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Effectiveness of Time Management Training Program on Patient Quality of Care Performed by Nurses Working in Intensive Care Units in the West Bank Government Hospitals

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This thesis was submitted in partial fulfillment of the requirements for the Doctoral degree in nursing

May / 2024

Thesis Approval

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Declaration

I declare that this thesis was composed by myself and that the work contained herein is my own, except where it states otherwise by references or acknowledgment, the work presented is entirely my own.

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Dedication

This thesis is dedicated to all nurses for their efforts in caring for their patients and their profession, to my parents who supported and encouraged me all the time, and my wife who supported me throughout the years especially in times of stress.

Acknowledgement

In the name of God, I would like to thank God for making all things possible for me, for granting me health, and for giving me the great chance to be able to complete this work successfully.

I would like to express my sincere appreciation and thanks to my honored first supervisor Dr. Sumaya Sayej who accepted me as her PhD student without any hesitation when I presented my research proposal. Thereafter, she offered me continuous advice, patiently supervising me and always guiding me in the right direction. I have learned many things from her and without her help and support I could not have finished my PhD successfully. I would like to give special thanks to my second supervisor Dr. Mutaz for his encouragement and help to continue this work.

I am very grateful for my parents (My mother Maryam and my father Taha), my brother and sisters for their understanding, support and encouragement throughout my PhD journey. Their firm and kind-hearted support encouraged me to be steadfast and never give up in to difficulties. They always have faith and pride in me that made me more motivated and kept me working hard to do my best

To my wife Sahar and my children, I thank all of you for your support and patience during this journey. You are my backbone and the origin of my happiness. Your love and support without any complaints or regrets has enabled me to complete this PhD. Thanks more and more for my wife for taking the huge responsibilities and suffering all the worries taking care of our children.

Abstract

Introduction: Nursing is an intense and focused profession, so choosing the perfect time and managing it well will assist in improving the quality of care, managing work properly, and accomplishing the patient's outcome.

Aim: The study aimed to determine the effectiveness of time management training program for Intensive Care Unit (ICU) nurses and its implication on the quality of nursing care provided for patients in Palestinian government hospitals**.**

Method: A quasi-experimental design was used. A sample of 190 nurses working in the ICU in West Bank hospitals participated (intervention n=91; control n=99), and completed a questionnaire to test the study variables on two occasions: before the intervention, and three months after the intervention for both groups. The second tool was an observation checklist to check for quality of care for patients in ICU. The intervention was a training program on time management, which included topics on explaining, planning, prioritizing, goal setting, time commitment, and time wasting. Analysis of categorical variables was undertaken using descriptive statistics, and ANOVA inferential statistics were used to compare the results within and between groups.

Results: The participants' socio demographic characteristics indicated that nurses were almost equal in terms of gender (the females 51.6% and 48.4% were males), 74% were young and their ages ranged from 25 to 34 years with a work experience from 6 to 10 years. Most of participants 71.6% were bachelor's degree holders and 17.4% were Master degree holders vs. 11.1% were diploma holders

The intervention group mean time management score increased significantly after the intervention, but there was no statistical significant difference in the control group. The results also showed significant change in the mean score of time management 3 months after the intervention between the intervention and control groups ($P<0.001$). Following the intervention, the mean score of quality of care increased significantly in the intervention group, while there was no significant difference in the control group between times.

Conclusion: The results demonstrated that time management education training enhanced the nurses' knowledge of these skills (time planning, time prioritizing, goal setting, time commitment, and time wasting), which improve quality of care. Nurses were able to make good use of their time in a work shift by teaching time management dimension; planning, prioritizing, goal setting, time commitment, and time wasting.

Recommendations: Application of time management in nursing education, and curriculum may enhance the standard and quality of care. Time management is a culturally related concept that is needed to be highlighted for nurses specifically. Include time management education within the health professions in general and nursing curricula in specific at the university level to have effective nursing care services that ultimately will be reflected on the quality of care provided.

Key Words: intensive care unit; nursing; time management, quality of care.

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List of Abbreviations

ANOVA	Analysis of Variance
BSc	Bachelor of Science
ICU	Intensive care unit
CINAHL	Cumulative Index of Nursing and Allied Health Literature
CRD	Centre for Reviews Dissemination
IOM	The Institute of Medicine
IRB	Institutional Review Board
MEDLINE	Medical Literature Analysis and Retrieval System Online
MOH	Ministry of Health
MSc	Master of Science
MMAT	Mixed Method Assessment Tool
NHMRC	National Health Medical Research Council
PICO	Population ,Intervention ,Comparison ,Outcomes
PRISMA	Preferred Reporting Items for Systematic Reviews and Meta-Analyses
TM	Time Management
WHO	World Health Organization

Chapter One

Introduction

1.1. Introduction

This chapter presents the background of the study on time management concepts, and time management training and quality of nursing care for nurses in the ICU. Problem statement, study significance, research purpose and objectives, research questions and hypotheses are discussed as well.

1.1.2. Background of the Study

Time management skills are in high demand of modern life and place greater emphasis on both personal and professional commitments. Time management refers to a set of techniques for optimizing one's time use and the ability to manage time effectively (Janeslätt et al., 2018). For nurses, it is an essential talent to have, as they are often the first line to patient care. Time management give nurses to be make better use of their time, to get more to be done, and more likely to reach their goals (Said, 2014). Time management skills help nurses to learn how to set goals, decide what is most important, how to plan, and how to find ways to waste less time (Gordon & Borkan, 2018).

The art of regulating efficiently and overseeing one's time allocation to certain tasks is known as time management. Applying time management techniques is more crucial in health professions like nursing where workloads and responsibilities are in high demand. Nurses play a crucial role in the healthcare system and have a lot of work to do every day (Blevins & Millen, 2016). The use of time management skills is required due to the workload, time constraints, and the necessity to make quick decisions (Gordon &Borkan, 2018). The proper application of time

management skills enhances nurses' jobs and allows them to accomplish their tasks more wisely. Furthermore, implementing time management skills leads to timely patient care, reduces nurses' work stress, and improves their quality of life (Said, 2014). Effective time management allows nurses to give their full attention and time to the most important tasks first and delegate those that can wait until later. Good time management skills, help nurses to prioritize jobs, also get rid of those that are not necessary and would waste their time in addition to physical exhaustion; shift work, and low decision autonomy, nurses cite time constraints as one of the most significant sources of workplace stress (Qtait &Alarab, 2018).

In the field of nursing, the link between efficient time management and the provision of high-quality patient care, ensuring patient safety, and optimizing a nurse's job performance is consistently seen (Gutierrez & Jacobs, 2023). Enhancing productivity and efficiency is considered to be main benefits. Numerous procedures and methods that could improve time management while completing tasks or reaching goals can support this process. Some of these techniques include effective planning, setting realistic and achievable goals, delegating tasks, analyzing the amount of time spent on each task, organizing, scheduling, monitoring, and prioritizing (Qteat & Sayej, 2014).

Time management can be started by committing to make a change by managed effectively by establishing objectives and then prioritizing tasks based on how individuals or organizations wish to achieve those objectives (Jacobs, 2023). Nurses in ICUs, in particular, need to implement these skills properly as they are exposed to long lasting job stressors and the challenges of dealing with critically ill patients, heavy workloads, complications, unforeseen events, and shortage of time. Overcoming these challenges requires time management skills, timely and correct decision-making, prioritization, and familiarity with different devices (Lu DM, et al.,

2015). The process of time management identifies a person's needs based on the importance of the task and then aligns them with time and similar other resources (Xie, etal., 2023). Therefore, nurses must be innovative and implement a variety of methods for producing outcome and results within a specified time frame to manage their time effectively (Gutierrez & Jacobs, 2023). A study by Zyoud (2023) recommended that healthcare institutions should consider organizational and individual factors to improve the time management skills of their employees, which make a positive impact on the organization as a whole. Time management- interventions are proven and effective policies that should be adopted by all healthcare facilities (Vizeshfar, et al., 2022).

The long-term of job stressor and challenges necessitates time management abilities, timely and right decision-making, prioritization, and knowledge with various gadgets of time management skills to affect nursing performance and quality of care (Qteat&Sayej, 2014).

1.1.3. Quality of care in ICU

The quality of care provided in an intensive care unit relies on the expertise of the nurses working there. In a setting where clinical mistakes can have fatal consequences, they provide care for patients with complicated and numerous requirements (Rice & Nelson, 2005). In the ICU, nurses constitute the largest permanent professional group, and play a crucial role in identifying clinical care and helping patients recover (Twibell et al., 2008). It has been shown that when the number of patients per nurse is low, patient outcome of care are better (Aiken et al., 2002). The main reason for this change is to improve the standards of care for patients. The Australian College of Critical Care Nurses, mention that there should be one nurse for every patient (ACCN, 2022). However, the healthcare system must be able to hire the right number of

trained nurses to reach this percentage. Not all healthcare systems have enough nurses to meet these kinds of suggestions about hiring.

Nursing quality of care recognized as nurse-sensitive outcomes are patient outcomes that are potentially affected by nurses' interventions, and they include patients' experience, behavior, or clinical status, which are determined in whole, or at least partly, by the quantity and quality of nursing care delivered (Doran & Pringle, 2011).The quality of care provided by nurses is influenced by the personal factors of nurses (age, education, skills, and critical thinking) (Evans et al., 2017).Failing to consider time management skills seriously and to put them into practice effectively is one of the challenges associated with applying them into practice. According to Butler et, al.(2018), 31% of nurses spend their time on direct patient care, 45% on indirect patient care, and the remaining 24% is spent on outpatient and personal activities. Butler et, al. (2018) suggested that the amount of time nurses waste on personal and non-clinical tasks is a significant contributor to the inefficiency of their overall performance. Nurse's lack of knowledge on proper time management requires education and Tajiki et, al. (2022) study reported that nurses, who received time management, were better in adapting to the demands of their workday in the ICU. Tajiki et, al. (2022) added that time management skills training may enhance service quality and that the ability to manage time is a significant aspect in novice nurses' success.

For that and from previous literature, learning time management skills need training and education. Despite the importance of nurses’ understanding of time management and the need for proper training in these skills, there is a lack of studies on the effectiveness of time management training program. As a result, the purpose of this study was to investigate the effect of education/

on time management on the quality of ICU patients' nursing care in ICUs in Ministry of Health (MOH) hospitals in the West Bank.

1.2. Problem Statement

The success of an organization including hospitals is likely tied to the degree to which its staff members can make efficient use of the time they have available for their many different pursuits. Achieving greater productivity, improved output, and fewer missed deadlines are all the results of well-executed time management. Good time management also leads to increased self-control, a more positive self-image, and less stress. Effective time management is crucial to nurse's performance and career advancement at all stages of the nursing continuum (Aggar et, al., 2017; Maryniak, 2019). As stated by Aeon et al. (2021), without a doubt, many of us struggle with time management and need extra help, a system, and regular practice in order to reach our full potential and accomplish our goals.

In intensive care units, nurses rely heavily on effective job prioritization. There are appointments for medications, laboratory work and other tests, treatments, bedside care, family updates, physician rounds, and more. This list goes on and on and that is why time management is essential component of nurse's work load. Van Dam et al. (2013) reported that nurses may suffer from burnout, various physical and emotional injuries, and stress due to these persistent problems. Therefore, ICU nurses, in particular, need to use these abilities effectively due to the unique stresses of their jobs, including those posed by dealing with seriously ill patients, large caseloads, unexpected problems, and a lack of time. Further, Lu et al. (2015) commented that time management, effective decision-making, prioritization, and familiarity with various gadgets are necessary for nurse to meet their job requirements and succeed in facing obstacles. Rosario (2012) added that nurses make multitask and sound judgments regarding their patients' health

and well-being. When nurses learn to manage their time better, they can care for more patients in less time, benefiting everyone. In general, few studies have examined how time management education affects nurses in ICUs, particularly in Palestine. This research study aims to evaluate the effectiveness of time management education training program for ICU nurses working in Palestinian governmental hospitals.

ICU nurse's knowledge of which tasks are most important during work shifts can reduce their stress and make it easier to unwind and mingle with coworkers without feeling overwhelmed. Time management can help nurses balance their career requirements and personal life demands, and allow them to be more productive in both areas (Qtait, 2024). Filomeno et al. (2023) suggested that nurses need to develop their time management skills as an essential component to operate efficiently and effectively and to fulfill their job requirements safely during their daily work.

Time management can be impacted by two major factors: 1) personal aspects including nurses' internal motivation and concentration; and 2) environmental aspects including issues like high workload, bad planning, and poorly organized approach (Nayak, 2019). The consequences of poor time management could be devastating for nurses, their patients, coworkers, families, and the entire business. As a result of these factors; employee weariness, stress, bad attitude, sloppy work, and diseases are all potential outcomes of inadequate time management skills as well (Goldsby et al., 2020).

The quality of care received is the ultimate goal of every health system's organizational action. Quality of care can be defined: "The degree to which health services for individuals and populations increase the likelihood of desired health outcomes and are consistent with current professional knowledge" (Blumenthal, 1996, p. 892). The quality of care can be derived from

practice standards, guidelines, and protocols (De Neef et al., 2009; TeBeest et al., 2013). The quality of health care measurement suggests observation of three parts that include structure, process, and clinical outcomes (La Sala, et al., 2017). Some experts believe that in a patient-centered approach, the evaluation of patient outcomes might be a more effective approach than other methods (Lee, 2007). Quality indicators that show nursing quality of care reflecting patient outcomes in the ICU may allow for the measurement and comparison of the effectiveness, performance, and quality of nursing care (Al-Dorzi, et al.,2023).

This study's overarching goal is to assess and explore ICU nurse's knowledge about time management skills, to gain insight into and explain how nurses handle their time, and to identify individual and institutional barriers, and to introduce time management skills programs to affect their quality of care. The information obtained will be utilized to develop the intended programs and other interventions strategies to help nurses improve their time management skills and enhance their ability to meet the challenges they face during their work in ICU leading to a better quality of care for their patients in ICUs.

One of the most important ways to judge how well hospital staff manage their time is by looking at the quality of health care services they provide to patients and the outcomes of these services (Xieetal., 2022). When nurses are always too busy and overloaded, they will not have enough time to provide adequate and safe care in their work settings particularly ICU, which need nurses to be highly efficient to meet the minimum health care requirements within these settings. To be highly efficient, nurses need to have time management education aiming at reducing their loads and improving their skills in managing their patients in ICUs (Tajiki et al., 2022).

Therefore, this study aims to investigate the effectiveness of a time management- program for nurses working in intensive care ICU on the quality of patients' nursing care in government hospitals in the West Bank.

1.4 Significance of the Study

1. Lack of systematic and comprehensive time management education has been noted in several studies and in Palestine particularly descriptive studies and recommendations for systematic education programs (Qteat and Sayej, 2014; Qtait, 2019; Zyoud. 2023). Moreover, there is a general dearth of research in this field in the Arabic region and even more scarcity of research in Palestine.
2. Nurses play a critical role in providing comprehensive care to patients and their families and the healthcare system cannot work without nurses (Blevins & Millen, 2016). The nurses' role being neither the primary caretakers of ICU patients nor the sporadic few time management education programs has not been evaluated where this study intends to do.
3. This study provides decision-makers in Palestine with empirical information about nurses' time management and quality of care. This new information is expected to facilitate the development of new training plans, protocols, and tools for use to manage time among ICU nurses while caring for their patients.
4. Five dimensions that facilitate time management; time, planning, time priority, goal setting, time commitment, and time waster (Qtait and Sayej, 2023). This study seeks to identify the reality of these five dimensions for nurses in ICU and the resulting quality of the nursing care they are offering.

5. The study is the first of its kind to examine time management training program in nursing and its effectiveness on the quality of nursing care they offer for ICU patients in MOH West Bank hospitals.
6. The results of this study will benefit in many areas including policymakers, nursing education, nursing practice, and future research in this area. Nurses closely with other healthcare professionals can contribute positively to the care of critically ill patients in all aspects of patient care.

1.5. Purpose of the Study

The purpose of this study was to investigate the effectiveness of a time management-training program for nurses working in the ICU on the quality of patients' care in government hospitals in the West Bank.

Time management training programs are critical components for nurses to provide timely and successful patient care in ICUs. Time management strategies can be learned, and nurses who are aware of them may suffer less stress while executing their duties on time**.**

1.6. Goal and objectives of the study

The study aimed to determine the effectiveness of time management education program for Intensive Care Unit -ICU nurses and its implication on the quality of nursing care provided for patients in the Palestinian governmental hospitals. To achieve this goal, the following measurable objectives are set:

1. To assess the level of time management and nursing quality of care among ICU nurses before the intervention as baseline information**.**

2. To compare the time management and nursing quality of care three months after the intervention within and among ICU nurses for the intervention and the control groups.
3. To assess the time management and nursing quality of care within and among ICU nurses based on demographic variables before the intervention.
4. To compare the time management and nursing quality of care three months after the intervention within and among ICU nurses based on demographic variables for the intervention and the control groups.

1.7 Research Questions

1. What is the level of time management and nursing quality of care in the intervention and the control groups?
2. Is there a difference between the intervention of time management and the level of quality of care among the experimental group and the control group?
3. Is there a difference in the quality of care three months' post-intervention within, between, and between the study groups based on demographic variables at pre-intervention?
4. Are there significant differences between the posttest levels of post-time management with the selected demographic in the experimental group and the control group?
5. Are there significant differences between the quality of nursing care mean scores and the demographic characteristics of the participants at the pre-test?

1.8 Study Hypotheses

1.HO1: There is no significant difference for the training program on time management in nursing quality of care in ICU between the intervention and the control groups.

2.HO2: There is no significant difference for the training program on time management in nursing quality of care in ICU between the intervention and the control groups, based on demographic variables.

3.HO3: There is no significant difference for the time management and nursing quality of care in ICU between the interventions with three months later, between the intervention and the control groups as result of training intervention program.

1.9. Theoretical framework

A theoretical framework is a foundational review of current theories that acts as a roadmap for creating the arguments used in your own work. A theoretical framework is an essential component of any research thesis, offering a lens through which the study problem can be analyzed, and comprehended. It illustrates the concepts, theories, and existing research that support the study, bridging the gap between the research topic and the methodology. This section presents the description of the time management variables; time management dimension and nursing quality of care

1.9.1. Time Management

Everybody has the same number of hours in a day in real life, yet although everyone has the same number of hours, everyone perceives time differently. According to Mackenzie et al. (1991), the phrase "time management" refers not just to managing one's time but also to manage one's own time. This definition is useful for defining everyone's sense of time and for figuring out the best way to manage that sense of time. Time management is a way for managers to make their work more efficient and effective. It may not be as easy as people think and expect it to be (Mercanlioglu, 2010). During the ages, numerous perspectives have been held on the idea of

time. The concept of time is intrinsic to one's personality and culture, and its significance varies depending on context, culture, and individual (Gupta, 2001, p 80).

Previous related studies' definitions of time management differed. Many researchers defined time management as time management techniques (Jex&Elacqua, 1999; Macan, 1994; Macan et al., 1990). Some researchers defined "techniques" as the efficient use of time to accomplish goals in a given amount of time (Orpen, 1994; Slaven&Totterdell, 1993; Woolfolk & Woolfolk, 1986). Two major time management behaviors are planning and allocating time (Burt & Kemp, 1994; Smythe & Robertson, 1999). According to Lakein (1973), time management is the process of specifying demands and goals, prioritizing activities, and developing plans. Some researchers approached time management through a recognition lens. Time management is defined as "behaviors that aim at achieving an effective use of time while performing goal-directed activities" (Bachrach & Rapp, 2022, p 60).

Time management is defined as a process that aids in the organization of events or tasks by determining the amount of time required to complete the tasks, the deadline for completing these tasks, and then adjusting the interfering events so that the tasks can be completed on time (Maganga, 2014). Time management does not imply that numerous things must be completed in a single day, but rather the completion of the most important ones. This technique assists the individual in determining the most important chores to complete at home, at work, or in one's personal life. As a result, the individual has complete authority over his or her own life.

1.9.2. Dimensions of time management

According to the theory of time management behavior scale (TMBS) (Macan, 1990), there are many dimensions to time management behaviors and time management mechanics; Planning, Prioritizing, Goal setting, Time commitment, and Time wasting. The time management mechanics dimension includes traditional time management skills like taking notes and scheduling. The component of goal planning and prioritization comprises identifying the relative priority of tasks required to attain the objectives. The preference for organization dimension is related to organizational practices and the work environment. Perceived temporal control is the most predictive component of skills.

1.9.2.1.Time planning

Time planning; setting priorities and learn to differentiate between important and urgent activities, dealing with time wasters (El Shahat, &Gadery, 2019). One of the most crucial components of effective time management is time planning. Determining actual goals and priorities is the key to effective time management planning (Diniz et al., 2021). Time management and time planning tactics are crucial for everyone who wishes to be efficient in all aspects of life. Due to this, the nurse must determine objectives and methods, as well as short-, medium-, and long-term time planning. According to the research, students study by planning their studies, but they are unable to carry out these plans and are concerned about what to do when this occurs (Filomeno et al., 2023).

The key concern is time management, and it covers numerous aspects that could aid in arranging time to complete work within a short duration (daily or weekly intervals) or longer duration. Olalekan, et al (2023) and Arian et al.(2023) stated that effective time planning and high motivation were related to job performance, planning can help nurses manage their time

more effectively and provide quality care. This may also make it simpler to unwind and socialize at work without experiencing worry and weariness, achieving a better balance between professional and personal life, and working more effectively and efficiently.

It is also possible through improved time management. By acquiring time management skills, nurses must work wiser, rather than harder, good time management skills are crucial for surviving nursing's hectic daily shifts (Ferreira, 2023).

