



Nurses' workload and the factors associated with patients' safety

A literature review

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safety**

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The literature review is done to describe what are the nurses' workload and what are its effects and consequences for the patient's safety. The purpose of the thesis is to describe nurses' workload and to view how the workload affects the patient's safety. This thesis Aim is to provide knowledge to the Nurses or Nursing student about how workload effect patient safety.

A Descriptive Literature Review is applied in this thesis. Data were collected from reliable academic databases from Laurea Finna, PubMed, CINAHL for the study. Data were deliberately selected using special inclusion and exclusion criteria to identify the most of relevant article for the study. The method of data analysis is thematic data analysis.

Nurses' workload and patients' safety is highly dependent on organizational structure. This thesis concludes that when there are enough nursing staff, technology facilities and supportive working environment, then there will be positive difference on patient safety, quality care and work satisfaction by Nurses.

In conclusion, this study's findings strongly argue how managing nurse's workload can have positive impact on patient safety and care. To address this issue health care facilities should ensure that there are enough nursing staff, technology facilities to ease the burden of administrative task and also supporting working environment. With these facilities the patient could have high quality care, patient safety and the nurses will have proper satisfaction with their duties.

Keywords: Nurse, Nurses workload, Patients Safety, Quality care

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1 Introduction

Nurses play an important role in maintaining patients' safety and patients' quality care. Even though the exact meaning of 'quality nursing care' has been in discussion for long and no concrete meaning is revealed yet there are many factors that affect and effect the concept of quality nursing care. Moreover, the good quality of the healthcare is indicated by some of the major issues such as patient's satisfaction on their care, safety and person-centered care, skill staff and the care that involves patients in decision making. (Stavropoulou et al. 2022.)

Nurses form the foundation of any healthcare system, providing constant care to patients. Their duty includes numerous tasks such as administering medicines, checking vital signs, documentation, patients consulting, educating patients regarding their care and treatment, overall health and patients evaluation. However, the ever-increasing demands placed on nurses can lead to a very heavy workload, potentially jeopardizing the most important part of their job: ensuring patient safety. (Banda et al. 2022.)

A growing amount of investigation is discovering a deep link between a nurse's workload and patient safety. Several reasons impact to a heavier workload, such as high nurse-to-patient ratios. When a single nurse is accountable for an enormous number of patients, time becomes very limited. This can lead to a rushed evaluation, missed opportunities to intervene early, and ultimately, there will be a greater risk of complications for patients. (MacPhee et al. 2017.) Also, long working hours and caring for patients with multiple health problems may lead to further burden on nurses. Under these circumstances, fatigue, stress, and difficulty focusing become common, which lead to mistakes in medication administration, documentation, or even overlooking subtle signs of a patient's health worsening. A positive work environment promotes the wellbeing of the nurses enabling the nurses to do their job safely and efficiently. This helps the nurses improve their mental health, job satisfaction, job performance and overall well-being of their health. The nursing work environment impacts patient safety, better work environments and a more positive safety culture. (Phillips et al. 2019.)

To improve healthcare delivery, it is essential to recognize the impact of workload on patient safety. The crucial role of nurses in patient outcome the issue is even more important.

2 Theoretical Background

According to Aiken et al. (2018) have shown that when there is lack of enough nurses on staff members, the number of patients who die, get infections, or need to be readmitted to the hospital all increases. Additionally, the psychological toll on nurses, including burnout and feeling unhappy with their jobs, can lead to a higher turnover rate. These further strain the healthcare system and ultimately compromise the care patients receive. (Kelly et al. 2021.)

The Thesis expects to highlight on the aspects of workload that can cause the greatest risk to patients. The findings can extensively aid in the improvement of effective approaches for managing nurse workload. Ultimately, this will ensure that nurses can continue to provide the high-quality care their patients deserve, adopting a safer and more positive healthcare environment.

2.1 Nursing Workload Overview

Nursing workload is referred as the task that nurses need to complete within the specific period of time. These tasks include the responsibility and the specific deadline to complete it. (Myny et al., 2021.) In healthcare setting, nurses play a vital role to keep patients safe and also ensure for receiving high quality care. Nurses' workload is highly impacted by their duties to interaction with their patients, patient's outcome such as safety, satisfaction and the clinical results. It is critical and important to understand and address that how nurses workload may affect the patient's safety. (Hassmiller & Wakefield 2022, Ch 10.)

Nursing is a challenging area that need a lot of measurement and constant evaluation of the work. This involves the time and effort of nurses that is spend for caring patients, upgrading their skills and managing the work environment at the same time. Workload of nurses are often measured by no of nurse to patient's ratio, no of hours appointed for caring patients and the volume of task that is appointed. Similarly, the more the patients need care, demand and the diagnoses more there will be the gap between the patients need and the available recourses. This leads to further workload to nurses that lead to less interaction with patients, chances of unfinished tasks and more additional time pressure to nurses. (Ivziku et al. 2022.)

Furthermore, there are number of patient's turnover in hospital are increasing leading more stress and workload to the nurses. This leads less communication to the patients and more chances of unsafe work condition, lengthy amount of hospitalization. Increase in the patient specializations results in increase in interruption on caring patients that means more information is required and less efficiency in work. Less efficiency means worse patient's outcome and also means low quality care and increase in nurse's workload. (Waterfield, Barnason 2022.)

