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Educating Nurses on Mental Fatigue

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This is to certify that the doctoral study by

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has been found to be complete and satisfactory in all respects,
and that any and all revisions required by
the review committee have been made.

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Abstract

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Project Submitted in Partial Fulfillment

of the Requirements for the Degree of

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Abstract

Education correlates with nurse performance and avoiding mental fatigue. This project attempted to answer the question, "Educating nurses on mental fatigue will increase knowledge" focusing on educating rehabilitative nurses regarding mental fatigue. The project was guided by the Analysis, Design, Develop, Implement, and Evaluate model. Twenty rehabilitative nurses were administered a pretest consisting of 10 multiple-choice test questions. They received education on mental fatigue through PowerPoint presentations and handouts. After completing the education, participants were administered a posttest with the same 10 questions. An evaluation tool consisting of six questions was completed measuring an increase in knowledge after the posttest. The average score on the test before attending the staff education was 40%. The highest score earned was 80%, and the lowest was 10%. After the staff education, the average test score increased to 58.5%. The minimum score after the staff education was 20%, and the maximum score after attending the staff education was 90%, demonstrating increased knowledge. This project has the potential to impact social change as nurses can recognize mental fatigue resulting in enhanced self-care, increased nurse retention, and positive patient outcomes.

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Dedication

This project is dedicated to the Almighty Father, the protector and provider of all needs and desires. This project is committed to nursing professionals and families. God has blessed me with a supportive mother, sister, uncle, aunt, and nephew. Thanks for the prayers, encouragement, and inspiration throughout these two years. Choosing to pursue a DNP will help my family in many ways. To God be the Glory for the strength, guidance, perseverance, and faith. Jeremiah 29:11, paraphrased, "For I know the plans I have for you, plans to prosper you and not harm you, plans to give you hope and a future," has been one of my Bible verses that kept me focused.

Acknowledgments

Thanks to the Health and Rehab Center, nurse managers, and nurses for permission to perform this project and for sharing best practices and knowledge among the nurses. Thank you to Dr. Ann Hubbard and the review committee for their leadership and for sharing their knowledge, passions, and perspectives on my project and clinical practicum experiences. I want to thank the faculty, mentors, and preceptors who have helped me reach this point in my academic career. Most importantly, thank you, Heavenly Father, and my family members, for your continued encouragement, involvement, and support through this journey.

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Section 1: Nature of the Project

Introduction

Mental fatigue is exhaustion from constant and extended periods of cognitive activity, which results in a decrease in cognitive performance, disengagement, increased displays of emotions and withdrawal, changes in concentration (Russell et al., 2019), and reduced motivation (Clarity Clinic, 2021).

Nurses often experience mental fatigue (Jang et al., 2021). This project educated staff nurses on recognizing symptoms of mental fatigue. The nurses in a Rehabilitation facility in central Alabama had not been educated on mental fatigue. As a result, these nurses do not recognize symptoms of mental fatigue. The nurse manager reports symptoms mirror mental fatigue, such as (a). the failure to follow protocols for medication administration, (b) an increase in absenteeism, and (c) a decrease in nurse retention. This doctoral in nursing practice (DNP) project had the potential to impact social change. Educating the nurses had a positive social change by improving patient outcomes, decreasing errors, and increasing nurse retention. Educating nurses in this facility could improve adherence to medication protocols, reduce absenteeism, and increase nurse retention. In addition, the nurses recognized and addressed mental fatigue, aiming to improve patient outcomes through education.

Problem Statement

There has been developing knowledge of the effects of mental fatigue on nurses. Mental fatigue is linked to a decrease in the performance of nurses. Mental fatigue is a physical symptom that encourages recuperation and sleeping after a day's work

(Sadeghniiat-Haghighi & Yazdi, 2015). When nurses do not recover sufficiently during non-work time, fatigue accumulates and becomes more permanent or chronic, jeopardizing nurses' work performance, patient safety, and quality of care. Nurses develop mental fatigue due to many reasons, such as (a) inadequate staffing, (b) increased patient load, and (c) increased demands for care (Bazazan et al., 2019). As a result of the nature of their work, nurses may be particularly susceptible to multiple dimensions of fatigue, and their performance is linked to patient safety (Sadeghniiat-Haghighi & Yazdi, 2015).

According to nursing management at the project site, symptoms of mental fatigue became evident in the nursing staff in a rehabilitation facility at a local rehabilitation center in Alabama. This DNP project addressed the gap in practice by educating staff nurses on the symptoms of mental fatigue. Education is essential in achieving organizational goals (Chaghari, 2017)—sustainable goals like continued quality education for nurses and better patient outcomes. Educating nurses about the symptoms of mental fatigue helped identify and manage the emotional challenges of nursing and nurses' experiences in practice (Dwyer, 2014). If not recognized, nurses could develop harmful psychological and physical effects, including insecurity, altered cognitive functioning, and loss of empathy and self-esteem (Tabor, 2011). Educating nurses about the symptoms of mental fatigue can decrease errors that impact patient care in a rehabilitation facility located in Alabama.

Purpose

The significant practice gap addressed in this doctoral project is a lack of knowledge for staff nurses in a rehabilitation facility in central Alabama about the symptoms of mental fatigue. This goal was to educate nurses about the symptoms of mental fatigue, which will result in decreased medication errors, increased quality patient care, and improved nurse retention. This DNP project attempted to answer the following practice-focused question "Will educating nurses on mental fatigue increase knowledge?" The staff nurses who were educated on the symptoms resulted in the early identification of mental fatigue.

Nature of the Doctoral Project

Source of Evidence

The source of evidence to meet this doctoral project's purpose was a systematic review. The following databases were used: Cumulative Index Nursing Allied Health Literature, Ovid, PubMed, Academic Search, and Cochrane Database of Systematic Reviews. The references chosen were published between 2015 through 2021. Scholarly sources were obtained through the Walden University Library. The inclusive criterion was literature in English. Keywords to include are as follows: *Mental Health*, *Mental Fatigue, Nurses, Education,* and *Staff Education*.

Approach

The approach followed the planning, implementing, and evaluating steps in the Walden University Staff Education Manual (WUSEM). I first organized and analyzed evidence from a literature review. Second, approval was received from the facility and

the necessary steps were taken for Institutional Review Board (IRB) permission from Walden University. Third, I implemented the analysis, design, development, implementation, and evaluation (ADDIE) model to develop the curriculum with expert input. The ADDIE model helps promote workforce development and performance in the context of a real-world practice environment (Patel et al., 2018).

