTS AND DISCUSSION

Based on the literature studied, we could make considerations and present results, which were grouped in the following thematic pillars, discussed next: the peculiarities, competences and skills essential for nurses' actions in cases of Multiple Casualty Incidents (MCI) and which should be developed in academic education; and teaching strategies to encourage these competences and skills.

Before discussing these pillars, however, we present a categorical analysis of the studies included in this integrative literature review.

Aspects of literature on higher nursing education and MCI

To consolidate the results, analytical activities were developed, considering 60 scientific studies, which are systematically presented in Chart 1.

The scientific studies analyzed compose the following categories: 41 original research papers (68%); six reviews; five supplements; four studies resulting from course conclusion papers and dissertations; two reflections; one update; and one debate. The time dimension of the publications ranged between 2000 and 2011, with the highest publication incidence level in 2008 (17 papers = 28%).

As for journals, 36 were published in international (60%) and 24 in Brazilian journals (40%). In this context, the *Revista da Escola de Enfermagem da USP* (REEUSP) and the *Revista Brasileira de Enfermagem* (REBEN) stood out in Brazil, and Chest and AMIA Annual Symposium Proceedings internationally, all of which published five of the papers analyzed (8%).

MCI: complex and peculiar events

Multiple Casualty Incidents produce more than five severe victims, showing a disequilibrium between available resources and demands, but whose needs can be attended to by putting in practice protocols⁽²⁻³⁾.

Care in cases of Multiple Casualty Incidents should center on a principle that is different from that characteristic of daily practice: the fundamental rule is to enhance the maximum level of wellbeing for as many people as possible⁽³⁾. In other words, the premise that the best medical resources should be offered to the most severe victims should be replaced by the concept of the best medical care for as many victims as possible, which involves the right moment, the adequate time and the minimal use of resources, i.e. efficient and precise professional action⁽²⁾.

In this perspective, it is fundamental to prepare health professionals to work in a problem-solving way. That is the case because Multiple Casualty Incidents involve peculiarities the actors who will work in these situations should be very familiar with to solidify existing care, avoiding the production of further victims and the aggravation of existing patients.

An English study establishes that it should be highlighted that Multiple Casualty Incidents (IMV) represent a reality in the global health panorama, with distinguished etiologies according to each territory. Denying this fact can imply mistakes that can easily lead to three forms of denial: this is not going to happen here, this is not going to happen to me or someone will take care of the problem⁽¹¹⁾. Such mistakes can entail irreparable damage for the subjects involved in this process.

Chart 1 – Literature aspects on higher education in nursing and Multiple Casualty Incidents (MCI)

