INFLUENCING TURNOVER INTENTION BY ADDRESSING PERCEIVED STRESS IN NURSING

By

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Doctor of Nursing Practice Project submitted to the faculty of

Division of Doctoral Nursing

in the School of Nursing

at Indiana Wesleyan University

in partial fulfillment of the requirements for the degree of

Doctor of Nursing Practice

August 2023

Acknowledgments

This work would not have been possible without the support of those around me. I would like to recognize the faculty of Indiana Wesleyan University who guided, mentored, and encouraged me throughout the project. Special recognition goes to my advisor, Dr. Kathryn Gilreath, whose encouragement and positive attitude pushed me forward on difficult days.

I am especially indebted to Dr. Brock Reiman, Vice President, and Dr. Jo Ann Donnenwirth, Dean of Nursing, at Aultman College of Nursing and Health Sciences, who supported my career goals and worked actively to provide me with the protected academic time to pursue those goals. Thank you to the faculty and friends at Aultman College who gave much personal and professional advice. Special recognition goes to Dr. Jenner Mbobi, who assisted in developing the statistical analysis and provided feedback on collecting the data, and Sarah Swiger, who served as editor.

I am grateful to all the healthcare professionals I have had the pleasure to work with during this project, including Elizabeth Good-Knutson who mentored me through the hospital system, and the managers, nurses, and patient care technicians who gave me their time.

Nobody has been more important to me in the pursuit of this project than the members of my family. I wish to thank my husband, Todd, whose love and support have allowed me to evolve into who I am, and my three children, Bethany, Aaron, and Grant, who inspire me daily. I thank my parents, who encourage me to succeed in whatever I pursue. Most importantly, I thank Jesus Christ, who directed my path and upheld me. Without Him, I am nothing.

Abstract

Increased job-related stress levels in nursing have contributed to the low retention of nurses. The United States registered nurse turnover rate is the highest it has ever been, currently standing at 27.1%. The continued and increasing shortage of nurses at the bedside affects the healthcare facilities' ability to meet patient's complex needs. Job-related stress is a factor that contributes to turnover. This project aimed to identify and mitigate stress and evaluate the impact on perceived stress and turnover intention in nursing staff. The Perceived Stress Scale measured participants' perceived stress levels, and the Turnover Intention Scale measured the intention to leave the organization. Perceived stress data were analyzed using a *t*-test. Due to the small sample size of participants and the categorical nature of the data, Fisher's exact test was used to analyze the turnover intention data. Statistical significance was found between the two groups relating to perceived stress at the 0.05 level ($t = 2.413,\ \mathrm{df} = 34$). Perceived stress decreased during this project by using the stress continuum model and integrating interventions such as mindfulness, gratitude, utilizing facility behavioral and spiritual services, aromatherapy, and reflective journaling. Turnover intention was not statistically significant other than in the item asking about the intention to leave the organization as soon as possible (two-tailed $p = 0.041$). Future studies should incorporate manager involvement in the promotion and design of the project, replicate the project with larger sample sizes, and assess the effectiveness of specific stress management interventions. Additional research should include an assessment of the mental health needs of nursing staff and ways to address turnover in the population.

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Chapter I: Introduction

The need for additional nurses is a global conversation. The World Health Organization (2020) cited a shortage of almost six million nurses worldwide. The United States (U.S.) has not been immune to this issue, with the nurse vacancy rate at 17% (NSI Nursing Solutions, Inc. [NSI], 2022). The shortage of nurses and patient care technicians combined with the increased complexity of healthcare nationwide contributes to frequent stress at the bedside. In turn, the stress resulting from staffing shortages affects turnover leading to continued short staffing, added job-related stress, adverse patient outcomes, and negative effects on profit margins at many hospitals.

Many nurses and patient care technicians operate at a high-stress level daily; this has become an accepted everyday occurrence. Identifying and addressing perceived stress provides an opportunity for interventions to decrease the turnover intention rates of the nursing team.

Statement of Problem

Increased job-related stress contributes to low retention of nurses (Lee & Jang, 2020; Lee & Kim, 2020; Mirzaei et al., 2021). Persistent high-stress levels impact work activities and job performance, leading nurses to experience burnout, compassion fatigue, lower job satisfaction, high workplace turnover, and inferior quality of care for patients. The American Nurses Association (ANA, 2017) describes a healthy nurse as one who can balance physical, intellectual, emotional, social, spiritual, personal, and professional well-being. Administrators of a private urban hospital in the midwestern United States found that the low retention of nurses and patient care technicians contributed to decreased staffing numbers, adverse patient outcomes, and effects on profit margins. Effective

interventions were needed to identify and reduce job-related stress, and to overcome the high turnover rate among nursing staff.