Planning and Implementation

The ADDIE model analysis phase identified the need for a staff education session on mental fatigue. After visiting the project site and conducting informal interviews with the directors and preceptor, the need was confirmed for this staff education. The educational session invitation started with a flyer in the conference room. The education session included the dayshift, nightshift, and Baylor-shift nurses participating in the pretest and post-test for this project. At least 20 voluntary participating nurses were expected to answer an anonymous pretest regarding education about mental fatigue.

Before the educational session, a pretest was conducted. The academic session was a PowerPoint conducted in person for 30 minutes. After 2 weeks, a posttest followed. All the posttest responses were collected. Finally, descriptive statistics were used to analyze the data.

Evaluation

The objective of the evaluation phase of the ADDIE model was to gather feedback from the participants related to the staff education development and outcome. Only one group of nurses had variable levels of experience and education. There were three different shifts of nurse participants. The feedback from the pretest and posttest was

shared in the statistics. The participants were able to provide a summative evaluation after the posttest for their improvements. The results were analyzed using descriptive statistics.

Significance

For this doctoral project, the staff nurses, the nurse manager, and the residents were the stakeholders. The staff education led to an improved understanding of mental fatigue. This can promote a positive culture of commitment and compassionate care for the residents. The stakeholders also helped support the need for continuous education for nurses, which can contribute to nursing practice. Education will enhance the nurses' professional development, prepare the staff nurse for a broader course scope, and better understand the cultural, political, economic, and social issues affecting patients and influencing health care delivery (American Association of Colleges of Nursing, 2021). In addition, this education can help increase the nurses' sense of commitment nurtured toward leadership for social change and health equity through best practices (Read et al., 2016).

The staff nurse and nurse managers contributed to this project by participating in the entire educational session. Participating stakeholders indicate the strength of the implementation process, including the educational training provided to the staff nurses and nurse managers (Corry et al., 2022). The staff nurse and nurse manager completed the pre and posttest. Staff nurses and the nurse manager participating strengthen the implementation and evaluative process for the education session.

The importance of the stakeholders further helped the organization's view about social change. Walden University (2019) defined positive social change as "a deliberate process of creating and applying ideas, strategies, and actions to promote the worth, dignity, and development of individuals, communities, organizations, institutions, cultures, and societies" (p.15). Positive social change leads to the promotion of human and social conditions (Walden University, 2019). Nurses educated about mental fatigue will affect social change. Every unit in the organization may utilize this staff education approach. The project is completed, and the educational session is transferable to the organization. Each manager may examine the process of educating their staff nurses about mental fatigue.

Summary

The DNP project educated staff nurses on recognizing mental fatigue symptoms. Section 1 provides information about the gap in practice in a rehabilitation facility in Alabama. The guiding practice-focused question was also introduced, and the approach to this DNP project was addressed. The significance of this DNP project and the potential contribution to nursing practice were also provided. In Section 2, the concepts, models, relevance to nursing practice, local context, the role of the DNP student, and function of the project team are presented. Overall, this project provided evidence to fill the gap in practice through a systematic approach guided by the steps expressed in the WUSEM and the ADDIE model's phases.

Section 2: Background and Context

The problem identified in this DNP project was nurses' need to know the signs and symptoms of mental fatigue. Mental fatigue in nurses is evident at a local Alabama rehabilitation center. Many nurses encounter stress and adopting effective management techniques can provide better self-awareness and communication, translating into a safer patient care environment (Guan, 2017). The DNP question is "Will educating nurses on mental fatigue increase knowledge?" Educating the nurses about mental fatigue will help them cope with the increasing demands in health care.

The project setting is a local rehabilitation facility in Alabama. The rehabilitation facility is a 50-bed capacity facility. There are 20 full-time nurses employed at this center. The nurse-patient ratio is 1 to 15. This setting was feasible for educating nurses about mental fatigue. The nurses on the unit express their need for education about mental fatigue. The nurse manager is supportive of the project. The rehab center promotes all nurses' health, wellness, and education. In this section, the concepts, models, and theories, the relevance to nursing practice, the local background and context, the DNP student's role, and the project team's function were the significant headings discussed.

Concepts, Models, and Theories

When nurses do not recover sufficiently during non-work time, mental fatigue accumulates and becomes more permanent or chronic, and it jeopardizes nurses' work performance, patient safety, and care (Cho et al., 2021). Nurses develop mental fatigue

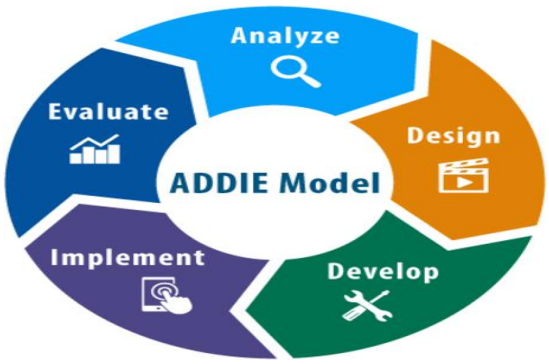
due to many reasons like staffing and scheduling, lack of sleep, diminished hygiene, patient load, acuity level, and increased care demands.

Evidence-Based Practice Model

The ADDIE model guided the staff education (see Figure 1). The ADDIE model refers to instruction for a particular group to determine and develop the outcomes, methods, materials, content, and approaches that will constitute the learning experience (White et al., 2021). The ADDIE model is a functional, flexible, and systematic educational guide in best practice facilitate nurses' learning vital for safe and competent clinical performance (CDC, 2019). The nurses received education and training utilizing ADDIE applications.

Figure 1

ADDIE Model Phases



The ADDIE method is the most used instructional design (ID) model (Patel et al., 2018). This model guided my practice problem of educating the nurses about mental fatigue. The model included opportunities for feedback essential for improving educational sessions and programs (CDC, 2019). Educating the nurses using the ADDIE model helped nurses recognize burnout, potential errors, and workplace stress. The

ADDIE model was chosen because it offered evidence-based practice (EBP) for learning strategies for promoting workforce development and performance in real-world practice environments (Patel et al., 2018). This evidence-based model ADDIE provided a step-by-step focus on the target audience, nurses.