2.1.1 Patients care approach and up to date Knowledge

Patients centered care focuses on patient's need of healthcare and importantly encourage the patients to actively take part in the treatment. This approach emphasizes the clear communication from the health provider and encourages the best interest of their own healthcare. This approach leads to better treatment outcomes, higher satisfaction of patients, and cost effectiveness care. Patients usually evaluate the healthcare experience based on the communication skill. These are the main essential things to ensure the patients satisfaction and delivering the patients centered care. (Coulter, Oldham 2016.)

Professional nurses need to have up to date knowledge in their relevant field to be relevant and to provide information for quality care of the patients. This helps to provide quality care, improve time and cost effectiveness. Nurses must practice evidence-based nursing in order to provide quality care. However, the workload of the nurses makes it challenging to provide various mandatory information to the patients. (Ricks, Ten Ham. 2015.)

2.1.2 Long shifts due to lack of nurses and Documentation

For ensuring patient safety nursing workload is a crucial factor with the length of nursing shifts being an important aspect. Long shifts of nurses, with inadequate staffing, cause several challenges. As a result, there is fatigue among nurses, where extended work hours can lead to intellectual weakening and decreases in decision-making abilities among nurses. Furthermore, longer shifts typically result in increased workload, with nurses facing higher patient loads, thereby making it tough to provide optimal care to everyone. This increased workload among nurses' staff, linked with fatigue, drastically increases the risk of errors, including medication errors, documentation failures, and other safety-related incidents. A study shows a clear negative impact of increased nursing workload on the quality of work life, particularly in the context of caring for COVID-19 patients. Talking about the issue of long nursing shifts is therefore essential to improving patient well-being and maintaining high standards of healthcare delivery. (Babamohamadi et al. 2023.)

For ensuring patient safety in healthcare settings, accurate documentation always play a crucial role. It enables care without interruption, effective communication among healthcare staff, and establishes the implementation of evidence-based practices. However, there can be challenges in maintaining documentation, leading to incomplete and inaccurate records due to overburdened nurses. This can lead to risk such as miscommunication, late

interventions, and bad events. There are several factors that contribute to the documentation workload faced by nurses. Firstly, the adoption of Electronic Health Records (EHRs) has brought advantages but also increased documentation time, requiring nurses to navigate complex systems and ensure data accuracy. Secondly, accordance with regulatory requirements like HIPAA and quality reporting necessitates accurate documentation, demanding additional time allocation from nurses. Lastly, time constraints further exacerbate the situation as nurses balance multiple responsibilities, leaving documentation to compete for their attention within tasks like direct patient care and medication administration. Addressing these factors is vital in improving documentation practices and ultimately enhancing patient safety. (Tsai et al. 2020.)

2.2 Patient safety Overview

For preventing harm to the patient while providing proper healthcare, nurses should focus on how to reduce risk, and errors. Ensuring the safety of the patient is foundational to high-quality healthcare and involves systematic efforts to create safer practices, environments, and policies. (WHO, 2021.)

Study shows that with high nursing workload, insufficient staff and communication gaps between staff- staff and staff- patients can increase patient safety risk that leads longer hospital stay and medication errors. (Aiken et al, 2018.)

2.2.1 Medical Errors and Low-quality care

One out of ten patients experience the harm while receiving healthcare, this result in more than 3.5 million death each year that is due to unsafe practice and care. Mistake in administrating medicine, surgeries that include unsafe practices, hospital infection, wrong/ late diagnoses, bedsores, falls, incorrect way of blood transfusion practices, sepsis are some of the common causes of patients maltreatment. (WHO, 2023.)

The study shows why medication errors happen a lot during the stage when nurses give patients their medication. Nursing work can be overwhelming which involves a lot of tasks, strict working hours, and keeping track of a lot of information and the big reason why medication error happen is due to the heavy workload of nurses. The article suggests different ways to prevent these errors and improve the medication process, as well as ideas to reduce nurses' workload. (Jin et al. 2023.)

The most important rule of every healthcare is to avoid malpractice. Low quality care for the patients may causes medicines error, hospital infection, sepsis, and misidentification of

patients. Patients' safety should be recognized as key to the global health issue and the vital part for improving health system. (WHO, 2023.)

2.2.2 Poor communication to patients and nurse and patients bonding

Poor communication and lack of communication may occur either intentionally or unintentionally. It can lead to serious consequences for patient safety. Doing heavy workload in daily basic limited time to take care in each patient that may be had fatigue, stress which may affect the quality of care. Poor communication of Health care system leads to errors in patient safety and quality care for e.g. delay medication, delay diagnosis and treatment. Enough level of nurses in workplace that helps to communication with patients that may have better quality of patient safety. (Nicole kraut 2021.)

Successful communication is a basic component of quality wellbeing care. It is well known that there is a strong relationship between the communication aptitudes of healthcare suppliers and persistent wellbeing results. Medical caretakers are at the bleeding edge of quiet care; in this manner, they can communicate persistent data to any suppliers included in a patient's arrange of care. It is basic to persistent security and results that viable communication happens between medical caretakers and suppliers. (Nicole kraut 2021.)

The relation between nurse and patient is so deep and is interrelated with each other which helps us to analyze the decision-making capacity of patients in clinical state of nurse records and discourse. If there is a good relationship between nurse and patient, the number of days staying in hospital for patient reduces which also improves quality care. These may also give good satisfaction to both nurse and patient. However, in contrast, there can be a bad patient who may demand a lot and wishes to make their own decision. This may affect maintaining a good relationship with professionals. (Molina Mula, Gallo- Estrada 2020.)

