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THE ROOTS OF STRESS ARE NOT INDIVIDUAL: GROUNDED-THEORY BASED INTERVENTIONAL MODEL FOR NURSES

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ABSTRACT

The use of Grounded Theory is growing in nursing research, as a scientifically rigorous method that allows giving meaning to situations experienced by human beings and creating a theory based on data from these experiences. To propose an intervention model for occupational stress in nurses working in Urgency and Emergency Care Services, it was used a qualitative approach based on Symbolic Interactionism and Grounded Theory as theoretical and methodological frameworks, respectively. Data were collected through semi-structured interviews and were analyzed using open, axial and selective coding. Participants were ten nurses with one or more years of experience at that Care Services at a university-affiliated hospital. Two categories of underlying stress factors for nurses were identified: "Inadequate work conditions" and "Non-existent or low-quality care policies". Thus, we reached a situational diagnosis and, from there, indicators of structure and processes to be considered in strategic management plans, both for worker health and patient safety. All participants reported very similar stress-inducing situations, regardless of working with children or adult or the shift and duration of their relevant work experience. Participants' analysis emphasized the need to review and improve working conditions and to implement policies that support the quality of health care professionals.

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INTRODUCTION

Stress is a phenomenon capable of acting as a trigger for a series of biological events and other behavioral deficits (Tong *et al.*, 2023). The existence of stress in the personal and professional lives of individuals impacts physical and mental health of human beings (Bui *et al.*, 2023). Considering professional aspects, there are few prospective studies proposing interventions to improve working conditions (Wang *et al.*, 2023). One obstacle to planning interventions is that stress is partly an organic response, dependent on how individuals respond to stressors, and these responses vary widely (Antczak-Komoterska *et al.*, 2023; Tong *et al.*, 2023). Some studies show that coping mechanisms need to be versatile and customized, depending on the internal characteristics of individuals, including physiological response patterns, as well as the characteristics of professional teams, and external factors related to the working environment. The hospital environment, for example, poses very stressful work demands, and nurses, therefore, have both experience and knowledge about stress, but very few or no tools at their disposal to deal with it (Martins *et al.*, 2011).

Studies indicate that stress levels among nurses working in emergency and urgency units are very high (Santana *et al.*, 2019; Zheng *et al.*, 2021). Emergency and urgency care units have very high levels of work overload and occupational strain. It is necessary to monitor these professionals' mental and physical health (Sacco and Copel, 2018) in order to maintain acceptable stress levels and avoid long-term chronic health problems (Labrague *et al.*, 2018). Several studies recommend strategies aimed at reorganizing processes at nursing professionals' workplaces in order to diminish sources of stress. They also point to an imbalance between increasing complexity of demands and availability of spatial, material and human resources for assistance (Labrague *et al.*, 2018; Reilly *et al.*, 2014). In light of the pressing need to address stress among nurses and the inherent challenges in identifying effective coping strategies, this study delves into nurses' firsthand experiences and representations of workplace challenges. Our aim is to develop a diagnostic model that identifies the root causes of stress, serving as a blueprint for potential intervention strategies. By harnessing the insights and suggestions from nurses, our objective is to lay the groundwork for future interventions that can comprehensively address and mitigate the stressors inherent in their work environment.