Analysis

Engagement helped with performance, tests, subject matter analysis, planning, and design resources. The first phase in the ADDIE model focuses on the issue in practice. Collecting evidence-based data from the literature reviews, facility guidelines, and information from the organization leaders is part of assessing the practice problem. The comprehensive data helped define the practice issue and prepare the staff education project's outcomes (Jeffery & Longo, 2016).

Design and Development

The analysis phase assisted the next phase. The design was based on the learning need identified and analyzed in the first phase. The design and development phases were the staff education project's blueprint for addressing the practice problem's need (Jeffery & Longo, 2016). Based on the data gathered, the pretest and posttest were created in this phase.

Implementation

The implementation phases of the ADDIE model allowed pre/post-test, educational sessions, and evaluation. The implementation phase involves delivering the learning materials to the program participants using the methods identified in the design and development phases (Jeffrey & Longo, 2016; Patel et al., 2018).

Evaluation

Feedback was obtained throughout the stages and on every aspect of the training. It is imperative to revise the content so that improvements or changes can be made as needed. The participating nurses requested to complete both the pre /post-test and recommend an evaluation with the team to make a recommendation. Evaluation reports and actionable recommendations or changes for the current or future nursing staff training project were developed (CDC, 2019a). The evaluation phase can help this project for goals met or not met (Burts, 2018).

Education and the ADDIE Model

The ADDIE model was utilized in several healthcare settings. The model has driven the structure of most nursing students and graduate students. The ADDIE model developed a NIS training program in Taiwan (Lu et al., 2016). The learning needs, goals, design content, teaching strategies, and evaluation phases were implemented. Another successful use of the ADDIE model was helpful in nursing practice, including patient self-management of type I diabetes (Xie et al., 2020) adopted in a Taiwan hospital as an EBP model to improve care behavior (Hsu et al., 2014).

Relevance to Nursing Practice

Kelly (2020) viewed mental fatigue as an individual's problem, understanding mental fatigue as an occupational phenomenon and recognizing the influential role secondary trauma contributes in mental fatigue. As such, the causes and addressing solutions to mental fatigue are multifaceted and complex. Causes of mental fatigue stem from the external pressure of caring for patients and pressure from organizational policy

and practices, including unhealthy work environments, poor communication, stigma, and more (Kelly, 2020). This project examined that healthcare professionals are at daily risk, and the need to recognize, address, and treat mental fatigue is a priority. However, mental exhaustion from shift work and extended hours can compromise patient care and nurses' safety and health and increase nursing turnover and healthcare costs (Dommett et al., 2019). The literature supported the need to address mental fatigue in nurses.

Mental fatigue was associated with many adverse conditions affecting different types of employees, their organizations, and the patients they serve. During the Covid-19 pandemic, staff nurses have experienced increased mental health issues, with mental fatigue being a concern (Hatami et al., 2022). The role of unpredictability, uncertainty, the seriousness of the disease, misinformation, and social isolation contribute to stress and mental morbidity, and mental fatigue affects the nurse (Rajkumar, 2020). The dimension of emotional exhaustion refers to feelings of being depleted, overextended, and fatigued. Reducing mental fatigue will improve quality, quantity, and patient outcomes (Johansson et al., 2022). The possible cause of the difference in results expected, according to the research, was the lack of a solution. There was evidence that mental fatigue exists and still occurs. There was no definite solution to mental fatigue recommendations being considered with limitations. The limitations were based on the nurse's response, clinical experience, years of service, novice versus expert, career length, demographic regions, and organizational assistance to resolve or decrease the problem (2022).

Recent evidence-based practices that resulted in nurses experiencing mental fatigue were interviews and utilizing the Multidimensional Fatigue Inventory. This inventory consisted of twenty items in five dimensions: general tiredness, physical fatigue, mental fatigue, reduced activity, and reduced motivation (Guan et al., 2017). This randomized study supported two crucial factors in current practice, finding risk factors for mental fatigue and job burnout as dependent variables. This project focused on the mental fatigue variable. Under intense work-related pressure, nurses may easily suffer from deteriorated mental health, including disease, fatigue, anxiety, depression, poor ability to work, and even physical and mental fatigue (2017). Evidence-based practice showed that job strain on mental fatigue and chronic diseases among civil servants is worth noting. Mental fatigue and job strain need interventions with preventive strategies that directly affect the system, policies, organization, and workplace atmosphere (2017).

Nurses' history of mental fatigue is called burnout, general, and compassion fatigue. Fatigue is categorized into multiple dimensions: physical, mental, compassion, emotional, alarm, total, and other work-related behaviors, environmental experiences, and nurses' responses (Steege et al., 2018). The prevalence of fatigue in the U.S. workforce is estimated at 37.9% (2018). Evidence suggests that a higher prevalence exists among nurses and that mental fatigue is a significant factor in absenteeism and nurses' decision to leave the profession (2018).

For years mental fatigue has been experienced by a vast number of nurses. In the United States (US), 60% of nurses work in hospitals, rehabilitation environments where accountability is constant, and 12-hour shifts and day-night rotating schedules are the

norms (Smith-Miller, 2014). The prevalence of mental fatigue among nurses is attributed to the ongoing demands of caregiving and other job-related stressors, such as rapid admission and discharge cycles and high patient acuity levels that require increasingly complex occupational skill levels (2014). Therefore, the practice problem of educating nurses about the heightened increase in mental fatigue was essential.

Registered nurses (RN) are at high risk of mental fatigue, particularly those who work in the hospital or rehabilitation facilities owing to the complex and hectic work environment with varied work demands and nonstandard work hours (Cho et al., 2021). There are negative influences of mental fatigue on the nurse. The negative consequences of mental fatigue significantly impact individual nurses' health and well-being, patient safety, and the organization (2021). Mental fatigue risk management systems have proposed strategies for addressing mental fatigue-related risks; a key component of such systems is monitoring changes causing mental fatigue (2021). Nursing leaders in the hospital can make system changes to monitor and address the factors leading to mental fatigue is integral. Elements to include and watch among the nurses are staffing and mental fatigue levels, reviewing and revising different policies (Rainbow et al., 2021). This DNP project was adequate for each nurse and impacted patient care.