3 Purpose, Aim and Research Question

The purpose of the thesis is to describe nurses' workload and to view how the workload affects the patient's safety. This thesis Aim is to provide knowledge to the Nurses or Nursing student about how workload effect patient safety.

The questions that provide our research and development are:

1. What are the factors that affect Nurses workload?
2. How can the workload of nurses affect the patient's safety?

4 Methodology

4.1 Descriptive Literature Review

Selecting a topic of the thesis, making research question relevant to the topic of the thesis, searching and choosing the data from different kinds of sources, and selecting qualitative method is the process of literature review. When the analysis of the collected data is done, a discussion will be held for the process of thesis question and to find the answer of the related question. (Leite et al. 2019.) The most important part of literature review is collection of data and analyzing of collected data. Also, finding keyword for the topic of the thesis is another crucial part which focus on main topic and help to find out the answer of the research question. (Cooper et al.2018.)

The thesis has adopted a descriptive literature review to examine the relationship between nurses' workload and patient safety. The descriptive literature review method was selected for its capability to create existing knowledge and provide a complete overview of the current state of research on this critical topic. This method is suitable for discovering complex healthcare issues where multiple factors interact, such as the impact of nursing workload on patient outcomes. By systematically analyzing and summarizing findings from various studies, this method allows for the identification of patterns, movements, and gaps in the existing literature. (Paré et al. 2015.)

4.2 Data collection and Collection Process

In this study, literature review was conducted using a qualitative approach. Relevant information were retrieved using the combination of search keywords and Boolean operators. Articles for the study were collected using systematic approach across major databases such as Laurea Finna, CINAHL, PubMed and Google scholar were used. For their extensive coverage these databases were chosen in the thesis and consistent access to a broad range of peer-reviewed literature, particularly in nursing, healthcare, and medicine. Their inclusion ensures scholarly basis for the research, since these databases include substantial, high-quality, and up-to-date academic articles. Articles were used on the basic of inclusion and exclusion criteria. Articles having full text accessibility and published in English were considered.

The search was conducted according to the PICO format as in table 1 and in addition with using following keywords and Boolean operators: "Nurse" OR "Practical nurse" AND "Workload" OR "Stress" OR "Anxiety" AND "Patient Safety" or "Quality care". These searches were used to gather the broad spectrum of material related to the nursing workload and their outcomes.

Table 1: PICO framework with Boolean operators

P		“Nurse *”	OR	“Practical Nurse *”		
I	AND	“Workload * ”	OR	“Stress”	OR	“Anxiety *”
C	AND					
O	AND	“Patients Safety”	OR	“Quality care ”	OR	

Articles that are published after 2014 were included in the review to ensure the data reflect the update and recent findings. Articles prior to 2014 and those articles that are not related to the study were excluded from the data. Furthermore, articles with free access and through Laurea’s system were included, whereas research that requires payment for access was excluded.

The search result and the numbers of relevant articles from the various search engines used in this study are listed below. This methodology provides thorough and relevant articles for exploring the relationship between nurse’s workload and patient’s safety.

The results from the data collected using various search engine in this study are listed below on Table 2.

Table 2: Search words from the various search engine

Source	Search words	Hits	Extracted Article
Laurea Finna	"Nurse" OR "Practical nurse" AND "Workload" OR "Stress" OR "Anxiety" AND "Patient Safety" or "Quality care"	70	0
CINAHL	"Nurse" OR "Practical nurse" AND "Workload" OR "Stress" OR "Anxiety" AND "Patient Safety" or "Quality care"	345	1

PUBMED	"Nurse" OR "Practical nurse" AND "Workload" OR "Stress" OR "Anxiety" AND "Patient Safety" or "Quality care"	229	3
Google Scholar	"Nurse" OR "Practical nurse" AND "Workload" OR "Stress" OR "Anxiety" AND "Patient Safety" or "Quality care"	18000	1

The thesis is going to use some rules that help to find the right articles for the study. First, the focus will be on articles that talk about nursing burnout and will be written in English. These are our inclusion criteria, meaning the articles need to meet these conditions to be included in the study.

On the other hand, the exclusion criteria, which means the thesis will avoid certain types of articles. The thesis will not use articles in languages other than English, and also skip articles that were published a long time ago i.e before the year 2014. These rules will help to reduce our search for the most applicable articles for the study, journal articles and other related content can be taken out. Once sufficient information is collected, categories like different types of workloads and their effects on patient safety will be arranged. This will help to understand how there is influence on patient safety due to nurses workload and also find the areas for further research.

By combining these findings, the aim of the thesis is to provide a basic relationship between Nurses workload and safety of patient. The inclusion and exclusion criteria are listed below in Table 3.