1.9.2.2.Time Priority

Priority management is organizing your time according to the tasks you have and working out which are the most important to the least important (Stanoeva, 2023*).* The importance of studying time management and managers' critical role in organizational success, as well as the fact that time management is one of the most important markers of effectiveness and success, it is critical to explore factors influencing it (Claessens et al., 2007). According to the results of their study, task and activity prioritization, delegation, appropriate meeting management, and preparation for work-related and personal matters are positive influences on time management. According to Araghieh et al. (2020) time management is the prioritization of objectives and the use of existing resources to achieve short- and long-term goals. The goal of time management is to minimize wasting time, organize work hours, identify needs and requests, prioritize them, and assign the time and resources required for each.

Prioritizing focuses on urgent and important duties as opposed to those that are not important or do not advance the goals. It is crucial to create a "to-do" list when prioritizing. The inventory is a tool for planning. While chief nurses may utilize a weekly or monthly list, a list can aid in daily operations coordination. Periodic checks to determine what was not completed.

The list should allot sufficient time for each task and permit chief nurses to say "no" to activities that do not align with their priorities and avoid wasting time (Habib et al., 2018).

According to Macan (1994) effective time management requires setting goals and priorities. The first includes actions such as prioritizing tasks to achieve one's objectives and setting objectives to accomplish them. The objective should be SMART, which stands for specific, measurable, attainable, realistic, and time-bound because it is the desired outcome. As a result, you will be able to determine whether or not you are heading in the correct direction. People who set goals and plan actions to accomplish them are goal achievers because they develop the crucial habit of staying focused and achieving their significant objectives (Rich, 2012).

1.9.2.3. Goal setting

Goal setting is the process of identifying specific goals and determining how to achieve them (Rakhshan et al., 2019). Goal setting is the first step in effective time management, and it represents the future quality and technique of time spent by employees. More investment in this area, as well as managers defining clear and quantifiable goals, can save time in the long run. Setting and prioritizing clear goals and objectives, as well as precisely determining and clarifying tasks, are all recommended for effective and proper time management (Filomeno et al., 2023). In this context, increasing hospital administrators' understanding of time management and the need of precise goal setting by providing time management courses and forcing them to prepare a time management plan will help them manage their time more effectively.

Determining how we will utilize our time is crucial for increasing our productivity and organization, goal setting, defining priorities, planning and organizing skills, and minimizing time wastage (Gordon & Borkan, 2014) are skills that can be developed. In the late 1950s,

Macan (2007) introduced time management; method requires the ability to meet short-term goals, the ability to implement and achieve these goals rapidly, the ability to prioritize and plan the work, and the ability to prevent work delays (Ayun, 2017).

1.9.2.4. According to (Qtait, 2017), one of the factors that lead to a constraint for doing the job on time during working hours is employees' irresponsibility. Employees' follow-up matters and personal transactions, the use of the telephone and the Internet for personal matters without control, and conversations with colleagues about matters unrelated to work are among these constraints (Filomeno et al., 2023).

1.9.2.5.Time commitment

According to Wilson, et al., (2021), time planning, time attitudes, time follow-up, time commitment, and time impediments have an impact on time management practices. Dimensions include time management (Analyzing time, follow-up time, planning time, and time commitment) (Qteat&Sayej, 2014).

When you arrive at work on time, you have a head start on the day, which can help you focus and be more done. As a result, you may be able to get more done at work than you would have if you had been late, which is good for both your career and your company (Soatova, 2023).

1.9.2.6.Time waster

Time wasters are activities that consume the productive time of health professionals at work. God apportioned time equally to all humans, but how each individual spends his or her time varies (Mgeleka, 2015). There are some pursuits in life that provide little reward for the amount of time spent. Although most people blame others for bad time management and attribute it to external circumstances, they are also responsible for time loss. A study into the reasons of nurses' time waste discovered that the positional characteristics of a related ward

influenced the nurses' movements between wards, as well as the frequency with which the nurses entered the patients' rooms or the nurses' station (Bagher, etal., 2019).

A study into the reasons of nurses' time waste discovered that the positional characteristics of a related ward influenced the nurses' movements between wards, as well as the frequency with which the nurses entered the patients' rooms or the nurses' station (Hendrickson & Kovner, 1990).

There is a major gap in the study on time management: no one has said for sure if it works (Green & Skinner, 2005). For example, research on the link between managing your time and doing a good job at work has come to different conclusions (Macan, 2000). Also, researchers have only tried to combine qualitative literature so far, which means they haven't been able to do a quantitative general assessment (Claessens, 2007). We did a meta-analysis to fill in this knowledge gap about how to handle our time. Before we answer the question of whether time management works, let us be clear about what makes it work. Like other reviews, we see that almost all studies are focused on two main outcomes: performance and satisfaction (Wegman et al.,2018).

Overall, it seems that better time management leads to higher productivity and happier employees. Personality traits, especially conscientiousness, were found to be much more connected to time management abilities than demographic variables (such as gender, age, and job autonomy or workload). In addition, the correlation between time management and productivity at work appears to be strengthening with time (Burkeman, 2016), which may be a result of the increased autonomy and flexibility of modern workplaces.

Overall, our results help scholars, and the public evaluate the worth of time management. In light of recent concerns regarding the efficacy of time management, this insight is especially pertinent now (Gregg, 2015).

Therefore, numerous authors have provided a variety of human activities that squander time, as shown below.

Lack of skills or incompetence Some job duties in an organization necessitate administrative skills and a thorough understanding of organizational procedures, while others necessitate social skills and an awareness of others' needs, and others necessitate technical and specialized knowledge as well as the ability to apply it, (Christison &Stoller, 2023). People should have faith in organizations because they are interdependent systems with many different entities that must work together. Furthermore, some people lack the necessary skills to complete a task, preventing them from completing it on time.

Procrastination It refers to a proclivity or habit of postponing things. People put off tasks in their daily lives due to subconscious fear and laziness, which could be failure fear, fear of the unknown, or labor with non-essential jobs (Mgeleka, 2015).

Two attitudes might assist managers in preventing time wasters and procrastination:

1) Common time wasters include the telephone, unexpected visits, unsuitable delegation, personal disorganization, misunderstanding, and poor self-discipline.

2) One person spends too much time on the phone, whereas another only manages crises. After completing the previously indicated personal analysis, he or she should consider how he or she should consider how he or she spends, his or her time and which of those behaviors are time wasting. Once chosen, he or she devises strategies to minimize or minimize the time spent on such jobs.

Five dimensions or themes formed, namely “plan", "priority", goal setting", "time commitment", "time waster" as indicated in figure 1.

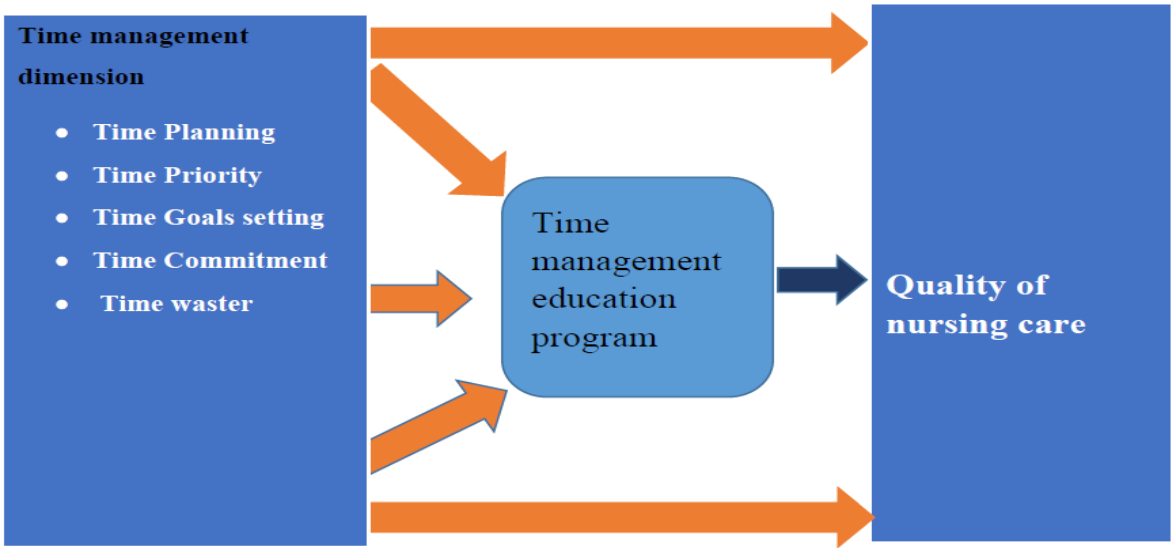

Figure 1: Dimensions or Themes of time management

1.9.3. Time Management for Nurses

Time Management relies heavily on a person's willingness to adapt. Successful time management is vital for medical team members, including nurses who play a crucial role in patient care (Blevins & Millen, 2016). Due to the ever-increasing demand for nurses, it is essential to find more efficient ways to boost the quality of care (Said, 2014). Good time management is a crucial skill for workers in the healthcare system (Ancel& Yilmaz, 2016). Time management skills and the ability to effectively deal with threats are becoming increasingly important as the pace of work increases.

In the healthcare system, nurses are vital resources (Blevins & Millen, 2016). The persistent and worsening nursing shortage necessitates full-time using intelligence rather than force to enhance medical care (Said, 2014). Staff members at a healthcare facility require a fundamental competency in how to manage time (Ancel& Yilmaz, 2016). Rising urgency necessitates the use of productive time employment contentment in the fields of management and threat analysis. A recent study confirmed this (Gordon &Borkan, 2014).

Skills in multitasking, prioritization and pressure management are necessary for nursing (Ancel& Yilmaz, 2016). Nurse's tasks for a particular shift must be completed meeting the needs of patients, coworkers, and superiors. It is the nurses' responsibility to best accommodate any unforeseen circumstances that may emerge throughout a shift, categorizing them as urgent, important or not urgent (Cleary &Horsfall, 2011).

Delays in patient care and safety have been linked to poor time management. If nurses are pressed for time, they may need help thinking clearly, arranging their tasks efficiently, and avoiding mistakes. As a result, it is crucial to organize the day's patient care in advance, set priorities, and delegate responsibilities (Blevins & Millen, 2016). Nurses need practical time management skills and a variety of time management tactics for professional nursing practice and peak performance on the job (Qteat&Sayej, 2014).

Effective time management entails differentiating between important and urgent tasks. Multiple researches concurs that the most important jobs are typically not the most urgent. However, we have a tendency to let urgent responsibilities control our lives. Activities can be classified as either urgent, not urgent, important, or not important (Filomenoetal., 2023).

Time management, figuring out what is most important, and planning might be some of the hardest skills to learn. There are always things that need your time and attention, and when

there is so much to do, it can be hard to decide what to do first. Priorities can change quickly in patient care, so you have to be ready to constantly reevaluate situations and act accordingly.

1.9.4. Time Management and Training

Time-management education encompasses a wide range of tactics and courses that individuals can utilize to improve their time-management abilities or assist their staff in increasing their efficiency and production. Time-management training is crucial because it may assist people in a range of organizations develop their abilities and enhancing their job efficiency. It can help employees be more productive in their professions by helping them to do more things in less time and take on extra job duties, which may qualify them for other roles or promotions (Green & Skinner, 2005).

Training in time management skills may help to improve the quality of care for patients (Ravarietal., 2020). Nursing professionals should have access to time management training as part of their continuing education programs because efficient time management will increase nursing team members' motivation and satisfaction, which will improve the standard of care they deliver (To fighietal., 2022).

1.9.5. Quality of health care

The concept of quality: Quality is an elusive and abstract term that is commonly used in manufacturing industries and has crept into the vocabulary of health care services. Quality was defined by Feigenbaum (1991) as "the total composite product or service characteristics of marking, engineering, manufacturing, and maintenance through which the product and service in use will meet the customer's expectation" (Feigenbaum, 1991, p. 7).

Medical experts have long disagreed on how to define and assess quality in health care, especially in the nursing profession. Some academics contend that characterizing quality reduces its importance and that doing so would amount to a value judgment.

However, in order to attain excellent patient outcomes, there must be shared meaning within the organization; therefore, quality in a professional sense reflects a value judgment (Mandal, 2007).

Quality and safety are important parts of healthcare systems all over the world. In different parts of health system management, reports about the level of care and the safety of patients are made public. For example, the U.S. Institute of Medicine (IOM) released two important studies in 1999 and 2001 that pointed out problems with the level of care and patient safety. The Institute of Medicine defined quality care as "the degree to which health services for individuals and populations increase the likelihood of desired health outcomes while remaining consistent with current professional knowledge".

Busse, et al., (2019) proposed a three-part approach to measuring healthcare quality structure, process, and clinical results. In a patient-centered approach, evaluating outcomes may be more beneficial than other strategies (Lee, 2007).

Health professionals have long disagreed on how to define and quantify quality in health care, particularly nursing, and how to assess it. Some authors argue that defining quality narrows its scope and that any definition would be a value judgment. However, in order to get high-quality results for patients, there must be agreement on what quality means across the entire business (Goldstone & Ball, 1984; Mandal, 2007; Peters, 1991). Quality measurement is used to quantify both negative and good healthcare outcomes (Mainz, 2003).

Deviation from policies and procedures, lack of drug labeling, incorrect medication, unsuitable dosage, incorrect mode of administration, and errors of omission are also prevalent errors connected with poor nursing care (Riaz, et al., 2017). The study by (Khan, & Muhammad, 2022) discovered that several factors connected to nurses, patients, patients' relatives, management of time, working environment, and ICU settings and supplies influenced the quality of nursing care in critical care units.

1.9.6. Intensive Care Unit

Intensive care unit (ICU) is a clearly defined area within the hospital, in which experts' medical, nursing, and technical staff are provided with equipment for monitoring and immediate life-saving interventions, these grew in parallel with advances in invasive surgical and medical procedures (Christensen, et al., 2023). Accordingly, the majority of patients hospitalized to the aforementioned region have health issues that pose a serious risk to their lives. They most likely exhibit symptoms of imminent death that they either independently observe or learn from the experiences of others. Thus, the standard of care given to patients in the critical care unit is more crucial than any other (2010, Hopkinson).

Nurses at all levels are playing an active role in evaluating the quality of health care; nurses are the only consistent professionals to be in constant 24-hour surveillance of patients in hospitals. Ensuring adequate nurse numbers, improving access to education and competence is necessary to deliver quality of patients’ care and safety their involvement leads to opportunities to work with colleagues in other professions, both to better articulate their respective contributions and to improve patient outcomes (John & George 2012).

1.8 Conceptual and Operational Definitions

Time management: is defined as "a form of decision-making used by individuals to structure, protect, and adapt their time to changing conditions" (Aeon et al., 2021, p. 2). In the study time management five dimensions that facilitate time management; time, planning, time priority, goal setting, time commitment, and time waster (Qtait and Sayej, 2024).

Quality of care: “The degree to which health services for individuals and populations increase the likelihood of desired health outcomes and are consistent with current professional knowledge” (WHO. 2023).

Training program: In this study, the intervention was employed by the researcher to increase nursing knowledge on time management through education. The training program goal was to raise nurses' knowledge, and this improved the intervention groups' knowledge levels. A structured program on time management and its effective use in nursing performance and quality of care in the ICU was administered to the intervention group. Nurses in the intensive care unit are essential to the ward. The length of time nurses spend caring for critically ill patients at the patient's bedside and the various hands-on treatments they undertake for patients who are so sick that, in certain circumstances, they are on ventilators are related to this function.

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Summary

This chapter on literature review discussed the study's conceptual and theoretical dimensions. It also aims to provide a theoretical approach to time management that other researchers have

proposed. More importantly, it demonstrates the importance of time management in improving healthcare quality. The evaluation provides strong support for the study's objectives, as detailed. As a consequence of this section, a preliminary study suggests that there is a research gap on time management that needs to be addressed, as there have been few studies on time management and quality of care in ICU.

Chapter Two

Literature Review

2.1 Introduction

The main objective of this literature evaluation is to ascertain the existing body of research in order to identify any knowledge gaps and contradictions within the literature. By engaging in this process, the formulation of arguments aimed at substantiating the imperative nature of the time management education program and establishing the significance of the subject matter. This literature review focuses on time management and how it affects nursing professionals' performance. Nonetheless, a large percentage of the research focused on nurses' time management and the effectiveness of instructional programs. The primary goal of the literature review was to establish the link between this thesis and previous studies.

The researcher conducted an internet search primarily targeting electronic databases such as the Cumulative Index to Nursing and Allied Health Literature (CINAHL), PsycINFO, SCOPUS, Google Scholar, and MEDLINE. The scope of the search conducted was restricted to English language literature due to difficult to translate other language, and most of nursing publication in English.

2.2 Systematic Review of Time Management and Quality of Care

This section contains the findings of the evidence on time management and quality of care. This section begins with the purpose of the review and justification for using systematic review methods, followed by a description of the search strategy. Following that is a rationale of the judgments made in selecting the research reports for assessment, as well as information about the

methodology used to assess the quality of included studies. Based on the papers examined, the section finishes with a summary of current literature gaps.

2.2.1. The Purpose of the Systematic Review

The systematic literature review is conducted to identify, evaluate, and summarize the findings of all related individual studies in a specific area in order to synthesize and present the findings in a comprehensible format (University of York & Centre for Reviews Dissemination [CRD], 2009; Tacconelli, 2010). A systematic review begins with a query and eligibility criteria, from which similar studies are found. Before synthesizing the review results, the rigor and degree of evidence of each study are carefully evaluated (Higgins & Green, 2008). To do this, researchers must follow rigorous, scientific, chronological stages to strengthen the rigor of the review, which must be reported in the review to reduce bias (Abalos et al., 2001).

The highest quality evidence can be identified by systematic review to guide optimal practice, answering clinical questions from health team members, researchers, policymakers, and decision-makers (Elamin et al., 2009; University of York & Centre for Reviews and Dissemination, 2009).

2.2.2. Search Strategy

To address the review question and find high-quality evidence, researchers must adhere to a precise, methodical search strategy (Khan, Kunz, Kleijnen, & Antes, 2011). Establishing specific questions and a thorough search strategy in advance of conducting a systematic review is crucial (University of York & Centre for Reviews and Dissemination, 2009). The Population, Intervention, Comparison, and Outcomes (PICO) model was deemed suitable (Dickson, 2017), and the following was included in this review: P, nursing working in a hospital; I, nursing time management and effect on quality; C, comparing the use of time management globally; O,

advantages and disadvantages of using time management. As a result of including these terms, the review question led to the following: What is time management in the field of nursing?

2.2.3. Method

This quantitative systematic review was designed and conducted in accordance with the Cochrane Collaboration protocols (Higgins & Green, 2011). The PRISMA (Preferred Items for Reporting Systematic Reviews and Meta-analyses) tool was used as part of the methodology in this systematic review to assess the quality of the included papers (Shamseer et al., 2015). Figure 1 shows a comprehensive overview of the search strategy as well as descriptions of the studies that were included and excluded.

2.2.4. Data Sources and Search Strategy

This systematic review of quantitative studies considered an English-language original study published between 2014 and August 2023. The following databases were used in the analysis PUBMED, Scopus, and Google Scholar, were used to search electronic databases for the following terms: quality of care, nurse performance, nurse competency; work performance, and Employee Performance. Time management and time efficiency, the titles and abstracts of the relevant articles were carefully read; (831) results were obtained from all databases (SCOPUS = 105, PubMed = 96, Google Scholar = 630), see Figure 1.

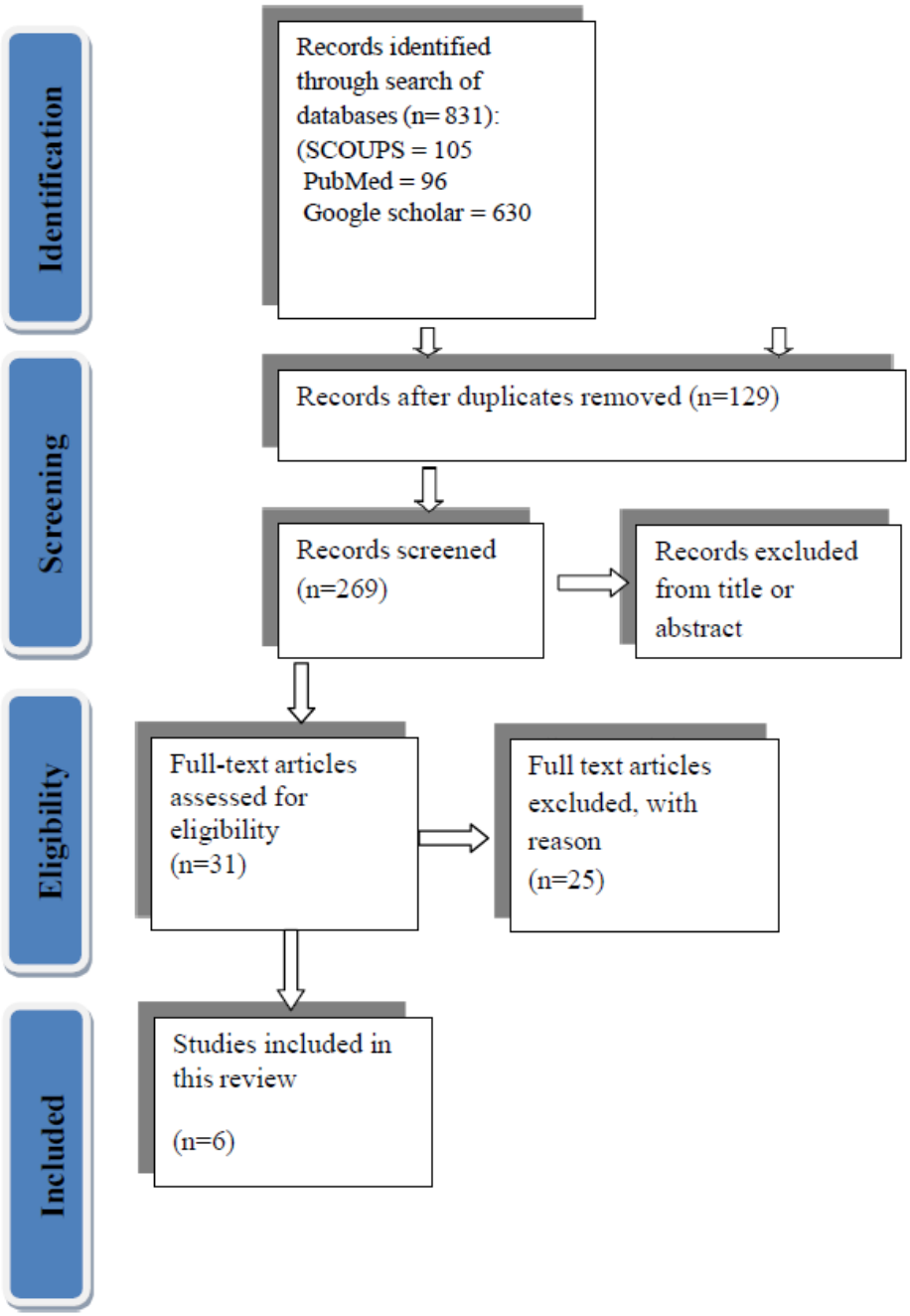

Figure 2: Flow chart of study selection process PRISMA

2.2.5. Inclusion Criteria for Systemic Review

The terms "Nurse", “Time management", "quality of care" and "performance", served as the inclusion criteria for the systematic review. The studies were written in English and covered quantitative, qualitative, and mixed-methods research. They were published between 2014 and 2023, with the final search date being October 30, 2023. Take this time long due to little paper publish in time management, and quality of care.