MATERIALS AND METHODS

A qualitative study was conducted which centered on gaining understanding of nurses' perspectives about minimizing stress in the workplace. The theoretical framework was Symbolic Interactionism (Burbank and Martins, 2010), a perspective originated in sociology, which emphasizes people's interaction processes with others and themselves. Based on those interactions, individuals learn to attribute meanings (which are dynamic) to things and situations and react to those things and situations based on those meanings. We chose Grounded Theory as a methodological framework that allows systematic gathering and interpretation of social actors' experiences and as a pathway to reliable results and generation of knowledge and social action (Polacsek et al., 2018a,b). Participants formed a convenience sample of ten nurses (nine women) with experiences ranging between 1 and 21 years who worked day- or night- shifts in the adult or pediatric emergency and urgency units of a university-affiliated hospital in Goiania, GO, Brazil. Data collection happened after approval by the research ethics review committee of the institution where the study was conducted (CAEE nº45021915.2.3001.5078). There were two groups with five nurses each: the first group worked at the pediatric urgency and emergency unit and the second group worked at an adult emergency unit (units were adjacent and the same administrator was responsible for both). Data collection started with a simple survey, consisting of two multiple-choice questions, based on previously defined categories (McVicar, 2003). This was followed by a semi-structured interview with the participants of this study. The interview began with the open question: *If you were to think of an intervention plan for work-related stress in emergency and urgency services, how would it be structured?*

After transcription of the recorded interviews, we grouped and coded results in three phases: preliminary coding, conceptual coding, and axial coding. This last phase originated categories and subcategories. Comparative analysis of the interviews throughout the coding process favored reliability in the process of discovery of a central category/phenomenon and guided subsequent selective coding and development of a theoretical matrix/substantive theory, as recommended by Grounded Theory (Glaser and Strauss, 1967).

RESULTS

Description of work-related stress in urgency and emergency-care units: We presented nurses with four conceptions of stress, derived from content analysis done in our previous study with 408 nurses in the same hospital (McVicar, 2003). Nurses were asked to say which category best fitted their experience in urgency and emergency units (Table 1).

Table 1: Nurses' choices of definition of stress best fit to their workexperiences at urgency and emergency units. Goiania-GO, Brazil. 2015/2019

Categories	n
Stress is a synonym of exhaustion, overload, and pressure.	06
Stress is an illness.	00
Stress is a phenomenon that triggers illnesses.	02
Stress is a phenomenon dependent on quality of life.	02

Knowledge about mediating systems of stress: When asked which systems in the human body are involved in the stress phenomenon, seven out of ten nurses pointed to the neurologic, endocrine and immune systems.

Conceiving an intervention plan: Analysis of participants' assertions demonstrated that nurses in urgency and emergency-care units ascribe the stress that they undergo to unsatisfactory conditions at the workplace, including qualitative and quantitative aspects of human resources, material resources and equipment. The lack of support in all these areas hinder opportunities for professionals to "give their

best", as shown in the following statements (all statements quoted here were translated from Portuguese by the authors):

E2: "Any measure taken to benefit the patient inherently benefits the staff and enhances the functioning of the unit. Our current situation is unsustainable: facing a tremendous demand with an insufficient staff size. This results in multiple challenges: stress from patient care, stress from staff allocation, team conflicts due to the feeling of being overwhelmed, and patients who are so stressed they lack basic amenities like a chair. Imagine the crisis if a patient's condition deteriorates and we lack even basic facilities like a stretcher, let alone monitoring equipment for vital signs."

E 9: Certainly, an approach that would alleviate my stress involves receiving more support. We require this support to provide optimal care to our patients, given the intricate demands of the job. Situations arise where we're in need of a needle but none are available, or a tray and find none at hand, or a functional monitoring system; it's clear things aren't on track. While I enjoy the camaraderie here and appreciate the work environment, the intense stress can sour the mood of the staff, because often, at that crucial moment, they themselves have to call out for help - in an emergency unit! - (laughter). Such incidents negatively impact our entire shift."

Presenting the central phenomenon: acting on the roots of stress:

The central phenomenon "Acting on the roots of stress" emerges from two categories of participants' experiences: inadequate work environment and lack of robust healthcare policies. These categories reveal an interplay between the challenges of navigating a work setting lacking essential support and the distress of failing to offer adequate care to patients, despite a genuine passion for the profession.