Table 3: Inclusion and Exclusion Criteria

Inclusion Criteria	Exclusion Criteria
Article on Nursing Burnout	Article that are not related to nursing burnout
Article on English language	Article other than English language
Article from year 2014 onwards (2014-2024)	Article before year 2014
Nursing workload in Health care sector	Nursing workload in specific sector

Free access article or from Laurea Finna, CINHAL, PubMed	Paid article
According to the research question	Not related to the research question

4.3 Thematic Data Analysis

The extracted data was analyzed using the Thematic analysis approach. Thematic analysis is one of the well-known and common method among the qualitative researchers for analysing qualitative data that are extensively vast in descriptive data (Naeem et al, 2023.) Thematic analysis is a data analysis process that involves investigate through the data set, identifies the data pattern then involves coding systematically, deriving themes and creating a narrative. There are several ways of conducting the thematic analysis. Thematic analysis is way to identify, analyse and report the pattern or the theme of the qualitative data. It is commonly used and foundational method of qualitative data analysis. Thematic Analysis does not rely on single theory and also does not have strict set of beliefs. It is known for its flexibility that are essential for the qualitative approaches meaning that it doesn't follow the strict rules. The aim of the thematic analysis is to find the themes that captures the important and meaningful about the data that are related to the research questions. The process consists of thematic analysis involves careful reading, rereading of the data and identifying the core theme. (Terry et al. 2017.)

The term 'Phase' is used to highlight the Thematic analysis. There are mainly 6 phases of performing thematic analysis (Terry et al. 2017.)

The first phase consists of getting familiarized with the data. This includes the early and interim analytic ideas which requires curious and asking lot of questions of the data. Re-reading the textual data and getting the thorough understanding of the data is done in this step. This enables the deep engagement of the data. (Terry et al. 2017.) Several articles and studies were read that are related to the topic of nursing workload and patient's safety before this study to clear the topic and familiarization on the topic.

Second phase is generating initial codes. In this process the initial codes are generated from the texts. The essence of the content must be preserved while generating codes. This is a process of breaking down the longer text into few words as codes or keywords which still contains the full meaning of the longer texts. (Terry et al. 2017.) Keyword or code that were generated in this phase were Nurse, Nurses, Practical nurses, Workload, stress, anxiety, patient, Patients, safety, health, quality care, burnout, workplace, errors, wellbeing were generated Patients

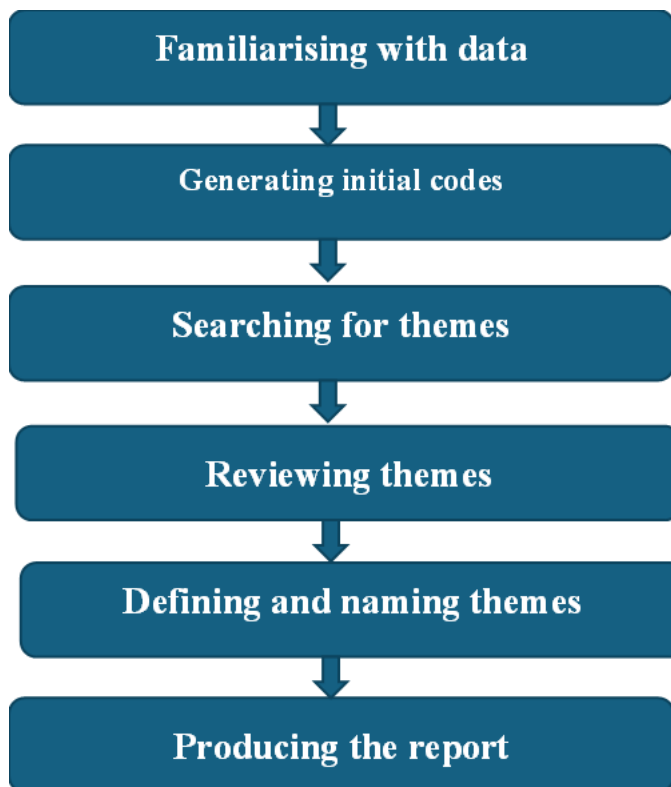
The third phase is generating the initial themes. The codes in the second phase are again checked for the similarities, pattern and connections. After that the themes are generated which covers all the codes under different themes preserving the core of the codes. (Terry et al. 2017.) At the final of this phase, we came keywords and codes we came up with are Nurses workload, Nursing workload, quality care of healthcare, influence of nursing workload, Workload and its factors, Patients health, Patients Safety and nurse's well-being.

The fourth phase is Reviewing themes. This is also a very important step in thematic analysis. All the generated themes are checked for repetition meaning, overlapping of the content, or not so meaningful themes. Sometimes it's hard to put everything under same themes, in those cases sub themes are generated, sometimes two themes can be merged into one theme and even discarded if it doesn't make a holistic meaning. Reviewing is very important to make themes more meaningful. (Terry et al. 2017.) At the final part of this phase nurse's workload and factors associated with patient's safety were identified.

The fifth phase is defining and naming the themes. After reviewing the themes, the themes are named and defined again to preserve the essence meaning of the themes. This is a short description of the themes headings just to illustrate the themes meaning. This is an easy step as it doesn't need to be long. (Terry et al. 2017.) In this phase the concrete nursing workload and its effect on patient safety, descriptive literature is defined.

The final phase is producing the report or in another word writing the report. This is a final step where each theme is described properly, including the illustrative quotes from the data. Here the findings are discussed broadly. (Terry et al. 2017.) This phase involves the extensive explanation in writing with all the relevant details of the data. The purpose is well present and provide the clarity and put the clear context in depth. The Figure 1 in the following illustrate the Thematic analysis and the phases of the Thematic analysis.