2.2.6 Exclusion Criteria for Systemic Review

There was no response to the search inquiry, use of personnel who are not nurses; samples not nurses and the content are unrelated to the topic. In addition, articles not English due to difficult to translation, and not appear in database that use in searching. Excluding non-English paper in systematic reviews on clinical interventions had a less effect on overall conclusions and could be a viable methodological shortcut especially for rapid reviews (Bahji, et al., 2023).

2.2.7 Quality assessment for systemic review

The Mixed Method Assessment Tool (MMAT) (appendix 9) was used to evaluate these six publications (Hong et al., 2018). Previously, researchers used the MMAT to assess the reliability of data collected using qualitative, quantitative, and mixed methods (Topping, A. (2015) They were assigned quality ratings ranging from 100%, which meant all standards were met, to 0%, which meant no criteria were met.

The researcher who examined the MMAT scores impartially assessed each paper. The quality scores were applied to determine how each study might contribute to the overall picture, not to exclude any particular study. Additionally, quantitative studies were assessed in compliance with National Health and Medical Research Council (NH&MRC, 2007).

Table 1: Result of Data Reviewed

Topic, year and author	Study designs and sample	Goal	Strategists	Level
Barua et al., (2019). Time management of the clinical nurses at Public Hospital in Bangladesh.	77 participants were included in a descriptive correlational study design using simple random sampling.	This study aims to explore how clinical nurses evaluate their ability to manage their time.	It claims that attaining organizational objectives and delivering high-quality care can be impacted by effective time management.	3
Qteat & Sayej (2014). Factors affecting time management and nurses' performance in Hebron hospitals.	181 nurses were chosen using a stratified random selection technique and a quantitative descriptive methodology.	This study set out to investigate the variables that affect nurses' performance in Hebron hospitals and time management, including administrative and personal obstacles.	The impact of efficient time management techniques on nursing performance is examined in this study. And Hebron hospitals rank high for time management, low for personal obstacles, and high for administrative obstacles.	3

Soliman et al. (2018) Impact of an Training Intervention program about Time Management for nurses in Dialysis Unit.	A convenience sample of 60 hemodialysis patient patients was selected from 60).	This study set out to determine how nurses in a dialysis unit reacted to a training intervention program on time management.	Following the intervention, nurses' performance increased, as did their opinions of the importance of time management in increasing performance and control over time wasters.	3
Ike &Oluwatosin (2022). Effect of an Training Intervention on Nurses' Competency in the Neonatal Unit of a Teaching Hospital in Nigeria:	Pre- and post-intervention, a single (1) group quasi-experimental design was used. All 40 registered nurses who work in the neonatal unit were selected at random as a sample.	This study aims to investigate the effects of an educational intervention on nurses' knowledge, attitude, and newborn care practices at an Ogun State teaching hospital.	The establishment of an educational program for newborn unit nurses increased their neonatal care competency. It is advised that nurses attend CE and training programs on a regular basis in order to maintain their competency.	2

Mohamed et al. (2019). Effect of Time Management Training Program on Nursing Performance.	Quasi-experimental design the study sample; (n = 27	To see how a time management training program influences nurse performance.	The research hypotheses were approved in light of the investigation's findings. All hospital professionals, particularly nurses who endure more issues, should receive time management training.	2

2.2.8 Analysis of the Quality of Research

When possible, best practices should be supported by high-quality research evidence (Facchiano& Hoffman Snyder, 2012). A thorough evaluation of study reports reveals the strengths and weaknesses of studies, which reflect on the quality of evidence provided (Facchiano& Hoffman Snyder, 2012). Such evaluation is critical in transferring research into practice (Hill and Spittle House, 2001). Critical appraisal is the systematic evaluation of research findings to determine their validity, rigor, and relevance to clinical practice (Hill &Spittle House, 2001). Understanding degrees of evidence is one aspect of this approach. Table 8 depicts the evidence hierarchy of Australia's National Health and Medical Research Council (NHMRC) (Coleman et al., 2005).NHMRC evidence Hierarchy: designations of levels of evidence according to type of research design (Coleman et al., 2005, p.15).

2.2.9 Result of search review

There were 831 items returned from electronic databases. Following a thorough assessment, six studies were included, both descriptive and experimental.

2.2.9.1 Characteristics of included studies

Table 1 summarizes the six main studies considered for this study. These studies covered between the year's 2014–2023, from a variety of counterfactual perspectives, time management and its effect on quality of care or performance of nursing care. In the six studies reviewed, the socio demographic characteristic of nurses indicated that the majority were female with a bachelor's degree in nursing, and above the age of 30 and with more than seven years of nursing experience.

For the use of the questionnaires in these studies was revised as well;Barua, et al., (2019) used the Nurses' Perceived Time Management Skills Questionnaire (NPTPMQ). Qteat and Sayej, (2014) used questionnaires developed by researchers, Soliman, et al., (2019) used questionnaires developed by the researchers, Urenna, et al.,(2022)use a semi-structured questionnaire and nurses' clinical performance observational checklist Nayak. (2018). Time management behavior scale: It was a structured questionnaire format developed by (Sergio, 2012).

2.2.11.1 MAKE SURE THESE NUMBERS ARE CHANGED ON THE TABLE OF CONTENTS

2.2.9.2 Importance of time management

Individuals need to efficiently manage and control their personal and professional time.

This necessitates skills in goal formulation, prioritization, planning and organization, and time management (Gordon &Borkan, 2014). Making decisions about how to spend one's time is

crucial to becoming more organized and productive. Time can be wasted by not having strategic plans, not having daily plans, not prioritizing, misplacing things and looking for them again, using the phone, internet, emails, and surfing excessively, as well as by being disorganized (Spidal, 2009).

Time management necessitates a strong willingness to change. Effective time management is critical for focusing on outcomes and improving overall performance. More productivity, less stress, more efficiency, a higher likelihood of reaching life and career goals, and more prospects for job progression are all outcomes of effective time management.

Ineffective time management, on the other hand, can have a negative impact on one's career path, resulting in missed deadlines, low-quality work, and excessive stress (Meiring, 2017). Individuals who plan their work schedules, set-aside time for leisure, and prioritize achieving their goals will always feel less stressed and under pressure, which promotes personal growth (Said, 2014).

To manage time efficiently, nursing staff members must be properly oriented to the unit's personnel and operations, as well as aware of the nursing activities for the shift. Effective time management necessitates confidence, skill competence, and clarity of understanding (Cleary &Horsfall, 2011). Some effective time management strategies include arriving early to plan the work, making a list of tasks that need to be completed, prioritizing these tasks, estimating the amount of time needed for each task, spending the time mindfully, carefully allocating the time for unscheduled activities, learning to say "no," organizing the home, and delegating tasks to others (Said, 2014).

According to Qteat &Sayej (2014), the time management impact of efficiency on nursing performance is investigated in this study, additionally, Hebron hospitals rank highly for time management, low for personal barriers, and high for administrative barriers. The impact of time management and its obstacles on nursing performance is evident in Hebron hospitals. There seems to be no correlation between time management and demographic factors (e.g., gender, age, experience, education, and type of hospital).

The scores of time wasters and time management showed a strong negative correlation. The pre, post-test, and follow-up intervention-related goal-setting, interruption management, procrastination time management, and time-waster domains (internal and external) showed highly significant differences among nurses. Suggestions: policies, rules, and regulations should be made clear to employees so they can save time. Records should be coordinated and organized to save time; and nursing staff at all levels should receive training programs on time management (Saleh & El shazly, 2020).

Senior nurse managers generally had positive status when it came to their time management abilities and habits. Age, monthly income, service experience, and perceived time management skills all differed significantly when the mean scores for these skills were compared. The results point to the importance of effective time management in both meeting organizational objectives and delivering high-quality care. The nurse manager or administrator has the ability to recognize the nurse's time management practices and take appropriate action to enhance them (Barua etal., 2019).

The study's findings showed that the overall mean score for nursing knowledge and skills after the program (15.05±1.70) (125±2.45) was higher than the overall mean score for nursing time management performance before the program (49.55±16.25) and after the program (14.00±.00)

(109±8.47). In conclusion, the research hypotheses were approved based on the study findings. It is recommended that time management training be made available to all hospital staff members, with a focus on nurses who are known to be more tolerant of issues (Mohamed etal., 2019).

The dimensions of time in this study according to (Mohamed etal., 2019; Barua et al., 2019, Saleh, El shazly, 2020; Qteat & Sayej, 2014), and many dimensions to time management behaviors and mechanics; **Planning, Prioritizing, Goal setting, Time commitment, Time waster**. The time management mechanics dimension encompasses conventional time management behaviors, such as note-taking and scheduling. The dimension of goal setting and prioritization entails determining the order of importance of tasks necessary to achieve the objectives. The preference for organization dimension relates to organizational approaches and the work environment. The most predictive aspect of behavior is the dimension of perceived time control.

2.2.10. Discussion

The purpose of this review was to identify and categorize the best time management tactics used by nurses to arrange their workdays more efficiently. Everyone in the place of work benefits from effective time management strategies. The results of this analysis reveal that **Planning, Prioritizing, Goal setting, Time commitment, and Time wasters** (Saleh , El shazly, 2020, Qteat, M., &Sayej, S. 2014).. Like us, Malkoc et al. (2018) found that nurse management can more effectively manage their calendar by giving priority to the most important tasks. Productivity increases when both short- and long-term goals are set. Burrus(2019) divides time management strategies into three major categories: planning, time assessment, and monitoring behaviors.

Time management includes time planning, setting priorities, and learning to distinguish between important and urgent activities, as well as dealing with time wasters (El Shahat & Gadery, 2019). Time management is one of the most important aspects of effective time management. The key to effective time management planning is determining actual goals and priorities (Diniz et al., 2021).

Goal setting is the process of identifying specific goals and determining how to achieve them (Rakhshan et al., 2019).Goal setting up is the first step in efficient time management, representing the future quality and methodology of employees' time spent.

More investment in this area, as well as managers defining clear and quantifiable goals, can save time in the long run. To achieve effective and proper time management, it is recommended to set and prioritize clear goals and objectives, as well as precisely determine and clarify tasks (Qtait, 2023).

According to Wilson, et al., (2021), time planning, time attitudes, time follow-up, time commitment, and time impediments have an impact on time management practices. According to Qteat and Sayej (2014), dimensions of time management (analyzing time, follow-up time, planning time, and time commitment), Therefore, numerous authors have provided a variety of human activities that squander time, as shown below. God apportioned time equally to all humans, but how each individual spends his or her time varies (Mgeleka, 2015; Qteat&Sayej, 2014).

The paper’s review suggests many things, as nursing staff needs to have access to time management training programs to enhance the current use policies, rules, and regulations. These should be clear so that staff members can save time and perceive time management as a means of

achieving effective organizational performance and reducing time wasters (Barua, et al., 2019). Offered time management skills training courses to nursing staff members in healthcare organizations at all levels in order to maximize the application of time management practices, attain successful organizational performance, and minimize time wastage (Saleh, El Shazly, 2020). The hospital staff as a whole should be provided with time management training, but especially the nurses who put up with more issues (Mohamed et al., 2019). Raise awareness and more studies about obstacles of time management for nursing and more studies about the relationship between work and quality of care (Qteat & Sayej, 2014).

2.2.11. Limitations of the review

This review eliminated papers written in languages other than English due to translation and most of nursing publication in English, as well as limited research on nursing time management and its relationship to patient quality of care.

2.2.12. Conclusion

The review comprised six studies. According NHMRC Evidence Hierarchy appendix (9), Levels 2 and 3 had a high level of evidence, while the other two had a medium amount. The one study that looked into the effect of a time management education program on nurse performance revealed positive results.

The research gap for nursing time management is the lack of attention to the effect of time management on the quality of care on time management. The study highlighted a research vacuum in the absence of appropriate guidance and intervention programs to improve their time management skills.

Finally, this systematic review indicated a scarcity of research on how educational programs affect care quality. A considerable knowledge gap was observed in the study area, highlighting the significance of the research presented here.

Chapter Three

Methodology

3.1. Introduction

This chapter included the methods that have been used for this study design; setting, sample, tools, validity, reliability, pilot study, ethical considerations, data collection and data analysis procedures

3.2.Research Variables

Independent Variable: The ICUs nurses' demographic variables (age, gender, training level marital status, and years of nursing experience) and the time management training program for nurses

Dependent Variables: The two dependent variables in this study were nurses' level of time management knowledge and skills, and quality of care provided to patients.

3.3.Research Approach

The goal of nursing research is to increase and diversify nursing knowledge. This research encourages professional development and should lead to improved nursing care. The most significant aspect of every research effort is the research methodology. The goal of the research study that is conducted determines which research approach is most suited. The purpose of this study was to investigate the effectiveness of a time management-education program for nurses working in intensive care ICU on the quality of patients' nursing care in government hospitals in the West Bank.

3.4. Research Design

This quantitative, quasi-experimental (pre-test, post-test) control group model (Creswell, 2017), also known as a controlled before-and-after study (Wensing & Grimshaw, 2020). In this sort of study, a control group with identical features and functioning as the intervention group is selected. Data collected for both populations in similar ways before and after the intervention are administered to the experimental group. Although randomized control trials are widely regarded as the gold standard for experimental research, there are times when the conditions of this type of design cannot be met, and a quasi-experimental design is a better option (Panko, et al., 2015). The benefits of this design include the ability to investigate relationships in naturally occurring settings where certain requirements of a true experiment, such as control and manipulation, are not met (Behi & Nolan, 1996). Furthermore, where there are practical and ethical barriers to conducting randomized control trials, quasi-experiments are very useful (Grimshaw et al., 2020).

A quasi-experimental approach with a convenience sample for nurses was used for this investigation. A quasi-experiment was an appropriate alternative for concluding the groups. Because of its similar characteristics and the fact that it did not use the time management-education program, a comparable control group was chosen. The population and sample selection discuss their features in detail, as well as a description of the program's unique teaching methods and interventions as in Table 2.

Table 2: The Quasi Experimental Design

Study subjects	Pretest	Intervention for Nursing	Posttest
Experimental group	O1 nurses	X	O2 nurses
Control group	O1 nurses	-	O2 nurses

Key:

O1 nurses: observation or pretest for nurse participants in the study.

O2 nurses: observation or posttest time for nurses in the study

X- The intervention program / training program on time management for experimental group of nurses in the study.

The first tool was distribution of the questionnaire used to assess time management dimensions, and socio-demographic characteristics of the participants.

Second tool was direct observation of nurses in the ICU by the researcher to assess the quality of nursing care performed the observational checklists. Observation studies can help researchers detect things that participants may not be aware of. Because people may reappear in the observations, it was deemed inappropriate to supplement the observed data with surveys or interviews, as this would undoubtedly have influenced the observed activities.

3.5.Study Setting

The setting for this study was the ICUs at 11 government hospitals in the West Bank. These are the only governmental hospitals that have ICUs. These units are vital to the Palestinian community because they offer critical care services to the majority of the Palestinian population. These hospitals are located in north, middle and south West Bank as such; Alia, Bet-Jalla, Dora, and Abu Al Hassan Governmental Hospitals in the south of WB. Rafidia, Al Watani, Sulfit,

Tulkarem and Jenin Hospitals in the north of West Bank and lastly Palestine Medical Complex and Jericho Hospitals are in the middle of West Bank.

The total number of ICU beds is 104 beds spread to all over the 11 hospitals (MOH Report, 2022) and the total number of nurses at the time of data collection was 215 as indicated in the following Table 3.

Table 3: Number of nurses and number of beds in each ICU in the 11-targeted hospitals

#	Hospital	No of nurses	No of beds
1	Hebron (Alia) hospital	36	18
2	Dora Hospital	12	5
3	Beit Jala (Al Hussein)	12	5
4	Jericho hospital	9	3
5	Rafidia / Nablus	20	12
6	Jenin (Khaleel Sulaiman)	18	10
7	Palestine Medical Complex	42	28
8	Tulkarm (Thabit Thabit)	18	5
9	Qalqiliya (Darweesh Nazal)	8	3
10	Salfit (Yasser Arafat)	7	4
11	Al Watani/ Nablus	18	7
	Total	**215**	104

3.6. Study Population

The study purposefully selected all available nurses (215) working in the 11 ICUs in the West Bank. To avoid contamination from the experimental group to the control group, randomization was done at the hospital level rather than with individual nurses. By virtue of the ICU locations and the variation in terms of the number of beds and number of nurses in each unit, the study investigator considered a similar number of nurses to be assigned to the control and intervention groups from all areas. The number of potential participants was 215 nurses; 190 agreed to participate in the study, 15 declined, and 10 did not meet the inclusion criteria. Out of 190 participants, 91 participants for the intervention group and 99 participants for the control group were selected purposefully from all areas of WB to meet the study objectives as referred to in Table 4

Table 4: Name of hospitals and number of nurses in each hospital assigned for experimental and control groups

Control Hospital	**No of nurses**	**Experimental hospital**	**No of nurses**
Salfit (Yasser Arafat)	7	Hebron (Alia)	35
Qalqiliya (Darweesh Nazal)	8	Beit Jala (Al Hussein)	11
Rafidia Nablus	20	Dora hospital	11
Jenin (Khaleel Suleiman)	18	Tulkarem Hospital	17
Jericho hospital	9	Al Watani hospital	17
Palestine Medical Complex	37		
Total	**99**		**91**

3.7. Inclusion and Exclusion Criteria

For inclusion criteria, all nurses working in ICU governmental hospital were included. For exclusion criteria nurses who have time management course education or certification in less than 2 years. Nurses who are unable to attend the education program session were also excluded.

3.8. Tools

Three Two tools were used to achieve the research objectives and to answer the research questions (appendix 1).

1. Time Management Tool

The first section contained socio-demographic information and included gender, age, qualification, marital status, and years of experience.

The second section contained Time management (TM) questionnaire for nurses in ICU that was structured to achieve the study goal and objectives and to answer the research questions and hypotheses.

The TM questionnaire contained 48 items or sub-questions representing the five dimensions of time management (goal setting six items, time planning seven items, time commitment and delegation eleven items, time priority six items and time wasters thirteen items) and few items related to nurses' general knowledge about time management. The questionnaire was structured based on a collection of earlier studies and intensive literature review, and by a discussion with specialists that addressed the research variables. To strengthen the reliability and validity of the structured questionnaire, a qualitative study by Qtait and Sayej (2024) about dimensions of time

management for ICU nurses was conducted to illicit subjective information regarding their time management knowledge and skills.

Four subscales of the questionnaire items related to the dimensions of time management were arranged into a5-point Likert Scale format from Always to Never. The responses were rated for always (5) points, for very often (4) points, for some times (3) points, for rarely (2) points and for never (1) point. The responses' mean score identified from the Likert 1-5 were; 1.79 for never (very low), 1.8- 2.59 for rarely (low), 2.6- 3.39 for sometimes (medium), 3.4- 4.19 for very often (high) and 4.2- 5and always (very high).The other two subscales of the questionnaire were measured on 5 point Likert Scale format (1-5) from strongly agree to strongly disagree and their mean scores were obtained as for the other dimensions.

Quality of Nursing Care Observation Checklist

Quality of nursing care scale (QNCS-ICU) is an observation checklist used in ICU for measuring quality of nursing care practice. This scale is valid and used in many studies (Zeraati, 2014; Te Beest et al., 2013; EfiEvangelou et al., 2020). The checklist measures the quality of general nursing care activities that are common in different ICUs. The QNCS-ICU detects the indicators in nursing care; quality and safety in health care is determined by patient outcomes, process and organization that involved in the delivery of nursing care (Binnekade et al., 2003; De Neef et al., 2009). The checklist included 46 items for quality of patient care, observable and objective indicators in ICU for intensive care on a 4-point Likert rating scale (0 = not applicable, 1= undesirable, 2 = relative desirable, and 3 = desirable). The result of Quality of nursing care scale mean scores rated as; 1.00-1.75 Poor, 1.76-2.51 acceptable, 2.52-3.2 good, and3.28-4.00 very good as referred to in Appendix (2).

