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PHOTOVOICE: A STRATEGY FOR IDENTIFY NURSE'S SELF-PERCEPTION OF OCCUPATIONAL EXPOSURE OF MUSCULOSKELETAL RISKS

ABSTRACT

The People's self-concept contributes to their sense of identity, and if associated with methods that promote the involvement of participants, we develop knowledge that promotes causes and social change. **Introduction:** In recent decades, the scientific community has identified a high prevalence of work-related musculoskeletal disorders in nurses, as a result of work processes, high physical demands, workspaces, and the emotional and sometimes stressful association of clinical contexts. Obstetric nurses, due to their specific work, have been a group that has been little studied and, above all, little involved in research processes. **Research Objective**: This study aims to identify the self-perception of Obstetric nurses regarding daily activities in the labour context, which are self-perceived as high risk for work-related musculoskeletal disorders. **Methodology:** A qualitative approach was used, utilising an empowering research method - Photovoice. Twenty who work full time in the delivery room took part. Photographic records were presented by the Obstetric nurses and their self-perceptions were shared through interviews. The interviews and photographs were then transcribed, analysed and categorised. **Results:** The average number of years as a Obstetric nurses was 14.4 years, but with 24.8 years working as a nurse. Twenty-two work activities with a potential risk to health were photographically recorded.

Keywords
Obstetric Nursing; Self Concept; Occupational Injuries; Occupational Exposure; Risk.

1. Introduction

The most common occupational health problem in Europe is musculoskeletal disorders (MSDs) (Sousa et al., 2023), which are responsible for professional impacts such as presenteeism, absenteeism, quality of work and productivity, as well as personal consequences such as suffering, risk of chronicity, reduced finances and quality of life (Van Hoof et al., 2018; Wang et al., 2015; Lira et al., 2021). According to the latest European Occupational Disease Statistics (EODS) (Jan et al., 2019), work-related musculoskeletal disorders (WRMSDs) account for 45 per cent of all illnesses. The European Agency for Safety and Health at Work (EU-OSHA) has announced that the economic impact resulting from absenteeism from work due to health problems is estimated at 550 million dollars/year, with an impact of between 0.4% and 4% of the gross national product (GNP) of European countries (Meyer et al., 2017).

The technical, human and holistic specificities of obstetric nurses (ONs)' clinical performance make this professional group favourable to the development of some work injuries (Sousa et al., 2024; Sousa et al., 2019).

Other studies indicate an increase in burnout among nurses (66.2%), citing the COVID-19 pandemic in 2020 as the reason for this increase, given the significant increase in workload and long-term work pressure, resulting in physical and mental exhaustion and a lack of effective management and support (Chang et al., 2023).

The analysis of nurses' self-perception of work-related stress concluded that risks and workload have a significant impact on nurses' self-perception of work-related stress (Lira et al., 2021).

The aim of this study is to identify obstetric nurses' self-perception of daily activities in the labor context that pose a high risk of work-related musculoskeletal disorders. The question is: Which activities performed by obstetric nurses are perceived as posing the greatest risk for musculoskeletal injuries?

2. Methodology

This chapter provides a detailed description of the methodology adopted to carry out the study. The approach was qualitative, using the Photovoice methodology where photography and narrative are the tools used to collect data.

After describing and justifying the type of approach, we will move on to the method of recruiting participants, followed by the process of collecting and analysing the data. Finally, the ethical considerations involved in the research will be discussed.

2.1 Photovoice: Approach and background

To carry out this study, it was necessary to select a method that would enable the participation of the ON and allow them to see the phenomenon from their angle of action.

The method selected was Photovoice, because it facilitates the empowerment of participants to document and reflect on their own reality through the use of photography and, consequently, the description and narrative justification of the image. This method emerged in the early 1990s with researchers Caroline C. Wang, from the University of Michigan, and Mary Ann Burris, from the University of London, who discovered the potential of this resource in promoting social change and critical dialogue about the phenomenon (Wang & Burris, 1997; Wang et al., 1996). This approach has its epistemological foundations in Paulo Freire's model of critical consciousness, feminist theory and the tradition of documentary photography (Latas et al., 2017). This method involves the observer through their optics, their reasoning, their knowledge, their emotions and the physical image of the phenomenon, enabling deeper scrutiny and interpretation on the part of the viewer (Jarldorn, 2019).