Purpose of Project

The purpose of the project was to investigate whether nurses and patient care technicians who identify and reduce stress report lower perceived stress and lower turnover intention. A program implemented in the acute care setting sought to identify stress in the nursing staff and introduced interventions to decrease perceived stress levels. By analyzing exit interviews, the project facility identified that one of the reasons for its high turnover rate was the level of job-related stress (E. Good-Knutson, personal communication, November 12, 2021). In the last two years, nurses reported increased stress levels correlated to the COVID-19 pandemic (Serrano et al., 2021).

Implementing the stress program could result in a decrease in perceived stress and turnover intention. The project also addressed the recommendations of the ANA in their Healthy Nurse, Healthy Nation Grand Challenge, which addressed the mental and physical health of nurses in the United States (ANA, 2023). It also aligned with the Joint Commission's recommendations to reduce nurse burnout (The Joint Commission, 2019).

Background of Problem

Nurses are in high demand. The U.S. Bureau of Labor Statistics (2022, September 8) states there are over 203,000 registered nurse (RN) job openings annually, many resulting from turnover. The nursing shortage is exacerbated by a national nurse turnover rate of 19% in 2019, with 18% of nurses leaving in the first year and 66% by the second year of employment (NSI, 2019). The current turnover rate for RNs is 27.1% (NSI, 2022). The recent pandemic exacerbated the nursing shortage problem, with many

hospitals reporting a lack of nurses (Serrano et al., 2021). Researchers found that 66% of nurses surveyed considered leaving the profession (American Association of Critical-Care Nurses [AACN], 2021).

In September 2021, the ANA called for the Department of Health and Human Services to declare a national nurse staffing crisis and proposed solutions such as workforce retention strategies and training opportunities (ANA, 2021). Other researchers proposed to address the stressors experienced by nurses in order to reduce turnover rates (Labrague et al., 2020; Lee & Kim, 2020).

The project manager completed a strength-weakness-opportunity-threats analysis of the project facility, a private urban teaching hospital in the midwestern United States. The hospital is part of an independent health system with positive local brand recognition providing specialized stroke, cardiac, and cancer care. It has Joint Commission accreditation, Magnet certification, and categorization as a level-one trauma center. The hospital has over 1,000 skilled beds available but recently decreased patient census due to short staffing. Over 7,000 trained professionals are employed by the hospital, making it the largest employer in the county. Currently, new hires receive sign-on bonuses and student loan forgiveness incentives. The hospital receives a modest number of applicants from the college of nursing and health sciences, which offers associate and bachelor's degree programs in nursing.

Despite positive attributes, the hospital has weaknesses, especially considering the impact of the pandemic. One of the biggest concerns is the need for more nurses and patient care technicians. Several other shortfalls have stemmed from these staffing issues, including high nurse-patient ratios in some areas, out of practice nurses back at the

bedside, fast-tracking of orientation in nurses and patient care technicians, decreased patient and nursing satisfaction rates, the closure of available patient beds, and a high turnover rate in the nursing department. The health system also experienced budget cuts as it attempted to recover from pandemic closures.

There are several external threats to the hospital. While this hospital remains the largest employer in the county, other regional hospitals are in direct competition. These hospitals are larger and have greater resources. One hospital in the same county was recently purchased and incorporated into an existing health system. With more extensive health system backing, these hospitals offer higher wages for nurses and have better financial resources to support advances in the field. The affiliated health system of the project hospital was already recovering from the pandemic shutdowns, postponed elective surgeries, and pandemic-strained resources. Recent vaccine mandates further exacerbated the nursing shortage by alienating those that refused to receive the vaccine, leaving fewer nurses and patient care technicians at the bedside. These identified weaknesses and threats contribute to adverse patient outcomes and lower the quality of care.

An available opportunity is that local nursing schools offer licensed practical nurse (LPN) certification as well as Associate of Science in Nursing and Bachelor of Science in Nursing degrees. The hospital could develop programs to recruit recent graduates from these programs. The hospital could also develop programs to retain current nursing staff who are already oriented, experienced, and familiar with the healthcare system. By retaining the current nursing team, the hospital can save time and money by avoiding onboarding new hires. The need to retain current nursing staff

demonstrates this project's relevance.