3.9. Pilot study

The purpose of the pilot study is to ensure that the questions in the measuring tools are clear and understandable to the participants, and effective for the education program. The pilot study was conducted before the actual data collection; 20 participant nurses were selected from Yatta Hospital. The data from the pilot study were excluded from the main study. Statements were modified to make them more intelligible in the time management questionnaire, and the time required for data collection was estimated to be 25 minutes. For the Quality of Nursing Care Scale (QNCS-ICU), quality of care observation for nurse during working shift.

3.10. Validity and Reliability

3.10.1. Validity

The tools used in this study were constructed by the study researcher after reading studies literature (Qteat and Sayej, 2014; Macan et al., 1990). Content validity refers to how relevant the questions are to the subject under study. To strengthen the reliability and validity of the structured questionnaire, a qualitative study by Qtait and Sayej (2024) about dimensions of time management for ICU nurses was conducted to illicit subjective information regarding their time management knowledge and skills. In this study, the content validity of instruments was questioned, including all important ideas pertinent to the research topic. The questions were designed to cover the time management dimension.

This instrument was authorized and examined by a variety of professionals, including research advisers and nursing educators. After refining the questionnaire items and summarizing the expert's ideas, changes were made to the phrasing and content. Some goods were added, while others were discarded.

Validity for the quality-of-care observational checklist, is considerably valid because of its' international use in many previous studies (Zeraati, 2014; TeBeest et al., 2013; EfiEvangelouet al., 2020). This instrument was approved and evaluated by same experts including, research adviser and nursing educators.

3.10.2. Reliability

Reliability refers to an evaluation tool's capacity to deliver consistent results when used to similar settings. The current study's pilot phase was used to examine the study's questionnaire.

The instrument was tested for the Cronbach's alpha coefficient to assess the reliability of the time management questionnaire for nurses in ICU. The two tools stability and consistency were assessed using the reliability coefficient as provided in Table 5.

Table 5: Reliability Statistics of the Tool

	Items	Alpha Cronbach
Time management	48	0.89
General knowledge of ICU Nurses on Time management	5	0.84
Goal Setting	6	0.88
Time planning	7	0.92
Time commitment and delegation	11	0.92
Time priority	6	0.85
Time Wasters	13	0.89
Quality of nursing care	49	0.94

The Cronbach alpha reliability obtained for overall scale was 0.89, indicating a high consistency among study items. All subscales of the questionnaire rated high as; the general knowledge of ICU nurses on time management was 0.84, the goal Setting 0. 88, time planning 0.92, time commitment and delegation 0.92, time priority 0.85, time wasters 0.89, and the quality of nursing care checklist 0.94. These results indicate high internal consistency level for all scales and satisfy the purpose of the study.

3.11. Data Collection Methods and Procedure

Ethical approval was obtained from the Ethical Committee (IRB) Appendix (two),at the Arab American University in Palestine, and an approval letter was obtained from Palestinian Ministry of Health allowing for accessing ICUs in the targeted governmental hospitals (appendix three). The nursing directors and the ICUs head nurses were approached; the study goal and objectives, and the data collection processes were explained. Further, the intervention education program for the experimental group was explained as well.

To assess the time management for nurses of the ICU nurse use a questionnaire. The researcher provided the questionnaire to the study participants and collected the documents once they were completed. All of the distributed questionnaires returned to the researcher within two weeks.

To evaluate quality of nursing care rate of ICU staff, data were acquired by observation. ICU nurses knew that the researcher undertook observational studies, but they did not know what the researcher was searching. The observational data were conducted through one week for each ICU, the observation data collected by the researcher himself. In the observation method, the researcher watched interactions of the participants in a natural situation. The aim of observing

the participant is to create a complete and specific description of social interaction in a natural situation (Astin & Long, 2009). Further, the researcher may have more control over the participants, particularly in terms of credibility, and be more aware of less tangible qualities such as disinterest and goodwill. However, participants' observations may be difficult, particularly if they are conducted in a hectic working environment such as the ICU. The research might lose the accuracy of observation if the participants recognize that the researcher is observing them (Lanoe, 2007).

The lectures for the education program were delivered twice a week for ten consecutive weeks in the intervention ICU. Data were collected using the same method for both intervention and control group nurses in order to evaluate time management and nursing quality of care. Three months after the organized education program concluded, the post-intervention data were collected.

The research process

The intervention phase of the study was carried over eight months as implemented by the researcher as the following as figure1:

Preparation Phase:

During the preparation phase, data collection methods and a time management education program are developed through a survey of relevant material, including journals, periodicals, textbooks, the internet, and theoretical knowledge of the topic. The curriculum covered the concept, steps, and relevance of time management, as well as the different types and dimensions of time management, tools, and elements that contribute to time management and waste.

- **Pre-implementation Phase**:

  After selecting the sample and determining the intervention and control group, the nurses fulfilled the questionnaire as pretest Phase. The time management questionnaire required 20–25 minutes to be completed. The second tool observational checklists to measure the quality of care done by researcher.

- Following the completion of the questionnaires, the researcher implemented the time management education program. Please refer to program timetable as implemented in appendix 4,this occurred for 12 weeks. Whereas the post intervention assessment was three months after the structured education program ended.

  The training section nurse's experimental group were divided into 10 groups (9 nurses in each group). The education program was planned to be given in 10 hours over 5 sessions for, 2 hours in session for, 2 days a week for each group. An orientation to the program and its aim was place at the start of the sessions, and the nurse participants were informed about the time and location of the sessions, which were held at the education department lecture room. Each session began with setting objectives and providing a review of the current topic; at the conclusion of each session, the nurse and their questions were discussed.

  Each group understood the program content utilizing the same teaching methodologies, which included lectures, group discussions, role-playing, brainstorming, and handouts. The following teaching and instructional materials were used: handouts and a PowerPoint presentation. The researcher carried out the program with two groups in one week, using the same available resources, relevant content, and instructional methodologies for both sessions.

Table 6: Pre-test post-test control group design

Sample	Group	Q1 Baseline	Intervention	Q2 Three months
Nurses in ICU	Intervention group	√	Education program	√
Nurse in ICU	Control group	√		√

3.12. The Education program

The Time Management for nurse's course is designed to help nurses working in intensive care unit feel more empowered about how they spend their time at work. This program sought to help participants better understand how they currently use their time, get clarity on their work priorities and objectives, and make better use of time and resources. These abilities will enable learners to raise the efficiency and effectiveness of health services and improve staff quality outcomes. Each session was started by setting objectives and overview of the new topic, at the end of each session the participants' concerns and their questions were discussed.

3.13. Ethical Considerations

Academic approval of the study proposal was obtained first from the Arab American University, and then ethical approval for this study was obtained from the Ethical Committee at Arab American University in Palestine (IRB) in (Appendix 2). In addition, an approval letter from the Palestinian Ministry of Health for the targeted governmental hospital was obtained

(Appendix 3). The aim and objectives of the study was explained to the director of nursing and the head nurses at each targeted ICU in these hospitals.

Informed consent: Participants signed documents pertaining to the study's aim and objectives to indicate their voluntary permission to participate, and they informed to free to withdraw at any time they feel so. Participants will also be notified that this study is part of an academic requirement. The researcher assured them of their anonymity and confidentiality and stated that their input would not affect their job rating and that the study would not put them in any physical, social, psychological, or financial danger (Appendix5).

The researcher explained that participation in this study may have benefited participants by expanding their understanding of time management and have a positive effect on their self-efficacy regarding time management.

3.14. Data Analysis

SPSS version 23 software was used to enter, code, and manage data. The study employed both descriptive and inferential statistics. Data were reviewed for missing items and outliers early in the analytic process. When a small number of missing values were discovered, they were replaced with the mean of the data so that the distribution of the data did not change after these values were replaced. Descriptive statistics for means, P-value, standard deviation (SD), and frequency were utilized to summarize the characteristics of the study groups (control and intervention). The inferential statistics were used all through the study phases (pre-test, and post-test), for t-test ANOVA and chi-square measures were all included.

Normality was acknowledged and parametric statistics were utilized based on the assumption that skewness and kurtosis values fell within the range of twofold standard error (Kim, 2013). Fortunately, all distributions were within the permitted range for parametric statistics used.

Furthermore, Cronbach's Alpha reliability test was utilized to assess data internal consistency within each analyzed variable.

Summary

This chapter has examined the rationale for employing a quantitative design, specifically a quasi-experimental design. Participants' inclusion and exclusion criteria, as well as research settings, were discussed. In addition, data collection methods, outcome metrics, and other ethical considerations for participants were highlighted. Finally, the statistical tests employed to obtain reliable results were discussed.

Chapter Four

Results

4.1. Introduction

The study's findings are provided in this chapter. The goal of this study was to investigate the effectiveness of time management training on the quality of care provided by nurses in ICUs in Palestinian government hospitals. The data were analyzed using the statistical software for social science (SPSS, version 23). To test the research questions, descriptive and inferential statistics were used. The characteristics of the participants are described using descriptive statistics (frequency, percentage, mean, and standard deviation). To test the research variables, inferential statistics (independent t-test, paired t-test, X^2) were used.

4.2. Description of the participant's socio-demographic characteristics

The descriptive analysis revealed that the majority of nurses, 77 (40.5%), were between 30 and 34 years, 64 (33.7%) were between 25 and 29 years and 32(16.8%) were 40 years and more with almost half of them 98 (51.6%) females, and 92 (48.4%) males, of whom 112 (58.9%) were married. An interesting fact found that 89% of Palestinian ICU nurses have a high level of nursing education; 136 (71.6%) were bachelor's degree holders and 33 (17.4%) were Master degree holders vs. 21(11.1%) were diploma holders. Regarding work experience 83 (43.7%) have been working from 6 - 10 years, 55(28.9%) have been working from 1 -5 years and 52(27.4%) have been working for more than 10 years. Regarding the question “Did you receive any training program on time management”, all participants said “no” which means that time management issue is never discussed nor taught to nurses knowing that 89% are degree holders in nursing.

Table 7: Description of Participants socio-demographics (N =190)

socio-demographics characteristics		N (%)
Age	25 -29 years old	64 (33.6)
	30 – 34 years old,	77 (40.5)
	35 – 39 years old	32 (16.8)
	40 years old and above	17(8.9)
Gender	Male	92 (48.4)
	Female	98 (51.6)
Marital status	Single	78 (41.1)
	Married	112 (58.9)
Training level	Diploma	21(11.0)
	Bachelor	136(71.6)
	Master or more	33 (17.4)
Work experience	1-5 years	55 (28.9)
	6-10 years	83 (43.7)
	More than 10 years	52(27.4)
Did you receive any training program on time management	No	190 (100)

4.3 Socio-demographics characteristics of the study participants in both groups

A chi-square was performed to assess if there were significant differences between the experimental and control groups regarding socio-demographic data. The results revealed no significant differences between the two groups as displayed in Table 7.

Table 8: Comparison between socio-demographics of the participants in both groups

Characteristics		**Experiment N (%)**	**Control N (%)**	**P-value**
Age	25 -29 years old	28(30.8)	36(36.4)	*0.244*
	30 – 34 years old,	40(44.0)	37(37.4)	
	35 – 39 years old	18(19.8)	14(14.1)	
	40 years old and above	5(5.5)	12(12.1)	
Gender	Male	44(48.4)	48(48.5)	*0.985*
	Female	47(51.6)	51(51.5)	
Marital status	Single	37(40.7)	41(41.4)	*0.916*
	Married	54(59.3)	58(58.6)	
Training level	Diploma	10(11.0)	11(11.1)	*0.078*
	Bachelor.	71(78.0)	65(65.7)	
	Master or more	10(11.0)	23(23.2)	
Work experience	1-5 years	22(24.2)	33(33.3)	*0.372*
	6-10 years	43(47.3)	40(40.4)	
	More than 10 years	26(28.6)	26(26.3)	

P. value significant at the 0.05 level

The Results showed in table (4.2) that the sample consisted of 190 nurses working in the intensive care units, including 99 (52%) of the sample were in the control group of which 48% were males. In the experimentalgroup47% were males and 53% were females. More than the half of the nurses (68.2%) in the experimental group was between the ages of 25 – 34 years old, whereas, in control group their ages were evenly distributed between the age groups. A total percent of 73% in intervention group had less than 10 years of experience in the intensive care units. More than the half of the nurses with a percent of (71.1%) had bachelor degree in nursing in the intervention group, and for the control group their levels of education were the same. No significant differences were found between demographic characteristics (age-group (p= 0.244), gender (p=0.985), years of experience (p= 0.460), training level (p= 0.078), work experience (p= 0.372) and marital status (p= 0.916)).

4.4 Time management and quality of nursing care of both groups at pre-test

The following figures represent data distribution of all variables under study in both control and intervention group. Based on the previous assumptions, the distribution was accepted if it met the acceptable level of skewness and kurtosis, and if the distribution appeared to show reasonable normality.

To compare the outcomes of the two groups at the post-test, the homogeneity of the two groups at the pre-test must be assessed. Therefore, an independent sample t-test was performed to compare the means of outcomes between the experimental and control groups.

The first assumption of the t test was the normal distribution of the variables outcomes scores, which were assessed by a histogram and skewness of normality that indicated the outcomes

variable scores was approximately normally distributed within the two groups, as seen in figures 2,3,4,5.

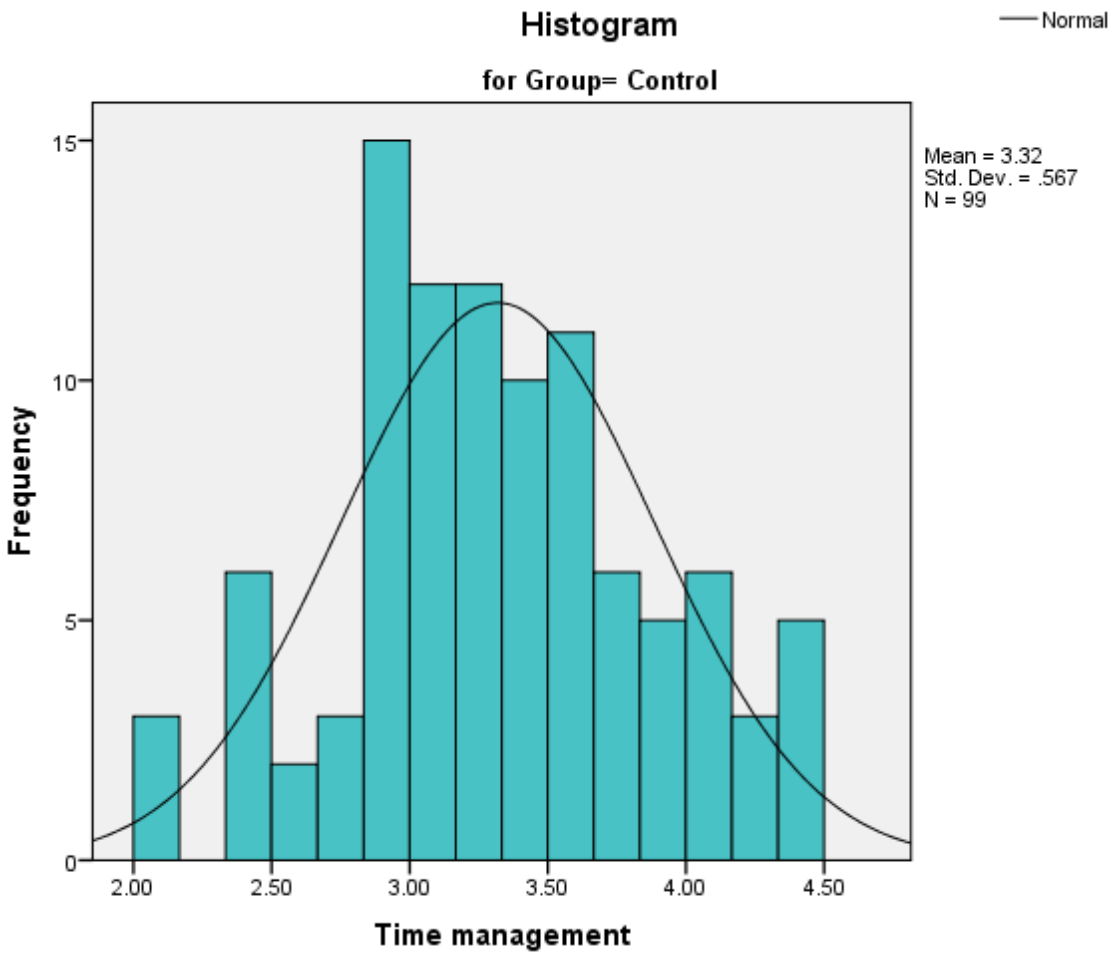

Figure 3: Distribution of time management scores among the control group

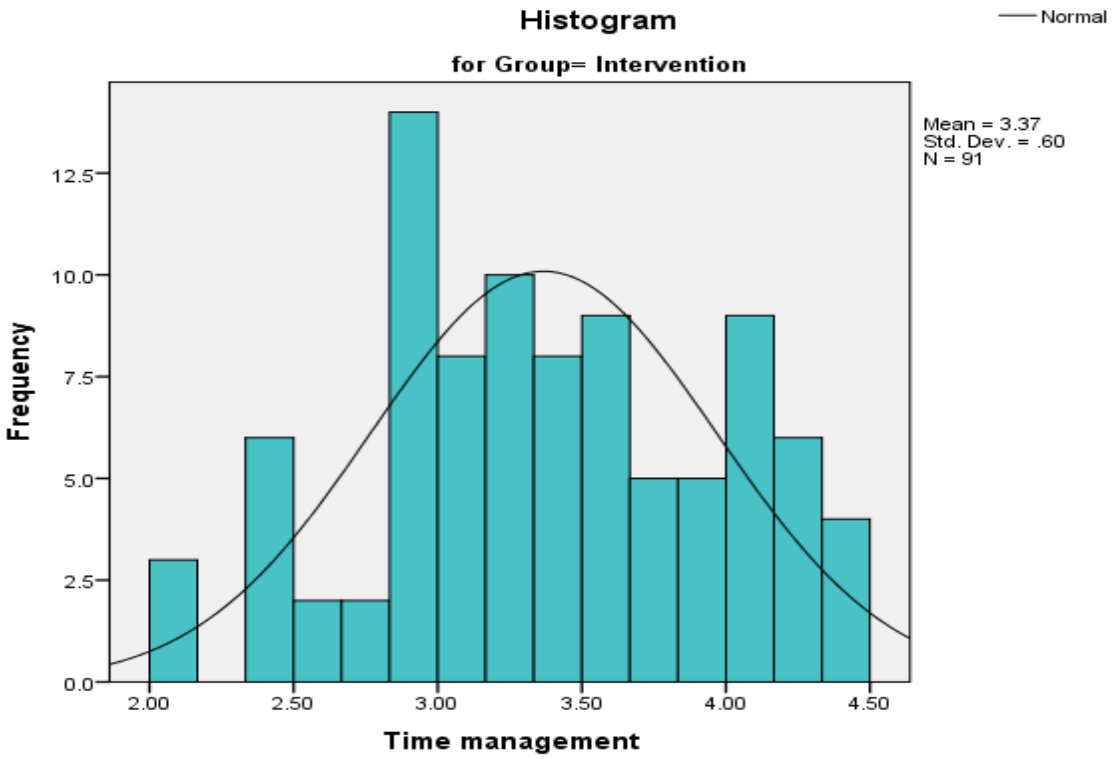

Figure 4: . Distribution of time management scores among the experimental group

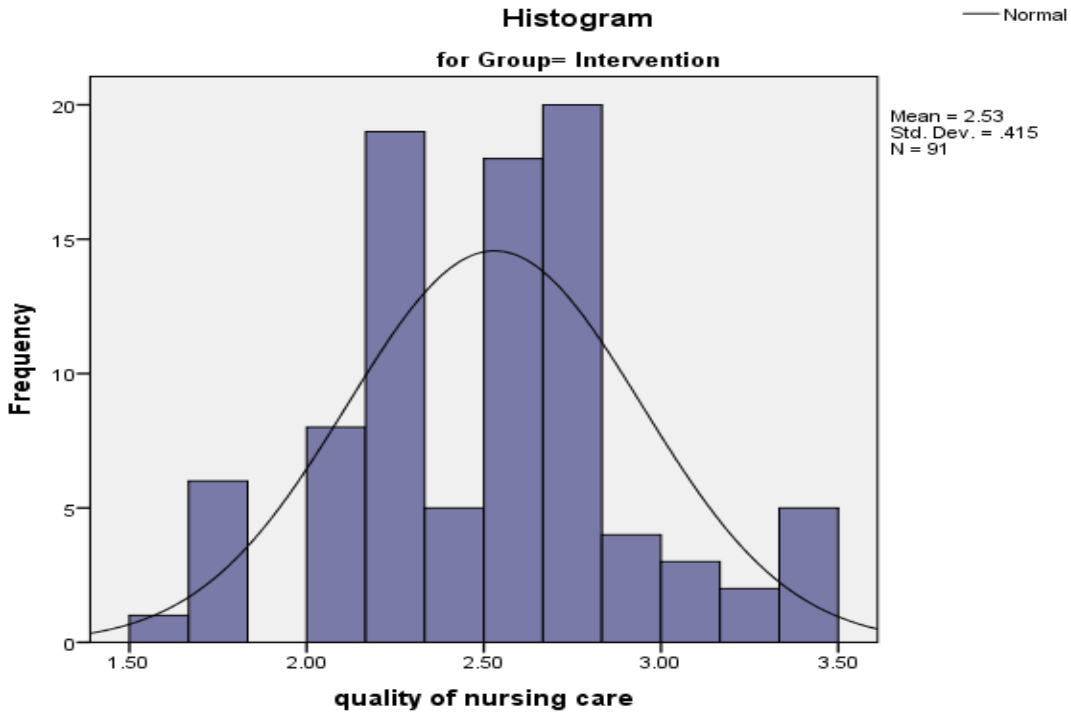

Figure 5: Distribution of quality of nursing care scores among the experimental group