Category 1: Inadequate working environment

This category stems from two subcategories: the need to improve work conditions and the need for quality and safety at the workplace. Both subcategories relate to the central phenomenon since both support a deeper comprehension of how to construct an intervention, based on knowledge of specific factors that trigger stress responses. In the first subcategory, called "the need to improve work conditions", all nurses underline the need to increase human resources, material and equipment. Participants mention establishment of institutional protocols, the effective presence of management staff, a decent physical working environment, among other factors, as essential to achieve less stressful work conditions, as exemplified in the following statements:

E1: "For a less stressful environment, I believe having the proper support in terms of both staff and materials is essential. It would also be beneficial to have a designated 'point person' in challenging situations. Furthermore, effective norms and organized routines would greatly enhance the structure of our tasks."

E3: "Considering an intervention strategy to address my stress, it would revolve around working in an optimal physical environment equipped with organized and readily available materials to boost our performance."

E4: "It's crucial to foster suitable environments for both patients and their caregivers. This ensures dignified care for patients without overwhelming the workforce or making patients sit uncomfortably on chairs, denying them basic comfort."

E7: "I feel a significant source of stress arises from feeling unsupported and disorganized in our work. The frustration of not seeing solutions or feeling that I'm not at my best deeply troubles me. Enhanced environmental conditions that allow for improved care and accommodation for patients and their caregivers, as well as efficient patient flow, would be tremendously beneficial."

Statements in the subcategory "providing quality and safety at the workplace" emphasize that a continuous training program would prepare professionals to deal more efficiently with unexpected and stressful situations. Training would also improve issues of

occupational skills and safety at work. The following statements exemplify the former points:

E5: "Ensuring quality and safety at work can reduce stress. Training programs could make this achievable. Moreover, hands-on training tailored to specific services, along with internships for real-world experience, would significantly benefit. All these areas need development."

E10: "I recognize that with each passing day, technology advances in serving life. Therefore, training, updates, and job-specific knowledge—which I didn't receive during my graduate studies or in my specialization course—are crucial. Such opportunities would enhance the quality of my work, instill more confidence, and consequently reduce stress in my tasks."

Category 2: lack of good healthcare policies

The category Lack of Good Healthcare Policies branches out into two subcategories: Focus on Nurses for Quality Care and Focus on Support Services to Back Up Care. The subcategory "focus on nurses for quality care" refers to setting up strategies so that the nursing professional can feel that his work is appreciated and undergo less stress; it also refers to improving communication among members of different occupational categories and setting up counseling programs for patients and their caregivers in order to reduce stress-inducing demands:

E5: "Policies that foster recognition and gratitude, with increased independence for supervisors."

E8: "...there's a need to implement workplace health guidelines and to organize events on specific occasions, on-site exercises, stress-relief practices, massages, and more."

E9: "On-site services for staff at the hospital, such as access to a psychologist and a nutritionist."

The subcategory Focus on Support Services to Back Up Care illustrates how often nurses are compelled to shoulder responsibilities typically catered to by other services, which consequently amplify stress-inducing challenges:

E7: "You understand, any initiatives that would alleviate stress in our department essentially mean addressing the entire hospital's issues. For instance, when feeding bottles for the children are delayed, mothers point fingers at the nursing staff; it takes hours for the laboratory to deliver results, and parents attribute this delay to us. Can you see why we're so overwhelmed? Whether it's the milk dispensary, the laundry, the laboratory, the admission department, or the pharmacy, there are shortcomings everywhere!"

E9: "One more thing: if patients were briefed more comprehensively, it would ease our burden of perpetually guiding and enlightening them. Doctors should significantly contribute, but they typically abstain from informing patients... leading to the weight of this responsibility falling squarely on us... and this becomes a source of stress for both us and the patients. Additionally, it's not solely the doctor's role, but every department should genuinely invest more effort in patient communication."

