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NURSES' WORK ENVIRONMENT IN TIMOR-LESTE: A SWOT ANALYSIS

AMBIENTE DE TRABALHO DOS ENFERMEIROS EM TIMOR-LESTE: ANÁLISE SWOT

ENTORNO LABORAL DE LOS ENFERMEROS EN TIMOR-LESTE: ANÁLISIS DAFO

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ABSTRACT

Background: Nursing is fundamental to healthcare systems, contributing to care delivery, health promotion, and continuity of care. In resource-constrained settings such as Timor-Leste, structural and organizational limitations may adversely affect nurses' working conditions and the quality of care. Objective: To analyze the weaknesses of the nursing work environment in Timor-Leste by identifying the organizational, structural, and contextual factors influencing professional practice and health service delivery. Methods: An exploratory descriptive qualitative study was conducted using the SWOT framework. Data were collected between January 10 and September 20, 2024, through semi-structured interviews with 12 purposively selected participants, including nurses and health service managers. The interview data were analyzed using thematic content analysis with the support of ATLAS.ti software. Data collection continued until thematic saturation was achieved. Results: Five interrelated weaknesses characterized the nursing work environment: workforce shortages, limited material resources and infrastructure, insufficient investment in health promotion, limited community engagement, and weaknesses in care organization. These constraints interacted to reduce service capacity, compromise continuity of care, and limit the implementation of preventive and health promotion strategies. Conclusion: The nursing work environment in Timor-Leste is shaped by interconnected structural and organizational weaknesses, with workforce shortages emerging as the central constraint. These findings provide evidence that may inform workforce planning and strategies to strengthen nursing practice and primary healthcare in resource-constrained settings.

Keywords: Nursing. Work Environment. Health Workforce. Health Systems. SWOT Analysis. Timor-Leste.

RESUMO

Enquadramento: A enfermagem constitui uma componente fundamental dos sistemas de saúde, contribuindo para a prestação de cuidados, a promoção da saúde e a continuidade dos cuidados. Em contextos com recursos limitados, como Timor-Leste, as limitações

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estruturais e organizacionais podem afetar negativamente as condições de trabalho dos enfermeiros e a qualidade dos cuidados prestados. Objetivo: Analisar as fragilidades do ambiente de trabalho em enfermagem em Timor-Leste, identificando os fatores organizacionais, estruturais e contextuais que influenciam a prática profissional e a prestação de serviços de saúde. Métodos: Foi realizado um estudo qualitativo, exploratório e descritivo, utilizando o modelo de análise SWOT. Os dados foram recolhidos entre 10 de janeiro e 20 de setembro de 2024, através de entrevistas semiestruturadas a 12 participantes selecionados por amostragem intencional, incluindo enfermeiros e gestores de serviços de saúde. Os dados das entrevistas foram analisados através de análise temática de conteúdo, com o apoio do software ATLAS.ti. A recolha de dados prosseguiu até ser alcançada a saturação temática. Resultados: Foram identificadas cinco fragilidades inter-relacionadas que caracterizam o ambiente de trabalho em enfermagem: insuficiência de recursos humanos, limitações dos recursos materiais e das infraestruturas, investimento insuficiente na promoção da saúde, reduzido envolvimento comunitário e fragilidades na organização dos cuidados. Estas limitações interagem entre si, reduzindo a capacidade de resposta dos serviços, comprometendo a continuidade dos cuidados e condicionando a implementação de estratégias de prevenção e promoção da saúde. Conclusão: O ambiente de trabalho em enfermagem em Timor-Leste é condicionado por fragilidades estruturais e organizacionais interligadas, sendo a insuficiência de recursos humanos a principal limitação. Estes resultados fornecem evidências que poderão contribuir para o planeamento dos recursos humanos em saúde e para o desenvolvimento de estratégias destinadas ao fortalecimento da prática de enfermagem e dos cuidados de saúde primários em contextos com recursos limitados.

Palavras-chave: Enfermagem. Ambiente de Trabalho. Recursos Humanos em Saúde. Sistemas de Saúde. Análise SWOT. Timor-Leste.