This methodology allows participants to portray their realities and experiences through images, facilitating a deeper and more multifaceted understanding of the issues under study (Wang & Burris, 1997). This approach was chosen because of its effectiveness in enabling participants to narrate their own stories and perspectives, giving them a deeper understanding of the issues under study.

2.2 Study design

The study took place in the delivery theatre of a Portuguese public hospital between November 2022 and April 2023. The study took place in three stages. Firstly, briefings were held with all the ONs in the department, instructing them on the use of the Photovoice method and asking them to take part in the study.

The eligibility criteria for taking part in the study were: holding a professional certificate as a ON, working in a delivery room full time to guarantee professional experience and the context under study. The length of professional practice was not considered an exclusion criterion, as it allows for a temporal perspective of the focus.

In the second phase, the ONs who expressed an interest in taking part in the study were contacted, instructed to fill in the consent form, the source of the photographic record (mobile phones or the camera made available to the service), the number of photos (five), and the necessary guidelines for the photographic record (the individual themselves could not be the subject of the photograph, complete capture of body posture, and that the phenomenon of MSDs should be important in recording the activity).

In the third phase (March to April 2023), after receiving all the photographic records, which were grouped, numbered and then coded, individual interviews were carried out, by prior appointment, in a private space, using a script.

2.3 Recruitment and Participants

The selection of participants was intentional, based on the pre-defined eligibility criteria and the availability of the ONs (Creswell & Creswell, 2018). During the initial briefing, the researchers' contact details were made available so that ONs interested in taking part in the study could express their interest, and a total of 20 ONs were obtained, who claimed to be interested in the topic and curious about the method.

2.4 Data collection

The photographic records were taken between November 2022 and February 2023, totalling 100 photographic records received, which were validated for the study after being analysed by the researchers. All the records were made using the participants' mobile phone cameras, and the camera provided by the researchers was not used.

The interviews took place between March and April 2023. The interviews were recorded with the prior consent of the participants, the narratives were transcribed, the transcription validated, coded, categorised and the results extracted.

It should be noted that at the beginning of the interview, the participants viewed the five photographic records they had developed, and only after they had been validated did they start asking questions. The interviews were carried out by appointment and in a suitable space, lasting between 24 and 38 minutes, and only one interview per participant was necessary, following the basic guidelines of the SHOWeD acronym defined by Caroline Wang (1999).

The coding and content analysis process followed the three phases recommended by Bardin (2016), pre-analysis; exploration of the material; treatment of the results, inference and interpretation. It was carried out by two expert researchers, using 'TurboScrive' software to transcribe and validate the narratives, and confirmed by email by all the participantes. The process of coding, categorising and extracting results, the WebQDA® qualitative analysis system was used, which made it possible to structure the narratives, manage the process more fluidly and make the data more efficient through systematisation and analytical transparency, as well as the participation of the different researchers, bringing rigour to the entire research process.

2.5 Ethical Considerations

Authorisation to carry out the study was requested from the Health and Research Ethics Committee of the Dr. Nélio de Mendonça Hospital, and authorisation was obtained on 29 March 2022 under number S.22001442.

With regard to the fundamental ethical principles defined by the Declaration of Helsinki and the Belmont Declaration (respect for persons, beneficence and justice), and by the European Union's General Data Protection Regulation and European Directive 2001/20/EC, they were complied with throughout the process, making it possible for the ONs to participate voluntarily in the study and to withdraw at any stage of the process, without harming the ONs. The participants and those involved in the photographs o signed their consent to the right to their image and participation. During the interviews, the dignity of the participants was respected, respecting their time and providing a calm, safe and welcoming environment (Resnik, 2020).