Thus, the central phenomenon pertaining to the theoretical model, devised using ground-theory, is presented in Figure 1. Our model has elucidated three main stages: definition of stress, mediating systems, and stress-inducing demands. These stages delineate not only the manifestations of stress but also the overarching systems and demands that either contribute to or alleviate the pressures faced by nurses. Key contributors to stress are (1) improper working environment and (2) the lack of effective healthcare policies. Based on this understanding, we devised a holistic model for intervention. Our approach is four-pronged, emphasizing the necessity of enhancing infrastructure, ensuring quality and safety at work, recalibrating focus on the nursing profession to prioritize quality care, and bolstering support services that serve as the backbone of patient care. It is these interventions, directly targeting the root causes of stress, that hold the

potential to transform the nursing landscape in Urgency and Emergency Units.

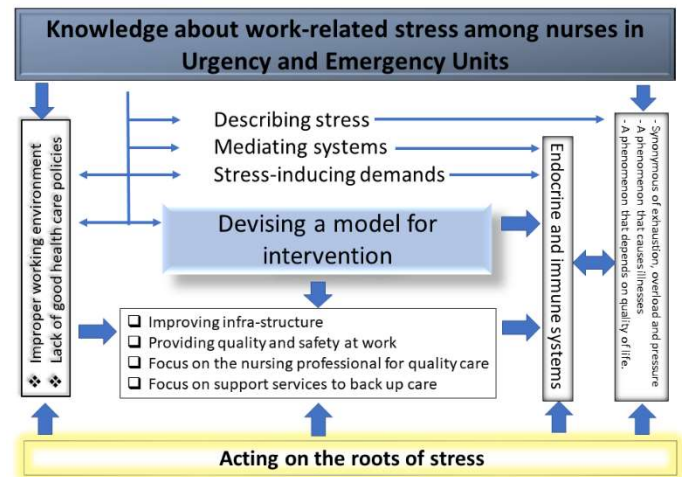


Figure 1. Theoretical model "Acting on the roots of stress"

DISCUSSION

Studies about stress among nurses often assess the relation between stress and social-socio-demographic variables such as gender, duration of relevant professional experience, shift, among others. Conflicting results are frequently to individual factors, suggesting that stress depends on how each individual perceives, adapts and responds to stressors. This often leads to fragmented interventions, rooted in the belief that the nurse brings stress to the workplace from other contexts. In this perspective, as these stressors are viewed as personal and originating outside of the work environment, administrators are perceived to lack direct influence over them. Situations such as double shifts, traffic congestion, household responsibilities, secondary employment, etc., are consequently viewed as regrettable but beyond the control of healthcare administrators (McVicar, 2003).

The data gathered from this study challenge the common perception that individual, idiosyncratic, or non-work-related variables are the primary drivers of stress among nurses. On the contrary, as illuminated by the interviews we translated and analysed, participants overwhelmingly emphasized work-related factors as the primary culprits. More than just personal job-related stressors, these nurses view such factors as deeply ingrained, almost inseparable, not just from their individual roles, but from the very structural framework of the hospital. The sentiments expressed in the interviews highlight a profound belief among participants that the roots of their stress are intertwined with the systemic operational procedures and organizational culture of the healthcare institutions they work in. This underscores the need for holistic institutional reforms rather than mere individual-focused interventions to address and alleviate the stress experienced by nurses. The findings presented a surprising twist regarding the influence of shifts on stress levels. Contrary to popular belief that evening shifts are a main cause of nurses' stress, our data did not reveal any significant disparities between evening and day shifts or, at least, the negative structural factors were so strong that they overrode any influences of shift in nurses' perceptions of the root causes of their stress. While other research has highlighted nocturnal shift as having a negative impact on workers' quality of life (e.g., Starc, 2018), such distinctions were not echoed in this study. Notably, only two nurses mentioned "quality of life" as a defining feature of urgency and emergency service. But even in their case, they were referring to the "quality of life" they experience at work, rather than to external factors. This perspective is invaluable for devising an intervention plan. Addressing the identified stressors could serve as a roadmap for broader improvements, with an overarching goal of enhancing quality across the board, especially in-patient care. The narratives shared by the participants clearly signalled a perception of stress that goes beyond individual factors. Consistently, participants