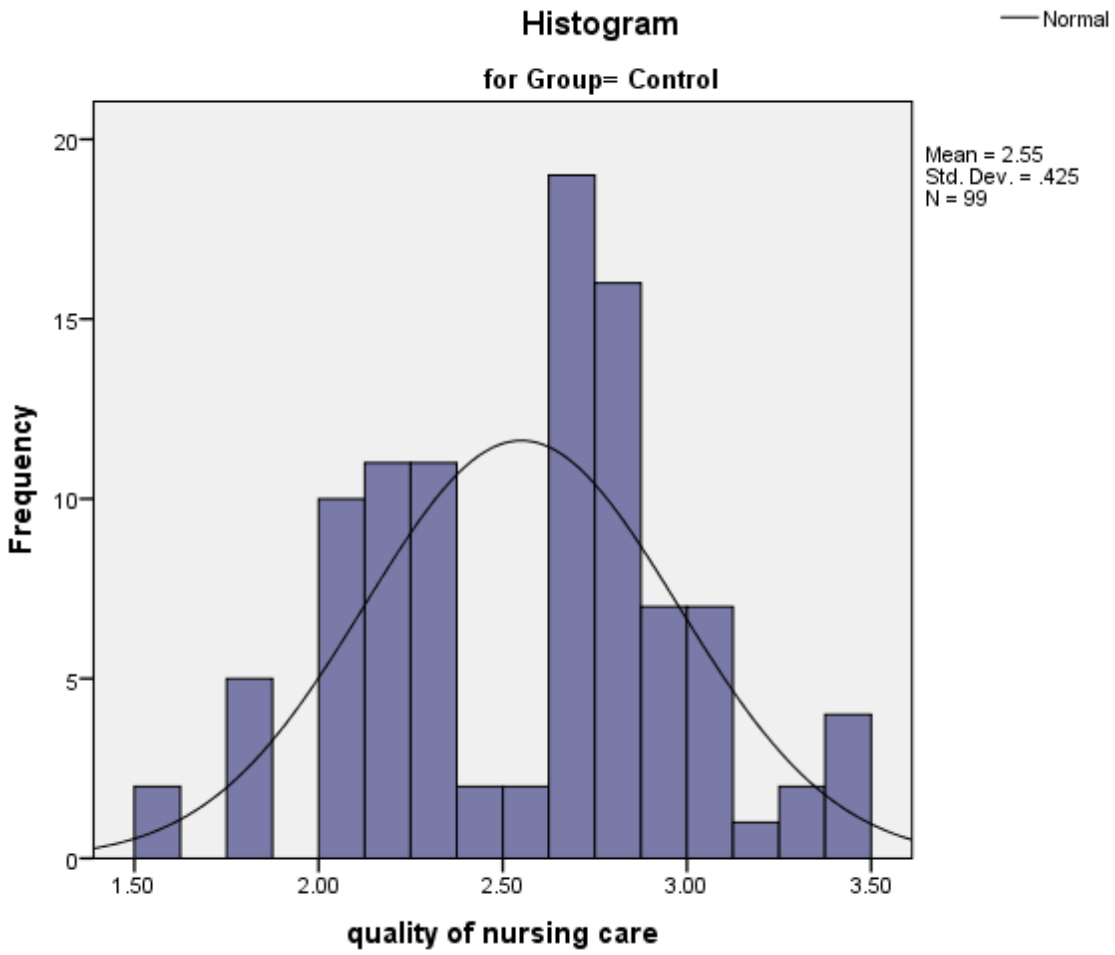

Figure 6: Distribution of quality of nursing care scores among the control group

4.4 Analysing Research Questions

Research question one: what arethe levels of time management and nursing quality of care in the intervention and the control groups?

The analysis showed that time management was (M=3.3± SD = 0.6) which is medium. According to the domains of time management, time management in the ICU was the highest among the nurses (M=3.8±SD = 0.8) while time commitment and delegation was the lowest

(M=3.3±SD = 0.6). Also, the quality of the nursing care was acceptable (M=2.5 ± SD = 0.4) as seen in Table 9.

Table 9: The levels of time management and nursing quality of care among nurses in the intensive care unit

Variable	**M(SD)**	**Level**
Time management	3.3(0.6)	Medium
General knowledge of ICU Nurses on Time management	3.8(0.8)	High
Goal setting	3.5(0.7)	High
Time planning	3.4(0.8)	High
Time commitment and delegation	3.3(0.6)	Medium
Time priority	3.4(0.6)	High
Time wasters	3.4(0.6)	High
Quality of nursing care	2.5(0.4)	Acceptable

Research Question Two: Is there a difference between the post-test level of time management and the level of quality of care among the experimental group and the control group?

The differences in time management scores between the experimental and control groups at the post-test and between the groups themselves pre- and post-test were examined. These differences were examined by a paired t-test and an independent sample t-test.

The analysis revealed that there was a significant difference in the time management scores between the experimental and control groups ($P<0.05$). The mean of the time management scores in the experimental group (M = 4.1±SD = 0.3) was higher than that in the control group

(M = 3.4± SD = 0.6). Also, the domains of time management revealed significant statistical differences between the experimental and control groups (*P*<0.05) as seen in Table 10.

Table 10: The difference of time management between both groups at posttest

Time management dimension	**Control**	**Experimental**	**t test**	***P****
	M(SD)	**M(SD)**		
General knowledge of ICU Nurses on Time management	3.8(0.8)	4.5(0.5)	7.879	0.001
Time Goal setting	3.5(0.7)	4.2(0.5)	8.344	0.001
Time planning	3.3(0.7)	4.1(0.5)	9.180	0.001
Time commitment and delegation	3.3(0.6)	4.0(0.3)	9.903	0.001
Time priority	3.4(0.6)	3.9(0.5)	6.815	0.001
Time wasters	3.4(0.6)	3.9(0.4)	7.622	0.001
Time management	**3.4(0.6)**	**4.1(0.3)**	**10.050**	0.001

**P. value significant at the 0.05 level*

Independent samples t-test.

SD=Standard deviation

The analysis revealed that there was a significant difference in the time management scores mean between pre-and post-test of the experimental group (*P*< 0.05). The mean of the time management scores of the experimental group at the post-test (M = 4.1±SD = 0.3) was higher than the pre-test (M = 3.4±SD = 0.6). In addition, the domains of time management revealed significant statistical differences between pre- and post-test of the experimental group (*P*< 0.05). The time management illustrated high mean scores at post- test than pre-test, as seen in Table 11.

Table 11: the difference of time management in the experimental group at pre and posttest

Time management	**Pre test**	**Post test**	**t test**	***P****
	M(SD)	**M(SD)**		
General knowledge of ICU Nurses on Time management	3.9 (0.8)	4.5(0.5)	6.986	0.001
Goal Setting	3.6(0.7)	4.2(0.5)	7.063	0.001
Time planning	3.4(0.8)	4.1(0.5)	7.904	0.001
Time commitment and delegation	3.4(0.6)	4.0(0.3)	8.142	0.001
Time priority	3.4(0.6)	3.9(0.5)	6.684	0.001
Time Wasters	3.4(0.7)	3.9(0.4)	6.672	0.001
Time management	**3.4(0.6)**	**4.1(0.3)**	10.714	**0.001**

**P. value significant at the 0.05 level*

The analysis revealed that there was no significant difference in the time management scores mean between the pre-and post-test of the control group (P> 0.05). Also, the domains of time management revealed no significant differences between the pre-and post-test of the control group as seen in Table 12.

Table 12: Thedifference of time management in the control group at pre and post-test

Time management dimension	**Pre-test**	**Post-test**	**t-test**	***P****
	M(SD)	**M(SD)**		
General knowledge of ICU Nurses on Time management	3.8(0.8)	3.8(0.7)	1.492	.139
Goal Setting	3.5(0.7)	3.4(0.7)	1.979	.051
Time planning	3.4(0.7)	3.2(0.8)	1.860	.066
Time commitment and delegation	3.3(0.6)	3.2(0.6)	1.948	.054
Time priority	3.4(0.6)	3.3(0.6)	2.000	.051
Time Wasters	3.4(0.6)	3.3(0.6)	1.510	.134
Time management	**3.3(0.6)**	**3.4(0.6)**	0.485	.629

**P. value significant at the 0.05 level*

Research question Three: Is there a difference in the quality of care three months after the intervention within, between the study groups based on demographic variables at pre-intervention?

The difference in the quality of nursing care means scores between the experimental and control groups at the post-test and between the groups themselves pre- and post-test were examined. These differences were examined by a paired t-test and an independent sample t-test. The analysis showed that there was significant difference in the quality of nursing care mean scores between the experimental and control groups ($P< 0.05$). The mean of the quality of nursing care

scores in the experimental group (M = 3.4±SD = 0.19) was higher than that in the control group (M= 2.6± SD = 0.27) as seen in Table 13.

Table 13: The difference of the Quality of nursing care between both groups at the

Variable	**Control**	**Experimental**	**t-test**	***P****
Quality of nursing care	**M(SD)**	**M(SD)**		
	2.6(0.27)	3.4(0.19)	25.6	0.001

**P. value significant at the 0.05 level*

In addition, the analysis revealed that there was a significant difference in the quality of nursing care means scores between the post-test of the experimental group ($P< 0.05$). The mean of the quality of nursing care scores of the experimental group at the post-test (M = 3.4±SD = 0.19) was higher than the post-test for control group (M = 2.5±SD = 0.42). However, the analysis revealed that there were no significant differences in the quality of nursing care scores mean between control and experimental group of the control group ($P> 0.05$) as seen in Table 14.

Table 14: The difference of the Quality of nursing care within both groups at pre and post test

Variable	**Pretest**	**Posttest**	**t test**	**P***
Quality of nursing care	**M(SD)**	**M(SD)**		
Experimental	2.5(0.42)	3.4(0.19)	19.3	0.001
Control	2.6(0.42)	2.7(0.27)	0.364	0.716

**P. value significant at the 0.05 level*

Research Question Four: Are there significant differences between thescor levels of time management with the selected demographic in the experimental group and the control group?

The differences in the time management mean scores and demographic characteristics at the pre-test were examined. These differences were examined by an independentsample t-test and ANOVA test. The analysis revealed that there were no significant differences in time management scores and participants' demographic characteristics (age, gender, level of education, and training program on time management) at pre-test ($P > 0.05$). However, the experience of the participants revealed significant difference with time management mean scores ($P < 0.05$). Scheffe post hoc test showed that the 1-5 years and more than 10 years were able to make time management statistically significantly further than 6-10 years ($P < 0.05$) as seen in Table 15.

Table 15: Differences between time management mean scores of the participants and demographic characteristics at pretest (N=190)

Demographic characteristics		**M(SD)**	**Statistical test**	***P****
Age	25 -29 years old	3.4(0.6)	F= 1.844	0.141
	30 – 34 years old,	3.2(0.6)		
	35 – 39 years old	3.4(0.5)		
	40 years old and above	3.4(0.6)		
Gender	Male	3.4(0.6)	t= 0.897	0.371
	Female	3.3(0.6)		
Level of education	Diploma	3.3(0.6)	F= 1.813	.166

	Bachelor.	3.3(0.6)		
	Master or more	3.5(0.5)		
Experience	1-5 years	3.4(0.6)	F= 7.003	.001
	6-10 years	3.2(0.6)		
	More than 10 years	3.5(0.5)		

**P. value significant at the 0.05 level*

Research Question Five: Are there significant differences between the quality of nursing care scores and the demographic characteristics of the participants at the pre-test?

The differences in the quality of nursing care scores and demographic characteristics at the pre-test were examined. These differences were examined by an independent t-test and ANOVA test. The analysis revealed that there were no significant differences in quality of nursing care mean scores and participants' demographic characteristics (age, gender, level of education, experience, and training program on time management) at pre-test ($P > 0.05$) as seen in Table 16.

Table 16: Differences between quality of nursing care mean scores of the participants and demographic characteristics at pretest (N=190)

Demographic characteristics		**M(SD)**	**Statistical test**	***P* ***
Age	25 -29 years old	2.5(0.5)	F= 0.067	.977
	30 – 34 years old,	2.6(0.4)		
	35 – 39 years old	2.6(0.4)		
	40 years old and above	2.5(0.5)		
Gender	Male	2.5(0.4)	t=0.697	0.487
	Female	2.6(0.4)		
Level of education	Diploma	2.6(0.4)	F= 0.497	.609
	Bachelor.	2.5(0.4)		
	Master or more	2.6(0.4)		
Experience	1-5 years	2.5(0.5)	F= 0.029	.972
	6-10 years	2.5(0.4)		
	More than 10 years	2.5(0.4)		

**P. value significant at the 0.05 level*

Summery

Sufficient numbers of participants were recruited to both groups at the beginning of the study. At subsequent test points, this number was not reduced significantly and this maintained the power of the analysis. It was concluded that the pain intervention program entailed statistically significantly more positive outcomes among participants who received the intervention than for those in the control group. Time management education program entailed statistically significantly more positive outcomes among participants who received the intervention than for those in the control group. In particular, the intervention yielded improvement in participants' knowledge and abilities in time management dimension, and improved quality of care for nurses.

Chapter Five

Discussion

5.1 Introduction

The current study aimed to determine the time management education program effect on the quality of nursing care for patients in ICUs in Palestinian government hospitals. This study effort has been ambitious since its inception. The measuring of nursing care is a commonly discussed topic in nursing literature. There is an abundance of material on time management in nursing. However, there is little consideration of time management and its impact on nurse quality of care. As discussed in the literature most of the research on this topic examines time management and nursing not related to quality of care for patients. The research aimed to bridge the gap in the literature and in practice, by examining the effect of education programs in time management on the quality of care.

Time management is a basic skill of effective management; it influences how one uses the time of others as well as one's own. When time is managed properly, it saves available time, improves patient care quality, increases productivity, and improves effectiveness. Furthermore, time management assists nurses in becoming more organized and focused, as well as learning to control their time rather than allowing their time to dominate them Radhika (2018),. Moreover, as the demand for hospitals to adapt and address issues grows, enhancing staff creativity will become an increasingly essential concern (Nayak, 2019).

5.2 Demographic Characteristic

As previously stated, the participants included 190 nurses from eleven hospitals in the West Bank. The study population varied in terms of age, gender, years of experience, and

qualifications. The majority of participants held a bachelor's degree in nursing, which is comparable with previous study in terms of demographics (Dowd, 2009; Textor, 2003).

For demographic variables, time management skills may be learned, and nurses who are aware of them may suffer less stress while executing their responsibilities on time. According to the study findings, there is a relationship between years of experience in the present position of nurse, and their time management abilities. The event provided them with the opportunity to learn more about leadership skills and to clarify their strengths and capabilities for using those talents to improve management skills. However, this result contradicts the findings of Habib et al. (2018), no link between time management age and experience. Meanwhile, as nurses' age and years of experience increases, their understanding of time waste decreases. Similarly, Marquis and Huston (2015) emphasised that lower level managers with less years of experience face more interruptions than higher level managers with more years of experience. This finding was supported by Radhika (2018), who discovered that when nurses gain experience, they became more proficient with their work owing to better time management.

The investigated in several studies on the usage of these skills by nurses; factors such as job experience and personal traits have been demonstrated to impact time management (Ebrahimi et al., 2014). Because opinions on the function of sex, age, and degree of education level Elsabahy et al. (2015), study by Ahmed and Abosamra (2015), showed that the nurses with more experienced performed significantly better than less experienced colleagues.

The quality of nursing care is a major concern in different countries around the globe, including Palestine. This research sheds light on the nursing care offered to ICU patients by investigating the causes and contributing elements related to the nurse's demographic data. The

results showed that there were no noticeable disparities in the quality of nursing care between the age groups of nurses, gender, level of education, and experience.

Findings demonstrated that there were no significant differences in the quality of nursing care with regard to nurses age groups (p=0.977). This result is consistent with several studies that found that there is no significant association between nurses' pretest practice and age variable (Abul-Azem& Al-Hayy, 2019; Oluma & Abadiga, 2020).On the other hand, other research revealed that hospitals provide better quality of treatment, most likely because healthcare personnel get more experience.

Time management dimensions have a positive impact on quality of care, now keep time management encourages nursing to work within something planned, and followed up, and adherence planning leads to speed of work and analysis leads to perseverance nurses to work and commitment lead to accurate performance and commitment needed nurses to hear from the manager not many of one becomes the fastest and most reliable performance and improves quality of care (Soliman, et al., 2018; Oluma, &Abadiga, 2020; Barua, et al., 2019).

Regarding the association between nurses' time management and years of expertise with studied subjects after the program period, there was a statistically significant positive link between nurses and their assistants' time management and years of experience agreed with study (Tuomikoski et al., 2019; Hagrass et al. 2023).

There is no shortage of time because everyone has the same number of hours, minutes, and seconds per day to complete their tasks. There is a lack of time management. Based on this certainty, people must learn how to make better use of their time. Nurses must manage their time effectively because they are responsible for a wide range of tasks.

5.3 Time management dimension

5.4 Time Planning

Time planning is an essential component of good time management. Time management planning is an important factor for anyone who wishes to be efficient in all aspects and activities of life.

As a result, nurses should identify goals and approaches, as well as develop time plans for the short, medium, and long term. According to the findings of the current study, time plan their work but are unable to carry it out, and they are concerned about what to do when they are unable to carry out their plans (Cemaloglu & Filiz, 2010). The key issue is time management, and it comprises numerous dimension that might help in planning time for completing chores in a short period of time, either daily or weekly intervals, or over a longer period (Maganga, 2014). According to Barling, Weber, and Kelloway (1996), efficient time management mixed with strong motivation is related to work success. However, Jekale and Tsega (2008), found that time management was critical to the development in performance lead to improve quality of care.

5.5 Time Priority

Priority management is organizing your day according to the tasks you have and working out which are the most important to the least important (Stanoeva, 2023*).*The time priority is high in the study that's related to the importance of determining what is not a priority, making time for essential activities and never leaving important ones for the last minute, thus avoiding stress and achieving the balance necessary to reach one's goal (Hannah et al., 2021).This clinical investigation showed that time management and prioritisation skills of the ICU nurses were significantly and favourably improved by taking part in the time management training.

Regarding the impact of time management training, opinions differ. In a related study, head nurses significantly increased their use of time management techniques in the areas of organisation and time control. However, there was no significant change in time management and goal-setting techniques (Khodam & Kolagari, 2010).

5.6 Goal Setting

Time management skills include learning how to develop goals. Goal planning is the first stage in efficient time management, indicating the future quality and technique of nurses' time use, according to El-Shahat (2019), setting goals guides the mechanics of time management, perceived control of time, as well as daily and long-term planning, which enhances the creativity of staff nurses.

Individuals who engage in goal setting and organizing the necessary measures to attain those goals are considered goal achievers because they develop the crucial habit of staying focused on achieving their major objectives (Mgeleka, 2015).

5.7 Time Commitment and Delegation

The result of time commitment and delegation in the study were medium, effectively limiting and managing the amount of time spent on particular tasks as time management, and it is seen to be highly beneficial for boosting efficiency and productivity. This procedure aids in time management when working on projects or achieving goals as assigning assignments (Sayej&Qteat, 2014). One useful strategy for raising performance is time management, which has gained increased attention in the field of organizational behavior lately.

Ultimately, this style of management boosts productivity by preventing needless task delegation. Effective time management is not a unique skill. Distinct from general management in that it aims to control work hours and prevent wastage of time (Eshaghieh, 2015).

5.8 Time Waster

The working environment in hospitals is complicated, and chances for improving the efficiency of nurses' and doctors' workloads should be evaluated individually in each hospital and work group. Process changes (to reduce wasted time waiting in wards), simple innovative ways (to reduce wasted time searching for needed equipment), the use of hospital information system technology for documentation and communication, and better ward design. According to Adebisi (2015), the time management-training program appears to increase time management skills. The current study's findings revealed that the majority of nurses were satisfied with the time wasters post and follow-up program. A time waster is anything that prevents people from doing their work. In terms of time management skills among nurses and their comprehensive program, the study findings revealed that the majority of nurses dealt with internal and external time wasters, as well as identifying how to manage different interruptions such as phone visitors and meeting interruptions. A time waster is something that stops an individual from completing a task.

In the same way, the nurse's knowledge had risen following the education program's execution, and it was a highly statistically significant improvement in time management, priority, and time wasters (p-value = 0.001). Marquis and Huston (2015) found that a person practice priority skill at home, at work, and in an interactive group to change one's activities with others, which provides more time for education and focus. In other words, nurses recognize time management as a vital component of task execution and nursing practice, and they employ various time management tactics. Nurses who master time management skills in nursing work are smarter rather than harder.

According to the findings of this study, education in time management skills considerably enhanced the total mean time management scores. Numerous research supported our findings, demonstrating that education programs assist participants in acquiring new knowledge and abilities while also improving time management skills.

The total mean score of the intervention group went from 3.4 before participating in the education session to 4.1 one month later, which was considerably higher than the control group. The large number of participants in the study, hosting many courses to cover the interference of work shifts, using skilled professors, and active engagement of nurses in the courses were all possible variables impacting the final outcomes. Other factors, aside from participation intime management education program may have an impact on time management abilities. The current study's researchers made sincere efforts to control these aspects as much as feasible. Factors such as job experience have been demonstrated to influence time management (Ebrahimi et al., 2014).

