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A REVIEW OF THE EFFECT OF NURSE SHORTAGES ON EXISTING NURSE WORKFORCES IN SOUTH AFRICA AND UKRAINE

The object of this research is the nurse shortages on existing nurse workforces in South Africa and Ukraine. The healthcare system has taken strain since the inception of the war in Ukraine. The war caused damages to hospital, clinic and warehouse infrastructure, leading to limited medical resources and impacting the shortage of healthcare personnel, especially among the nursing professionals. A skilled, motivated and supported health workforce is essential to providing consistent and quality healthcare to patients. However, nurse shortages make it difficult for the existing nurses in a war-stricken country to provide the best possible care to their patients, which can be emotionally distressing for the nurses. Whereas in South Africa, economic turmoil and the recent COVID-19 pandemic placed an even more significant strain on South Africa's overburdened and under-resourced healthcare system, eventually leading to a decline of healthcare workers on the frontline, thereby affecting the delivery of quality healthcare to patients. This paper will explore the expected effects of nurse shortages on the existing nurse workforce in these countries. It will provide recommendations for nurses to cope and regain their motivation to deliver quality healthcare to patients without compromising their own health and well-being. The researchers, therefore, conducted a qualitative study with Registered Nurses (RNs) and Operational Nurse Managers (ONMs) working in selected critical care units at a public hospital under investigation. The findings of the study revealed that the nurse shortage significantly impacted the well-being of existing nursing staff, both personally and professionally. Simple strategies to improve their well-being via the use of an Employee Assistance Program (EAP) were recommended by the researchers to address their mental health and well-being issues by providing support and advice in critical times of need, encouraging meditation & physical fitness activities and encouraging nurses to make a conscious decision to achieve a balance between work and family life. Such strategies will benefit the Ukrainian health workforce in providing quality healthcare to their patients during the unpleasant circumstances caused by the ongoing war.

Keywords: *nurse shortages, nurse workforce, healthcare, patient care, burn-out, fatigue, stress, de-motivation.*

1. Introduction

Amidst Ukraine's war and economic challenges, the European Federation of Nurses Associations reported that Ukrainian nurses found it difficult to support their patients as they feared war [1]. Yet, the existing nurse workforce did not abandon their duties and still cared for their patients, which President Volodymyr Zelensky recognized for their commitment and frontline work in tough war conditions.

Short-staffing compromises patient care and impacts nurses' well-being, leading to adverse outcomes such as burnout, increased stress, workplace violence, absenteeism, job dissatisfaction or leaving their position or the professional altogether [2, 3]. With repeated attacks on medical facilities and staff shortages, Ukrainian healthcare providers grapple with a burnout crisis driven by direct and secondary trauma [4]. Nurse shortages in the existing Ukraine nurse staff bring about fatigue, stress, and burnout, further exacerbated by the war leading to job and personal challenges.

The shortage of health workers, especially in the nursing community in South Africa, is a big problem. The shortage started long before the pandemic and have led to nurses in the public health sector facing almost double the workloads [5]. The existing nurse workforce also dealt with the common implications due to nurse shortages: fatigue and burnout, stress and a demotivated workforce. Both countries' existing nurse workforce had experienced fatigue. Fatigue related to the work of nursing staff has been recognized as a threat to their health. Still, it is also negatively associated with patients' safety and the quality of care. Nurses are at substantial risk of fatigue due to stressful work environments with heavy workloads and non-standard work schedules [6].

The effects of nurse fatigue can be devastating to the overall health and well-being of the nurse and affect their personal and work life. Therefore, fatigue management strategies are crucial to protect the health and well-being of nurses. Work stress and burnout remain significant concerns in nursing, affecting individuals and healthcare organizations. Authors of [7] found that manifestations of burnout include reductions in physical and psychological energy, stress, headache, fatigue, and depression. These manifestations ultimately lead to increased absenteeism and turnover rates in the nurse workforce and consequently negatively affect the quality of care given to the patient [7]. Nurses working on the frontlines in Ukraine are burnt out due to their immense pressure to provide emergency care with limited resources. In an interview with the nursing and midwifery policy adviser at the World Health Organization, author of [8] reported that nurses working in the conflict zone had to manage complex patient mental and physical health issues. Some had been subjected to violence from traumatized patients, but they remained fearless and still went on caring for the patient. However, being unable to deal with these traumatic events at the moment could eventually lead to the manifestation of demotivation, leading to an increase in absenteeism and turnover rates in the nurse workforce [7]. Therefore, urgent strategies developed by hospital management to deal with stress, burnout, and fatigue are imperative to help nurses deal with the trauma and emotions so that they can go on to maintain quality healthcare for their patients.