RESUMEN

Introducción: La enfermería constituye un componente fundamental de los sistemas de salud, contribuyendo a la prestación de cuidados, la promoción de la salud y la continuidad asistencial. En contextos con recursos limitados, como Timor-Leste, las limitaciones estructurales y organizativas pueden afectar negativamente las condiciones laborales de los profesionales de enfermería y la calidad de los cuidados prestados. Objetivo: Analizar las debilidades del entorno laboral de enfermería en Timor-Leste, identificando los factores organizativos, estructurales y contextuales que influyen en la práctica profesional y en la prestación de los servicios de salud. Métodos: Se realizó un estudio cualitativo, exploratorio y descriptivo, utilizando el modelo de análisis SWOT. Los datos se recopilaron entre el 10 de enero y el 20 de septiembre de 2024, mediante entrevistas semiestructuradas a 12 participantes seleccionados mediante muestreo intencional, incluidos profesionales de enfermería y gestores de servicios de salud. Los datos de las entrevistas fueron analizados mediante análisis temático de contenido, con el apoyo del software ATLAS.ti. La recopilación de datos continuó hasta alcanzar la saturación temática. Resultados: Se identificaron cinco debilidades interrelacionadas que caracterizan el entorno laboral de enfermería: escasez de recursos humanos, limitaciones de los recursos materiales y de las infraestructuras, inversión insuficiente en promoción de la salud, participación comunitaria limitada y debilidades en la organización de los cuidados. Estas limitaciones interactúan entre sí, reduciendo la capacidad de respuesta de los servicios, comprometiendo la continuidad asistencial y limitando la implementación de estrategias de prevención y promoción de la salud. Conclusión: El entorno laboral de enfermería en Timor-Leste está condicionado por

debilidades estructurales y organizativas interrelacionadas, siendo la escasez de recursos humanos la principal limitación. Estos resultados proporcionan evidencia que puede contribuir a la planificación de los recursos humanos en salud y al desarrollo de estrategias destinadas a fortalecer la práctica de enfermería y la atención primaria de salud en contextos con recursos limitados.

Palabras clave: Enfermería. Entorno Laboral. Recursos Humanos en Salud. Sistemas de Salud. Análisis SWOT. Timor-Leste.

1 INTRODUCTION

Nursing plays a central role in health systems by delivering care, promoting health, preventing disease, and addressing population health needs. As one of the largest professional groups in healthcare, nurses are essential to ensuring continuity and quality of care.

However, nursing practice is frequently constrained by structural and organizational deficiencies that undermine both working conditions and care delivery. Workforce shortages increase workload and reduce service capacity (1) while limited supplies, equipment, medications, and weaknesses in service organization remain persistent challenges in Timor-Leste's health system (2, 3).

The nursing practice environment, shaped by staffing, leadership, organizational support, and resource availability, is a critical determinant of care quality and patient safety. Supportive environments improve outcomes for both patients and professionals, whereas unfavorable conditions impair nursing performance and health service effectiveness (4); (5). In Timor-Leste, deficiencies in clinical supplies, equipment, and infrastructure, together with occupational hazards, excessive workload, and fatigue, continue to compromise healthcare professionals' well-being and the quality of care (2); (3).

These conditions compromise healthcare professionals' well-being, reduce care quality, and weaken health service performance, underscoring the need for safe and supportive work environments (3); (5).

Although individual characteristics, such as resilience and coping strategies, may influence nurses' responses to workplace demands, evidence indicates that professional performance is primarily shaped by organizational and contextual factors. Accordingly, this study focuses on the structural and organizational weaknesses of the nursing work environment (6); (5).

In Timor-Leste, these challenges are intensified by the unequal distribution of health professionals, resource constraints, and limited access to healthcare in rural and remote areas (2); (7). These conditions reduce health system responsiveness and reinforce the need to understand the nursing work environment to inform workforce planning, strengthen health services, and improve care quality (2); (3).

Therefore, this study analyzes the organizational, structural, and contextual weaknesses of the nursing work environment in Timor-Leste and their implications for professional performance and care quality.

2 METHODOLOGY

This exploratory and descriptive qualitative study analyzed weaknesses in the nursing work environment in Timor-Leste, focusing on organizational, structural, and contextual factors affecting health services.

A qualitative approach was adopted using the SWOT (Strengths, Weaknesses, Opportunities, and Threats) framework to explore participants' perceptions and experiences of the nursing work environment. Although the broader study applied the full SWOT framework, this article focuses exclusively on the Weaknesses dimension.

The study was conducted between January 10 and September 20, 2024, in Timor-Leste. Data were collected through semi-structured interviews with 12 purposively selected participants, including eight nurses and four health managers/decision-makers. Participants comprised seven women and five men, with 8-40 years of professional experience, working in the municipalities of Dili, Aileu, Manatuto, Liquiçá, and Baucau. Their sociodemographic and professional characteristics are presented in Figure 1.