In summary, the strength-weakness-opportunity-threats analysis identified a weakness in the staffing numbers of nurses and patient care technicians and an opportunity to retain current nursing staff. Administration analysis turnover annually, and in a 2021 report provided by human resources (N. Russ, personal communication, January 10, 2022), the total turnover rate for the health system was 21.32% across all positions, including RNs (20.22%), LPNs (2%), and the patient care technicians (13.12%). The nursing staff made up 35.34% of the total turnover system-wide for 2021. Based on nursing exit interviews, a nursing executive at the hospital stated that one reason for turnover was burnout after experiencing an elevated level of job-related stress (E. Good-Knutson, personal communication, November 20, 2021).

The factors of job-related stress and post-traumatic stress disorder (PTSD) correlate positively with the turnover intention rate of nurses (Lee & Jang, 2020; Lee & Kim, 2020; Mirzaei et al., 2021). Lee & Jang (2020) suggested that organizations implement intervention programs that reduce stress and turnover. Since an increase in stress levels directly impacts the turnover of nurses and patient care technicians, the project's goal is for participants to report less than 10% turnover intention and show a decrease in the perceived stress level after three months of project implementation.

After recognizing that nursing staff retention was the issue to be improved, a gap analysis identified the gap between the current and desired turnover rates. By reviewing evidence-based literature, a plan was developed to address the stress levels in nursing that have led to an increase in turnover.

Significance of Problem

Turnover is costly for healthcare organizations, with the average hospital losing between four to seven million dollars annually (NSI, 2019). Each percent change in nurse turnover will cost the average hospital an additional $262,300 (NSI, 2022). This budget loss can affect an organization's overall profit margins. Based on these figures, it was determined that if nursing staff turnover (RN, LPN, and patient care technicians) was cut in half, the project facility would retain over four million dollars annually. Short staffing also leads to what Kalánková et al. referred to as missed, rationed, or unfinished nursing care (2020). Gaps in nursing care decrease patient safety and care quality (Kalánková et al., 2020; Lee & Kalisch, 2021).

Additional stressors have contributed to the nursing shortage in the past two years. The increased stress and expectations of the COVID-19 pandemic created unprecedented work environments. Nursing experienced an increased caseload due to being short-staffed and the influx of patients related to the pandemic. Some nurses believed that their health and the health of their families were threatened (AACN, 2021; Pourgholam et al., 2023). Many felt the emotional drain of an increased death rate while supporting patients. PTSD and job-related stress positively correlate with turnover intention (Lee & Jang, 2020; Lee & Kim, 2020; Mirzaei et al., 2021). According to a media release concerning a survey by the National Councils of State Board of Nursing (NCSBN), the increase in perceived stress has contributed to more than 100,000 RNs leaving the profession in the last two years, and 20% projected to leave by 2027 (NCSBN, 2023). With the already elevated level of nurse shortage, the high turnover rate exacerbated the problem of increased stress.

Impact of Project

Knowing that job-related stress correlates with turnover intention, Lee & Jang (2020) suggested that organizations implement intervention programs that reduce stress and turnover. Alkhawaldeh et al. (2020) found that implementing stress management interventions in healthcare organizations reduced job-related stress and improved coping skills among nurses. This project identified perceived stress in the nursing staff and implemented corresponding interventions. The turnover rate was expected to decrease, correlating with a decrease in perceived stress, to address the overall turnover.

The project provided managers with tools for addressing the high-stress levels in nursing units and decreasing turnover. The potential benefits from this project included decreased perceived stress, turnover intention, and training expenses. In addition, while not assessed in this project, there could be increased in job satisfaction, patient satisfaction, quality of care, saving revenue, and overall nursing retention.

Chapter II: Literature and Theory Review

Literature has validated the current nursing shortage. The shortage increased job-related stress among nurses and other healthcare personnel, which increased turnover. The rate of turnover increased, resulting in many hospitals needing additional staff to provide quality patient care. By implementing programs that include interventions to address job-related stress, hospitals attempted to retain nurses and decrease turnover.

Literature Review

A literature review was conducted to review scholarly works on nursing shortage, turnover intention, stress in nursing, and stress reduction models. Medline, Cumulated Index to Nursing and Allied Health Literature, and Google Scholar were searched using the keywords: “nursing shortage," "turnover intention," "nurse turnover," "stress in nursing," and "stress reduction". Articles published before 2016 were excluded. Upon review of the included articles, several themes emerged, including the pervasive nursing shortage, job-related stress in nursing that has contributed to turnover, and recommendations for organizations to address stress in their staff to decrease turnover and mitigate the shortage of nurses.