Because of nurse shortages, existing nurses also face various job challenges, which often bring about a sudden change in their working environment. For instance, the nurse shortage brings about an unexpectedly uneven workload which causes the nurse to forget or not have the capacity to attend to more than one patient at a time. This could lead to medical errors such as incorrect administering of medication, not having the ability to frequently turn patients on the bed in ICU units leading the patient to develop bed sores, and in the worst-case scenario, not being able to resuscitate a patient in time causing mortality [7].

The theory of Lewin depicted in Fig. 1, which highlights three main steps, including unfreezing, change and refreezing, could be helpful to nurses in managing their job or personal challenges that impact healthcare. Lewin's model is easy to understand and can be implemented in any work environment; it follows three easy steps.
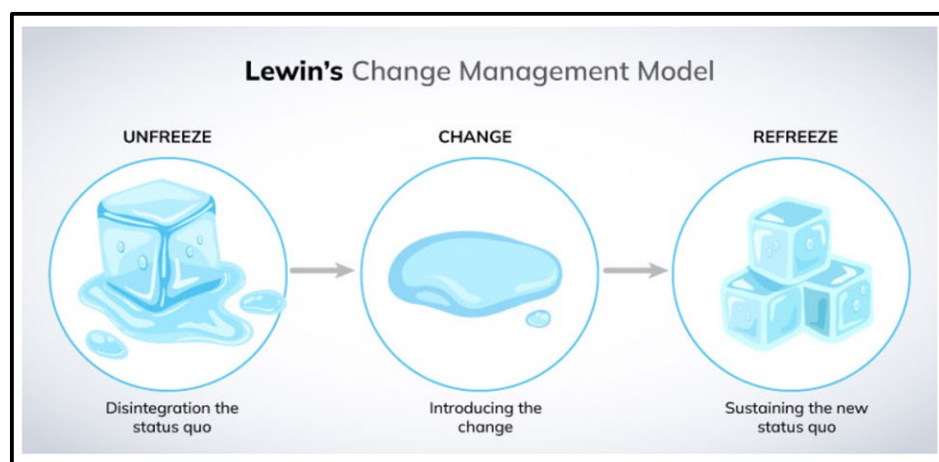
According to [9], unfreezing was associated with identifying and defining a problem, Change – moving to analyze and clarify the alternatives and refreezing to implement and evaluate the ideas. The model is a proactive approach to change management following an efficient method that doesn't impact the nurse's continuity of providing good healthcare.

The model will allow the hospital management, staff, and nurses to quickly implement and make the required changes to help deal with any job or personal challenges they face due to the nurse shortage. Nursing shortages bring about many challenges for the existing workforce in Ukraine and South Africa, as the nurses must endure a considerable deficiency in the quantity and quality of their workforce that impacts the delivery of quality healthcare. By utilizing the three-step change model, the existing workforce will be able to navigate the changing work environment brought on by factors such as nurse shortages, which will also provide calm and relief so that the existing nursing workforce in both countries can continue providing good healthcare. Therefore, the formulation of *the aim of this study* consisted of two parts: scientific and practical. The scientific part aimed to explore the solution to the effect of nurse shortages on the existing staff. Because of nurse shortages, existing nurses face various job or personal challenges, which often bring about a sudden change in their working environment. By adapting Lewin's Three-Step Model for Change the existing nurse workforce can manage their job or personal challenges that impact healthcare. On the practical part, this will make it possible for nurses to implement the model on a daily basis in order to navigate through their changing work environment which will provide them with self-control and clarity enabling them to prioritise their work, reduce their stress levels thus being able to provide a good standard of healthcare to their patients.

2. Materials and Methods

The researchers followed a phenomenological research design approach in this study. The course was deemed appropriate for this research because it enabled the researchers to obtain a detailed narrative of the problem: nurse shortages' effect on the existing nurse workforce. Authors of [11] postulate that descriptive designs aim at describing the dimensions, variations and importance of phenomena resulting in thicker descriptions; exploratory investigates the whole nature of phenomena, their manifestations and their contributing factors. In a phenomenological study, between 5 and 25 interviews are usually conducted to gain a sufficient dataset to look for emerging themes using other participants to validate the data findings [12]. This requirement was met as the researchers used semi-structured interview questions as a data collection method to extract the data.