Local Background and Context

During observations of the staff nurses' their attitude toward mental fatigue was negative. Many nurses expressed the need for education about mental fatigue. The nurses and other personnel express the need to help recognize mental fatigue signs and symptoms. The nurse manager and charge nurses report they noticed increased mental

fatigue amongst nurses before and during COVID-19 (Nurse Manager & Charge Nurse, personal communication, June 2021).

The institutional context of the organization values community, staff, and patient benefits. The overall community benefits, nurse-patient morale, and nurse-doctor morale would increase. The vision statement of this facility was to improve patient outcomes, staff enhancement, people, financial stewardship, growth, patient safety, and quality care (Diversicare Difference, 2020). The vision ties into this doctoral project. The facility's patient encounter totals more than 1,000 residents, several physicians on the medical staff, and many nursing opportunities (2020).

The proposed project took place in a local rehabilitation center. The facility was a 50-bed designated facility with four floors and nurse managers. Staff education occurred on the 2nd, 3rd, and 4th floors. The 2nd, 3rd, and 4th floors had 50 rehab/hospice/short-term/long-term beds. The 20 staff members include full-time and part-time nurses, secretaries, patient care technicians, nurse directors, and charge nurses. The participants consisted of only nurses. More than 50% of the nurses were willing to participate. In addition, the nurses were provided a mental fatigue pretest and posttest. Considering the nurses' preferences, resources are available, and the test was executed in the conference room. The staff education unit did not affect any financial responsibility of this organization.

Inclusion criteria include any nurse primarily employed by the rehabilitation center and on the 2nd, 3rd, and 4th floors. No exclusion criteria were identified for this project. The administration of the project site agreed to support this project. The site was

feasible in the community with over 100 years of service. To reach all the participants within the inclusion criteria, flyers were posted in the conference room for participation. In addition, there was weekly monitoring of the nurse's involvement, including the weekend nurses. The pretest and posttest included which the participants must acknowledge before proceeding.

Role of the DNP Student

Professional Context and Relationship to the Project

I am a master's prepared nurse educator. I am a full time health science educator, adjunct nursing faculty, and staff registered nurse. I chose this facility based on the availability of a DNP student practicum site and its close location. I collaborated with the nurse educator and director of nursing at the time to coordinate nursing functions and activities. Education experience enabled me to appreciate and value the need for continuous education.

Relationship to the Topic, Participants, Evidence, or Institution

I adhered to the practicum policies and rules as a DNP student. Every objective was implemented according to the DNP essentials. The project was vital because patient quality care and the mental well-being of the nurse are essential. The practicum experience helped me collect and collaborate with the appropriate stakeholders as recommended by the preceptor. A licensed statistician helped prepare the data collected for the project. There was a continuous evaluation of information from the nurses.

The role of the nurse is vital to the healthcare system. The nurse's role expands to the community, legislation, and governance. Nurses must be equipped to handle the

smallest yet impacting factors of healthcare. Educating nurses about mental fatigue is one of those factors. One perspective that affects the choice for this project was that mental fatigue might continue to increase.

Motivation for the Project

The motivation for this DNP project was to continue in the education sector. Continuing education will guide the impact of patient care and quality. As a practicing registered nurse, I played a central role in developing educational training for nurses in establishing interprofessional teams, participating in the group's work, and assuming team leadership. In addition, education about mental fatigue was a problem the DNP leader could address to increase self-care, staffing, scheduling, and patient outcomes.

Potential Biases

The project was conducted without any potential bias. I did not know anyone at this organization or have personal ties with the project site management and staff. I was not offered and did not receive any compensation that could cause conflict in completing this project and impacting healthcare.

Role of the Project Team

The DNP project team included a nursing educator, a quality officer, a nursing administrator, and nurse managers. The nurse educator served as the content expert and trainer. Also, the nurse educator assisted with meeting times, scheduling, and presentations. Constant collaboration with the nurse educator and nurse managers ensured the progress and completion of the project's activities. The nurse manager encouraged participation in this project.

Mentoring during a project helped the implementation and evaluation phases. The team assisted with notification of the critical meeting, correct tool utilization, and organization. An evaluation was essential for this project. The DNP student worked with the organization, the Walden Committee, and the DNP chair to develop and finalize all areas. Revisions were made according to the feedback of the team.

The nurse manager, nurse educator, and quality personnel were made aware of the plan to create educational training for the nursing staff on mental fatigue. The organization does offer e-learning courses and a learning management system utilizing anonymous identification. This partnership allowed for future educational training opportunities. Through the continued support of the project team, the organization may make changes as necessary to meet the continuous healthcare challenges in nursing.

Summary

Subsequently, as it relates to improving mental fatigue in nurses, education was imperative to help decrease this practice problem, from examining key factors that cause nurses' mental exhaustion to develop educational development for the staff nurses. Section 2 of the project covered the ADDIE model used to frame this project in addressing each phase of the model and the education. The ADDIE instructional design model was used to develop the educational training. The educational training addressed the gap in nursing practice and nursing knowledge about mental fatigue. The staff education did equip nurses to provide awareness and better patient care. Section 3 reintroduced the problem identified in the project, restated the practice-focused questions,

and described the sources of evidence and how data and the evidence collected were analyzed and distributed.

Section 3: Collection and Analysis of Evidence

Mental fatigue is common among nurses, which may be attributed to working in mentally stressful work settings and the need to develop new skills to cope with advances in medical care and technology (Bazazan et al., 2019). In addition, mental fatigue is caused by work-related emotional stress, such as patients' demands and expectations, which results in lethargy, decreased concentration levels, or lack of motivation for work (Hee et al., 2021). Therefore, educating nurses about mental fatigue will reduce the problem and keep nurses aware of associated signs and symptoms. According to the nurse managers, the nurses' need for more education about mental fatigue was evident in the nurses' performance. The observations were consistent with the literature, which showed that many nurses experience mental fatigue and are not educated about it.

Practice-Focused Question

This project's clinical question is "Will educating nurses on mental fatigue increase knowledge?" The identified gap in practice was that nurses' knowledge about mental fatigue is integral in a local rehabilitation center in Alabama. Therefore, the education portion focused on mental fatigue and recognize some causes. This project was conducted to plan, implement, and evaluate the impact of education on their knowledge of mental fatigue.