Figure 1: Thematic Analysis



The concept from the article were categorized into different categories followed by the research questions and utilizing thematic analysis method. The articles which were considered as a reference were analysed to find out patterns and to explain clearly, coming up with a better conclusion. Corresponds to the research questions, gathered meaning unit from the referenced articles were broken down into sub themes. Sub themes were then reviewed further based on the similarities of the concepts thus produce the main themes. The Theme and Subtheme of our thesis is presented below on Table 4.

Table 4: Theme and Subtheme

Subtheme	Theme
Environment and organizational factor	Factors influencing nursing workload
Human factor	
Professionals and psychosocial factor	
Poor communication and lack of Motivation	Negative outcome of workload
Work Stress and Fatigue	
Nursing workload and errors	
Nursing workload and violations workplace	
Effects organizations	

Acuity-Based Workload Distribution	Optimizing Nursing workload and Developing Patient Safety
Skill Mixed Optimization and Safe Staffing	
Work Redesign Strategy	
Fostering Nurses well-being and Engagement	

5 Result of the literature Review

The thorough study shows various aspects. But to be precise on our topic we draw down certain points to support our main topic. The following main themes were obtained and considered as a result and are discussed in more detail in this section:

- Factors influencing nursing workload,
- Negative outcome of workload, and
- Optimizing Nursing workload and Developing Patient Safety.

5.1 Factors influencing nursing workload

The following section presents the findings from the literature review regarding the relationship between nurses' workload and factors associated with patient safety. The findings describe on key point that has been gained from the research, highlight the complexities and challenges faced by nurses in today's healthcare environments.

5.1.1 Environment and organizational factor:

Study done in UK and Ireland hospitals it was found that there are nurses have no choices over their shift and shift length. This will lead to have significant workload for the nurses. Burnouts are more common t the nurses that work 8-12 hours shifts and those who had inadequate staffing level and have no control over the duration of their shift and taking a smaller number of breaks were related with increase fatigue and weariness. Nurses working 12 hours of shifts were reported to have less control over their shifts, Nurses with fewer options about their shifts were more prone to feel burnout. (Dall' Ora et al. 2023.)

5.1.2 Human factors:

According to the study done in ICU at Queen Elizabeth central hospital nurse workload compromises to provide the quality care for the critical patients. Due to the nature of the

nurse's heavy workload lot of key crucial treatment were missed out such as feeding the patients, poster treatment for the patients that would lead to pressure ulcer, dental hygiene and also the basic hygiene like changing bed sheets and pillow sheets. This lead to low quality care from the nurses and increase the risk of hospital acquired infection. It was found that nurse workload endangered the patient's safety. Increase number of cases related to patient's cardiac arrest near fall scenarios to extubating that were unplanned that risked the safety of patients were reported due to hurrying and lack of time to monitor the patients. The study supports and highlighted the need of strategies to reduce the workload of nurses by increasing the amount of nurse to improve the patient's safety and quality of care to the patients. (Banda et al. 2022.)

5.1.3 Professionals and psychosocial factor

There are significant number of nurses bullying issues and are the common problem in nursing profession. It has considerably affected the practicing nurses and also the nursing students. Approximately 78% of nurses have experienced the bullying in their nursing career. Additionally, it was reported that half of the nursing student have experience bullying in practice and in clinical settings. Remarkably, there is not specific department that has confirmed on the bullying and which department experience more or less amount of bullying. Therefore, almost 60% of nurses that experience the bullying quit their workplace within the first six months of their employment. This kind of behavior not only have impacted the nurse's well-being but has also impact the worse challenges in the staffing and hiring. (Edmonson & Zelonka, 2019.)

5.2 Negative outcome of workload

There is a significant implication for patient safety and quality care due to increasing workload of nurses in healthcare settings. Where the Nurses are coping with multiple responsibilities at the same time, the workload can manifest in various negative ways. The following section explores these negative outcomes in detail, emphasizing the human impact on both patients and nursing professionals. (Banda, Simbota, Mula 2022.)

5.2.1 Poor communication and Lack of motivation

Poor communication and lack of motivation at work are major reasons causing the negative impact of excessive workload on the nurses, which may hamper patients safety. Effective communication is one of the most critical dimensions of patient care and helps in improving the relationships between a nurse and a patient, affecting patients' perception about the quality of healthcare and treatment outcome. Ineffective communication by health workers and/or a patient usually involves misunderstandings, incomplete transfer of information, and

delays in making decisions, each of which poses serious risks to patient safety. (Tay et al. 2012.)

Poor communication and lack of motivation within nursing as a field feed on the cycle of inefficiency and poor morale because an excessive workload impacts the effects on the nurses. While talked about these issues that helps to improved communication protocols, team support, and motivational strategies is vital to enhancing nurses' performance and safeguarding patient safety. Without motivation, nurses may experience reduced engagement in the workplace, diminished focus during work, and burnout, and all of these reasons disable their ability to perform tasks effectively. (AL-Mugheed et al.2022.)

Some factors that may affect healthcare workers' motivation to work include supervision, financial benefits, job training, and growth of the working staff, and efforts should be made to manage the issues such kind of challenges requires multiple interventions. (Karaferis et al.2022.)Effective utilization of staff time, encouraging nurses to provide quality health services, improving medical facilities, providing practise communication skills training workshops, establishing nursing quality assurance committees, and more importantly, ensuring positive attitude transformation among the nursing managers' level .This could address the issue of demotivation among health workers at work and build up appropriate communication skills among nursing staff.(Norouzinia et al.2015.)

