

The Identifying Factors Affecting Nursing Workload: A Literature Review

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ABSTRACT

Nurses are essential in realizing quality health service management. This quality can be achieved if the quality of life of nurses is maintained and control is optimal. However, nurses in various work units still face workloads that result in disruptions to the quality of patient safety. The study aimed to identify factors Affecting Nursing Workload. The year used was 2019-2023, and the research design used all quantitative and qualitative research-data based on ProQuest, Pub Med, and Science Direct articles. The article was published in English, and nurses as a sample. Factors OR Aspect AND Affecting OR Influencing AND Workload OR “amount of work” OR “high workload” AND nurses. There were twelve articles included in this article. This article studies three themes: the effects of a high nursing workload on patient care, the impact of a high nursing workload on mental nurses, and other factors. A nurse’s workload can cause problems with patients, the mental health of nurses, and other factors. It requires commitment from leaders, managers, and nurses to provide patient care and services to improve the quality of nurses’ work and patient satisfaction.

Keywords: mental health, nursing, patient care, patient safety, workload

INTRODUCTION

One of the obstacles to providing quality healthcare services to achieve universal coverage is the worldwide shortage of the nursing workforce. The increased workload on nurses has created many negative impacts, such as decreasing the quality of nursing care, threatening the safety of patients, and increasing the workforce’s mental health issues, challenges to fighting diseases, and improved health. The excessive workload can prevent professional development, so the lack of opportunity for professional development affects the quality of nursing practices (Tamata & Mohammadnezhad, 2022).

Nurse leadership contributions can be made to nurses to improve patient outcomes, and 70% of work overload is the most severe problem in the healthcare system (Abed et al., 2021). The role of the nurse manager is to improve the nurses’ performance in the hospital (Patarru’ et al., 2019). Still, nurses’ quality of life can decrease due to the increased number of patients admitted to hospital (Ebrahimi et al., 2021).

Nurses' workload was due to organizational aspects and professional recognition such as hospital were obtained for physical work conditions, rate of pay, variety of tasks performed in their job, the amount of responsibility you are given, and the chance of Promotion (Hellín Gil et al., 2022). The results of other research state that physical and mental demands are the causes of the workload felt by nurses, which has an impact on reducing the overall performance of nurses (Babamohamadi et al., 2023). The heavy workload of nurses can disrupt the work-life balance, and they may not be able to do life-related activities (Ebrahimi et al., 2021). Because workload hinders the quality of nursing care due to many negative causal factors, further identifying the causes of nurse workload in hospitals is necessary. The study aimed to identify factors affecting nursing workload.

METHODS

Data Sources

This Literature review focused on studies on nurses' workload in hospitals. Four search engines were used: PubMed, ProQuest, and Science Direct. This study was conducted in 2019-2023. It included different combinations for each database of the following keywords: Factors OR Aspect AND Affecting OR Influencing AND "Nurses' workload" OR "Nursing workload" OR "amount of work" OR "high workload" AND nurses.

Inclusion and Exclusion

The search study was limited to articles published in English, with nurses as samples in all units. The Preferred Reporting Items for Systematic Reviews and Meta-Analysis guidelines (PRISMA). Articles were excluded if the study did not focus on nurses, the workload associated with another research variable, and disease.

Study Selection

The articles reviewed by the researcher and those that met the inclusion and exclusion criteria were thoroughly reviewed. Focus on the articles began with examining each section of the research abstract and screening full articles. The search identified 309 topic research in the databases. After deleting 10 duplicates and unavailable articles, 28 pieces are analyzed. After title and abstract screening and detailed analysis of the full articles, 12 articles met the inclusion criteria and were reviewed. Analysis of the reports began with examining relevant data, such

as authors, years, topic, doi, country, methods, sample, study purpose, results, and conclusion (Table 1).

RESULTS

The study in this article aims to answer the research objectives, where, based on the table, 12 articles that focused on workload were found. This article studies three themes: the effects of a high nursing workload on patients, a high nursing workload on nurses, and the nursing workload factors.