The planning of this educational training was aligned with the ADDIE model. The ADDIE process started with the analysis phase, moving into design, development, and implementation, and finishing with the evaluation phase. The design phase involved creating learning objectives for the educational training. Next, the development phase

included the content and learning material based on the design. Finally, the implementation phase addressed the plan implemented, which is an educational training section. Implementing this educational training required a simple PowerPoint presentation for the nurses and the quality team.

Source of Evidence

In the past decade, mental fatigue has increased. Many researchers consider mental fatigue as burnout, job-related stress condition, or even a work-related mental health impairment (Maslach & Leiter, 2016). Causes of mental fatigue stem from the external pressure of caring for patients and pressure from organizational policy and practices, including unhealthy work environments, poor communication, stigma, and more (Gardner et al., 2019). Mental fatigue resulting from shift work and extended hours can compromise patient care and the safety and health of nurses as well as increase nursing turnover and healthcare costs (Gardner et al., 2019). The literature supported the need to address mental fatigue in nurses. Reducing mental fatigue has improved the quality, quantity, and outcomes of patients being served (New Mexico American Nurse Association, 2016).

The gap in practice regarding mental fatigue was that nurses did not recognize the symptoms in a local rehabilitation center in Alabama. Institutions, including the American Nurses Association (ANA), the Joint Commission (JCAHO), and the Institute of Medicine (IOM), have consistently identified mental fatigue as an urgent priority (American Nurses Association, 2020). But the level of fatigue has caused some unreported errors regardless of the numerous preventative measures in place for quality

patient care. Though nursing errors have garnered national attention, the relationship between environmental elements and errors is still being explored (IOM, 2010).

Moreover, key strategies were in place to decrease nurses' mental fatigue. Facilities continue to redesign schedules, develop potential plans to reduce fatigue, and provide opportunities for staff to express concerns about fatigue. However, the consistent report of mental fatigue experienced by nurses was high. The purpose of this DNP project was to educate nurses on how to recognize mental fatigue. The overall goal is for the nurses to utilize the knowledge to better care for themselves.

The rehabilitation center was a 50-bed capacity facility. This local rehabilitation facility employs over 15 registered nurses and licensed practical nurses. Sixty percent of the nurses were full-time, and the remaining 40% were contractual or PRN. This rehabilitation facility had 50 beds. The rooms were large enough and equipped to give patients care. There were 20 nurses, and the nurse-patient ratio was 1 to 15. Therefore, this setting was feasible for educating nurses about mental fatigue. The nurses in this unit often complain of mental fatigue. Therefore, the nurse manager was supportive of this project. A pretest and posttest evaluating full-time and part-time nurses on this unit about mental fatigue were explored.

This project examined mental fatigue and summarized and synthesized findings to develop fatigue management strategies. Special attention was given to identifying the institutional and unit factors contributing to mental fatigue and measures that can mitigate their effects. The rehabilitation center was dedicated to promoting health and wellness for all staff nurses. The implementation of professional nursing services, the provision of

current health education principles, and the development of individualized health management plans are essential principles designed to protect and promote the well-being of the staff. Therefore, the focus was on nurses getting educated on recognizing mental fatigue and ways to prevent it.

Evidence Generated for the Doctoral Project

Study Design

The evidence was collected using a pretest and a posttest to address the issues causing mental fatigue. The first step in starting this project was to set the objectives for implementing this project—the number of participants who contributed data toward resolving the practice-focused question. There were 20 nurses in the facility to participate. Full-time and part-time nurses were participants in this project. A pretest and posttest were the tools utilized in this project. The data collection expanded over 3 weeks. All nurses from all three shifts participated and took the pretest voluntarily. I analyzed and interpreted the data with the assistance of a statistician. The ADDIE model for instructional design to the nurses guided the implementation.

Participants

During recruitment, it was explained that participation was entirely voluntary and completed the pre/posttest by informed consent. The nurses varied in age, education, and years in the profession. The project did not harm humans, and the study resulted in educational training for the nurses. There were no direct benefits to participation. Subjects were not coerced to participate and may decline to respond to the pre and posttest was anonymous.

Instruments

The pretest and posttest were administered utilizing a quick response (QR) code. The test was anonymous. The QR code allowed the nurses to take the test anytime during a break or off duty. The test consisted of 10 questions each.

Procedures

The staff education project was offered over a 3-week timeframe. Nurses voluntarily completed the pretest (Appendix A) and posttest (Appendix B) via a QR code or written test for 3 days. After the pretest and questionnaire, nurses were presented with a PowerPoint during a staff meeting (Appendix C) on ways to prevent mental fatigue. The nurses were also provided with a paper copy of the PowerPoint. Once the staff education had been completed, I immediately administered the posttest (Appendix B) to gather data on the knowledge that nurses would gain about mental fatigue. The nurses were given an evaluation form (Appendix D) at the end of the staff education session to evaluate the presentation.

Protections

Ethical considerations and protections of all participants were necessary to ensure institutional review board (IRB) approval (approval no. 12-16-22-1045988). The identity of the subjects and any entities or organizations will be kept confidential. There was ensured compliance with this requirement as outlined by Walden University and the IRB process. There were no potential risks to the participants. Nurse leaders were asked to commit approximately 15 minutes to the data collection and educational training afterward. There was no breach of confidentiality; all information collected was shared

with the nurses. There were no financial burdens related to participating in this educational training. Nurses physically had easy access to the pretest, questionnaire, and posttest via QR code. The data collected will be retained in a password-protected file by me for at least 1 year.

Analysis and Synthesis

The known causes of mental fatigue are staffing, scheduling, increased work demand, and increased nurse-patient ratio. This education training was designed to enhance nurses' knowledge and understanding of mental fatigue and its prevention. The systems to be used for recording, tracking, organizing, and analyzing the evidence included SPSS. This system helped track the number of pre and posttest nurses. The pretest consisted of 10 questions examining what the nurses recognized as mentally exhausting situations, and the posttest consisted of 10 questions evaluating changes in mental fatigue since the pretest. After the pretest was completed over 3 weeks, a posttest was collected for evaluation. Based on the DNP staff education project, the data examined the knowledge gained regarding mental fatigue and its prevention. Results were organized and presented in tables to discuss the practice-focused question.

Summary

Section 3 described how the evidence was generated for this project by collection, analysis, and interpretation. The literature supports a detailed description of the sources of evidence for the project. This section briefly mentions how I protected all the participant's confidentiality, including the stipulations of Walden's University IRB.