Eligible participants were nurses or health managers/decision-makers with relevant professional experience who voluntarily agreed to participate. Recruitment was conducted in person at participants' workplaces, where the study was presented and written informed consent was obtained before scheduling the interviews.

Interviews were conducted face-to-face in Tetum using semi-structured guides tailored to each participant group. Sessions lasted 30-60 minutes, were audio-recorded, transcribed verbatim, and analyzed in the original language. Quotations presented in the Results section were translated into Portuguese while preserving their original meaning. Data collection ended when no new relevant themes emerged in the final interviews, indicating data saturation.

Data were analyzed in ATLAS.ti using thematic content analysis following Bardin's framework. The analysis comprised three stages: pre-analysis, material exploration, and data interpretation. Transcripts were first read repeatedly to achieve data familiarization and identify meaning units.

Coding was performed by a single researcher using a deductive approach. Initial categories were derived from the four SWOT dimensions (strengths, weaknesses, opportunities, and threats) and subsequently refined according to themes emerging from the interviews. The resulting coding framework organized the data into thematic categories and subcategories aligned with the study objectives.

To enhance analytical rigor, codes and categories were continuously reviewed to ensure consistency between the empirical data and the thematic framework. Representative codes included lack of human resources, lack of organization in the care process, health promotion, and community capacity building.

Methodological rigor was ensured according to the criteria of credibility, dependability, confirmability, and transferability. Credibility was strengthened through iterative data analysis and comparison between the empirical findings and the study objectives. Dependability was supported by a transparent description of the analytical procedures. Confirmability was achieved by maintaining explicit links between the data, codes, and interpretations, while transferability was facilitated through detailed reporting of the study context, participants, and methodological procedures.

Participants were identified using alphanumeric codes (E1-E12) to ensure anonymity and confidentiality. The study complied with ethical standards for research involving human participants. All participants provided written informed consent before the interviews, and ethical approval was granted by the Ethics Committee of Timor-Leste (Ref. No. 01/INSP-TL/UEPD/1/2024).

3 RESULTS

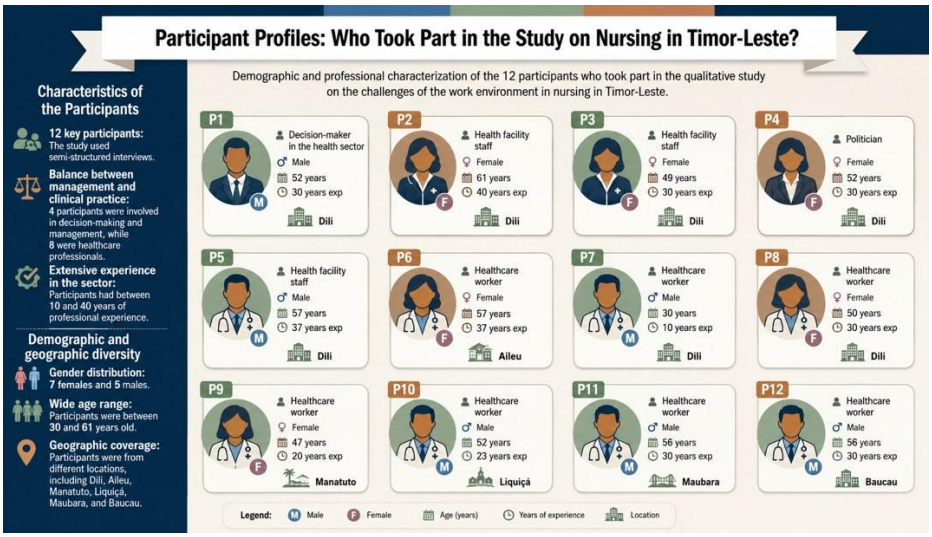
The sample consisted of 12 participants, including health professionals and health policymakers. The participants were divided into two professional groups: health personnel in clinical practice and representatives of decision-making bodies.

The participants' ages ranged from 30 to 61 years. Their professional experience ranged from 8 to 40 years. The sample included participants of both genders from different practice locations in Timor-Leste, namely Dili, Aileu, Manatuto, Liquiçá, and Baucau.

A detailed description of the participants is presented in Figure 1.