The Effects of High Nursing Workload on Patient Care

The workload felt by nurses has an impact on patients and nurses in the hospital. The results of this study from three articles on the effects of high nursing workload on patients. One article regarding patient acuity was confirmed as variables associated with the workload rather than staffing resources, patient transfers, documentation, patient isolation, unscheduled activities, and patient specialties (Ivziku et al., 2022). Two articles found that nurses' ratio to patients needs to be more balanced due to poor nurse performance (Banda et al., 2022; Skela-Savic et al., 2023). This study's result states an extremely critical shortage of RNs and, thus, a high RN workload (Skela-Savic et al., 2023). The nurse manager determines a policy as a solution to overcome the workload felt by nurses by increasing the number of nursing staff and monitoring the quality of nursing care (Banda et al., 2022). One article states that nurses had workload in the morning shifts and night shifts; the common causes of variation are associated with the current methodology used to assign the number of nurses per shift, considering the number of patients per ward as a unique factor (Buestan & Perez, 2022).

One article found a decrease in patient safety, affecting the provision of quality nursing care, and the nurses more prioritized (Banda et al., 2022). The higher workload per nurse can be explained by the higher workload of COVID-19 patients, an increase in the proportion of COVID-19 patients in the total patient population, and their extended stay. This higher workload of COVID-19 was mainly due to nursing interventions such as being bedside, respiratory care, mobilization, and positioning, e.g., turning into a prone- or back position, hygienic procedures, and taking care of the patient and his or her relatives (Hoogendoorn et al., et al., 2021). One of the factors causing nurses' workload is the patient factor, including an unbalanced patient-nurse ratio. In addition, the high level of nursing care duties is caused by COVID-19.

The Effects of High Nursing Workload on Mental Nurses, and Other Effects

This study had five articles on the effects of high nursing workload on nurses' mental health. Two articles that the workload felt by nurses has an impact on nurses' well-being, nurses capacity to perform negatively, blame themselves, have body pain, stress, feelings of guilt, discouragement, and anger (Banda et al., 2022; Chen et al., 2022). The nurse makes an error in administering medication when exhausted (Banda et al., 2022). Job stress and burnout were associated with the shifts when the total workload exceeded 90% and the mental workload during task performance (Buestan & Perez, 2022; Shan et al., 2023). The nurses had a medium–high level of mental load in the emergency units due to the ratio of the number of patients and nurses is not balanced, environmental conditions, a female, older, and having stable employment or a permanent contract (Soto-Castellón et al., 2023).

The other factor is that nurses' work organization was significantly related to physical, mental, and emotional nursing workloads, but they reported a high burden of healthcare documentation. If the workload types are compared between mental, physical, and emotional workloads, the highest workload is mental (Ferramosca et al., 2023). One article found that excessive workload on nurses can cause burnout. However, workload can cause other burdens like biological, physical, psychological, chemical, and mechanical loads (de Carvalho et al., 2019). The data found states that health service documentation can cause higher fatigue in work organizations than other factors, causing mental workload problems for nurses and other workloads.

The Effects of High Nursing Workload on Other

The use of technology can overcome obstacles in nursing services; one article revealed that by using the Shift Check App, the average workload of nurses was effectively reduced (Chen et al., 2022). In addition, satisfaction and information acceptance intention in all aspects, including behavioral intention, technology use intention, and contributing factors, increased (Chen et al., 2022).

However, one article found that the effect of the Electronic Health Record (EHR) on the workload of nurses due to interruption incidence found for EHR tasks was much higher than that of other nursing procedures or general daily nursing care (Shan et al., 2023). The presence of interruptions and task performance, multitasking incidence, the difficulty of EHR tasks, and the incidence of error or near error due to nursing colleagues, patients, and nurses themselves (Shan et al., 2023).