Literature aspects on higher education in Nursing and MCI	Autors (year)	Publication/Syudy Type	Journal
MCI: COMPLEX AND PECULIAR EVENTS	Salvador, Alves, Dantas and Dantas (2010), Moral (2003), Braga, Oliveira and Givisiez (2006), Minayo and Deslandes (2009), Kahn, Schultz, Miller and Anderson (2009), Epley et al. (2006), Aylwin et al. (2006), Nocera and Garner (2000), Devereaux, Christian, Dichter, Geiling and Rubinson (2008), Christian, Devereaux, Dichter, Geiling and Rubinson (2008), Rubinson et al. (2008), Devereaux et al. (2008), Massey and Gao (2010), Rehn, Andersen, Vigerust, Krüger, Lossius (2010), Khorram-Manesh, Hedelin, Ortenwall (2009), Markel et al. (2008), Jokela et al. (2008), Shirley and Mandersloot (2008), Nelson (2008), O'Laughlin and Hick (2008), Hotchkin and Rubinson (2008), Traub, Bradt and Joseph (2007), Crawford, Gao and White (2006), Alm, Gao and White (2006), Massey, Gao, Welsh, Sharp, Sarrafzadeh (2006), Killeen, Chan, Buono, Griswold and Lenert (2006), Hammond (2005), Niska and Burt (2005)	Review, original research, debate and supplement	Rev enferm UFPE on line, Revista cubana de medicina general integral, São Paulo em perspectiva, Ciência e Saúde Coletiva, Annals of Emergency Medicine, The American Journal of Surger, The Lancet, Australian Journal of Emergency Management, Chest, AMIA Annu Symp Proc., BMC Emerg Med., Scand J Trauma Resusc Emerg Med., Isr Med Assoc J., Int J Electron Healthc., Crit Care., Respir Care., Med J Aust., Scand J Surg., Adv Data.
ESSENTIAL NURSING COMPETENCES AND SKILLS FOR MCI	Wehbe and Galvão (2005), Gentil, Ramos and Whitaker (2008), Ramos and Sanna (2005), Valentim and Santos (2008), Cox and Briggs (2004)	Research, original research and updates	Revista Brasileira de Enfermagem, Revista Latino-americana de Enfermagem, Revista de Enfermagem da UERJ, Critical Care Nurse
ACADEMIC EDUCATION: THE FUNDAMENTAL BACKGROUND	Backes, Silva and Rodrigues (2007), Silva and Camillo (2007), Bagnato and Rodrigues (2007), Gabrielli and Pelá (2004), Stedile and Friendlander (2003), Oliveira, Verissimo, Püschel and Riesco (2007), Fernandes, Almeida Filho, Rosa, Pontes and Santana (2007), Cavalcanti (2004), Rodrigues and Caldeira (2008), Batista, Batista, Goldenberg, Seiffert and Sonzogno (2005), Kruse (2008), Esperidião and Munari (2004), Terra, Fenili, Spricigo and Gonçalves (2007), Rosa and Cestari (2007), Optiz, Martins, Telles Filho, Silva and Teixeira (2008), Scherer, Scherer and Carvalho (2006), Soares and Bueno (2005), Domenico and Ide (2005), Barbosa and Viana (2008), Gomez, Haas, Ahmed, Tien, Nathens (2011), Pfenninger, Domres, Stahl, Bauer, Houser, Himmelseher (2010), Yasin, Malik, Nasreen, Safdar (2009), Perry and Lindell (2006), Mehta (2006), O'Neill (2005)	Original research, research, review and reflection	Ciência e Cuidado em Saúde, Revista da Escola de Enfermagem da USP, Revista Brasileira de Enfermagem, Revista Latino-americana de Enfermagem, Revista Nova Atena de Educação Tecnológica, Revista de Saúde Pública, Revista da Escola de Enfermagem Anna Nery, Online Brazilian Journal of Nursing, Revista Gaúcha de Enfermagem, Revista de Enfermagem da UERJ, Can J Surg., Int J Emerg Med., Ulus Travma Acil Cerrahi Derg., J Postgrad Med., Scand J Surg.

In this sense, in didactical terms, it is evidenced that care delivery to Multiple Casualty Incidents should be based on three fundamental pillars: 1) command, which should be properly identified to guarantee the management of care delivery, adding up the stakeholders' efforts; 2) communication, which involves contact between commands and the fundamental figure of the regulation central, which should vouch for attendance to all needs in the context; and 3) control, which results from the effective consolidation of the previous pillars, ranging from safety on the scene to the management of facts (integrated team care, guaranteed information to family members and the media, etc.)⁽²⁾.

Therefore, pre-hospital care should be systemized in three phases, whose success is an interdependent factor, i.e.: screening, treatment and transportation. Screening is the verification of cases to determine priority health care needs and the adequate place for treatment, marking compliance with the fundamental principle of care delivery to Multiple Casualty Incidents (MCI): treating as many victims as possible, as fast as possible and in the best possible way⁽³⁾. This is achieved through the rapid assessment of the victims' clinical conditions, which should take no more than 60 seconds per victim⁽²⁾.

An Australian study that highlights the evolution of screening systems over the years highlights that, since World War II, the patient screening procedure is considered the main sole factor that contributes to the survival of Multiple Casualty Incident victims⁽¹²⁾.

Therefore, screening methods should be simple, standardized and fast. Among currently existing screening protocols, the START (Simple Triage And Rapid Treatment) stands out, which identifies victims with the help of colored labels, using physiological respiration, perfusion and mental status parameters⁽²⁾. Through this protocol, victims are classified in four priority categories, with their respective colors: dead or expecting (black); immediate (red); late or delayed (yellow); and minor or minimal (green)^(2-3,13).

International studies underline the relevance of electronic screening methods. A study at the Stanford University, California, demonstrated improved care delivery to Multiple Casualty Incidents (MCI) when electronic instead of paper-based screening systems are used, highlighting: the safety and efficacy of these methods and the improved identification of victims and, consequently, family members' anticipated comfort. *During a deployment of the paper and electronic triage tags, 19% to 25% fewer radio calls were made during the event in the electronic triage team*⁽¹⁴⁾.