The study was undertaken at a public hospital in KwaZulu-Natal (KZN), South Africa, where the healthcare system is severely strained due to economic challenges

Fig. 1. Lewin's Three-Step Model for Change [10]

leading to high nurse shortages. Due to ethical reasons, confidentiality, and anonymity, the hospital's name had not been revealed. The hospital has inpatient and outpatient services, with 451 beds for inpatient care. Five inpatient wards were identified for this study. These are Intensive Care Unit (ICU), Neonatal intensive care unit (NICU), Paediatric, Surgical and Medical wards. These wards are high-priority wards in a public hospital setting as patients in these wards have different types of severe illness, disease or recovering from complex surgery that requires critical care. The patients admitted to these wards range from newborns to children and adults with surgical or medical complications. Data were collected within five medical wards at a Public hospital in KZN: Intensive Care Unit (ICU), Neonatal intensive care unit (NICU), Paediatric, Surgical and Medical wards. Due to the ongoing war in the Ukraine the researchers was unable to travel to the Ukraine and conduct one-on-one in-depth interviews, instead the researchers collected data about the war and the state of healthcare in Ukraine using the most recent articles from accredited journals such as Elsevier and the International journal of environmental research and public health.

The population for this research study was Registered Nurses (RNs) and Operational Nurse Managers (ONMs) working in selected critical care units at the public hospital under investigation in KZN South Africa. The researchers chose purposive sampling to select participants likely to be exposed to the effects of nurse shortages within their team, as it added value to the research by identifying specific participants that were required and relevant to the study.

The sample population represented the two levels of ranked staff ONMs and RNs. The Inclusion criteria for this sample were permanently employed ONMs and RNs that had more than one-year working experience in their current position at the hospital. This study implemented a one-on-one in-depth interview for the primary data collection method. The researchers used a semi-structured interview schedule that worked as a guide for the discussion, which the interviewees could also use to prepare. The researchers constructed interview questions with the objectives of this study to ensure validity, and the interview questions were also submitted to an independent statistician for validation. Furthermore, the researchers pre-tested the interview questions in a pilot study with a selection of RNs and ONMs outside of the sample for this study to increase the validity and reliability for future studies. The research design for this study was deemed appropriate for these reasons, and the data analysis was performed in line with ethical standards and without bias.

During the data collection process at the public hospital in KZN, twenty in-depth semi-structured interviews were conducted, consisting of interviewing five ONMs and fifteen RNs. The instrument used for this study was an in-depth structured interview schedule, a tool applied to gain more insight into the problem required for the research completion. Such interviews were held to explore the needs, desires and feelings of respondents and were conducted in a comfortable, quiet environment, ensuring privacy between the researchers and respondent; this also limited background noise from medical equipment, which affected the concentration levels of respondents and for clarity on the recording for transcription purposes. The interview process was 25–30 minutes long for both RNs and ONMs. The researchers administered the interviews.

Interviews were audio recorded using a smartphone and a voice recorder as a backup.

Each recording was downloaded and named according to the sequence of the interview. The file was named according to the person's designation and the interview sequence, such as RN001 and ONM001. These files were then shared with a certified transcriber via an app named WeTransfer. The transcriber then transcribed the data into MS Word format. A Verbatim transcription was applied for the transcription process.

Data analysis for this study used thematic analysis to identify significant emerging themes. NVivo, a Qualitative Data Analysis (QDA) computer software tool, was used to facilitate the data coding and analysis. According to author of [13], codes are a label assigned to a piece of data used to identify and give meaning to essential concepts within a data set. By coding data for this study, the researchers could identify themes. The data groups were labelled and organized, enabling the researchers to see the relationships between the data sets. The researchers used keywords and standard information to confirm a theme throughout the data collection process. Data analysis was thus guided by the available data rather than what was previously known by the researchers. The researchers also applied numerical codes such as RN001 or ONM002 to ensure and maintain the anonymity of participants when using the data.

3. Results and Discussion

3.1. Results. To better understand how nurse shortages impacted the existing staff in their daily jobs, the interview schedule aimed to explore the respondent's daily challenges at work due to the nurse shortages in their ward. The interview questions focused on their daily challenges at work due to nurse shortages. The respondents reported various job and personal challenges due to the implications of nursing shortages. It was discovered that staff performance had dropped considerably because of these challenges, which negatively affected the delivery of good health care to patients.

3.1.1. Multitasking and Overworked. Multi-tasking was the highest-ranked implication, as reported by most of the respondents. The staff shortage meant that existing staff had to compensate by overworking and servicing other departments, as respondents OPM4, OPM5 and RN6 described. This resulted in tiredness and frustration, as reported by respondent RN13.