conveyed stress as synonymous with feelings of exhaustion, overload, and extreme pressure, suggesting that they often encounter situations where their work becomes overwhelmingly taxing. This sentiment mirrors previous findings, where professionals have described their stress as stemming from an "enormous workload" (Owens *et al.*, 2019). Furthermore, it is crucial to underline that for these nurses, alleviating patient distress directly translates to a reduction in this overload. They emphasized that any measures or improvements geared towards patients inherently benefit them too, highlighting the deeply intertwined nature of their well-being with patient care. A significant portion of the nurses showcased an understanding of the physiological aspects of stress, detailing how the neurologic, endocrine, and immune systems play roles in stress responses. This level of awareness further highlights their acute consciousness of the impact of their work environment. Intriguingly, participants also drew connections between stress and health ailments. This contradicts earlier research (Pereira *et al.*, 2013) which postulated that while nurses are aware of stressors, they often don't associate them with their own health concerns. This disparity underscores the urgency of delving deeper into this area and reinforcing the implementation of strategies that foster wellness and proactive self-care for nurses (Sacco and Copel, 2018). The findings illuminate the need for structural changes within the healthcare system that prioritize both patient care and the well-being of these dedicated professionals.

Drawing on the insights garnered from interviews, this study, in conjunction with prior research on work-related stress among nurses, presents compelling evidence that underscores a common understanding of stress determinants in the high-paced settings of emergency and urgency care. The findings strongly suggest that superficial interventions, such as workplace gymnastics and similar initiatives, might not be the most effective in these particularly demanding environments and agree with previous studies that emphasize root causes (e.g., Labrague *et al.*, 2018). This study showed the painful clarity with which nurses describe the origins of stress and the potential interventions to alleviate it, as well as how it is intertwined with preoccupation for better patient care. Our analysis showed that central to participants' concerns are the suboptimal work environment and a conspicuous absence of comprehensive care policies. When examining the structural inadequacies in the workplace, the "lack of quality care policies" emerges as a recurrent theme. These findings align with other research, where nurses highlighted the imperative of better organizational planning, an augmented workforce, enhanced labor division, and the integration of protocols alongside quality programs (see also Xu *et al.*, 2019). The onus of the pervasive stress endured by nurses in emergency and urgency settings therefore falls predominantly on the wider context and is closely tied with low quality care. As one nurse put it, any improvement in patient care is, automatically, improvement in their stress. Factors contributing to this stress encompass a myriad of issues, such as ambiguity in defining the nature of urgency units, disorganized operational routines, compromised communication, dilapidated facilities and equipment, and substandard lighting and ventilation. Additional stressors include unsuitable accommodations, insufficient support mechanisms, and the absence of robust training initiatives. Cumulatively, these issues craft a challenging environment that amplifies stress, particularly when there's no immediate remedy on the horizon.

In conclusion, based on this researcher, nurses, with their first-hand experience, have shed light on actionable steps to transform this challenging landscape. Their recommendations, as synthesised and organized in our proposed model, pivot towards addressing the core issues that precipitate stress, emphasizing the necessity for more profound, structural changes rather than peripheral solutions. Embracing this approach aligns with research affirming that addressing root causes is one of the most effective strategies to foster well-being in professional settings. Also, it is very important to highlight the implications for clinical practice. The Urgency and Emergency Units are characteristically quite vulnerable within the diversity routine of Emergency Care. The scenario of dynamic tension, full of technologies for the recovery of life, leads us to reflect on situations that generate stress and the great responsibility that

surrounds the target professionals of this study. This performance is not only crucial for optimal patient care but also instrumental in safeguarding the well-being of the nurses themselves. Understanding the root causes of stress, as highlighted in this research, is paramount. This knowledge provides invaluable insights for hospital administration and healthcare stakeholders. By directly addressing these root causes, there lies an opportunity to enhance both patient care and the health of the caregiver, fostering an environment that prioritizes patient safety and, concurrently, the welfare of the nursing professionals.

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