In addition, a Finish study emphasizes that screening has been considered the cornerstone of mass casualty disaster situation management and showed to be the most important determinant of care delivery to victims, with clear advantages when using a screening system based on the commercial mobile telephony network and Radiofrequency Identification (RFID) pattern, permitting: patient labeling; screening information communication and medical exams to receive medical installations; and communication of screening information to the incident / medical command central⁽¹⁵⁾.

Based on this classification, treatment should be provided, established in priority areas according to the victims' severity, as determined in the screening phase. These areas are identified using colored canvas or flags. Thus, the medical priority areas are: priority 1 (red), involving victims with injuries that represent risk of death, but which are compatible with survival through minimal intervention; priority 2 (yellow), in which injuries are significant and require medical care, but can wait without being life-threatening; priority 3 (green), grouping victims with minor injuries, for whom treatment can be postponed for hours or days; and priority 4 (black), with deceased victims or people with improbable chances of survival, who should not be abandoned, but provided with comfort measures as possible⁽²⁻³⁾.

Finally, the victims' transportation should be accomplished according to the established needs. This should

take place in an organized way, through a traffic flow that avoids congestions and accidents.

In view of the above, the complexity of care delivery in case of Multiple Casualty Incidents (MCI) is clear. This should be based on care systemization, adding up the efforts of all professionals trained to act in these events, with a view to avoiding victims' worsening or the appearance of new victims. Besides, it is fundamental for all sectors to be involved in this process. An Australian study revealed the concerning facts that, in case of a catastrophe of great proportions on Australian territory, between 61% and 82% of severely injured patients could not have immediate access to surgery rooms, and that between 34% and 70% could not have immediate access to ICU beds, statistics that demonstrate the lack of preparation for effective care delivery in case of Multiple Casualty Incidents. Based on these data, the authors recommend working towards a national agreement on disaster preparation referral standards and the periodical publication of hospital performance indicators to improve catastrophe prevention⁽¹⁶⁾.

In this context of unparalleled need for incessant preparation to act in case of Multiple Casualty Incidents, nursing represents a fundamental piece in joint care activities. These professionals' education represents an unquestionably important factor in this process. An Israeli experience report clarified the importance of the educative training factor to reduce mortality and morbidity in case of mass disasters, which can only be achieved through organized and concise planning⁽¹⁷⁾, factors that will be further discussed next.

Essential competences and skills for nurses working in cases of MCI

Nursing professionals' activities in Multiple Casualty Incidents is supported by the Law that Regulates Professional Nursing Practice No. 7498/86, which established direct care delivery to critical patients and activities of greater technical complexity that require scientific knowledge and immediate decision-making skills as nurses' exclusive activity⁽¹⁸⁾.

Literature presents emergency work as a peculiar area, paradoxically characterizes as a field that produces suffering but is a source of accomplishment. Thus, emergency professionals clarify (...) *vanity and professional pride to practice problem-solving medicine, capable of saving lives in view of imminent death*⁽¹⁹⁾.

A study among nurses from the Massachusetts General Hospital in Boston highlighted that care delivery in disasters represents unique challenges and, in view of the global epidemiological relevance of Multiple Casualty Incidents, it should clearly be understood that the role of nursing in disaster medicine will continue growing, demanding adaptations from all stakeholders with a view to care improvements in these catastrophic events⁽²⁰⁾.

In this context, the analysis of literature indicated the need for a specific profile to work in the emergency sector, appointing, among other factors: clinical competency, performance, holistic care and leadership⁽²¹⁾; education and professional experience, skill, physical, stress-coping, rapid decision-making, priority-setting and teamwork abilities⁽²²⁾; aptitude to obtain the patient's history, physical examination, immediate treatment, concerned with life maintenance and patients' orientation to continue treatment⁽²³⁾.

In other words, these professionals' academic preparation (...) *demands the need for conceptual and methodological theoretical education that enhances competences for comprehensive care (...)*⁽²⁴⁾. Thus, among essential competences for emergency nursing practice, clinical reasoning for decision making and skills to readily perform interventions stand out⁽²⁵⁾.

Another essential factor for nursing professionals working in emergency situations is theoretical knowledge, knowledge articulation as a way to conduct solid health practices. From the comprehensive perspective of their academic education, it is mandatory for nursing professionals to be prepared to act in health accumulation practices in cases of Multiple Casualty Incidents, events of unarguable epidemiological importance in the current health context, which demand permanent education.