Respondent OPM4 – Surgical ward: *«There is also no cleaner at night, so you have to attend to spills meaning you end up doing the cleaner's job. During the day, you end up being a porter because you must take the patients to go do CT scans and ultrasound since there are no porters».*

Respondent OPM5 – Medical ward: *«We are just stretched far too thin; we are constantly multi-tasking; we've got patients that we have to see to, and you're doing other people's work as well».*

Respondent RN6 – Paediatric ward: *«There are so many duties to perform daily aside from our nursing responsibilities; we end up overworking ourselves and often working longer hours because there is so much to do».*

Respondent RN13 – Medical ward: *«Sometimes we have to fill the gaps outside what we do and that is frustrating. We end up getting burned out and tired».*

3.1.2. Health and mental wellness. The respondents were asked what personal challenges they faced because of the nurse shortages. Twelve of the respondents agreed that their physical health was significantly affected. The long hours took a toll on physical organs such as the feet, back, shoulders and overall body. Respondents also suffered from headaches and prolonged fatigue. In addition, some also had developed chronic conditions such as diabetes which were brought on by overworking long hours, sometimes without taking breaks because of the staff shortage. Twenty of the respondents also felt emotionally drained.

3.1.3. Fatigue and Burnout. Twenty respondents reported that prolonged fatigue led to burnout, preventing them from providing effective patient care. The respondents felt demotivated to work due to tiredness and burnout, and poor working conditions. Respondents reported that they did not feel like going to work; their energy levels were down, which meant that they were tired and could not cope well at work, impacting patient care. These mistakes can lead to harmful medical outcomes for patients. Authors of [14] states that burnout results from a demanding job that frequently exposes nurses to human suffering. When nurses do not have adequate support or leadership within the workplace to help them cope with these times, it can exacerbate burnout even more.

3.1.4. Family life and strained relationships. Eighteen of the respondents reported that there were blurred boundaries between work time and personal time with family, leading to the latter suffering due to ongoing work commitments. Respondents indicated that being overworked bred frustration, which staff vented on each other and their families. This led to strained relationships. Family time became lesser as respondents seemed only to go home to sleep and return to work the next day. Some respondents didn't want to talk or interact with their families or children at home due to arriving home tired and fatigued. Respondents further indicated that sometimes essential aspects of their children's lives and healthcare were overlooked. Children were even concerned about their parent's health and well-being, which caused unnecessary stress on young children. This also affected respondents' bonding with their children.

3.2. Discussion. It was clear that nursing staff had to multitask and perform many duties over and above their nursing duties every day. This entailed high levels of administration, admissions, medication, cleaning duties, obtaining food for patients and even porter responsibilities over and above their core duties. The extra duties further strained the existing nursing staff because they took time from the patient care duties and contributed to an increased workload. Staff were severely overworking, which meant going above and beyond their job descriptions and hours. The overworking and pressure led to exhaustion, compromising patient care and their health. Staff was highly frustrated, and their enthusiasm for work needed to be improved. They were naturally demotivated to work, and this affected their performance. This frustration was due to having to do more work than was expected. As a result, this put a strain on the existing staff, who constantly felt overworked, tired and eventually burned out, causing them to be absent from work.

Due to being overworked and always attending to emergencies and other duties, the respondents reported that they needed help to properly concentrate on a specific patient or a task. Due to staff shortages, concentration levels dwindled due to ongoing disturbances and having to attend to more than one patient. Overworking and multitasking had many implications for the existing staff, such as increased absenteeism and lowered concentration rates. There was unintentional underperformance due to too many duties and an inability to deliver effective services and care because of the staff shortage.

The mental and psychological impact was severe as respondents watched their patients suffer due to insufficient staff and resources. This further affected their performance. Therefore, Nurse managers must have regular conversations with their team to show support and counsel, especially if a patient has lost their life. Something as simple as a weekly check-in will go a long way towards caring for the mental wellness of a nursing team.

It is recommended that the hospital management staff consider looking into a digital consulting program that addresses mental health and well-being issues providing support and advice in critical times of need. Educating nurses on identifying burnout and trauma in themselves and their colleagues and handling those issues will be of great value and appreciation. The digitized program will be easily accessible 24/7, easy to use and helpful. This is why hospital management must be actively involved in ensuring they provide ample support through online wellness programmes and counselling to deal with the stressors that eventually lead to burned-out staff.

Meditation and Physical activity are another recommendation. Nurses should be informed and constantly reminded via the Employee Assistance Program (EAP) about the importance of physical activity through daily exercises, meditation, and balanced sleep, reducing stress and fatigue. These reminders can be built into the digital programme, which can come up as pop-up notifications with meaningful and inspiring messages that will also serve as mood upliftment, showing appreciation and care for the nurses.