According to the result of study time, management skills education considerably boosted the total mean scores of nursing care quality. Previous studies reported that education programs may assist nursing in acquiring new information and abilities, as well as improving their professional learning and work performance (Memarian et al., 2013; Cho et al., 2009). Similarly, Hall et al. (2009) observed that nurses who taught time management skills improved their competence and professional enjoyment. Raeissi et al. (2015) found a significant direct relationship between the nurse organization's roles and the quality of treatment. In terms of the improved total mean scores of nursing care quality after the intervention, it can be said that time, management is a planned behavior for the efficient use of time since it is possible to accomplish the established objectives with the varied tasks. Treatment quality should be updated at the level of health services in accordance with expert knowledge to maximize the likelihood of getting the greatest

possible health outcomes. As a result, it is proposed that the effect of time management training program may not be sustained over time, and that the training program should be continued for a longer period of time. Khan and Muhammad (2022) discovered that several factors connected to nurses, patients, patients' relatives, management of time, working environment, and ICU settings and supplies influenced the quality of nursing care in critical care units.

5.9 Time Management and Quality of Nursing Care of both Groups at Pre-test

This quasi-experimental study demonstrated that participating in the time management education had a significant and positive effect on the time management and quality of care for nursing in the ICU. This finding is similar to a previous study by Alferes et al. (2022).Time management improves professional performance through analysis and planning. To educate to make the best use of time, it is vital to anticipate potential issues and identify their root causes. Individuals, who manage their time better, learn to enhance their efficiency and achieve success as a result in work; hence, managing time takes personal skills and drive (Sabuncuoglu, et. al., 2010). A study of Farokhzadianetal. (2020) stated that time management skills education helps improve the quality of care. Improving nursing competencies, such as time management skills education, aids in the delivery of high-quality care. According to Masoudiet al. (2015), time management is a key determinant of less-than-optimal nursing care quality. Nurses must improve their time management skills because time management skills have a positive impact on work-life balance, safety, optimal use of time, and increased organizational efficiency. Education in time management skills improves the nursing care quality.Nursing professionals should take time management classes as part of their continuing education programs because efficient use of time increases the motivation and satisfaction of nursing team members, and improves the standard of

care they deliver (Tofighi et. al.,2022). In addition, nursing is both a science and an art, encompassing both direct and indirect care actions.

5.10 Conclusion

This study sought to assess the effect of a time management education program on the quality of care for nurses who work in the ICU. The study found that nurses were moderately efficient in time management before education. Time management education programs can help improve various areas of nursing care quality. Following time management education, ICU nurses' quality of care improved statistically significantly.

Nurses would benefit greatly from better time management skills. Reviewing the guidelines and instructions for treatment and care can be based on the application of realistic time management techniques. To provide patients with adequate treatment in intensive care units, time management is crucial. Nurses, who are aware of time management skills, may feel less stressed and complete their tasks on schedule, these techniques are attainable. As a result, managers of nurses in hospitals facilitate regular time management education for nursing staff. The education in hospitals is to provide more education opportunities, training programs, and study days on time management.

5.11 Nursing Implications

The application of practical time management education program methods can serve as a foundation for examining treatment recommendations and instructions. The time management dimensions are critical to the quality of care in intensive care units.

Time management skills can be learned, and nurses who are aware of these skills may feel less stressed while executing their duties on time. Nurses would greatly benefit from improving their

time management abilities. Therefore, nurse supervisors should facilitate regular time management education for nursing personnel in hospitals.

5.12 Limitations

There were several limitations to this study. The nature of self-report data may have an impact on the findings since some individuals may intentionally or unintentionally try to demonstrate their desires and not real experiences. The addition of the control group would have assisted in mitigating some bias. It was out that nurses were driven and involved in the research, indicating that careful, considered answers would have been given.

The inability to randomly assign participants to an intervention or control group increases the possibility of non-equivalent groups forming and permits unrelated factors to skew study outcomes. Randomizing groups at the hospital level was the best course of action in this situation to prevent cross-contamination.

5.13 Recommendations

The following recommendations have emerged from the findings of this study and are categorized into system-wide level, health services level and ICU level.

System Level

- Time management is a culturally concept that is needed to be highlighted in general population nationally and for nurses specifically. In addition, it will be beneficial if time management is considered in primary and secondary levels of teaching.
- It is recommended to include time management education within the health professions in general and nursing curricula in specific at the university level to have effective nursing care services that ultimately will be reflected on the quality of care provided

- It is recommended to inform the MOH with the current study findings that may allow them to include time management education within the in-service education programs for all health professionals

Health Service Level

- In service education in hospitals to initiate courses for nurses in the different departments of the hospital on time management.
- Encourage creative endeavors by offering various prizes for completed creative work, especially in time management for nurses.

ICU Level

- Each ICU develops and implements structured orientation programs for new personnel in time management education program. Manage the ongoing professional development for staff, including their training program in time management.
- Unit head nurse address issues related to staffing distribution and resource availability in ICU settings to assure the quality of patient care.
- Put posters in each department with time management ideas and their impact on staff nurses' outcomes.

Recommendations regarding Nursing Education and Research

- Further research on the time management and quality of care is needed in different settings, for government and government hospital, and different wards in hospital.
- Application of time management in nursing education and curriculum may enhance the standard and quality of care.

- The results of this study help nurses, nursing educators, and managers of clinical settings create education programs that address the needs of nursing students and ease their transition to the work place effectively.

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List of Appendices

Appendix (1)

Section 1

PART ONE: TIME MANAGEMENT QUESTIONNAIRE FOR NURSES IN MOH – ICU

	Questionnaire Items	**S. Agree 5**	**Agree 4**	**Neutral 3**	**Disagree 2**	**S. Disagree 1**
	Nurses' Time management in ICU					
1.	Exploitation of time help increasing the quality of car					
2.	Time management efficiently and effectively improves the quality of care.					
3.	Appreciation of the expected time for each task help in organizing the planned work within the allotted time					
4.	There is a relationship between nurse's time management and quality of care for nursing in ICU					
5.	there is continuous education program including time management for ICU nurses regarding time management and quality of care					

	Goal Setting	**Always 5**	**V. Often 4**	**Sometimes 3**	**Rarely 2**	**Never 1**
1.	I set my nursing goals based on the needs of my patients					
2.	I set specific goals for each specific task					
3.	I usually assess what has been accomplished to meet the goal I set					
4.	I usually set my nursing goals to be realistic and achievable					
5.	I usually identify the precise objectives for the tasks I should accomplish during my work					
6.	I usually set a deadline for performing any needed procedure for my patients					
	Time planning	**Always 5**	**V. Often 4**	**Sometimes 3**	**Rarely 2**	**Never 1**
1.	I usually set my action plan based on the set goals					
2.	I make a list of things to be done during my working hour					
3.	I plan my nursing activities prior to working with my colleagues.					

4.	I usually make a schedule for my working day activities					
5.	I modify plans based on nursing intervention results.					
6.	I use a notebook to help me in tracking my working day activities.					
7.	I plan and organize my time according to duties and activities to be performed during my working day.					
	Time commitment and delegation	**Always 5**	**V. Often 4**	**Sometime 3**	**Rarely 2**	**Never 1**
1.	I'm committed to complete my nursing tasks allowing for each task to be complete within a specific deadline.					
2.	I'm committed to follow the protocols and policies of the ICU.					
3.	I start my duty early to take advantage of the day					
4.	I delegate tasks to colleagues based on their skills and abilities when I'm overloaded.					
5.	I'm committed to deliver consistently high levels of patient care all the time					

	during work					
6.	I usually strive to balance between compassionate and clinical support.					
7.	I delegate tasks to colleagues when there					
8.	I'm usually committed to advocate for my patient.					
9.	I usually provide care in an empathic way, taking into account the patient's feelings and treating them with dignity and respect					
10.	I usually provide my nursing care to be patient-centered and accommodate the patient's wishes, preferences and beliefs.					
11.	I usually attend provide the highest level of care possible because of the available opportunities for continuous professional development					
	Time priority	**Always 5**	**V. Often 4**	**Sometimes 3**	**Rarely 2**	**Never 1**
1.	I create a list of tasks based on priority					

	and check off items as soon I complete them					
2.	I focus on getting one task done and move on to the next.					
3.	I Identify most important tasks and create a plan accordingly					
4.	**I** tune out distractions while trying to accomplish the identified tasks					
5.	I know how much time I need for each task.					
6.	I delegate some of my duty to collogues in case I'm time deficient					
	Time Wasters	**S. Agree 5**	**Agree 4**	**Neutral 3**	**Disagree 2**	**S. Disagree 1**
1.	Moving around between patient's rooms, nursing station and rest room may delay the required tasks					
2.	Using phones and social media for personal matters during working hours					
3.	Waiting physicians to receive medication orders, post-round information, discharge orders and other necessary information					
4.	Communication with patient relatives,					

	visitors, and colleagues etc….					
5.	Searching for supplies or equipment to be used and then bring them back.					
6.	Non competence and delay in getting nursing task done on time					
7.	Procrastination on tasks that I don't like but it must be done.					
8.	Procrastination in decision-making					
9.	Underestimating time for tasks					
10.	Coordination among health professional for patients need, care and follow-up					
11.	Manual charting and documentation					
12.	Frequent disorder of Hospital information system (HIS)					
13.	Utilizing of use both system (manual and health information system					

Section 2

QUALITY OF CARE CHECKLIST FOR PATIENT IN ICU

N	Items	Not applicable 1	Acceptable 2	Good 3	Very good 4
1	Patient's eyes are clearly clean.				
2	The Glasgow coma scale (GCS)has been recorded.				
3	Patient's position is in agreement with instructions.				
4	The patient's limbs are protected in proper position.				
5	The changing position every 2 hours has been done and recorded.				
6	Theactualtuningofmechanicalventilationisconsisted withprescription.				
7	Endotracheal suctioning has been done and recorded according to protocol.				
8	The changes in mechanical ventilation tuning have been recorded.				
9	There location of tracheal tube in the mouth for prevention of lips or in every shift has been done and recorded.				
10	No visible secretions and condensate exist in the connections between the ventilator, endotracheal tubes, or tracheotomy.				

11	No visible condensate pile dup in ventilator tubes is existed.				
12	The pulse oximetry is monitored and recorded.				
13	Sterile saline solution and catheters for endotracheal suctioning are existed.				
14	The suction apparatus (the bottle and catheters)are clean and work well.				
15	The fixing band of tracheal tube is clean.				
16	The alarms of ventilator are switched on.				
17	Time to introduction of arterial and venous lines has been recorded.				
18	There is no sign of phlebitis in peripheral venous line and the line is in situ for less than72 hours.				
19	The central and peripheral venous lines have caps.				
20	The central line has been flushed with heparin-saline every 3 hours.				
21	The intake and output has been recorded				
22	The vital signs have been recorded				
23	All infusions of the patient are recorded on the ICU chart.				
24	Administered drugs have been recorded.				
25	There is no sore in the patient’s lips and mouth.				

26	The risk factors of pressure sore have been recorded.				
27	The active and passive mobility of patient has been recorded				
28	The defecation in previous 3 days has been recorded or an intervention has been implemented				
29	The weight and height of the patient have been recorded.				
30	The ABG result 1 hour after endotracheal tube removal is existed				
31	The alarms of the monitor are switched on.				
32	The central venous pressures have been recorded.				
33	Arterial blood pressure has been checked against sphygmomanometric pressure (past 24 hours).				
34	The cardiac rhythm has been recorded in past 24 hours				
35	Prescribed IV medications are infusing.				
36	The up-to-date temperature list in the past 48 hours is existed.				
37	The head of bed is in 30°–45° (if there is no contraindication).				
38	There is no sign of thrombosis in arterial line and the line is in situ for less than 6 days.				

39	The blood products have been checked according to hemovigilance protocol.				
40	The chart of blood products administration has been completed and signed.				
41	The vital signs have been recorded before blood product administration				
42	The vital signs have been recorded after blood product administration according to protocol				
43	The IV lines are fixed properly.				
44	The ECG strip and vital signs of the admission are recorded.				
45	Alarms of the monitor have been set properly.				
46	The time of feeding tube introduction has been recorded.				
47	The retention in gastric tube feeding has been measured.				
48	Feeding tube has been flushed according to instructions and is in place for less than 2 weeks.				
49	No air leaks from vacuum device of thoracic drain is existed				

Appendix (2)

Institutional Review Board (IRB)

Arab American University- Palestine
Deanship of Scientific Research
IRB committee
Tel: 04-241-8888, ext 1196
E-mail: irb.aaup@aaup.edu

الجامعة العربية الامريكية- فلسطين
عمادة البحث العلمي
لجنة أخلاقيات البحث العلمي
تلفون: 1196 ext 04-241-8888
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IRB Approval Letter

Study Title: Effect of time management-training program on the quality of intensive care unit (ICU) patients nursing care Quasi-experimental study

Submitted by: Mohammed Taha Muhmmod Qtait

Date received: 9th May 2023

Date reviewed: 4th June 2023

Date approved: 12th June 2023

Your Study titled "**Effect of time management-training program on the quality of intensive care unit (ICU) patients nursing care Quasi-experimental study**" With archived number 2023/A/107/N was reviewed by the Arab American University IRB committee and was approved on 12th June 2023.

Reham Khalaf-Nazzal, MD, PhD
IRB committee chairman
Arab American University of Palestine

General Conditions:

1. Valid for 4 months from date of approval.
2. It is important to inform the committee with any modification of the approved study protocol.
3. The committee appreciates a copy of the research when accomplished.

Appendix (3)

Palestinian Ministry of Health Approval

State of Palestine
Ministry of Health
ation in Health and Scientific Research Unit

دولة فلسطين
وزارة الصحة
وحدة التعليم الصحي والبحث العلمي

....
....

الرقـــم: ١٦٢/١٣٨٣/٢٠٢١
التـاريخ: ٢٤/٧/٢٠٢١

عطوفة الوكيل المساعد المدير التنفيذي لمجمع فلسطين الطبي المحترم،،،
ق. أ. الوكيل المساعد لشؤون المستشفيات والطوارئ المحترم،،،
تحيـة واحتــرام،،،

<u>الموضـــوع: تسهيل مهمة بحث دكتوراه</u>

يرجى تسهيل مهمة الطالب: **محمد طه محمود قطيط – برنامج الدكتوراه في التمريض**- الجامعة العربية الامريكية، بعنوان:

" Effectiveness of Time Management-Training program on Nurses working in Intensive Care unit on the Quality of Care in West Bank government hospitals "

حيث سيقوم الطالب بجمع معلومات عن طريق تعبئة استبانات الدراسة قبل وبعد تنفيذ برنامج تعليمي لممرضي/ات أقسام العناية المكثفة (بعد اخذ موافقتهم/ن) واخذ موافقة ادارة المشفى، وذلك في:

- **جميع المستشفيات الحكومية في الضفة الغربية**
- **مجمع فلسطين الطبي**

مع العلم ان مشرفة الدراسة: د. سميه صايج.
على ان يتم الالتزام بالمحافظة على اخلاقيات البحث العلمي وسرية المعلومات.
على ان يتم تزويد الوزارة بنسخة PDF من نتائج البحث، التعهد بعدم النشر لحين الحصول على موافقة وزارة الصحة.

مع الاحترام،،،

د. عبد الله القواسمي
رئيس وحدة التعليم الصحي والبحث العلمي

دولة فلسطين - وزارة الصحة - وحدة التعليم الصحي والبحث العلمي

نسخة: عميد كلية الدراسات العليا المحترمة/ الجامعة العربية الامريكية

Appendix (4)

Education Program

Table of contents of education program

Content of the time management training
Delivery methods: lectures, questions and answers, slide presentations, an educational clip, hands-on exercises, and an educational poster
Expected duration: 6 h **Goal**: To understand the effectiveness of time management education on the quality of nursing care in the ICU

Session	**Topic**	**Content**	**Objectives**
1	time management for nurses' introduction	History and Definition of time management for nurses	• Describe time management. • Apply time management in nursing work. • Time management in nursing care a broader perspective.
2	Importance of time management important on nursing work	Definition and objectives, advantages and the effect of time management on	• Explain the objectives of time management. • Understand the positive effects of time

		nursing work.	management on the quality of care and nursing work.
3	Dimension of time management goalsetting and priority	Definition of goalsetting and priority. Determining how to set goals and select tasks to obtain specific goals, and determine the priority of work	• Understand the necessity of setting goals and priorities in nursing care planning. • Prioritize patient care activities using categories. • Write everything down, and cross items off as they complete them. • Reprioritize as events unfold throughout the day.
4	Planning, time waster, and Time Commitment	Description of techniques associated with effective time management such as making lists, scheduling activities, checking off each task as it is accomplished,	• creating and using lists • Assigning activities to a particular time in accordance with the patient requirements. • Make a schedule of the activities that have to be done on working days.

		and avoiding time waster	• apply a range of time management techniques to the workplace
5	Exercises in group work	Description of the way subjects organize their time and work environment	• Assess how to organize time. • Structure the workplace for efficiency, productivity, and quality. • Use the appropriate time planning strategies. • prioritize and delegate
6	Time Management Review in nursing practice	The importance of implementation of time management in nursing work	• Working under control • Confidence to complete work on time. • Conscious of the amount of time spent on different tasks. • A positive effect of time management on work and perceived control of time. • Evaluate time management functions in nursing work.

			• Examine strategies and skills for managing time more effectively in a nursing practice. • Apply learning to their current nursing practice. • Create a plan for better time management in their roles as nurses. • Apply a range of time management techniques to nursing work.

Appendix (5)

Participants Consent Form

CONSENTFORM

Effectiveness of Time Management-Education Program on Patient Quality of Care Performed by Nurses Working in Intensive Care Units in West Bank Government Hospitals

Please Initial

TO BE COMPLETED BY THE PARTICIPANT

1. I confirm that I have read and understand the information sheet for the above study and have had the opportunity to ask questions. ☐

2. I understand that my participation is voluntary and that I am free to withdraw at any time, without giving any reason, and without my employment being affected ☐

3.IunderstandthatIdonothavetoanswerallofthe questions ☐

4. I understand that the researcher will write a report of the study from information that provide and that the findings will be presented in publications and conference presentations in anonymized form. Nothing that could identify me will be included. ☐

5.I agree to take partin the study.

Name of Nurse	Date	Signature
Mohammed Qtait		
Name of Researcher	Date	Signature

This form should be completed and returned in a sealed envelope to the Head Nurse at the unit.

Participant Information Sheet

AAUP-IRB Code No.:…2023 A 107 N_SS

AAUP-IRB Date:……12th June 2023

Study Title: Effect of time management-education program on the quality of intensive care unit (ICU) patients nursing care Quasi-experimental study

We would like to invite you to take part in a research study. Before you decide whether to participate, you need to understand why the research is being done and what it would involve. Please take time to read the following information carefully; talk to others about the study if you wish. Ask us if there is anything that is not clear or if you would like more information. Take time to decide whether or not you wish to take part.

1. What is the purpose of this study?

To determine the time management education effect on the quality of care for nurses in ICU in government hospitals.

2. Why is this study important?

To assess the nurses' time management and nursing quality of care in ICU.

To determine the differences in time managing education between nurses according to their level of education, gender, experience, age…. etc.

To determine the relationship between time management and quality of nursing care and previous time manageable education among studied nurses.

To determine the differences in nursing quality of care between nurses according to their level of education, gender, experience, age...etc.

To evaluate the effect of time management ducation program on nurses' quality of nursing care in ICU.

To evaluate and compare the difference quality of care between nurses with education in time management and with not education in time management.

3. What is the procedure that is being tested? *(If applicable)*

Permissions were first received for complete clearance from chosen hospital administration (MOH). The investigator allocated the questions alone. The study participants answered the questionnaire sheet individually and when in service. Pre and post-multimodal intervention data will be obtained.

4. Why have I been invited to participate in this study?

Apart of study in PhD in nursing

The study's overarching goal is to explore and gain of ICU nurses skills of time management, and to gain insight into and explain how nurses handle their time while at work and

identify individual and institutional barriers. Practically speaking, this information can be utilized to develop education programs and other interventions that help people improve their time management skills and enhance their ability to meet the challenges they meet during their work in ICU.

5. Who should not participate in the study?

Nurses who have time management course education or certification in less than 2 years **Nurses** whom unable to attend the education program session.