In addition, one article states that disruption during work among nurses occurs because the nursing team exchanges information with a multidisciplinary team during the medication administration process (Sasaki et al., 2019). One article found that the admission process also needs to improve to achieve the quality of nursing care because it is not performed—documentation by nurses (Trovó et al., 2020). The workload can cause problems in teamwork between nurses, such as conflict and difficult interpersonal relationships among the team (de Carvalho et al., 2019). The data in this study provides various factors that cause problems in health services that impact nurses' heavy workloads.

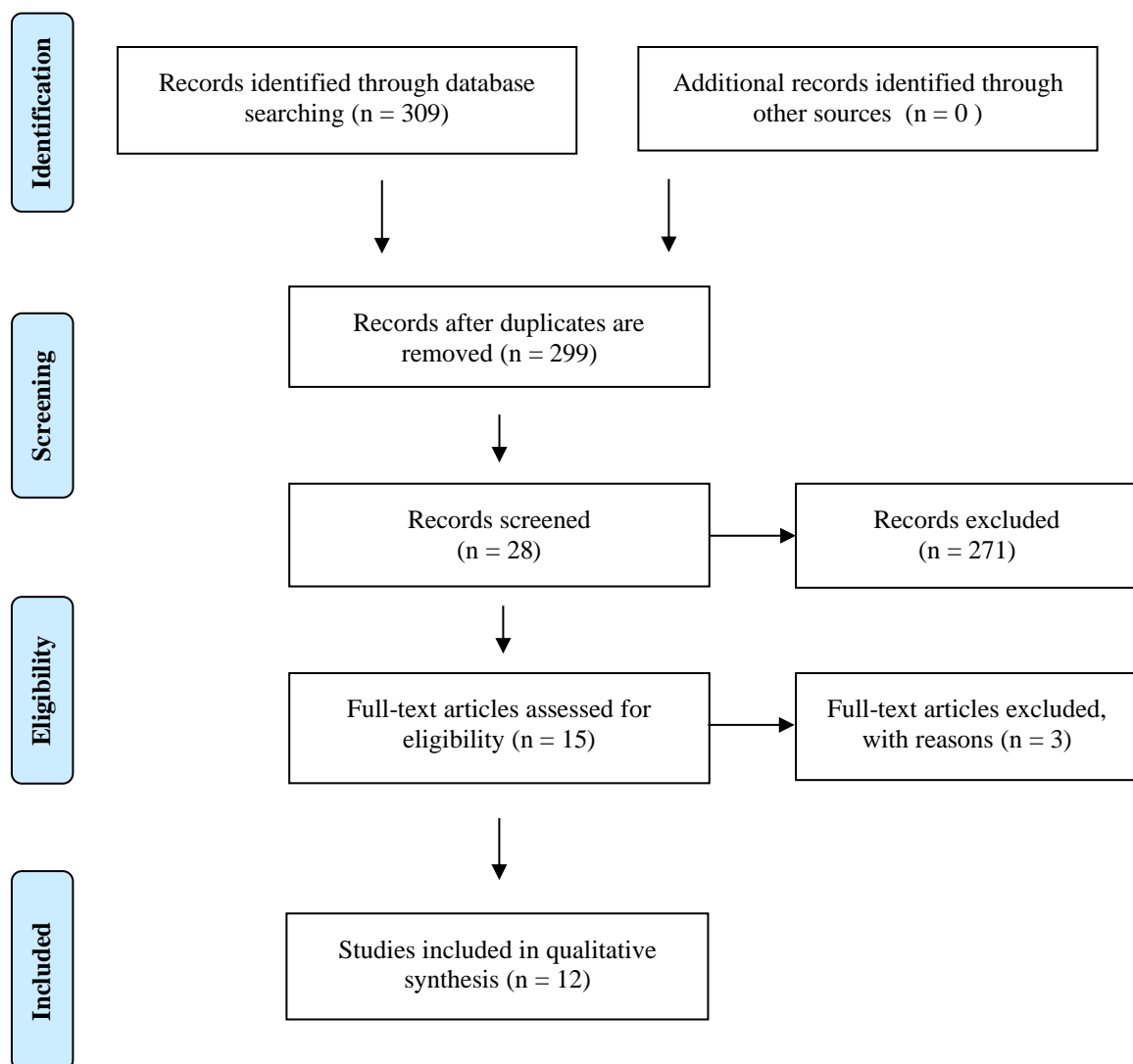


Figure 1: PRISMA Analysis

Table 1. The Identifying Factors Affecting Nursing Workload: Literature Review

Author/Year/Topic/DOI / Place	Study Design	Sample	Aim	Results	Conclusions
Sasaki et al., (2019). Interruptions and nursing workload during the medication administration process. http://dx.doi.org/10.1590/0034-7167-2018-0680 Brazil	The observational study	15 nurses and nine nursing technicians	Investigate the sources and causes of interruptions during the medication administration process performed by the nursing team of a NICU and measure the frequency, duration, and impact of interruptions on the team's workload.	The interruption source was the nursing team, self-interruption, and multidisciplinary team: information exchange, conversations, and alarms. The leading cause of interruption was the medication.	The primary source identification is the nursing team, and the cause is the exchange of information about care carried out by nurses during the treatment process.
de Carvalho et al., (2019). Workloads and burnout of nursing workers. http://dx.doi.org/10.1590/0034-7167-2017-0659 Brazil	A cross-sectional study	211 nurses	Identify workloads in nursing work and their association with nursing worker burnout.	Workloads are associated with the role of nursing workers. With exposure to workloads, burnout symptoms were upper limb pain, cervical pain, headache, and lower limb pain.	The Promotion of interventions can reduce nurses' fatigue at work.
Trovó et al., (2020). Time and quality of admissions: nursing workload. http://dx.doi.org/10.1590/0034-7167-2019-0267 Brazil	The observational study	199 nurses	Measure the nursing staff's average time during patient admission and investigate their compliance.	The time by the nursing team in intervention (professional evidence) impacts the workload. It must be considered in measuring nursing activities for the sizing, distribution, and work shifts.	The time spent by the nursing team in this nursing intervention impacts the team's workload, such as the sizing, distribution of personnel, work shifts, and quality of continuity of care.