5.2.2 Work Stress and Fatigue:

Stress from work does not always have a negative effect on job satisfaction of the employee to do work, but motivation has that strong effect on job satisfaction. Stress from work is also affected by other things such satisfaction from salary, the attitude of superior, good working environment and motivation to understand the employee in a better way which influences satisfaction of job (Kirana, Lukitaningsih, Londin 2021.)

The impact of long shifts, lack of sleep, too much work and sort of staff can have more chance for the nurses to make errors. The main reason behind making errors by nurses are work stress, fatigue, long shift, sort of staff, workload, and rush in working environment. Thses factors can have a negative impact on the health as well as the performance of employees. Medication errors are more likely to occur when the nurses have longer shift or the nurses who have night shift. (Di Muzio et al. 2019.)

5.2.3 Nursing workload and errors

The difference between the capacity of an employee to work and the ability of an employee's body to accept demands of the work that should be done is workload. The Nurses who receive workload must be given to the employee considering their physical and psychological state. In

general, if the employee is unable to cope with a given workload which is beyond their ability , it will cause decrease in motivation to complete the work which result in working error. (Kirana, Lukitaningsih, Londin 2021.)

5.2.4 Nursing workload and violations workplace

The European Federation of Nurses (EFN)made a mapping exercise to show the result which is based on challenges and solution for violence against nurses. There were three findings, where the first one shows why the violent incident were underreported. Due to the fear of victimization, employer discouragement the victims thought that the reporting does not make any difference. Second findings shows that the people who commit violent act are not only patients and family but the professional of healthcare from different position. And Third findings shows that violence have negative impact on nurses who is reducing their working hour and taking option for part time work. Nurses need more support from their institution, more legislative commitment against violence and also need opportunity to bring change in existing condition. (Paul et al. 2023.)

5.2.5 Effects organizations

Leadership, teamwork, the ratio of staff and the practice environment each are related and relevant for the safety of patients which is carried out by nurses. (Boamah, et al. 2018). The understanding capability of human factor can either makes easy or make obstacles for the nurses to complete all the task without making mistake within the given time frame. With proper leadership nurses can develop working skills, and with motivation and encouragement by supervisors can have positive impact on work and work satisfaction, resulting in better outcomes. A nurse who maintains a culture of safety may be less likely to have missed nursing care. (Srulovici, Drach-Zahavy 2017.)

5.3 Optimizing Nursing workload and Developing Patient Safety

Nurses play a fundamental role in healthcare facilities by confirming patient well-being and safety. The role of nurses is most important in care and treatment tasks for those who take on extra duty beyond their primary roles.

Nurses' workloads can become devastating, with the increasing density of patients and rising demands on the healthcare system. The concept of workload is often considered when a nurse is assigned tasks which are vulnerable to physical, psychological and job satisfaction. (Babamohamadi et al. 2023.) Over the past few years, many research has highlighted the hectic and yet demanding work of nursing, the knowledge, density, and to manage in urgent situation (Bakhshi et al. 2017.) By studying the strong link between caregivers and the quality of care, it is important to focus on the welfare and happiness of healthcare providers. By

initiating a supportive working environment and preserving effective use of nurses' time and skills, healthcare facilities can improve the experiences of both nurses and patients. Fortunately, there are realistic approaches healthcare associations can apply to optimize nurse workload management. (Jamebozorgi et al. 2022.)

5.3.1 Acuity-Based Workload Distribution:

In this process the workload is distributed according to the skill of nurses and requirement of patient optimal care. The acuity-based workload distribution is a well-researched strategy that optimizes the patient care and nurses workloads. This approach relies on a foundation of consistent and accurate patient acuity assessment. In this process evaluating various factors such as vital signs, diagnosis of the diseases, functional status, and medication needs to understand the level of care for each patient is required. Different kinds of Standardized tools are helpful in this process, which helps to provide a systematic way to measure and categorize patient acuity. For example, a high-acuity patient might require regular monitoring, while a low-acuity patient may need routine care and occasional checks. (Gartley 2016.)

The research shows us how the increase in patient safety is connected with nursing workload. The study focuses on the direct link between the pressure we put on our nurses and the risks our patients face. It's a clear reminder that when we talk about workload, we're not just talking about nurse burnout - we're talking about the very safety of the people in their care (Fagerström et al. 2018.)

5.3.2 Skill Mixed Optimization and Safe Staffing

There are different healthcare teams where there is a mix of Registered Nurses, Licensed Practical Nurses, and Certified Nursing Assistants who are the most essential for effective workload allocation (Dubois & Singh, 2009.) RNs, who have the higher education and training, are the most capable healthcare workers to perform complete patient assessments, administer complex medications, and manage critically ill patients. However, they can be bogged down by different kinds of time-consuming task yet essential tasks such as medication administration, vital sign monitoring, and basic patient helps to free up valuable time for RNs so that they can focus on more complex aspects of patient care (Dubois & Singh, 2009.) Furthermore, CNAs who provide invaluable assistance by helping the patients with day to day activities such as bathing, dressing, and ambulation. This collective approach confirms that the efficient use of resources and collaborative work by each healthcare worker helps to prevent RNs from becoming overloaded with basic tasks. (Aiken et al. 2014.)

Maintaining patient safety and nurse well-being there should be an adequate nursing staff. Proper guidelines for safe nurse-to-patient ratios often change on factors such as patient acuity and the type of care unit. For example, serious care units with high-acuity patients require continuous supervising and complex nursing interventions are require and lower nurse-to-patient ratios compared to medical-surgical units helps patients to recover from routine procedures. (Aiken et al. 2014.)