6. Can I refuse to take part in the study?

Yes

7. What will happen to me if I take part?

Withdrawal from the study

8. How long will I be involved in this study?

One month

9. What are the possible disadvantages and risks?

No disadvantage

10. What are the possible benefits to me?

Knowledge of time management in nursing and the effect of time management education on the quality of care for nurses on intensive care unit (ICU) nurses may raise the likelihood of

success and create opportunities for the advancement of the nursing profession. Knowing the limitations, particularly the lack of time management in hospitals, and working to eliminate them can improve nurses' performance efficiency, as well as the effectiveness of regulatory and planning activities, and the administration process as a whole

11. **Who will have access to my medical records and research data?**

Not use medical record

12. Will my records/data be kept confidential?

Yes

13. What will happen to any samples I give? *(If applicable)*

Not use name and keep confidential

14. What will happen if I don't want to carry on with the study?

No thing

15. What will happen to the results of the research study?

Use for dissertation

16. Will I receive compensation for participating in this study?

No

17. Who should I contact if I have additional questions/problems during the study?

Researcher contact details:

Mohammed Qtait

Email :m.qtait1@student.aaup.edu

18. Who should I contact if I am unhappy with how the study is being conducted?

Mohammed Qtait

Email :m.qtait1@student.aaup.edu

Ethical Review Committee

Deanship of Scientific Research

Arab American University-Palestine (AAUP)

Email: src@aaup.edu

Appendix (6)

Part One: Time Management Questionnaire Pretest and Posttest for Control Group

	Nurses' Time management in ICU	PRETEST					POSTEST				
		Strongly Disagree	Disagree	Neutral	Agree	Strongly agree	Strongly Disagree	Disagree	Neutral	Agree	Strongly agree
1.	Exploitation of time help increasing the quality of care	0(0.0)	11(11.1)	18(18.2)	46(46.5)	24(24.2)	0(0.0)	11(11.1	19(19.2	44(44.4	25(25.3
2.	Time management efficiently and effectively improves the quality of care.	0(0.0)	13(13.1)	30(30.3)	23(23.2)	33(33.3)	0(0.0)	13(13.1	30(30.3	21(21.2	35(35.4
3.	Appreciation of the expected time for each task help in organizing the planned work within the allotted time	0(0.0)	6(6.1)	28(28.3)	42(42.4)	23(23.2)	0(0.0)	6(6.1	29(29.3	40(40.4	4(24.2
4.	There is a relationship between nurse's time management and quality of care for nursing in ICU	1(1.0)	7(7.1)	24(24.2)	45(45.5)	22(22.2)	1(1.0	7(7.1	26(26.3	43(43.4	22(22.2

5.	There is continuous education program including time management for ICU nurses regarding time management and quality of care	1(1.0)	14(14.1)	34(34.3)	36(36.4)	14(14.1)	1(1.0	13(13.1	34(34.3	33(33.3	18(18.2
	Goal Setting	**Never**	**Rarely**	**Sometimes**	**Often**	**Always**	**Never**	**Rarely**	**Sometimes**	**Often**	**Always**
6.	I set my nursing goals based on the needs of my patients	0(0.0)	14(14.1	37(37.4)	34(34.3	14(14.1	0(0.0)	14(14.1	38(38.4	34(34.3	13(13.1
7.	I set specific goals for each specific task	6(6.1	5(5.1	46(46.5)	34(34.3	8(8.1	4(4.0	5(5.1	47(47.5	34(34.3	9(9.1
8.	I usually assess what has been accomplished to meet the goal I set	6(6.1	11(11.1	33(33.3)	38(38.4	11(11.1	4(4.0	10(10.1	35(35.4	40(40.4	10(10.1
9.	I usually set my nursing goals to be realistic and achievable	12(12.1)	9(9.1)	28(28.3)	40(40.4)	10(10.1)	10(10.1	9(9.1	29(29.3	38(38.4	13(13.1
10.	I usually identify the precise objectives for the tasks I should	7(7.1)	8(8.1)	46(46.5)	25(25.3	13(13.1	5(5.1	8(8.1	48(48.5	23(23.2	15(15.2

	accomplish during my work										
11.	I usually set a deadline for performing any needed procedure for my patients	6(6.1	14(14.1	35(35.4	34(34.3	10(10.1	4(4.0	14(14.1	37(37.4	33(33.3	11(11.1
	Time planning	**Never**	**Rarely**	**Sometimes**	**Often**	**Always**	**Never**	**Rarely**	**Sometimes**	**Often**	**Always**
12.	I usually set my action plan based on the set goals	7(7.1	5(5.1	39(39.4	32(32.3	16(16.2	5(5.1	8(8.1	48(48.5	23(23.2	15(15.2
13.	I make a list of things to be done during my working hour	8(8.1	13(13.1	35(35.4	36(36.4	7(7.1	6(6.1	13(13.1	35(35.4	36(36.4	9(9.1
14.	I plan my nursing activities prior to working with my colleagues.	8(8.1	8(8.1	37(37.4	41(41.4	5(5.1	6(6.1	8(8.1	40(40.4	38(38.4	7(7.1
15.	I usually make a schedule for my working day activities	7(7.1	15(15.2	41(41.4	34(34.3	2(2.0	5(5.1	15(15.2	40(40.4	36(36.4	3(3.0
16.	I modify plans based	8(8.1	13(13.1	37(37.4	37(37.4	4(4.0	6(6.1	13(13.1	38(38.4	37(37.4	5(5.1

	on nursing intervention results.										
17.	I use a notebook to help me in tracking my working day activities.	14(14.1	16(16.2	42(42.4	20(20.2	7(7.1	12(12.1	16(16.2	42(42.4	22(22.2	7(7.1
18.	I plan and organize my time according to duties and activities to be performed during my working day	11(11.1	7(7.1	47(47.5	23(23.2	11(11.1	9(9.1	7(7.1	48(48.5	22(22.2	13(13.1
	Time commitment and delegation	**Never**	**Rarely**	**Sometimes**	**Often**	**Always**	**Never**	**Rarely**	**Sometimes**	**Often**	**Always**
19.	I'm committed to complete my nursing tasks allowing for each task to be complete within a specific deadline.	6(6.1	9(9.1	48(48.5	29(29.3	7(7.1	4(4.0	9(9.1	48(48.5	33(33.3	5(5.1
20.	I'm committed to follow the protocols and policies of the ICU.	6(6.1	15(15.2	39(39.4	32(32.3	7(7.1	4(4.0	14(14.1	40(40.4	36(36.4	5(5.1
21.	I start my duty early	0(0.0)	17(17.2	50(50.5	26(26.3	6(6.1	0(0.0)	15(15.2	52(52.5	24(24.2	8(8.1

	to take advantage of the day										
22.	I delegate tasks to colleagues based on their skills and abilities when I'm overloaded.	0(0.0)	14(14.1	60(60.6	21(21.2	4(4.0	0(0.0)	12(12.1	61(61.6	20(20.2	6(6.1
23.	I'm committed to deliver consistently high levels of patient care all the time during work	0(0.0)	24(24.2	39(39.4	30(30.3	6(6.1	0(0.0)	21(21.2	43(43.4	27(27.3	8(8.1
24.	I usually strive to balance between compassionate and clinical support.	4(4.0	19(19.2	51(51.5	20(20.2	5(5.1	0(0.0)	21(21.2	43(43.4	27(27.3	8(8.1
25.	I delegate tasks to colleagues when there	0(0.0)	22(22.2	49(49.5	26(26.3	2(2.0	0(0.0)	20(20.2	52(52.5	24(24.2	3(3.0
26.	I'm usually committed to advocate for my patient.	0(0.0)	22(22.2	44(44.4	31(31.3	2(2.0	0(0.0)	20(20.2	46(46.5	30(30.3	3(3.0
27.	I usually provide care in an empathic	0(0.0)	19(19.2	48(48.5	25(25.3	7(7.1	0(0.0)	17(17.2	49(49.5	25(25.3	8(8.1

	way, taking into account the patient's feelings and treating them with dignity and respect										
28.	I usually provide my nursing care to be patient-centered and accommodate the patient's wishes, preferences and beliefs.	0(0.0)	16(16.2	38(38.4	30(30.3	15(15.2	0(0.0)	14(14.1	42(42.4	28(28.3	15(15.2
29.	I usually provide the highest level of care possible because of the available opportunities for continuous professional development	4(4.0	10(10.1	45(45.5	28(28.3	12(12.1	4(4.0	10(10.1	50(50.5	25(25.3	10(10.1
	Time priority	**Never**	**Rarely**	**Sometimes**	**Often**	**Always**	**Never**	**Rarely**	**Sometimes**	**Often**	**Always**
30.	I create a list of tasks	0(0.0)	15(15.2	42(42.4	31(31.3	11(11.1	0(0.0)	13(13.1	45(45.5	30(30.3	11(11.1

	based on priority and check off items as soon I complete them										
31.	I focus on getting one task done and move on to the next.	0(0.0)	15(15.2	44(44.4	32(32.3	8(8.1	0(0.0)	15(15.2	42(42.4	33(33.3	9(9.1
32.	I Identify most important tasks and create a plan accordingly	0(0.0)	7(7.1	51(51.5	31(31.3	10(10.1	0(0.0)	13(13.1	45(45.5	30(30.3	11(11.1
33.	I tune out distractions while trying to accomplish the identified tasks	2(2.0	10(10.1	56(56.6	20(20.2	11(11.1	0(0.0)	15(15.2	42(42.4	33(33.3	9(9.1
34.	I know how much time I need for each task.	0.0	12(12.1	54(54.5	25(25.3	8(8.1	0(0.0)	12(12.1	57(57.6	25(25.3	5(5.1
35.	I delegate some of my duty to collogues in case I'm time deficient	2(2.0	6(6.1	58(58.6	25(25.3)	8(8.1)	2(2.0	6(6.1	60(60.6	25(25.3	6(6.1
	Time Wasters	**Strongly Disagree**	**Disagree**	**Neutral**	**Agree**	**Strongly agree**	**Strongly Disagree**	**Disagree**	**Neutral**	**Agree**	**Strongly agree**
36.	Moving around between patient's	0(0.0)	56(56.6	35(35.4	7(7.1	1(1.0	0(0.0)	52(52.5	38(38.4	8(8.1	1(1.0

	rooms, nursing station and rest room may delay the required tasks										
37.	Using phones and social media for personal matters during working hours	2(2.0)	20(20.2)	31(31.3)	41(41.4	5(5.1)	2(2.0	20(20.2	32(32.3	39(39.4	6(6.1
38.	Waiting physicians to receive medication orders, post-round information, discharge orders and other necessary information	0(0.0)	12(12.1	33(33.3	43(43.4	11(11.1	0(0.0)	12(12.1	35(35.4	42(42.4	10(10.1
39.	Communication with patient relatives, visitors, and colleagues etc….	0(0.0)	11(11.1	36(36.4	39(39.4	13(13.1	0(0.0)	11(11.1	35(35.4	41(41.4	12(12.1
40.	Searching for supplies or equipment to be used and then bring them back.	1(1.0	10(10.1	46(46.5	24(24.2	18(18.2	1(1.0	10(10.1	44(44.4	22(22.2	22(22.2
41.	Non competence and delay in getting nursing task done on time		7(7.1	34(34.3	40(40.4	18(18.2	0(0.0)	7(7.1	34(34.3	37(37.4	21(21.2

42.	Procrastination on tasks that I don't like but it must be done.	6(6.1	19(19.2	39(39.4	30(30.3	5(5.1	6(6.1	19(19.2	36(36.4	32(32.3	6(6.1
43.	Procrastination in decision-making	0(0.0)	12(12.1	46(46.5	29(29.3	12(12.1	0(0.0)	12(12.1	45(45.5	26(26.3	16(16.2
44.	Underestimating time for tasks	2(2.0	26(26.3	38(38.4	26(26.3	7(7.1	2(2.0	26(26.3	35(35.4	26(26.3	10(10.1
45.	Coordination among health professional for patients need, care and follow-up	0(0.0)	20(20.2	34(34.3	37(37.4	8(8.1	0(0.0)	20(20.2	33(33.3	38(38.4	8(8.1
46.	Manual charting and documentation	2(2.0	19(19.2	47(47.5	21(21.2	10(10.1	2(2.0	19(19.2	46(46.5	24(24.2	8(8.1
47.	Frequent disorder of Hospital information system (HIS)	4(4.0	8(8.1	37(37.4	30(30.3	20(20.2	4(4.0	8(8.1	38(38.4	30(30.3	19(19.2
48.	Utilizing of use both system (manual and health information system	2(2.0	14(14.1	50(50.5	21(21.2	12(12.1	2(2.0	14(14.1	47(47.5	25(25.3	11(11.1

Appendix 7

Part One: Time Management Questionnaire Pretest and Posttest for Experimental Group

	Nurses' Time management in ICU	PRETEST					POSTEST				
		Strongly Disagree	Disagree	Neutral	Agree	Strongly agree	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
1.	Exploitation of time help increasing the quality of care	0(0.0)	11(12.1	17(18.7	37(40.7	26(28.6	0.0	0.0	2(2.2	23(25.3	66(72.5
2.	Time management efficiently and effectively improves the quality of care.	0(0.0)	13(14.3	21(23.1	18(19.8	39(42.9	0.0	1(1.1	6(6.6	10(11.0	74(81.3
3.	Appreciation of the expected time for each task help in organizing the planned work within the allotted time	0(0.0)	5(5.5	24(26.4	43(47.3	19(20.9	0.0	1(1.1	1(1.1	46(50.5	43(47.3
4.	There is a relationship between nurse's time management and quality of care for nursing in ICU	1(1.1	5(5.5	22(24.2	42(46.2	21(23.1	0.0	0.0	15(16.5	33(36.3	43(47.3

5.	There is continuous education program including time management for ICU nurses regarding time management and quality of care	1(1.1	12(13.2	27(29.7	35(38.5	16(17.6	1(1.1	3(3.3	15(16.5	25(27.5	47(51.6
	Goal Setting	**Never**	**Rarely**	**Sometimes**	**Often**	**Always**	**Never**	**Rarely**	**Sometimes**	**Often**	**Always**
6.	I set my nursing goals based on the needs of my patients	0(0.0)	12(13.2	29(31.9	38(41.8	12(13.2	0.0	4(4.4	10(11.0	49(53.8	28(30.8
7.	I set specific goals for each specific task	6(6.6	5(5.5	35(38.5	33(36.3	12(13.2	0.0	0.0	16(17.6	44(48.4	31(34.1
8.	I usually assess what has been accomplished to meet the goal I set	6(6.6	8(8.8	27(29.7	41(45.1	9(9.9	0.0	0.0	19(20.9	62(68.1	10(11.0
9.	I usually set my nursing goals to be realistic and achievable	12(13.2	6(6.6	19(20.9	42(46.2	12(13.2	0.0	0.0	3(3.3	58(63.7	30(33.0
10.	I usually identify the precise objectives for the tasks I should accomplish during my	6(6.6	6(6.6	39(42.9	24(26.4	16(17.6	0.0	0.0	15(16.5	36(39.6	40(44.0

	work										
11.	I usually set a deadline for performing any needed procedure for my patients	6(6.6	12(13.2	27(29.7	34(37.4	12(13.2	0.0	1(1.1	7(7.7	42(46.2	41(45.1
	Time planning	**Never**	**Rarely**	**Sometimes**	**Often**	**Always**	**Never**	**Rarely**	**Sometimes**	**Often**	**Always**
12.	I usually set my action plan based on the set goals	8(8.8	5(5.5	32(35.2	25(27.5	21(23.1	0.0	1(1.1	7(7.7	41(45.1	42(46.2
13.	I make a list of things to be done during my working hour	9(9.9	12(13.2	27(29.7	32(35.2	11(12.1	0.0	1(1.1	5(5.5	63(69.2	22(24.2
14.	I plan my nursing activities prior to working with my colleagues.	9(9.9	6(6.6	30(33.0	37(40.7	9(9.9	0.0	1(1.1	19(20.9	47(51.6	24(26.4
15.	I usually make a schedule for my working day activities	8(8.8	13(14.3	32(35.2	34(37.4	4(4.4	0.0	1(1.1	15(16.5	61(67.0	14(15.4
16.	I modify plans based on nursing intervention	8(8.8	12(13.2	26(28.6	37(40.7	8(8.8	0.0	0.0	12(13.2	54(59.3	25(27.5

	results.										
17.	I use a notebook to help me in tracking my working day activities.	14(15.4	13(14.3	31(34.1	25(27.5	8(8.8	0.0	9(9.9	8(8.8	45(49.5	29(31.9
18.	I plan and organize my time according to duties and activities to be performed during my working day.	12(13.2	6(6.6	37(40.7	22(24.2	14(15.4	0.0	0.0	23(25.3	24(26.4	44(48.4
	Time commitment and delegation	**Never**	**Rarely**	**Sometimes**	**Often**	**Always**	**Never**	**Rarely**	**Sometimes**	**Often**	**Always**
19.	I'm committed to complete my nursing tasks allowing for each task to be complete within a specific deadline.	6(6.6	7(7.7	40(44.0	31(34.1	7(7.7	0.0	2(2.2	3(3.3	64(70.3	22(24.2
20.	I'm committed to follow the protocols and policies of the ICU.	6(6.6	10(11.0	32(35.2	35(38.5	8(8.8	0.0	0.0	7(7.7	66(72.5	18(19.8
21.	I start my duty early to take advantage of the day	0(0.0)	14(15.4	44(48.4	23(25.3	10(11.0	0.0	0.0	10(11.0	60(65.9	21(23.1

22.	I delegate tasks to colleagues based on their skills and abilities when I'm overloaded.	0(0.0)	13(14.3	48(52.7	26(28.6	4(4.4	0.0	3(3.3	14(15.4	54(59.3	20(22.0
23.	I'm committed to deliver consistently high levels of patient care all the time during work	0(0.0)	20(22.0	38(41.8	27(29.7	6(6.6	0.0	2(2.2	3(3.3	64(70.3	22(24.2
24.	I usually strive to balance between compassionate and clinical support.	4(4.4	14(15.4	49(53.8	19(20.9	5(5.5	0.0	0.0	7(7.7	66(72.5	18(19.8
25.	I delegate tasks to colleagues when there	0(0.0)	19(20.9	41(45.1	27(29.7	4(4.4	0.0	0.0	10(11.0	60(65.9	21(23.1
26.	I'm usually committed to advocate for my patient.	0(0.0)	19(20.9	41(45.1	27(29.7	4(4.4	0.0	2(2.2	26(28.6	55(60.4	8(8.8
27.	I usually provide care in an empathic way, taking into account the patient's feelings and treating them with dignity and respect	0(0.0)	17(18.7	39(42.9	30(33.0	5(5.5	0.0	0.0	18(19.8	57(62.6	16(17.6

28.	I usually provide my nursing care to be patient-centered and accommodate the patient's wishes, preferences and beliefs.	0(0.0)	13(14.3	40(44.0	29(31.9	9(9.9	0.0	2(2.2	24(26.4	45(49.5	20(22.0
29.	I usually provide the highest level of care possible because of the available opportunities for continuous professional development	4(4.4	8(8.8	43(47.3	28(30.8	8(8.8	0.0	0.0	36(39.6	47(51.6	8(8.8
	Time priority	**Never**	**Rarely**	**Sometimes**	**Often**	**Always**	**Never**	**Rarely**	**Sometimes**	**Often**	**Always**
30.	I create a list of tasks based on priority and check off items as soon I complete them	0(0.0)	14(15.4	42(46.2	25(27.5	10(11.0	0.0	1(1.1	17(18.7	39(42.9	34(37.4
31.	I focus on getting one task done and move on to the next.	0(0.0)	12(13.2	39(42.9	37(40.7	3(3.3	0.0	3(3.3	10(11.0	60(65.9	18(19.8

32.	I Identify most important tasks and create a plan accordingly	0(0.0)	8(8.8	39(42.9	35(38.5	9(9.9	0.0	0.0	9(9.9	68(74.7	14(15.4
33.	I tune out distractions while trying to accomplish the identified tasks	3(3.3	8(8.8	50(54.9	19(20.9	11(12.1	0.0	2(2.2	32(35.2	29(31.9	28(30.8
34.	I know how much time I need for each task.		10(11.0	56(61.5	18(19.8	7(7.7	0.0	0.0	35(38.5	36(39.6	20(22.0
35.	I delegate some of my duty to collogues in case I'm time deficient	3(3.3	5(5.5	56(61.5	21(23.1	6(6.6	0.0	2(2.2	39(42.9	38(41.8	12(13.2
	Time Wasters	**Strongly Disagree**	**Disagree**	**Neutral**	**Agree**	**agree**	**Disagree**	**Disagree**		**Agree**	**agree**
36.	Moving around between patient's rooms, nursing station and rest room may delay the required tasks	0(0.0)	50(54.9	35(38.5	5(5.5	1(1.1	2(2.2	42(46.2	27(29.7	18(19.8	2(2.2
37.	Using phones and social media for personal matters during working hours	1(1.1	17(18.7	26(28.6	37(40.7	10(11.0	0.0	2(2.2	14(15.4	55(60.4	20(22.0

38.	Waiting physicians to receive medication orders, post-round information, discharge orders and other necessary information	0(0.0)	12(13.2	29(31.9	41(45.1	9(9.9	0.0	0.0	21(23.1	57(62.6	13(14.3
39.	Communication with patient relatives, visitors, and colleagues etc….	0(0.0)	9(9.9	32(35.2	43(47.3	7(7.7	0.0	0.0	13(14.3	50(54.9	28(30.8
40.	Searching for supplies or equipment to be used and then bring them back.	0(0.0)	9(9.9	39(42.9	26(28.6	17(18.7	0.0	1(1.1	17(18.7	32(35.2	41(45.1
41.	Non competence and delay in getting nursing task done on time	0(0.0)	6(6.6	29(31.9	36(39.6	20(22.0	0.0	2(2.2	18(19.8	47(51.6	24(26.4
42.	Procrastination on tasks that I don't like but it must be done.	6(6.6	17(18.7	27(29.7	38(41.8	3(3.3	0.0	2(2.2	16(17.6	59(64.8	14(15.4
43.	Procrastination in decision-making	0(0.0)	12(13.2	37(40.7	32(35.2	10(11.0	0.0	2(2.2	12(13.2	47(51.6	30(33.0
44.	Underestimating time for tasks	2(2.2	25(27.5	28(30.8	30(33.0	6(6.6	0.0	4(4.4	15(16.5	48(52.7	24(26.4
45.	Coordination among health professional for patients	0(0.0)	21(23.1	26(28.6	35(38.5	9(9.9	0.0	3(3.3	14(15.4	54(59.3	20(22.0

	need, care and follow-up										
46.	Manual charting and documentation	2(2.2	19(20.9	38(41.8	22(24.2	10(11.0	0.0	6(6.6	23(25.3	38(41.8	24(26.4
47.	Frequent disorder of Hospital information system (HIS)	3(3.3	9(9.9	33(36.3	28(30.8	18(19.8	0.0	4(4.4	20(22.0	41(45.1	26(28.6
48.	Utilizing of use both system (manual and health information system	1(1.1	13(14.3	39(42.9	25(27.5	13(14.3	0.0	2(2.2	15(16.5	54(59.3	20(22.0

Appendix (8)