Hoogendoorn et al., (2021). The impact of COVID-19 on nursing workload and planning of nursing staff on the Intensive Care: A prospective descriptive multicenter study.	Analyzed data	Nurses	Describe differences in the planning of nursing staff in Intensive Care during the COVID period versus a recent non-COVID period.	A higher number of patients per nurse and significantly higher Nursing Activities in Intensive Care nurses during COVID-19 compared to non-COVID.	A higher nursing workload during the COVID-19 period expressed a higher number of patients per nurse and increased nursing workload per nurse.

Author/Year/Topic/DOI / Place	Study Design	Sample	Aim	Results	Conclusions
<p>https://doi.org/10.1016/j.ijnurstu.2021.104005.</p> <p>The Netherlands</p>					
<p>Chen et al., (2022). The effect of medical material management system app on nursing workload and stress.</p> <p>https://doi.org/10.1186/s12912-022-00806-4.</p> <p>Taiwan</p>	Single-group pre and post-test	57 Nurses	Develop a clinical medical material management App for nurses to reduce their workload and improve the efficacy of medical material management.	The average workload of nurses was effectively reduced, particularly after employing the Shift Check App. Nurses' satisfaction and information acceptance intention increased in all aspects, including behavioral intention, technology use intention, and contributing factors.	The use of information technology products to assist medical material management in clinical practice significantly affects the load reduction of nurses and improves satisfaction.
<p>Buestan & Perez, (2022). Identification of predictive nursing workload factors: A six sigma approach.</p> <p>http://doi.org/10.3390/su142013169.</p> <p>Ecuador</p>	Case Study	-	Six Sigma (SS) is a generic methodology, and its DMAIC (Define, Measure, Analyze, Improve, Control) framework to identify statistically proven factors that affect nursing workload (NW) in any healthcare environment.	This study identified the nursing workload factors: the number of patients per ward, the number of times medication was administered per ward, the number of nurses assigned per ward, and the shift type. The excessive workload contributes to nursing burnout.	SS can be used effectively to estimate the importance of the main factors that affect nursing workload.
<p>Ivziku et al., (2022). Defining nursing workload predictors: A pilot study.</p> <p>https://doi.org/10.1111/jonm.13523</p> <p>Italy</p>	A cross-sectional prospective design	205 Nurses	Explore predictors of perceived nursing workload among patients, nurses and workflow	The nurses perceive workload due to patient acuity, staffing resources, patient transfers, documentation, patient isolation, unscheduled activities, and patient specialties. The nurse-to-patient ratio proved not to be a predictor of workload.	This study significantly contributed to the literature by identifying some workload predictors. The complexity of patient care, staffing adequacy, and some workflow aspects were prominent in determining the shift workload among nurses.