3. Results

Twenty ON took part in this study, mostly female (n=19), with an average age of 47.55 years, ranging from 30 to 61 years. The average length of service in the labour ward was 14.4 years, but with a professional nursing life of between 6 and 40 years.

With regard to photographic recording, the highest percentage of records was related to the activity of preparing/conditioning material (25%), followed by transporting/transferring and positioning users (12%) and, lastly, ON-specific activities such as catheterising vascular accesses/blood collection (10%), cardiotocography monitoring (10%), gynaecological assessment (9%), electronic records (9%), preparation/administration of therapy (7%), childbirth/perineorrhaphy (5%), breastfeeding (4%), pelvic strengthening or relaxation exercises for pregnant women (4%), putting on elastic stockings (4%) and others (1%).

Two semantic categories emerged from the content analysis of ONs' self-perception of WRMSDs: "perception of risk" (Registration Units (RU)-205) with 183 references, and "perception of preventive measures" (RU-77) with 73 references.

Fourteen subcategories were also identified, seven from the "perception of risk" category (material precariousness (49), demanding spaces (29), nature of professional activity (84), work organisation (26), lack of knowledge (12), age (4), emotional burden (1)), and seven from the "perception of preventive measures" category.

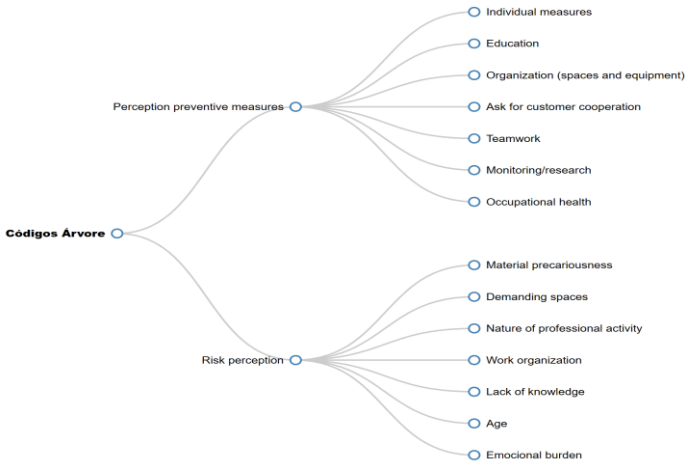

Figure 1. Tree code of the categories and subcategories that emerged from the categorisation.

In the "perception of risk" category, risk associations were mentioned in relation to confined spaces, precarious equipment and materials, the very organisation of spaces and work, as well as the very nature of the professional activity.

The subcategories with the most references were the nature of the professional activity (84), followed by precarious materials (49) and demanding spaces (29).

It is possible to see in the photographic records, as well as in the narratives of the ONs, the various postural conditions in the course of carrying out their activities, where alignment, balance and strength itself are challenged, as a result of the small spaces and/or too much equipment. It is possible to see lateralisation of the trunk and dorsiflexion, increasing effort, tension, fatigue and the risk of developing musculoskeletal injuries.

As the participants say:

> "(...) the photo also portrays the small spaces and lack of conditions, that we enter these spaces, which is a storeroom, and we have no possibility of moving, we have to remain static and rigid." (P7)
>
> "(...) this room is full of appliances, making it impossible for the user to access the side, which can lead to this type of position." (P12)
>
> "Although there is a ladder, the space is very small, sometimes forcing us to close the storage room door to open the ladder, so it's more common to try to get up there without looking for the ladder." (P4)
>
> "(...) There's a ladder to help you reach the material, but there's also limited space and I've already slipped off the ladder myself, leaving me with a few abrasions" (P17).

A B C

Figure 2. Adoption of postures with a risk of musculoskeletal injuries, a consequence of the small spaces and the organisation of spaces and material.

In the category of "perception of preventive measures", eleven ONs stressed the importance of awareness-raising and training, arguing the importance of literacy on the principles of biomechanics, helping to educate stable ergonomic behaviour, helping to reduce muscle, joint and ligament stress. Simulated practice was mentioned as an effective strategy, while safeguarding that team monitoring is fundamental to changing behaviour.