With the issue of work and family balance, hospital management staff and operational managers should encourage nurses to take their leave. This will enable nurses to make a conscious decision to achieve a balance between work and family. Nurses are encouraged to schedule a time to ensure that family time happens and strengthen the bond with the family during this time to help promote trust, understanding, and support.

4. Conclusions

With a shortage of nursing staff in countries like Ukraine, where medical resources and infrastructure are strained because of war, nurses are often required to take on additional responsibilities, work longer hours, and care for more patients. This can lead to burnout, decreased job satisfaction, and physical and mental exhaustion making it challenging for nurses to provide the best possible care to their patients. The findings extensively revealed that nurses may have to rush tasks to provide care when there are not enough nurses available to care for patients. This can be emotionally distressing for nurses, who may feel unable to provide the care their patients need and deserve.

Overall, nurse shortages can significantly impact the well-being of existing nursing staff, both personally and professionally. Access to resources and adequate support must be constantly provided to help alleviate challenges faced by nurses in Ukraine and other countries so that they can focus on what they do best: providing quality healthcare to their patients.

Conflict of interest

The authors declare that they have no conflict of interest in relation to this study, including financial, personal, authorship, or any other, that could affect the study and its results presented in this article.

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Data availability

The manuscript has no associated data.

References

1. *Support and investment in Ukrainian nursing – a challenge for the global leaders* (2022). European Federation of Nurses Association. Available at: https://efn.eu/?p=15414
2. Douglas, M. R. (2011). Opportunities and challenges facing the future global nursing and midwifery workforce. *Journal of Nursing Management, 19 (6)*, 695–699. doi: https://doi.org/10.1111/j.1365-2834.2011.01302.x
3. Shin, S., Park, J.-H., Bae, S.-H. (2018). Nurse staffing and nurse outcomes: A systematic review and meta-analysis. *Nursing Outlook, 66 (3)*, 273–282. doi: https://doi.org/10.1016/j.outlook.2017.12.002
4. Wilson, M. (2023). *Inside the Fight Against Burnout Amid the Chaos of War in Ukraine*. Available at: https://www.medpagetoday.com/special-reports/exclusives/104822 Last accessed: 01.07.2023
5. Mukwevho, N. (2022). *International nurses' day: SA's devastating nursing shortage*. Available at: https://health-e.org.za/2022/05/12/international-nurses-day-sas-devastating-nursing-shortage/ Last accessed: 02.06.2023
6. Cho, H., Steege, L. M. (2021). Nurse Fatigue and Nurse, Patient Safety, and Organizational Outcomes: A Systematic Review. *Western Journal of Nursing Research, 43 (12)*, 1157–1168. doi: https://doi.org/10.1177/0193945921990892
7. Mudallal, R. H., Othman, W. M., Al Hassan, N. F. (2017). Nurses' Burnout: The Influence of Leader Empowering Behaviors, Work Conditions, and Demographic Traits. *INQUIRY: The Journal of Health Care Organization, Provision, and Financing, 54*. doi: https://doi.org/10.1177/0046958017724944
8. Devereux, E. (2023). *Nurses in Ukraine 'brave' but 'burnt out', leaders warn*. Available at: https://www.nursingtimes.net/news/global-nursing/nurses-in-ukraine-brave-but-burnt-out-leaders-warn-06-07-2023/#:~:text=Nurses%20working%20on%20the%20frontlines,resources%2C%20nursing%20leaders%20have%20warned Last accessed: 01.07.2023
9. Garon, M.; Huber, D. (Ed.) (2017). *Change and innovation. Leadership and nursing care management*. St. Louis: Elsevier publishing.
10. Miller, K. (2022). *A Practical Explanation of Lewin's Change Management Model*. Available at: https://crowjack.com/blog/strategy/change-management-models/lewins-model Last accessed: 26.06.2023
11. Polit, F. D., Beck, T. C. (2010). *Essentials of nursing research: appraising evidence for nursing practice*. Philadelphia: Lippincott Williams & Wilkins, 610.
12. Sauro, J. (2015). *5 Types of Qualitative Methods*. Available at: https://measuringu.com/qual-methods/ Last accessed: 27.06.2023
13. Damyanov, M. (2023). *How to do thematic analysis*. Available at: https://dovetail.com/research/thematic-analysis/ Last accessed: 16.07.2023
14. Clarke, E. (2022). What Is Nurse Burnout? *Nurse Journal*. Available at: https://nursejournal.org/resources/nurse-burnout/ Last accessed: 10.07.2023

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