Author/Year/Topic/DOI / Place	Study Design	Sample	Aim	Results	Conclusions
Banda et al., (2022). Nurses' perceptions on the effects of high nursing workload on patient care in an intensive care unit of a referral hospital in Malawi: A qualitative study https://doi.org/10.1186/s12912-022-00918-x Malawi	Qualitative descriptive study	Nurses	Exploring the perceptions of nurses regarding the effects of high nursing workload on patient care in ICU	Nurses' perceptions of this study are that a high nursing workload compromises the delivery of quality nursing care to critically ill patients, compromises patient safety, and hurts nurses' well-being.	The study reveals the perceived effects of high nursing workload on patient care in the ICU.
Ferramosca et al., (2023). Nurses' organization of work and its relation to workload in Medical Surgical Units: A cross-sectional observational multicenter study. http://doi.org/10.3390/healthcare11020156 Italy	Cross-sectional	344 Nurses	Analyze relationships between factors regarding the patient, the nurse, workflow, and nurses' work organization.	Patient complexity, patient specialties, adequacy of staffing, collaboration with colleagues, unscheduled activities, supply search, and documentation significantly influenced nurses' work organization. The other result was that nurses' work organization was mainly related to physical, mental, and emotional nursing workloads.	This study showed that work context factors related to patients, nurses, and workflow can influence nurses' work organization and that work organization has an impact on the physical, mental, and emotional dimensions of nursing workload.
Skela-Savic et al., (2023). Patient outcomes and hospital nurses' workload: A cross-sectional observational study in Slovenian Hospitals using the RN4CAST survey. http://doi:10.2478/Sjph-2023-0009 Slovenia	Survey	1008 Nurses	Explore the relationship between patient outcomes and nurses' working conditions in hospitals	The odds ratio for staffing suggests that each increase of one patient per RN is associated with a 6% increase in the likelihood of a patient dying. Four of the 13 tasks checked were not performed on patients during the last shift.	The number of patients per RN is the highest in Europe and also higher than in some non-European countries, and represents an extreme risk to the quality of nursing and healthcare.

Author/Year/Topic/DOI / Place	Study Design	Sample	Aim	Results	Conclusions
Shan et al., (2023). Workflow interruption and nurses' mental workload in electronic health record tasks: An observational study. https://doi.org/10.1186/s12912-023-01209-9 China	A prospective observational	145 Nurses	Investigate how frequent interruptions and multilevel factors affect nurses' mental workload and performance in EHR tasks.	Interruptions, duration during EHR, error occurrence, and task duration. Multitasking, task switching, and task time. Task time, task difficulty, and system usability directly affected mental workload. Task performance was influenced by mental workload and professional title.	EHR tasks could increase nurses' mental workload and impair their task performance.
Soto-Castellón et al., (2023). Subjective mental workload in Spanish emergency nurses. A study on predictive factors. https://doi.org/10.1016/j.ienj.2023.101315 Spain	A quantitative, descriptive, observational, and cross-sectional study	201 Nurses	Discover the subjective mental workload of nursing staff and its relationship with socio-demographic, work, environmental factors at the workplace, and personality variables.	The nurses had medium to high levels of mental workload. The environmental conditions had a direct relationship with the mental workload. Positive and statistically significant relations were found between neuroticism and mental workload.	The predictors were the domain of neuroticism personality and the hygienic conditions in the workplace. This study could help define aspects that need to be considered for the well-being of emergency nurses. It also invites reflection on the influence of personal factors and work on the mental workload.