Figure 1

Characteristics of the participants



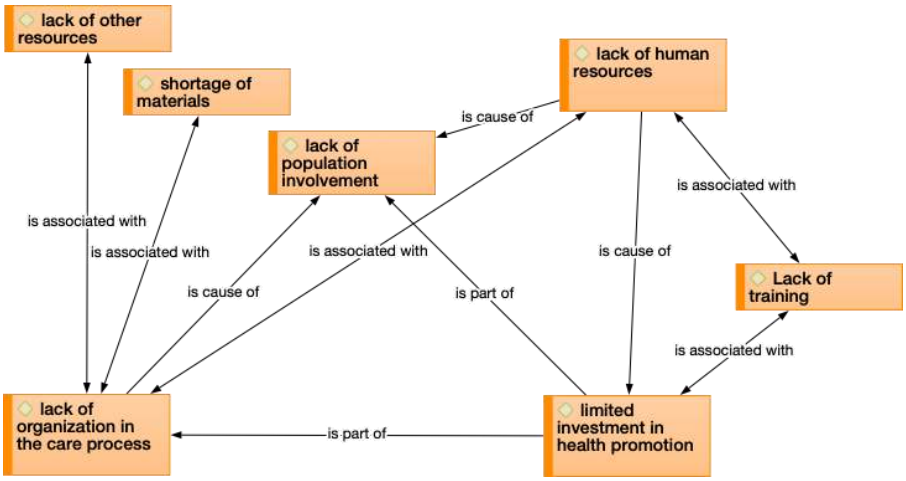
Source: Prepared by the authors.

Figure 1; Demographic and professional characteristics of the 12 participants in the qualitative study, showing gender, age, years of professional experience, professional role, and geographical location in Timor-Leste.

Figure 02 presents the main challenges in the work of nurses in Timor-Leste, organized into five categories: lack of organization in the care process, lack of material and human resources, insufficient investment in health promotion, and lack of community involvement. These categories are interconnected, highlighting the relationships among the various factors that influence the work environment.

Figure 2

Weaknesses in the work of nurses in Timor-Leste



Source: Prepared by the authors.

Figure 2 illustrates the interrelated weaknesses of the nursing work environment in Timor-Leste, organized into five categories: lack of human resources, shortage of materials, insufficient investment in health promotion, limited community engagement, and poor organization of the care process.

The shortage of human resources emerged as the central structural weakness, affecting service organization, limiting health promotion activities, and reducing the responsiveness of healthcare services. Poor organization of the care process was closely associated with workforce shortages, inadequate material resources, and limited community engagement, indicating that care delivery depends on the interaction of organizational, human, and material factors rather than on a single constraint.

Insufficient investment in health promotion was linked to workforce shortages and low community participation, reinforcing a predominantly reactive model of care. Similarly, shortages of supplies, equipment, and infrastructure further impaired service organization and limited the provision of quality care.

Limited community engagement was associated with weaknesses in service organization and health promotion, reflecting insufficient coordination between health services and the population. Overall, the findings demonstrate that these weaknesses are interconnected and mutually reinforcing, creating structural constraints that compromise the effectiveness, continuity, and quality of nursing care in Timor-Leste.

3.1 LIMITED COMMUNITY ENGAGEMENT

Participants described limited community engagement as a barrier to a participatory approach to healthcare. As one participant stated, *“There is a lack of community involvement at the center of care”* (E2). They also reported that health professionals do not consistently consider the population’s perspectives, needs, and expectations when planning interventions, emphasizing the need to *“ask the population what they...”* (E2).

3.2 LACK OF MATERIALS AND INFRASTRUCTURE

Insufficient material resources and infrastructure emerged as persistent barriers to nursing care. Participants reported shortages of supplies, equipment, medications, transportation, and adequate workspaces, stating that *“a lack of supplies hinders the care process”* (E1, E2, E3, E4, E6–E12). Other reported limitations included *“lack of a treatment protocol based on nursing care”* (E3), “*lack of supplies and treatment*

equipment" (E4), *"human resources and medications" (*E12), and *"lack of workspace and equipment"* (E1). These deficiencies limited the implementation of nursing interventions and reduced service capacity.

3.3 SHORTAGE OF HUMAN RESOURCES

The shortage of human resources emerged as one of the main challenges affecting healthcare delivery. Participants reported insufficient numbers of doctors, nurses, midwives, and technicians, resulting in increased workload, reduced service coverage, and difficulties providing care, particularly in remote areas. As highlighted, *"There is still a shortage of human resources to provide care in remote areas of Timor-Leste"* (E1–E12). Participants also associated workforce shortages with difficulties in care organization, limited community engagement, and restricted health promotion activities.