"(...) the lack of space makes it very difficult to adopt correct postures. It's not common to talk about WRMSDs in the delivery room, nobody talks about it. In order to prevent MSDs, we could adapt the physical conditions we have, on the spot, not in theory, to the possibilities of carrying out the different activities, simulating the correct ways of proceeding." (P9)

"For the time being, training for health professionals, reviewing correct practices and postures, although we all know this, we need to have someone to alert us and encourage us to change our practices" (P3).

The subcategory with the highest number of mentions was organisation (spaces and equipment), with 33 mentions. We can see that the replacement and arrangement of materials and equipment, the increase in human resources, mutual help between colleagues with complaints and breaks were some of the topics addressed by the ONs.

"The institution should replace obsolete equipment with ergonomic equipment, and look after its employees more, but there is no such thing, I don't feel any concern for the physical and mental health of the workers" (P7).

"(...) having equipment that isn't too heavy, and those that are heavy should be electric so they can be handled, I know they're expensive materials, but they'll reduce injuries to employees and make it easier to mobilise loads" (P6).

"I sometimes work with colleagues who are limited by musculoskeletal complaints, and they don't do some practical tasks, particularly in a delivery room, when they do vaginal touches (...)" (P16).

After presenting the results, we realised that ONs have a self-perception of the principles of biomechanics, as well as the main risk factors for musculoskeletal injuries. They stress the importance of MSDs at a professional and personal level, pointing out preventive strategies to control the risk, and show an interest in changing their behaviour and becoming literate on this subject.

4. Discussion

During the analysis of the narratives, it was possible to identify the existence of musculoskeletal complaints among ONs, a finding that is in line with current scientific evidence, which identifies nurses as the professional group with a high risk of prevalence of WRMSDs (Okuyucu et al., 2021).

The risk was highlighted in relation to the nature of the professional activity, narrating various daily activities that are carried out by the ONs, such as gynaecological examination, bladder catheterisation, putting on elastic stockings, carrying out childbirth or perineorrhaphy. These findings of self-perception are in line with the findings of Sousa (Sousa & Presado, 2020), who analysed 25 eutocic deliveries and identified a high risk of WRMSDs in eleven activities carried out by ONs, and a very high risk in two of them.

The precariousness of materials and equipment was identified as an aspect that interferes with the common daily activity provided by the ONs, reporting the inadequacy of equipment and materials, such as the armchairs used for monitoring cardiotocography and other tests, which are extremely low and without height adjustment, reinforcing the results of Dartey (Dartey et al., 2021), in which the ONs who participated in the study, affirm that non-adjustable materials are a threat to the lives of both clients and ONs.

Healthcare institutions play a fundamental role in promoting and preserving WRMSDs, and have a responsibility not only in ergonomics training, but also in improving the organisational aspects of the work environment[1]. Sociodemographic characteristics such as age and teamwork were also identified as a risk, in line with the results of Tolera (Tolera et al., 2023) regarding the occupational health and safety outcomes of health professionals, who concluded that there are variables associated with MSDs, such as: sociodemographic characteristics, occupational safety variables and behavioural variables, the design and pattern of work, the material used, the workplace, and the distance and body mass index.

Analysing the effect of mental health on MSDs revealed that healthcare workers with a poor mental health status were significantly 3,26 times more likely to contract MSDs compared to workers with a good mental health status (Tolera et al., 2023).

5. Final Considerations

This study stands out for its holistic approach to the ONs self-perception of the risk of WRMSDs. Using a qualitative approach and Photovoice was fundamental, thanks to the expressiveness of the approach, the possibility of involving the ONs in the whole process, leading to reflection and alerting them to the importance of the subject under study. The richness of the narratives and photographs made it possible to identify the precariousness of the materials and equipment, the small spaces and the nature of the ONs work. The study's limitations are due to the selection of the sample, which was intentional, the recruitment carried out in just one hospital and the closeness of the researchers to the service.

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