DISCUSSION

Based on the literature search results in this study, it was found that nurses' workload can affect patient care so that service delivery is hampered, affects nurses' mental health, and other factors cause nurses' workload. The nursing managers lack the effort to improve or change the hospital's work systems, which can decrease the quality of nurses' work. Ebrahimi et al. 1. State that the high workload of nurses in hospitals can upset the balance between work and life, which leads to a decrease in the quality of life; perceived social support can reduce the negative impact of workload on the quality of life of nurses (Ebrahimi et al., 2021). There is a need for more nurses and nurse leaders in all areas of nursing. The study results indicated that excessive workload influences nurse leaders' performance (Abed et al., 2021).

Compared with existing studies on workload, various consequences of poor workload in nurses will emerge and become a phenomenon that needs to be anticipated. The framework of the nurse work risk predictive model approach places workload as an aspect of high-risk hazard exposure that needs attention (Caldwell, 2018). Heavy workload and negativity related to OHS for nurses in hospitals also significantly increase Hazard Ratios (HR) in nurses (Gustafsson et al., 2020). One study even emphasized that workload is one factor that poses a risk of injury for nurses in Indonesia (Yulia et al., 2023).

Patient outcomes may not be achieved, one of which is due to the nurse's workload. An imbalance in nurses' workload can cause mental problems, so nurses need more decision-making and cognitive concentration. At the same time, the emotional load is more related to feelings and emotions regarding relationships with patients or colleagues in the work context (Ferramosca et al., 2023). Thus, the physical load can interfere with nurses' activities. Therefore, the physical workload resulting in a more significant mental and emotional burden is essential. Of course, this needs to receive attention and support from top and middle managers in hospitals to establish policies to maintain role competence, adapt to the work environment, and collaborate to reduce these aspects (Ferramosca et al., 2023). The study reveal that the effects were influenced by barriers to policy and planning, training, and enrolment barriers (Tamata & Mohammadnezhad, 2022).

This study has found an article stating that information systems can increase nurses' workload during work. This data aligns with several research studies that say Electronic Health Records (EHR) are essential in clinical nursing. However, nurses feel the workload is increasing and feel exhausted during EHR use. It was found that health workers experience fatigue during

EHR use, which is higher among nurses than other health workers (Melnick et al., 2021; Strudwick et al., 2022; Tajirian et al., 2020)). Fatigue during the use of new technology impacts patient care directly, and the number of quality nurse patients is reduced (Tajirian et al., 2020). This data can affect the quality of nurses' work toward patients, and up to now, the application still gives rise to differences in opinion regarding nurse acceptance. Therefore, based on literature study data, nurses' workloads occur due to various factors, from patients, nurses, or health system applications such as EHR. Nurses' use of the EHR application system affects their mental workload due to internal and external factors.

CONCLUSION

Identify factors that can influence nurses' workload because they are related to the number of patients, the patient's condition, the nurse's mental State while working, or other factors related to the use of health care system applications. Nurse leaders or managers must implement the health service system to find strategies to overcome nurses' workloads. This requires commitment from leaders, managers, and nurses to provide patient care and services to improve the quality of nurses' work and patient satisfaction.

LIMITATION

This study's limitation is that it needs to go to extraordinary lengths to describe how nurses' workloads can lead to burnout. Additionally, this study did not turn up any publications about the kinds of technology that can lead to burnout in nurses.

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