Nursing Shortage

Across the United States, the nursing shortage affected many hospitals. The ANA (2021) declared a national nurse staffing crisis in September 2021. The current RN vacancy rate stands at 17%, up 7.1 points from last year, with over 80% of facilities reporting a vacancy rate of over 10% (NSI, 2022). By 2026, the U.S. will need over one million more nurses (American Association of Colleges of Nursing, 2022). The increasing shortage affects healthcare facilities' ability to meet the population’s complex

needs. Hospitals have capped the number of patients they can accommodate, closed beds, and sometimes whole units due to a lack of staff (E. Good-Knutson, personal communication, November 10, 2022). Nurses have accommodated heavier patient workloads and longer work hours to meet the community's needs (AACN, 2021).

A key strategy for addressing the nurse shortage is retention. Healthcare systems can effectively address the gap in available nurses by keeping experienced employees (Hu et al., 2022). Ninety-four percent of hospitals consider retention a critical strategy to address the nursing shortage, with the majority having plans to increase retention (NSI, 2019).

Turnover Intention

Turnover intention is the intent to leave a place of employment within the next five years (Carthon et al., 2021; Chênevert et al., 2016; Labrague et al., 2020). Chênevert et al. found that the rate of turnover intention in employees is an early and robust indicator for predicting actual turnover (2016). A study by Hu et al. (2022) among 500 nurses in Beijing hospitals found that 78.3% held a strong or extremely strong turnover intention. The authors asserted that this high rate could be due to work being more intense and stressful. Researchers of 600 nurses in Philippine hospitals found that 46.1% reported an intention to leave their current work within a year, and 78.9% of nurses intended to leave their employment within five years (Labrague et al., 2020). Labrague et al. (2020) found that nurses who worked in hospitals with higher patient volumes, which led to increased workload and patient demands, saw a higher turnover intention rate.

Studies completed in the United States. found similar results when assessing turnover intention among nurses. Researchers in Arizona found a turnover intention of up

to 22.5% within one year (Carthon et al., 2021). Zeiher et al (2022) research in the Northeast and Midwest United States found 44% indented to leave their position at some point in the future.

The United States hospital turnover rate for 2021 increased by 6.4% from the previous year and currently stands at 25.9% (NSI, 2022). The RN turnover rate is the highest it has ever been, increasing in 2021 by 8.4%, and currently stands at 27.1% (NSI, 2022). Since 2016 the average hospital has experienced a turnover rate of over 83% of its RN workforce (NSI, 2021). An AACN (2021) survey found that 66% of nurses are considering leaving the profession. Another survey completed by the National Council of the State Boards of Nursing (2023) found that 25% of nurses surveyed planned to leave the profession in the next five years.

RN turnover varies by discipline and specialty areas. Nationally, step-down units had the highest turnover in 2021 at 30.2%, an increase from 24.4% in 2020 (NSI, 2022). Telemetry turnover was 30.2%, up 19.3% in 2020, and emergency turnover was 29.7%, up 20% in 2020. Critical care was found to have a turnover of 27.5%, which increased from 18.7% in 2020. These areas experienced notoriously high work-related stress, which may contribute to turnover rates.

Years of service impacts turnover intention rates. The rate of new hire turnovers has risen drastically over the last year. Over 36% of new hires hospital-wide leave within their first year, and over half of all turnovers have less than two years of experience (NSI, 2022). In 2019, the turnover in those with less than one year of experience was only 18% (NSI, 2019). Nearly a third of all newly hired RNs left their position within the first year. This turnover accounted for 27.7% of all RN turnover (NSI, 2022). New nurses can

experience a higher stress level due to learning new roles and skills than those in the profession for several years. Generally, the healthcare field has experienced unprecedented work environments in the last two years due to the pandemic. New nurses have entered the profession with higher-than-usual expectations and stress placed upon them.

Impact of Increased Turnover

The increase in turnover in the healthcare system has negative consequences. One consequence is the rising cost of healthcare. Turnover of a single RN will cost a hospital an average of $46,100, causing the hospital to lose up to 9 million dollars annually (NSI, 2022). Every percent change costs the average hospital $262,300. The costs could include recruitment, hiring, onboarding, or hiring temporary help to fill the gap made by a nurse leaving. Recruiting a new nurse takes up to three months. Hospitals' labor costs have increased by 62.7% because of using travel nurses to alleviate shortages (NSI, 2021).

Turnover can also affect the quality of care given to patients. Inadequate staffing can lead to missed, rationed, or unfinished patient care (Kalánková et al., 2020). Aspects of nursing care can be overlooked, or some tasks are prioritized to address the most critical needs leaving other tasks uncompleted. Gaps in care can affect patient safety and the overall quality of care (Kalánková et al., 2020; Lee & Kalisch, 2021). Turnover intention impacts teamwork and colleague relations, which in turn impacts patient safety, productivity, and quality of care (Pedrosa et al., 2021; Zaheer et al., 2021). Perry et al. (2018) examined direct-care nurses in the United States and how their dissatisfaction and turnover intention rates correlated with adverse events and patient satisfaction. Turnover intention has been linked to several adverse outcomes, including medication errors, falls,

and pressure injuries (Perry et al., 2018).