It was expected that nurses' cognitive levels would improve by educating nurses to avoid causative agents that increase mental fatigue. Furthermore, improving mental fatigue helped with better nursing decisions and patient outcomes. The pre and posttest and the ADDIE model guided this staff education project. Educating nurses on how to recognize mental fatigue will impact their practice. The continuous review of the literature aligns with the training and the project.

Section 4: Findings and Recommendations

This doctoral project focused on educating staff nurses about mental fatigue. Since the pandemic, mental fatigue has increased, causing nurses to perform under high-stress levels. RNs are at high risk of mental fatigue, particularly those who work in the hospital or rehabilitation facilities owing to the complex and hectic work environment with varied work demands and nonstandard work hours (Cho et al., 2021). Mental fatigue is important to monitor to ensure nurses' continued well-being as well as good patient safety levels in every area of nurse practices (Jang et al., 2021). However, there was little research to support educating about mental fatigue in nurses, and studies have shown the inconsistency in educating the nurse about mental fatigue. This doctoral project aimed to gain further data regarding educating staff nurses about mental fatigue. The practice-focused question focused on educating nurses about mental fatigue to improve their knowledge of self-care and prevention.

The sources of evidence for this doctoral project were the pretest and posttest scores. The pretest was given to the participants before the educational session. Once the education was completed, the participants completed the posttest. The pretest and posttest were made up of 10 multiple-choice questions. Each of the questions was worth 10 points, with a total of 100 points. Both tests had identical questions, and scores for learning gained were calculated to achieve the total learning score for the aggregate.

Findings and Implications

The sample size consisted of 20 rehabilitation nurses. All gained scores were calculated. The unanticipated limitations to the project were time constraints. The entire

educational session, including the pretest and posttest, had to be within 30 minutes. The time constraints could have impacted test scores and limited the educational content presented. Another project limitation was that the staff nurses needed to focus more on patient care. There were several days when the educational session had to be rescheduled due to the patient's acuity and staffing status. Staff nurses' knowledge of mental fatigue impacted the pretest significantly. The staff nurses' pretest scores were lower than before the educational session. But the posttest did show an increase in the scores.

Twenty nurses were selected for this study: one male and 19 females. All nurses were asked to complete a pretest to measure knowledge about mental fatigue before attending the educational session. After completing the education sessions, the nurses were again asked to take a test to measure knowledge about mental fatigue. The average score on the test before attending the session was 40%. The highest score earned was 80%, while the lowest was 10%. After the education, the average test score increased to 58.5%. The minimum score after the session was 20%, and the maximum score after attending the session was 90%.

To test if a significant difference exists between the pretest and posttest, a dependent *t* test was performed. At the 0.05 level of significance, there is sufficient evidence to show that there is a significant increase in the average change in test scores ($t = 3.63$, $p = 0.002$). This indicates that the scores on the post-test that are higher than the scores on the pretest are statistically significant. The education presentation was effective and resulted in an improved score of 18.5 percentage points higher. The results from the educational session implied that educating staff nurses about mental fatigue is necessary.

This project gained the importance of education for staff nurses in this rehabilitation center. The project achieved improved scores on the posttest versus the pretest. This project can bring awareness to educating staff nurses about mental fatigue continuously. This project can also impact other interdisciplinary areas and bring about positive social change in this rehabilitation center.

Additionally, the participants were asked to complete an evaluation of the workshop. The survey consisted of the following questions:

1. How would you rate the overall quality of this instruction?
2. How well did the presenters state the objectives?
3. How well did the presenter keep the session alive and listening?
4. What is your overall rating of the presenter?
5. How effective was the PowerPoint?
6. How convenient was the location?

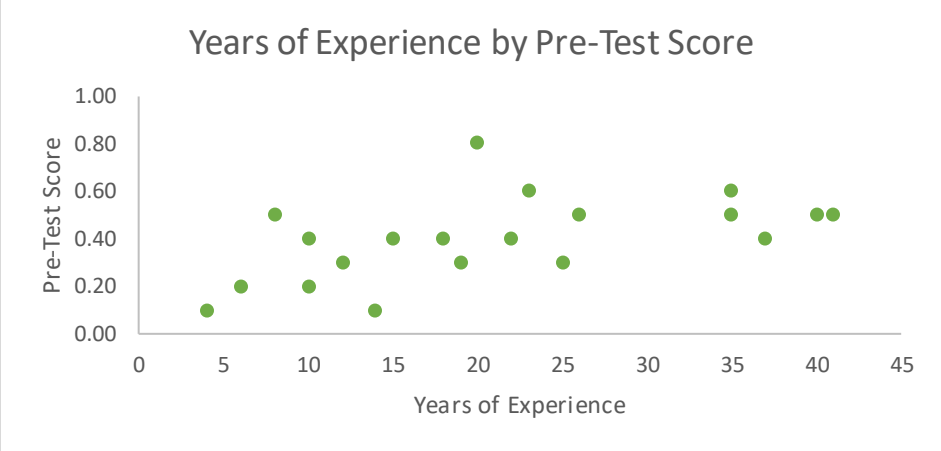
Thirteen out of the 20 original participants completed the evaluation. Most participants rated the presentation as "excellent" in every area surveyed. Only the questions concerning the PowerPoint presentation and the convenience of the workshop location had responses of "fair." None of the survey questions received a rating of "poor." Overall, the workshop resulted in higher scores on the post-test and was well-received by the participants.

Other variables were collected, such as age, years of experience, and test type (paper vs. electronic). A significant correlation was detected between the pretest score and years of experience ($r = 0.53$, $p = 0.016$). This result indicates a moderate direct

association, such that as the years of experience increase, the score on the pretest increases. However, none of the other variables statistically impacted the analysis. Figure 2 depicts the upward trend when comparing years of experience to the pretest score.

Figure 2

Years of Experience Compared to Pretest Score



Recommendations

Evidence shows that compassion and mental fatigue affect all nurses who should be educated and supported (Flarity et al., 2013). Nurses' history of mental fatigue is called burnout, general, and compassion fatigue. Fatigue is categorized into multiple dimensions: physical, mental, compassion, emotional, alarm, total, and other work-related behaviors, environmental experiences, and nurses' responses (Steege et al., 2018). The prevalence of fatigue in the U.S. workforce is estimated at 37.9% (Steege et al., 2018). Evidence suggests that a higher prevalence exists among nurses and that mental fatigue is a significant factor in absenteeism and nurses' decision to leave the profession (Steege et al., 2018). The proposed recommendation to address this lack of education in

staff nurses on mental fatigue is for organizations to facilitate mandatory training on recognizing mental fatigue.