Pretest-Postest Quality of Care Checklist for Control Group in ICU-

N	Items	Not applicable 1	Acceptable 2	Good 3	Very good 4	Not applicable 1	Acceptable 2	Good 3	Very good 4
		PRETEST				POSTEST			
1	Patient's eyes are clearly clean.	0.0	71(71.7	22(22.2	6(6.1	0	39(39.4	58(58.6	2(2.0
2	The Glasgow coma scale (GCS)has been recorded.	9(9.1	54(54.5	30(30.3	6(6.1	8(8.1	56(56.6	26(26.3	9(9.1
3	Patient's position is in agreement with instructions.	9(9.1	26(26.3	47(47.5	17(17.2	5(5.1	33(33.3	57(57.6	4(4.0
4	The patient's limbs are protected in proper position.	6(6.1	20(20.2	63(63.6	10(10.1	4(4.0	35(35.4	54(54.5	6(6.1
5	The changing position every 2 hours has been done and recorded.	5(5.1	45(45.5	41(41.4	8(8.1	1(1.0	24(24.2	66(66.7	8(8.1
6	Theactualtuningofmechanicalventilationisconsistedwithprescription.	2(2.0	25(25.3	64(64.6	8(8.1	2(2.0	27(27.3	58(58.6	12(12.1

7	Endotracheal suctioning has been done and recorded according to protocol.	2(2.0	36(36.4	45(45.5	16(16.2	0.0	14(14.1	77(77.8	8(8.1
8	The changes in mechanical ventilation tuning have been recorded.	4(4.0	21(21.2	65(65.7	9(9.1	2(2.0	40(40.4	37(37.4	20(20.2
9	The location of tracheal tube in the mouth for prevention of lips or in every shift has been done and recorded.	0.0	34(34.3	57(57.6	8(8.1	4(4.0	9(9.1	66(66.7	20(20.2
10	No visible secretions and condensate exist in the connections between the ventilator, endotracheal tubes, or tracheotomy.	16(16.2	19(19.2	53(53.5	11(11.1	1(1.0	26(26.3	60(60.6	12(12.1
11	No visible condensate pile dup in ventilator tubes is existed.	11(11.1	22(22.2	49(49.5	17(17.2	3(3.0	10(10.1	61(61.6	25(25.3
12	The pulse oximetry is monitored and recorded.	4(4.0	34(34.3	27(27.3	34(34.3	0.0	32(32.3	47(47.5	20(20.2

13	Sterile saline solution and catheters for endotracheal suctioning are existed.	3(3.0	35(35.4	30(30.3	31(31.3	1(1.0	20(20.2	61(61.6	17(17.2
14	The suction apparatus (the bottle and catheters)are clean and work well.	15(15.2	15(15.2	45(45.5	24(24.2	4(4.0	15(15.2	80(80.8	0
15	The fixing band of tracheal tube is clean.	4(4.0	31(31.3	44(44.4	20(20.2	0	25(25.3	73(73.7	1(1.0
16	The alarms of ventilator are switched on.	32(32.3	18(18.2	19(19.2	30(30.3	4(4.0	34(34.3	24(24.2	37(37.4
17	Time to introduction of arterial and venous lines has been recorded.	12(12.1	32(32.3	33(33.3	22(22.2	4(4.0	56(56.6	17(17.2	22(22.2
18	There is no sign of phlebitis in peripheral venous line and the line is in situ for less than72 hours.	20(20.2	17(17.2	44(44.4	18(18.2	10(10.1	35(35.4	41(41.4	13(13.1
19	The central and peripheral venous lines have caps.	15(15.2	41(41.4	38(38.4	5(5.1	19(19.2	37(37.4	39(39.4	4(4.0
20	The central line has been	31(31.3	36(36.4	12(12.1	20(20.2	11(11.1	22(22.2	51(51.5	15(15.2

	flushed with heparin-saline every 3 hours.								
21	The intake and output has been recorded	2(2.0	25(25.3	44(44.4	28(28.3	3(3.0	24(24.2	45(45.5	27(27.3
22	The vital signs have been recorded	0.0	24(24.3	37(37.3	38(38.4	0.0	33(33.3	39(39.4	27(27.3
23	All infusions of the patient are recorded on the ICU chart.	0.0	14(14.1	43(43.4	42(42.4	0.0	16(16.2	56(56.6	27(27.3
24	Administered drugs have been recorded.	4(4.0	6(6.1	61(61.6	28(28.3	0.0	12(12.1	41(41.4	46(46.5
25	There is no sore in the patient's lips and mouth.	2(2.0	38(38.4	45(45.5	14(14.1	4(4.0	22(22.2	51(51.5	22(22.2
26	The risk factors of pressure sore have been recorded.	6(6.1	38(38.4	54(54.5	1(1.0	4(4.0	44 (44.4	41(41.4	10(10.1
27	The active and passive mobility of patient has been recorded	57(57.6	34(34.3	7(7.1	1(1.0	6(6.1	58(58.6	31(31.3	4(4.0
30	The ABG result 1 hour after endotracheal tube removal is existed	2(2.0	46(46.5	24(24.2	27(27.3	1(1.0	31(31.3	57(57.6	10(10.1
31	The alarms of the	9(9.1	25(25.3	53(53.5	12(12.1	3(3.0	56(56.6	35(35.4	5(5.1

	monitor are switched on.								
32	The central venous pressures have been recorded.	19(19.2	42(42.4	26(26.3	12(12.1	6(6.1	51(51.5	31(31.3	11(11.1
33	Arterial blood pressure has been checked against sphygmomanometric pressure (past 24 hours).	13(13.1	52(52.5	31(31.3	3(3.0	0.0	75(75.8	21(21.2	3(3.0
34	The cardiac rhythm has been recorded in past 24 hours	3(3.0	30(30.3	54(54.5	12(12.1	4(4.0	54(54.5	32(32.3	9(9.1
35	Prescribed IV medications are infusing.	18(18.2	23(23.2	26(26.3	32(32.3	3(3.0	37(37.4	36(36.4	23(23.2
36	The up-to-date temperature list in the past 48 hours is existed.	0	60(60.5	30(30.4	9(9.1	0.0	75(75.8	10(10.1	14(14.1
37	There is no sign of thrombosis in arterial line and the line is in situ for less than 6 days.	10(10.1	33(33.3	44(44.4	12(12.1	27(27.3	28(28.3	31(31.3	13(13.1
38	The blood products have been checked according to hemovigilance	10(10.1	49(49.5	34(34.3	6(6.1	37(37.4	28(28.3	34(34.3	0.0

	protocol.								
39	The chart of blood products administration has been completed and signed.	13(13.1	47(47.5	18(18.2	21(21.2	46(46.5	17(17.2	34(34.3	2(2.0
40	The vital signs have been recorded before blood product administration	17(17.2	37(37.4	20(20.2	25(25.3	27(27.3	37(37.4	31(31.3	4(4.0
41	The vital signs have been recorded after blood product administration according to protocol	14(14.1	30(30.3	40(40.4	15(15.2	25(25.3	33(33.3	36(36.4	5(5.1
42	The IV lines are fixed properly.	8(8.1	38(38.4	40(40.4	13(13.1	0.0	53(53.5	30(30.3	16(16.2
43	The ECG strip and vital signs of the admission are recorded.	18(18.2	34(34.3	25(25.3	22(22.2	0.0	59(59.6	28(28.3	12(12.1
44	Alarms of the monitor have been set properly.	22(22.2	34(34.3	26(26.3	17(17.2	7(7.1	30(30.3	30(30.3	32(32.3
45	The time of feeding tube introduction has been recorded.	25(25.3	19(19.2	46(46.5	9(9.1	37(37.4	35(35.4	25(25.3	2(2.0
46	The retention in gastric	44(44.4	24(24.2	27(27.3	4(4.0	40(40.4	37(37.4	22(22.2	0.0

	tube feeding has been measured.								
47	Feeding tube has been flushed according to instructions and is in place for less than 2 weeks.	45(45.5	25(25.3	28(28.3	1(1.0	43(43.4	48(48.5	8(8.1	0.0
48	No air leaks from vacuum device of thoracic drain is existed	36(36.4	29(29.3	25(25.3	9(9.1	36(36.4	44(44.4	19(19.2	0.0

Pretest-Postest For Quality-Of-Care Checklist For Experimental Group in ICU-

N	Items	Not applicable 1	Acceptable 2	Good 3	Very good 4	Not applicable 1	Acceptable 2	Good 3	Very good 4
		PRETEST				POSTTEST			
1	Patient's eyes are clearly clean.	0.0	53(58.3	32(35.2	6(6.6	0(0.0)	4(4.4	55(60.4	32(35.2
2	The Glasgow coma scale (GCS)has been	9(9.9	52(57.1	25(27.5	5(5.5	0(0.0)	1(1.1	46(50.5	44(48.4

	recorded.								
3	Patient's position is in agreement with instructions.	9(9.9	27(29.7	44(48.4	11(12.1	0(0.0)	2(2.2	44(48.4	45(49.5
4	The patient's limbs are protected in proper position.	5(5.5	20(22.0	59(64.8	7(7.7	0(0.0)	7(7.7	43(47.3	41(45.1
5	The changing position every 2 hours has been done and recorded.	6(6.6	45(49.5	33(36.3	7(7.7	0(0.0)	7(7.7	60(65.9	24(26.4
6	Theactualtuning ofmechanicalve ntilationisconsist edwithprescripti on.	2(2.2	16(17.6	66(72.5	7(7.7	0(0.0)	0(0.0)	34(37.4	57(62.6
7	Endotracheal suctioning has been done and recorded	0.0	36(39.6	39(42.9	16(17.6	0(0.0)	0(0.0)	33(36.3	58(63.7

	according to protocol.								
8	The changes in mechanical ventilation tuning have been recorded.	3(3.3	19(20.9	60(65.9	9(9.9	0(0.0)	0(0.0)	44(48.4	47(51.6
9	The location of tracheal tube in the mouth for prevention of lips or in every shift has been done and recorded.	0.0	29(31.9	54(59.3	8(8.8	0(0.0)	1(1.1	26(28.6	64(70.3
10	No visible secretions and condensate exist in the connections between the ventilator, endotracheal	17(18.7	19(20.9	46(50.5	9(9.9	0(0.0)	4(4.4	49(53.8	38(41.8

	tubes, or tracheotomy.								
11	No visible condensate piledup in ventilator tubes is existed.	11(12.1	21(23.1	44(48.4	15(16.5	0(0.0)	4(4.4	38(41.8	49(53.8
12	The pulse oximetry is monitored and recorded.	4(4.4	34(37.4	24(26.4	29(31.9	0(0.0)	0(0.0)	31(34.1	60(65.9
13	Sterile saline solution and catheters for endotracheal suctioning are existed.	3(3.3	33(36.3	23(25.3	32(35.2	0(0.0)	0(0.0)	33(36.3	58(63.7
14	The suction apparatus (the bottle and catheters)are clean and work well.	13(14.3	14(15.4	46(50.5	18(19.8	0(0.0)	5(5.5	40(44.0	46(50.5

15	The fixing band of tracheal tube is clean.	4(4.4	29(31.9	38(41.8	20(22.0	0(0.0)	1(1.1	20(22.0	70(76.9
16	The alarms of ventilator are switched on.	34(37.4	17(18.7	16(17.6	24(26.4	0(0.0)	0(0.0)	58(63.7	33(36.3
17	Time to introduction of arterial and venous lines has been recorded.	12(13.2	32(35.2	33(36.3	14(15.4	0(0.0)	5(5.5	35(38.5	51(56.0
18	There is no sign of phlebitis in peripheral venous line and the line is in situ for less than72 hours.	18(19.8	18(19.8	43(47.3	12(13.2	0(0.0)	2(2.2	45(49.5	44(48.4
19	The central and peripheral venous lines have caps.	12(13.2	36(39.6	38(41.8	5(5.5	1(1.1	1(1.1	47(51.6	42(46.2
20	The central line	25(27.5	34(37.4	11(12.1	21(23.1	1(1.1	2(2.2	46(50.5	42(46.2

	has been flushed with heparin-saline every 3 hours.								
21	The intake and output has been recorded	1(1.1	25(27.5	42(46.2	23(25.3	0(0.0)	2(2.2	45(49.5	44(48.4
22	The vital signs have been recorded	0.0	17(18.7	41(45.1	33(36.3	0(0.0)	2(2.2	53(58.2	36(39.6
23	All infusions of the patient are recorded on the ICU chart.	0.0	14(15.4	41(45.1	36(39.6	0(0.0)	0(0.0)	50(54.9	41(45.1
24	Administered drugs have been recorded.	0.0	9(9.9	60(65.9	22(24.2	0(0.0)	0(0.0)	48(52.7	43(47.3
25	There is no sore in the patient's lips and mouth.	2(2.2	37(40.7	38(41.8	14(15.4	0(0.0)	1(1.1	43(47.3	47(51.6
26	The risk factors of pressure sore have been	6(6.6	38(41.8	46(50.5	1(1.1	0(0.0)	3(3.3	45(49.5	43(47.3

	recorded.								
27	The active and passive mobility of patient has been recorded	49(53.8	34(37.4	7(7.7	1(1.1	1(1.1	2(2.2	16(17.6	72(79.1
28	The ABG result 1 hour after endotracheal tube removal is existed	2(2.2	44(48.4	24(26.4	21(23.1	0(0.0)	9(9.9	55(60.4	27(29.7
29	The alarms of the monitor are switched on.	2(2.2	25(27.5	52(57.1	12(13.2	0(0.0)	4(4.4	58(63.7	29(31.9
30	The central venous pressures have been recorded.	13(14.3	40(44.0	26(28.6	12(13.2	0(0.0)	4(4.4	62(68.1	25(27.5
33	Arterial blood pressure has been checked against sphygmomanometric pressure	12(13.2	45(49.5	31(34.1	3(3.3	1(1.1	4(4.4	65(71.4	21(23.1

	(past 24 hours).								
34	The cardiac rhythm has been recorded in past 24 hours	2(2.2	28(30.8	55(60.4	6(6.6	0(0.0)	3(3.3	72(79.1	16(17.6
35	Prescribed IV medications are infusing.	0(0.0)	55(60.4	9(9.9	27(29.7	0(0.0)	4(4.4	62(68.1	25(27.5
36	The up-to-date temperature list in the past 48 hours is existed.	7(7.7	35(38.5	40(44.0	9(9.9	0(0.0)	4(4.4	64(70.3	23(25.3
38	There is no sign of thrombosis in arterial line and the line is in situ for less than 6 days.	10(11.0	24(26.4	45(49.5	12(13.2	0(0.0)	0(0.0)	64(70.3	27(29.7
39	The blood products have been checked according to hemovigilance	9(9.9	49(53.8	27(29.7	6(6.6	1(1.1	2(2.2	14(15.4	74(81.3

	protocol.								
40	The chart of blood products administration has been completed and signed.	13(14.3	39(42.9	17(18.7	22(24.2	1(1.1	1(1.1	16(17.6	73(80.2
41	The vital signs have been recorded before blood product administration	14(15.4	38(41.8	19(20.9	20(22.0	0(0.0)	1(1.1	11(12.1	79(86.8
42	The vital signs have been recorded after blood product administration according to protocol	12(13.2	30(33.0	40(44.0	9(9.9	0(0.0)	0(0.0)	14(15.4	77(84.6
43	The IV lines are fixed properly.	0(0.0)	50(54.9	34(37.4)	7(7.7	0(0.0)	1(1.1	12(13.2	78(85.7
44	The ECG strip and vital signs	17(18.7	34(37.4	18(19.8	22(24.2	0(0.0)	1(1.1	18(19.8	72(79.1

	of the admission are recorded.								
45	Alarms of the monitor have been set properly.	21(23.1	34(37.4	25(27.5	11(12.1	0(0.0)	5(5.5	62(68.1	24(26.4
46	The time of feeding tube introduction has been recorded.	26(28.6	19(20.9	43(47.3	3(3.3	1(1.1	1(1.1	70(76.9	19(20.9
47	The retention in gastric tube feeding has been measured.	45(49.5	21(23.1	21(23.1	4(4.4	1(1.1	3(3.3	62(68.1	25(27.5
48	Feeding tube has been flushed according to instructions and is in place for less than 2 weeks.	42(46.2	25(27.5	23(25.3	1(1.1	7(7.7	4(4.4	23(25.3	57(62.6
49	No air leaks from vacuum	37(40.7	29(31.9	23(25.3	2(2.2	11(12.1	1(1.1	66(72.5	13(14.3

	device of thoracic drain is existed								

Appendix (9)

Level	Intervention
I	A systematic review of level IIstudies
II	A randomized controlled trial
III-1	A pseudo-randomized controlled trial (ie: alternate allocation or some other method)
III-2	A comparative study with concurrent controls: ▪ Non-randomized, experimental trial ▪ Cohort study ▪ Case-control study ▪ Interrupted time series with a control group
III-3	A comparative study without concurrent controls: ▪ Historical control study ▪ Two or more single arm study ▪ Interrupted time series without a parallel control group
IV	Case series with either post-test or pre-test/post-test outcomes

Appendix (10)

Table 17: Details of the selected studies

1. Barua, N., Nesa, M., Latif, M. A., & Islam, S. (2019). Time management of the clinical nurses at Public Hospital in Bangladesh. Open Journal of Nursing, 9(10), 1041.
2. Qteat, M., &Sayej, S. (2014). Factors affecting time management and nurses' performance in Hebron hospitals. Journal of education and practice, 5(35), 41-58.
3. Soliman, M. A., Mahdy, A. Y., & Mohamed, H. A(2018). Impact of an Educational Intervention program about Time Management for nurses in Dialysis Unit.
4. Ike, E. U., &Oluwatosin, O. A. (2022). Effect of an Educational Intervention on Nurses' Competency in the Neonatal Unit of a Teaching Hospital in Nigeria: A Pilot Study. Journal of Neonatology, 36(3), 206-215.
5. Nayak, S. G. (2019). Time management in nursing–hour of need
6. Mohamed, M. K., Abed, F. A., &Elwahab, E. A. A. (2019). Effect of Time Management Training Program on Nursing Performance. I

الملخص

المقدمة: التمريض مهنة شاقة وذات متطلبات عالية، لذا فإن اختيار الوقت المناسب وإدارته بشكل جيد سيساعد في تحسين جودة الرعاية وإدارة العمل بشكل صحيح وتحقيق نتائج المريض.

الهدف: هدفت الدراسة إلى تحديد مدى فاعلية البرنامج التعليمي لإدارة وقت التمريض في وحدة العناية المكثفة وأثره على جودة الرعاية التمريضية المقدمة للمرضى في المستشفيات الحكومية الفلسطينية.

تصميم الدراسة: تم استخدام التصميم شبه التجريبي. واختيار عينة مكونة من 190 ممرضًا وممرضة يعملون في وحدة العناية المكثفة في مستشفيات الضفة الغربية (عدد التدخل = 91؛ السيطرة عدد = 99)، وأكملوا الاستبيان لاختبار متغيرات الدراسة في مناسبتين: قبل التدخل، وبعد ثلاثة أشهر من التدخل لكلتا المجموعتين. وكانت الأداة الثانية عبارة عن قائمة مرجعية للمراقبة للتحقق من جودة الرعاية للمرضى في وحدة العناية المكثفةوكان التدخل عبارة عن برنامج تعليمي حول إدارة الوقت مع التوضيحات والتخطيط وتحديد الأولويات وتحديد الأهداف والالتزامبالوقت أوإضاعته. تم إجراء تحليل المتغيرات الفئوية باستخدام الإحصائيات الوصفية، وتم استخدام الإحصائيات الاستنتاجية ANOVA لمقارنة النتائج داخل المجموعات وفيما بينها.

النتائج: أشارت الخصائص الاجتماعية والديموغرافية للمشاركين إلى أن الممرضين الفلسطينيين في وحدة العناية المركزة متساوون تقريباً من حيث الجنس الإناث 51.6% مقابل 51.6% 48.4% ذكور، 74% منهم شباب وتراوحت أعمارهم بين 25–34 سنة وخبرة عمل من 6 إلى 10 سنوات. حقيقة مثيرة للاهتمام هي أن 71.6% هم من حاملي درجة البكالوريوس و17.4% من حاملي درجة الماجستير مقابل 11.1% من حاملي الدبلوم.

مجموعة التدخل يعني زيادة درجة إدارة الوقت بشكل ملحوظ بعد التدخل، ولكن لم يكن هناك فرق كبير في المجموعة الضابطة. وأظهرت النتائج أيضا تغيرا كبيرا في متوسط درجة إدارة الوقت بعد 3 أشهر من التدخل بين مجموعتي التدخل والسيطرة ($P < 0.001$) بعد التدخل، ارتفع متوسط درجة جودة الرعاية بشكل ملحوظ في مجموعة التدخل، في حين لم يكن هناك فرق كبير في المجموعة الضابطة.

الاستنتاج: أظهرت النتائج أن التدريب على إدارة الوقت عزز معرفة الممرضات بهذه المهارات، مما أدى إلى تحسين جودة الرعاية. تمكنت الممرضات من الاستفادة بشكل جيد من وقتهن في نوبة العمل من خلال تدريس بُعد إدارة الوقت؛ والتخطيط، وتحديد الأولويات، وتحديد الأهداف، والتزام الوقت، وإضاعته.

التوصيات: من أجل زيادة جودة الرعاية، يجب أن تركز البرامج التعليمية على إعداد الممرضين لتولي المسؤوليات المتعلقة بإدارة الوقت. وينبغي عليهم أيضًا تعليمهم كيفية التعرف على مُضَيعات الوقت في مكان العمل ووضع استراتيجيات للتعامل معه.

الكلمات المفتاحية: وحدة العناية المكثفة، والتمريض، وإدارة الوقت، وجودة الرعاية.