A study at the University of Toronto, Canada, investigated professionals' educative preparation to act in cases of Multiple Casualty Incidents. The interviewed medical directors revealed that only one-third (39%) of institutions required disaster training programs for physicians, nurses and other health professionals. Besides, only 9% of the centers had taken measures for military agencies to participate in workers' training⁽²⁶⁾.

It is in this context that nursing stands out as an unmatched member in care delivery to these catastrophic events, and should work together and fine-tuned with other professionals, joining care actions and moments of dialogue with the victims and relatives, offering fundamental psychological support for comprehensive care delivery to these subjects' health⁽²⁷⁾.

Finally, we underline a relevant aspect of professional practice in emergency care:

at the same time as they are circumscribed (...) to a specific organizational culture, whose motto is expressed as acting fast to save lives. (...) they are not immune to the reproduction of socially solidified prejudices and grudges⁽¹⁹⁾.

How can this problem be minimized then, guaranteeing qualified, equanimous and problem-solving care, based on ethics, the true sign of health services? This question is particularly importance when considering care delivery to Multiple Casualty Incidents, whose fundamental pillar is the screening principle as a way to guarantee significant care delivery to victims. We defend that per-

manent education for health professionals is the guideline of this process, permitting the establishment of protocols, care standards and spaces for professional reflection, as means to enhance systemized and therefore effective health actions.

In this context, a Norwegian study underlines that screening precision significantly improves when well-trained and experienced professionals working in their habitual environment apply screening criteria⁽²⁸⁾.

In this perspective, nursing professionals' academic education represents the framework of this process, which is permeated by some fundamental subjective aspects that need to be addressed, which are: at this moment, students go through the inexperience and immaturity characterize of their phase of life at the time; they mostly experience the traditional pedagogical model, which hampers the understanding about the transformative function of the knowledge addressed; they express communication difficulties during their first practical contact with users, when they have to deal not only with their emotions, but also with those of other people; and, as a complex result of these elements, they report signs of anxiety, fear and anguish⁽²⁹⁾.

What strategies, then, should permeate these subjectively peculiar subjects' education, with a view to consolidating critical and reflexive nursing professionals who are capable of efficient actions when confronted with Multiple Casualty Incidents? This aspect will be discussed next.

Academic education: the fundamental framework

Across history, Nursing professionals' education has been subject to great changes, which received influence from this profession's representation over time. In 2001, however, a great advancement was consolidated, when the National Curricular Guidelines for Undergraduate Nursing Programs are established through CNE/CES Resolution No. 3, issued on November 7th 2001.

In summary, the pedagogical principles the Curricular Guidelines for Undergraduate Nursing Programs clarified are: the competence-based pedagogy; the principle of learning to learn; generalist, humanistic, critical and reflexive education; and student-centered education, with teachers acting as facilitators⁽³⁰⁾.

Thus, the goal is to prepare health professionals within a perspective of complexity and holism, with multiprofessional actions in response to the needs of our Unified Health System. Thus,

(...) today, education plays a role that goes beyond that teaching that aims for mere pedagogical and didactical scientific updates, that is, it turns into the possibility of creating spaces for participation, reflection and formation (...)⁽³¹⁾.

Therefore, the academic restructuring of health/nursing professionals' education process should involve the

following principles: acknowledgement of the multidisciplinary nature of professional practice; encouragement of clinical reasoning; valuation of the articulation between theory and practice; use of active teaching/learning methods; and curricular flexibility⁽²⁴⁾.

Thus, when we attempt to understand the competences and skills needed for nurses to act effectively in cases of Multiple Casualty Incidents (MCI), we are placing them in this *generalist* context, which aims to establish comprehensive education, based on critical thinking, autonomy, scientific knowledge, without neglecting ethics and humanescence. The use of active methods presupposes students who are at the center of the process, teachers who act as learning facilitators, in which problemization is the fundamental method, as knowledge, which is volatile, should not be transmitted, as what is imposed/desirable is to *learn how to learn*⁽³²⁾.

One essential aspect is related to the fact that nurses' care practice reflects their education process:

Although many studies call attention to care humanization (...), we believe this proposal will be more significant if we consider the humanization of teaching⁽³³⁾.

In this perspective, the framework for the promotion of humanescent health practices is the formation of humanescent health professional, a role the academy needs to play and which mainly involves teachers' preparation to put in practice the curriculum ideals of this process. In other words, care humanescence reflects the subjects who are part of it and who, in a continuous and incessant cycle, are improved through humanescent teaching.