Contributions of the Doctoral Project Team

The doctoral project team included the nurse educator and director of nursing. The nurse educator was a DNP-prepared nurse whose role was developing and implementing professional development. The director of nursing responsibility toward this project was to make sure all objectives were met. The team evaluated the pretest/posttest, PowerPoint, and evaluation form. The project team performed a formative evaluation during the project's planning steps and the pretest/posttest content validation.

Strengths and Limitations of the Project

The strengths of the doctoral project were that, overall, staff nurses at this rehabilitation center were receptive to the education. There were only two participants who did not volunteer to participate. The sample size was anonymous and small sample. The limitation of the study was the time constraints. As previously mentioned, the staff nurses increased patient acuity care and decreased the 30-minute sessions to 20 minutes per session. This made it challenging to give participants more time to complete the posttest. All tests were completed, and no question was answered. Another limitation of the study was that one PowerPoint slide had a similar vocabulary; therefore, clarification was made during the educational presentation.

Recommendations for future projects addressing similar topics would be giving participants more time to complete testing when patient acuity is high. The pretest and

posttest were easily readable and understandable. The educational session was easily understood, and many participants were receptive to the PowerPoint presentation.

Section 5: Dissemination Plan

This doctoral educational project took place at a local rehabilitation facility. Education was given to the staff nurses who took part in the nursing continuing education day. Based on the education tool, the staff nurses were receptive to the information. The data showed that a percentage of staff nurses increased their knowledge of mental fatigue. Since it was effective, it is essential to show nursing leadership the educational project's results to incorporate it into nursing education at the local rehabilitation facility. Mental fatigue, as previously discussed, can affect the staff nurse differently. This educational project can be modified to educate nurses about mental fatigue during high-stress moments.

Analysis of Self

As a current rehabilitative and medical-surgical nurse, educating staff nurses on mental fatigue was imperative. As a doctoral nursing student, this doctoral project must connect with long-term professional goals. The goal is to continue educating staff nurses about recognizing mental fatigue and caring for themselves. The completion of this project showed the importance of educating staff nurses on mental fatigue and that being receptive to the information will enhance their lives and professionalism as a nurse. Conducting the doctoral educational project gave me more insight into nurses' mental health. Educating staff nurses in appropriate settings with accurate information and evaluating the learning process was often vital.

Summary

In conclusion, this doctoral project aimed to increase the knowledge of staff nurses about mental fatigue at a rehabilitation facility in Alabama. Mental fatigue was recognized in the facility, and there was a need to provide the staff with an educational session. Increasing their knowledge would make the staff nurses recognize mental fatigue and make necessary changes. Overall, the data showed an increase in knowledge after the education provided. This shows that this doctoral education project successfully increased knowledge among staff nurses about mental fatigue.

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Appendix A: Mental Fatigue Pretest

1. It is estimated that _____ percent of nurses suffer from mental fatigue.
    a. 89
    b. 74
    c. 99
    d. 91
2. Mental fatigue is defined as:
    a. Burnout
    b. Excessive mental tiredness
    c. Mental tiredness that does not resolve from rest and sleep
    d. Is not damaging to society
3. Mental fatigue has been shown to increase over the years. It is estimated during what year does mental fatigue increase?
    a. 2022
    b. 2017
    c. 2014
    d. 2019
4. Nurses confuse which of the following for mental fatigue?
    a. Mental cloudiness
    b. Mental exhaustion
    c. Mental clarity
    d. Mental capacity
5. Mental fatigue is suffered from time to time. What do nurses report mental fatigue as:
    a. Feeling drained and zoned out
    b. Alertness and well-being
    c. Depleted
    d. Consuming

6. Mental fatigue when left untreated may cause which symptom?
    a. Better work performance
    b. Weakness in all extremities
    c. Performing large tasks well
    d. Uncontrolled headaches

7. Mental fatigue may lead to a break leading to which of the following signs:
    a. Issues with sleep
    b. Body aches
    c. Motivation

   d. Lack of communication amongst others and self
8. Mental fatigue could cause which of the following:
   a. Time management
   b. Healthy diet
   c. Weight gain
   d. Cognitive recovery
9. Mental fatigue affects problem-solving and one's anxiety level, which of the following is another characteristic.
   a. Differs from person to person
   b. Delegatory behavior
   c. Mental declined
   d. Predictable Social Isolation
10. Mental fatigue can be controlled if which of the following happens?
   a. Exercise and nutrition
   b. Work absence
   c. Decrease perfectionism and decisions
   d. Mental morbidity

1. QR Code for Mental Fatigue Pre-Test

Appendix B: Mental Fatigue Posttest

1. It is estimated that _____ percent of nurses suffer from mental fatigue.
    a. 89
    b. 74
    c. 99
    d. 91
2. Mental fatigue is defined as:
    a. Burnout
    b. Excessive mental tiredness
    c. Mental tiredness that does not resolve from rest and sleep
    d. Is not damaging to society
3. Mental fatigue has been shown to increase over years. It is estimated during what year does mental fatigue increase?
    a. 2022
    b. 2017
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4. Nurses confuse which of the following for mental fatigue?
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5. Mental fatigue is suffered from time to time. What do nurses report mental fatigue as:
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    b. Alertness and well-being
    c. Depleted
    d. Consuming
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    b. Weakness in all extremities
    c. Performing large tasks well
    d. Uncontrolled headaches

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    a. Issues with sleep
    b. Body aches
    c. Motivation
    d. Lack of communication amongst others and self

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    a. Time management
    b. Healthy diet
    c. Weight gain
    d. Cognitive recovery
9. Mental fatigue affects problem-solving and one's anxiety level which of the following is another characteristic.
    a. Differs from person to person
    b. Delegatory behavior
    c. Mental declined
    d. Predictable Social Isolation
10. Mental fatigue can be controlled if which of the following happens?
    a. Exercise and nutrition
    b. Work absence
    c. Decrease perfectionism and decisions
    d. Mental morbidity

Pre-Post Test Answers:

1. D
2. B
3. C
4. B
5. A
6. B
7. A
8. C
9. A
10. A

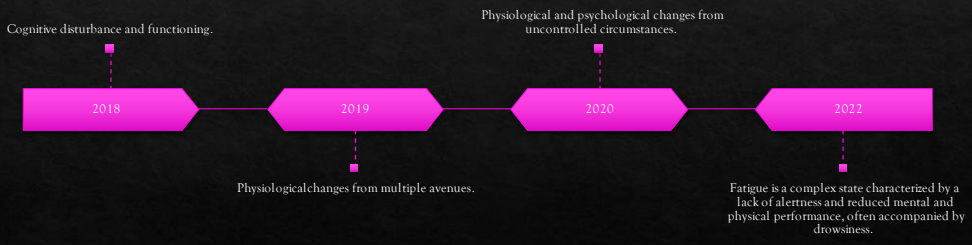
2. QR code for Mental Fatigue Post-test

Appendix C: Education and Mental Fatigue PowerPoint

Educational Objectives

- *What is Mental Fatigue?
- * Recognize signs and symptoms of mental fatigue.
- *Identify ways to prevent mental fatigue.
- *Develop a regular routine to decrease mental fatigue.

Timeline of Mental Fatigue



Mental Fatigue

- Definition:
  - Mental fatigue is a condition characterized by excessive mental tiredness.
  - While most nurses may experience symptoms of mental fatigue from time to time,.
  - Mental Fatigue can potentially lead to serious problems, including reduced productivity, decrease patient safety and satisfaction, poor job performance and impaired physical functioning.

Mental Fatigue Explained in Minutes

- https://youtu.be/DM2XFuzhEuU

Mental Fatigue

- Mental fatigue is also known as mental exhaustion. It refers to a general feeling of mental or psychological tiredness and lack of energy.
- People suffering from mental fatigue may report feeling drained or zoned out or may report an inability to concentrate on the task.
- In some cases, mental fatigue may even impair a person's ability to perform physical task. Mental fatigue alters the brain perception of effort, resulting in reduced capacity for physical exertion, this phenomenon is thought to be caused by reduction in dopamine-a neurotransmitter associated with motivation and performance.

Conti....

- If mental fatigue is left untreated may continue to impair physical performance until small tasks such as climbing stairs or riding a bicycle become difficult.

Symptoms of Mental Fatigue

- Weakness
- Muscle aches
- Headaches
- Sleepiness
- Lack of motivation
- Irritability
- Poor work/social performances

Signs Leading to a Break

Becoming impatient

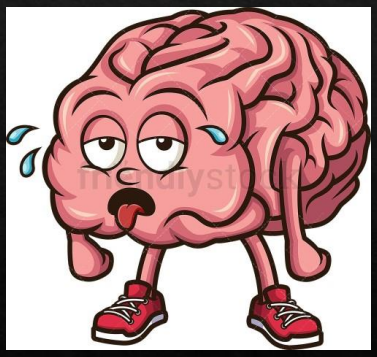
Issues with sleep

Easily Irritated

Lack of motivation

Feeling disconnected, anxious, and depressed

Contributing Factors of Mental Fatigue



- Health
- Work
- Fear
- No Sleep
- Anixety
- Debt
- Time Management

Factors That Affect Mental Fatigue

- Nutrition
- Sleep Disorders
- Time of Day/Circadian thyme
- Underlying conditions
- Fitness
- Caffeine Overload
- Work-load/Overtime
- Work related Breaks

Characteristics of Mental Fatigue

Differs from each person.

Difficulty, concentration, problem-solving, anxiety, irritability with co-workers and loss of passion for work are potential symptoms of mental fatigue

Mental Fatigue

- Mental fatigue is associated with many adverse conditions affecting different types of employees, their organizations, and the patients they serve
- The role of unpredictability, uncertainty, the seriousness of the disease, misinformation, and social isolation contribute to stress and mental morbidity, and mental fatigue affects the nurse (Rajkumar, 2020).
- For years mental fatigue has been experienced by a vast number of nurses. In the United States (U.S.), 60% of nurses work in hospitals, rehabilitation environments where accountability is constant, and 12-hour shifts and day-night rotating schedules are the norms (Smith-Miller, 2014). The prevalence of mental fatigue among nurses is attributed to the ongoing demands of caregiving and other job-related stressors such as rapid admission and discharge cycles and high patient acuity levels that require increasingly complex occupational skill levels (2014).

Mental Fatigue

Time Frame

- No set frame for mental fatigue
- Symptoms may persist indefinitely if not addressed early.
- External factors such as career stress can influence the duration of mental fatigue

Complications

- Effects of mental fatigue can take a toll on many aspects of a nurse's life.
- Poor work performance and reduced productivity can result in job loss, irritability and low mood.
- Can cause impaired physical tasks.
- Left untreated, may continue to impair physical performance until tasks like patient safety becomes compromised.

Prevention/Solution

- Exercise
- Vacation
- Minimize work-load
- Uninterrupted breaks
- Nutrition
  - Examples of Meals to prevent Mental Fatigue
    - Salmon, Avocado, Eggs, Oatmeal, Beans, Yogurt and granola, and Fruit Salad

More Tips to Avoid Mental Fatigue

- Let go of Perfectionism
- Reduce Excessive Decisions
- Limit distractions when working
- Consider a power nap
- Let go of perfectionism
- Stay Hydrated
- Prioritize sleep

Post-test

- Please scan the QR code to participate in the post-test.

Mental Fatigue Evaluation

*Please scan the QR code and complete the evaluation form.

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Appendix D: Mental Fatigue Education Presentation Evaluation Form

1. How would you rate the overall quality of this instruction?
    a. Excellent
    b. Good
    c. Fair
    d. Poor
2. How well did the presenters state the objectives?
    a. Excellent
    b. Good
    c. Fair
    d. Poor
3. How well did the presenter keep the session alive and listening?
    a. Excellent
    b. Good
    c. Fair
    d. Poor
4. What is your overall rating of the presenter?
    a. Excellent
    b. Good
    c. Fair
    d. Poor
5. How effective was the PowerPoint?
    a. Excellent
    b. Good
    c. Fair
    d. Poor
6. How convenient was the location?
    a. Excellent
    b. Good
    c. Fair
    d. Poor

1. QR Code Mental Fatigue Evaluation Form