Additionally, patient acuity levels can change vigorously throughout a shift, that makes flexible staffing models essential. On-call staff or flexible scheduling planning helps to guarantee adequate support during ultimate periods when patient needs are particularly high. By applying safe nurse-to-patient ratios and also arranging the staffing levels to meet the active demands of the unit, healthcare administrations can make certain that nurses have enough time and resources that are necessary to provide high-quality care to all their patients. (Jamebozorgi et al. 2022.)

5.3.3 Work Redesign Strategy

Appointing nurses to work consistently on specific units to work steadily helps to promotes a sense of teamwork and also understanding the patients and their needs. This helps to improves communication and cooperation among nurses and updates patient handoffs during shift changes. When the nurses are familiar with their patients and the unit layout, it will be easier for them to work more efficiently and also helps to minimise the delays and ensure the continuity of care. This kind of plan not only improves patient care but also improves nurse's satisfaction as it establishes a stable and supportive working environment. (MacPhee et al. 2017.)

A balanced workload for all nurses on a particular shift is so essential for promoting fairness and cooperation within the healthcare team. This arrangement not only helps to coordinated patient assignments to the skill sets but also helps to prevent certain nurses from becoming overloaded while others have minimum tasks. By applying a data-driven approach to workload distribution, healthcare professionals can guarantee that all nurses are giving their 100 percent time and care effectively to patient care while working within their capacity. (Oetelaar et al. 2016.)

In today's worlds, Technology play an important role on improving effectiveness for documentation process. By implementing electronic health records (EHRs) and other digital equipment can significantly improve effectiveness by making the nurses work easier. This equipment helps the nurses to record patient data, track the patient progress, and retrieve relevant data electronically, which helps to reduce the time that is spent on manual paperwork. Also, by reducing administrative tasks, nurses will have enough time to allocate to direct patient care, such as giving full assessments, providing patient education, and also offering emotional support to patient. This not only improves patient results but also give

satisfaction to nurses by allowing them to focus on their primary role of caregiving. (Jamebozorgi et al. 2022.)

5.3.4 Fostering Nurses well-being and Engagement

A nurse can make commitment to their professional growth by participating in ongoing education that helps to develop their skill. Getting education and skill not only help to give high quality care to the patient but also gives nurses the sense of achievement and satisfaction. Educational opportunities can range from specific training in acute care or wound management to workshops on communication skills or stress management techniques. By providing nurses with an approach to related educational resources, healthcare organizations authorize them to stay at the front of their field and modify to growing healthcare practices. (Aiken et al. 2014.)

Appreciating the nurses work and giving them valuable contribution not only boost nurse morale but also encourage them to do more good work with fostering positive working environment. Applying recognition and appreciation procedures can take various forms. Acknowledging nurses publicly by offering different kinds of bonus programs for their exceptional performance, or simply expressing thankfulness for their dedication can considerably make impact on nurses to feel valued within the organization. A nurse can get job satisfaction when they feel appreciation by the organization and motivate them to remain committed to their role, contributing to a more firm and effective healthcare worker. (Shin et al. 2018.)

Health care organization can also play a vital role by promoting nurses to join in stress management programs as their role is so demanding that lead to significant stress and burnout. These kinds of programs help the nurses to cope up with mental health, workshops on stress reduction methods like mindfulness meditation, or even flexible work arrangements that allow nurses to maintain a healthier work-life balance. By arranging the mental and emotional well-being of nurses, healthcare organizations not only create a more encouraging work environment but also influence to progressed patient care. When a nurse is well rested, they can manage the emotional demand, provide quality patient care and contribute to more positive healthcare experience for everyone. (Jamebozorgi et al. 2022.)

6 Discussion

Nursing Workload and Patient Safety has a complicated connection with each other which needs to study carefully. This thesis directs the relationship between nurse's workload and patient safety. The thesis combines different kinds of theories and findings that gives a clear understanding of how too much work can affect the safety and quality care of the patients.

The meaning of nursing workload doesn't only mean physical tasks but also mental tasks such as decision-making and problem-solving. Because of not having enough Nursing staff there is high workloads for certain nurses that can affect patient care. These factors increase nurses' fatigue, which can affect both physical and mental abilities. The evidence in this thesis matches with other research, showing that nurse fatigue is a major cause of error that happen in patient care, like giving the wrong medication or missing important assessments.

Patient's safety is very important to manage the nurse's workload and when there are enough nurses, they can spend more time and give better care to each patient. This leads to more accurate assessments and better outcomes. For example, (Aiken et al.,2018.) highlight research that shows this connection. This evidence emphasizes how important it is to have enough staff to improve patient safety in healthcare.

Electronic Health Record or the technology in health care organization is another big factor that plays an important role in reducing Nurses workload as this technology significantly reduces paperwork for documentation and reduces chances of error as nurses can focus on important task related to patient safety. (Kelly et al. 2021.)

Thus, the finding in this thesis is reliable as they support so well with other recent studies on nursing workload and patient safety. The analysis of the thesis covers a wide range of healthcare systems in different countries which makes the result more applicable. However, there are some limitations which affect the scope of the findings. Due to the short study period and limited time frame the study may not capture long term work impact. Also, the findings may not apply universally, and diverse data source can affect reliability. Beside these, the evidence strongly supports and suggest that for the patient safety it is so essential to manage Nurses workload.