3.4 LOW INVESTMENT IN HEALTH PROMOTION

Participants identified limited investment in health promotion as a weakness of the health system, with healthcare remaining predominantly treatment oriented. One participant emphasized the need to strengthen nurses' role in prevention, stating, "*Nurses should focus more on public health care for health promotion, like a pyramid"* (E2).

3.5 POOR ORGANIZATION OF THE CARE PROCESS

Weaknesses in the organization of care were reflected in difficulties coordinating services, organizing care pathways, and ensuring continuity of care. Participants described limitations in professional coordination, patient follow-up, and service planning, which reduced the capacity to provide integrated care. As one participant noted, "*Nurses focus more on public health care and health promotion, like a pyramid"* (E2).

4 DISCUSSION

The present study demonstrates that weaknesses in the nursing work environment in Timor-Leste constitute an interconnected system of structural and organizational constraints, with workforce shortages emerging as the central challenge. Human resource shortages affected not only service capacity but also care organization, health promotion, resource availability, and community engagement. These findings indicate that nursing care quality

depends on the interaction between workforce capacity, organizational support, and adequate material and structural resources.

The central role of workforce shortages identified in this study is consistent with evidence that an adequate nursing workforce is fundamental to healthcare quality, patient safety, and equitable access to services, particularly in low-resource settings (8); (1). In countries with limited resources, inadequate staffing disproportionately affects rural and remote populations, where geographical and organizational barriers further restrict access to healthcare. In Timor-Leste, participants described how workforce shortages increased workload, limited continuity of care, and reduced opportunities to implement health promotion and disease prevention activities.

Beyond workforce constraints, participants identified shortages of supplies, equipment, medications, transportation, and clinical protocols as major barriers to nursing practice. These findings align with evidence showing that supportive practice environments, characterized by adequate staffing, organizational support, and resource availability, are associated with improved patient outcomes, higher quality of care, and better professional well-being (9). Conversely, inadequate resources compromise care continuity, patient safety, and the delivery of evidence-based nursing practice.

Another important finding was the predominance of a curative model of care, driven by workforce shortages and organizational limitations that reduced opportunities for health promotion and community engagement. This pattern is consistent with previous studies emphasizing that resilient primary healthcare systems require investment in prevention, continuity of care, and community participation to improve health outcomes and reduce inequalities (10). The limited emphasis on health promotion identified in this study may therefore reinforce avoidable demand for curative services and increase pressure on an already resource-constrained health system.

This study extends current evidence by demonstrating that the challenges faced by nurses in Timor-Leste arise not from isolated deficiencies but from the interaction of workforce shortages, limited resources, and organizational weaknesses. Addressing these interconnected constraints requires integrated policies that strengthen the nursing workforce, improve working conditions, expand access to essential resources, and enhance primary healthcare capacity, particularly in underserved and remote areas.

5 STUDY LIMITATIONS

This study has several limitations. First, the findings are based on semi-structured interviews and reflect participants' perspectives within the contexts studied. Although data analysis was conducted by a single researcher, systematic coding procedures and iterative review of categories were used to enhance analytical consistency and transparency.

Second, the absence of researcher and data source triangulation may have limited the breadth of data interpretation. In addition, the purposive sampling strategy and relatively small sample size restrict the transferability of the findings beyond similar resource-constrained settings. Nevertheless, the detailed description of the study context, participant characteristics, and analytical procedures enables readers to assess the applicability of the findings to comparable healthcare systems.

6 CONCLUSION

This study demonstrates that weaknesses in the nursing work environment in Timor-Leste are interconnected and primarily driven by workforce shortages. Insufficient human resources, together with limited material resources, inadequate infrastructure, organizational weaknesses, low investment in health promotion, and limited community engagement, constrain the quality, continuity, safety, and equity of nursing care, particularly in primary healthcare and geographically underserved areas.

These findings highlight the need for integrated strategies that strengthen the nursing workforce, improve practice environments, enhance care organization, and expand community participation. By providing evidence from a resource-constrained setting, this study contributes to a broader understanding of the systemic factors shaping nursing practice and offers evidence to inform workforce planning, health service organization, and policies aimed at improving equitable access to high-quality care.

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