A study revealed that student aim for a teaching form in which teachers stimulate the students through the use of practical classes that involve students' participation in their planning, taking into account their experiences; which privilege students' learning instead of teachers' teaching; which enhance students' reflection on what they learn and the establishment of relations with their life; in sum, students aim for teaching through discovery, which represents meaning for them⁽³⁴⁾.

Thus, the *ideal teacher* is defined as a person who thoroughly knows the subject (s)he is teaching, with clarity, showing different ways of teaching, without discriminating among students, knowing how to organize teaching and preserving good relations with the students⁽³⁵⁾.

A German study presents the experience of building an academic curriculum for medical care in disaster cases, showing that knowledge and skills development in practical exercises can serve as basic training for medical practice in all types of emergency situations, a factor that can directly influence improvements in care delivery to victims⁽³⁶⁾.

Similarly, an Indian study emphasizes that the preparation process for a disaster is precisely dynamic. Professional training should include: ethical base for the alloca-

tion of scarce resources in a Multiple Casualty Incident; orientation on how an incident command system will work in a mass casualty disaster event; how to recognize the signs and symptoms of specific risks and treatment of specific conditions; basic and advanced life support; and isolation, decontamination and screening protocols⁽³⁷⁾.

Putting in practice this idealized education requires a learning environment that facilitates this process, because *it is through the experience process that man gives meaning to something, through the apprehension and interpretation of this something for his life*⁽³⁸⁾.

Thus, experience activities further students' competence and skill development, working with the real as a way to consolidate critical health professionals, as

bringing corporeity into the heart of education as an irradiating focus means bringing life and experiences into the education process and calling upon Pedagogy to pedagogize life⁽³⁹⁾.

What should not diverge in this process is the establishment of comprehensive education for nursing professionals. Therefore,

(...) aiming for the excellence of undergraduate Nursing education, as the fruit of educative practice based on the integrated curriculum, means that one cannot lose out of sight the triad: challenging, daring and innovating⁽⁴⁰⁾.

Through this triad, we believe that one can seek teaching strategies that further students' consolidation of comprehensive skills and competences, so that they can act in an effective and problem-solving way, always aiming for care quality.

CONCLUSION

This reflexive study allowed us to envisage different aspects of the thematic pillars *peculiarities of Multiple Casualty Incidents (MCI), essential competences and skills for nursing activities and teaching strategies to encourage these competences and skills*.

In this perspective, we could notice the epidemiological importance of Multiple Casualty Incidents in the contemporary context, events that are part of the International Classification of Diseases (ICD) under the title of external causes. This is the case despite the non-existence of statistics that show the actual proportions of these events in the Brazilian health scenario. Thus, it was explained that these currently represent frequent problems, in which traffic accidents, in addition to natural disasters, constitute important etiologies of these events, with significant consequences for the Brazilian Unified Health System, considering human and material as well as financial resources. This reality underlines the need for further research to reveal the actual proportions of Multiple Casualty Incidents (MCI) in the Brazilian health context.

In this perspective, we assert that academic education constitutes the framework of this process. This assertion is based on the premise that knowledge, core competences and skills exist for nurses to act in cases of Multiple Casualty Incidents which should initially be taught in the academic environment. In other words, we do not intend to defend specific education for nurses in any way, but to envisage comprehensive education that permits refining health professionals with a view to the consolidation of care excellence.

Thus, we hope to contribute to the development of further research to unveil the incipient nature of Multiple Casualty Incidents today and, above all, to cooperate with the affirmation of the education process as the guiding wire for professional qualification and, consequently, for the improvement of the health work process. In addition, we attempt to apprehend the aspects that should permeate nurses' academic education and, thus, contribute to clarify teaching strategies that facilitate students' learning

process so that, through generalist education, they can be prepared through problematizing educative tasks that enhance the knowledge, core competences and skills that are essential for effective actions in cases of Multiple Casualty Incidents (MCI).

Hence, the intention nowadays is the understanding of the fundamental health/education dyad, in a process that starts in the academy, when values should be constructed within the framework of complexity, holism, problematization, experiences, in short, through educative tasks in which there are no protagonists, but co-participants in a refinement process of competent professionals who are committed to care quality.

In sum, we defend that one cannot ignore the essential importance of the perspective of the unfinished in the Nursing profession. In other words, we consider that complete professional education will never be achieved, as permanent education is a factor *sine qua non* of nurses' professional practice.

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