7 Ethical Consideration:

The Research methods and design are considered as the principle of Ethical considerations. It is sensitive that the code of conduct, evaluating potential medical or psychological treatments, and studying human behaviour are strictly followed by the scientist. Ethical guidelines contribute to the validity of research, protect human rights and wellbeing of study participants, and ensure a high level of academic writing. (Tenk, 2023.)

By reviewing the referencing guidelines of Laurea University, it ensures accurate citation and referencing, which aids in avoiding plagiarism and enhances the credibility of the thesis. Adhering to these practices supports academic writing and contributes to the advancement of knowledge in specific fields. This review provides balance an objective analysis of the

literature with the intent of accurate reflection of the state of knowledge of the field. Authorized and official databases such as Laurea's Finna, EBSCO, Science Direct are used for the retrieval of data. (King, 2023.)

Before writing the thesis, the Laurea guidelines were carefully read and understood. We carefully reviewed and analyzed the article for the literature review, making sure not to include any identifying information about the participants like their names or contact details. Also, the thesis avoids plagiarism by not copying and pasting any text without giving credit, and by properly referencing any quotations that is used. The ethical principle for the thesis will be honesty, carefulness, human subject protection, non-discrimination, confidentiality (Resnik, 2020.) This literature review "Nurses workload and the factor associated with patients' safety" is conducted with strong commitment of ethical consideration. Authors of this literature review follow the Laurea Guidelines of scientific writing. Sources in this work are appropriately cited adhering the academic standards and respecting the property right of the original authors. This review provides balance an objective analysis of the literature with the intent of accurate reflection of the state of knowledge of the field. Authorized and official databases such as Laurea's Finna, EBSCO, Science Direct are used for the retrieval of data.

8 Conclusion

Our analysis of nursing workload and patient safety reveals important insights that matter in the everyday healthcare environment. Examining data from various organizations, we discovered that nurses and their patients are at danger when they are overworked. Nurses may get mentally and physically exhausted by the difficulties they encounter on a everyday basis. A nurse who is overworked and is exhausted, is more prone to make mistakes like administering the incorrect drugs, failing to notice significant change in a patient's health state, or failing to identify early warning indicators that could avert consequences. These types of mistakes may frequently result in patients who spend more time in the hospital and in certain situations, posing major health hazards.

Nurses can identify issues early and deliver better treatment when hospitals maintain appropriate staffing levels. They have time to observe minor alterations in their patients' conditions and take action before things get out of hand. Another important factor in helping nurses better manage their workload is modern technology. For instance, nurses' handling of paperwork has changed as a result of electronic health records. They can devote more time to their patients rather than hours of paperwork. This transition from paperwork to patient care demonstrates how nurses can operate more efficiently with the correct tools.

To increase patient safety and treatment quality, healthcare facilities need to concentrate on three main areas. Above all, they must keep the nurse-to-patient ratios within acceptable bounds during every shift. In addition to hiring more staff, nurses can increase productivity by investing in user-friendly technology. In order for nurses to perform as per their capabilities, it is equally important to provide a good working atmosphere.

As being in the nursing field already, we have experienced many of the challenges discussed in this review. We have our own support to the key factors discussed here. The findings align with our thoughts in many ways. For example, when we have adequate time with patients, who can provide more thorough assessments, respond more quickly to any issues or changes in conditions. Thus, we could build better relationships with our patients and their relatives. The importance of manageable workloads is not just an academic theory, it is something we see and feel in our daily practice. Both patients and healthcare professional benefits when the factors, such as a supportive working environment, managed workload, use of efficient technology, and appropriate staffing levels are maintained efficiently. Nurses can complete their duties safely and confidently which directly impacts on patient care and safety.

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Appendix 1: Data Extraction Form

Number	Author	Year	Title	Research Method	Finding
1.	Babamohamadi, H., Davari, H., Safari, A.-A., Alaei, S., & Pordanjani, S. R.	2023	The association between workload and quality of work life of nurses taking care of patients with COVID-19	Quantitative cross-sectional study	When the load of the work is too high, the quality of work decreases, where there is more stress and less job satisfaction.
2.	Aiken, L. H., Sloane, D. M., Bruyneel, L., Van den Heede, K., Griffiths, P., Busse, R., et al.	2014	Nurse staffing and education and hospital mortality in nine European countries: A retrospective observational study	Retrospective observational study	Increase in patients increases mortality rate while increase in number of nurses lower mortality rate.
3.	Fagerström, L., Kinnunen, M., & Saarela, J.	2018	Nursing workload, patient safety incidents and mortality: An observational study from Finland	Retrospective observational study	With the increase in nurse's workload, there is more incident of patient safety and increasing mortality risk.

4.	MacPhee, M., Dahinten, V. S., & Havaei, F.	2017	The Impact of Heavy Perceived Nurse Workloads on Patient and Nurse Outcomes	Cross-sectional survey study	With the increase in nursing workload, there is increase in emotional fatigue in nurses which is directly related with poor patient outcome.
5.	Shin, S., Park, J. H., & Bae, S. H.	2019	Nurse staffing and nurse outcomes: A systematic review and meta-analysis	Systematic review and meta-analysis	With the increase in nursing staff, there is less burnout which improve quality care of patient and wellbeing of nurses.