Turnover Related to Stress in Nurses

Many factors contribute to turnover intention. One theme present in the literature is that of increased stress. The stress leading to turnover can come from several avenues, including the pandemic, workload, inadequate staffing, job stress, fatigue, and burnout. Healthcare was one of the most challenging areas affected by the pandemic as increasing numbers of patients entered a healthcare system with a contagious virus and many unknowns. With nurses on the front line of patient care, changes in the healthcare environment significantly impact them. The pandemic caused nurses stress, anxiety, and fear of contracting COVID-19 (Falatah, 2021; Kim et al., 2020; Martin et al., 2023). Nurses face ever-changing policies and procedures and staffing issues. The workload increased to accommodate the influx of patients. Patients with the virus often had high acuity levels. Increased patient death rates affected nurses' emotional well-being. Hospitalized patients were isolated from their social circles, and their only contact was with their healthcare providers. Nurses also feared that they could contract the disease or pass it on to their families, causing many to isolate themselves from those they loved to protect them, only furthering the risk to their mental well-being (AACN, 2021). In one study, nurses reported heightened stress during the pandemic resulting in higher levels of depression and anxiety (Serrano et al., 2021).

The increase in burden and stress impacted the turnover rate for nurses. In Iran, Mirzaei et al. (2021) studied nurses working in areas affected by COVID-19, noting a positive correlation between PTSD, job demand, and job strain and turnover intentions. The turnover intention rate of the nurses in this study was 41.73% (Mirzaei et al., 2021).

The NCSBN found that increased stress contributed to more than 100,000 RNs leaving the profession in the last two years, with 20% projected to leave by 2027 (2023).

An increased workload related to short staffing was a common reason for increased stress resulting in nursing turnover. Nurses worked more hours and carried a higher patient workload due to inadequate staffing, which increased job stress and burnout (Hoedl et al., 2021; Martin et al., 2023). Factors such as greater role tension, job strain, overtime, and shift rotation caused an increase in turnover (Engström et al., 2021). Several other studies found that workload stress increased turnover intention (AACN, 2021; Lee & Kim, 2020).

Job or work related stress was positively associated with turnover intention (Fasbender et al., 2019; Lee & Jang, 2020; Lo et al., 2018; Mirzaei et al., 2021). Ghwandra et al. (2019) found that 22% of hospital nurses intended to leave their profession in less than a year due to workplace stress and heavy workload. Labrague et al. (2020) found that work stress predicted turnover intention at five years, while burnout predicted turnover intention at one year and five years. Nurses who reported a higher level of stress and burnout reported a higher turnover intention.

Stress and increased workload place nurses at risk for fatigue and burnout (Young et al., 2018). This burnout was also a factor in turnover (Lee & Jang, 2020; Pedrosa et al., 2021; Poku et al., 2022; Shaffer & Curtin, 2020). Fatigue affects nurses' physical and mental health, interfering with daily functioning. Researchers found that pediatric nurse turnover intention was associated with job satisfaction, work stress, burnout, organizational commitment, and work-family support (Yang & Chen, 2020).

The ANA (2017) identified workplace stress as the top work environment health and safety risk. Eighty-two percent of survey participants stated they were at significant

risk for workplace-related stress. Stress related to workload affected turnover intention and could affect the care and safety of patients. Jobe et al. (2021) found that emergency room nurses who experience secondary trauma are at risk of developing secondary traumatic stress disorder. Emergency room nurses are exposed to multiple stressors during their day that can lead to PTSD, affecting work productivity and decreasing patient quality of care. Nursing is a high stress occupation and could potentially result in neurotic symptoms affecting work performance and quality (Mehta et al., 2020). With the high demand for nurses, the increase in turnover has exacerbated the problem resulting in increased stress and even higher turnover intention rates.

Stigma of Stress

Due to the high levels of workplace stress in healthcare, many healthcare facilities offer programs and resources to address the mental health needs of providers. However, professionals are sometimes reluctant to recognize their needs and reach out for help managing their stress.

Perceived public stigma relates to how others perceive or experience poor mental health (Link, 1982). Stigma is one of the most significant barriers to health-seeking behaviors (Gulliver et al., 2012). Despite the high incidence of those who have experienced a need for mental healthcare, the stigma is still high. Poor mental health is not often discussed and is often perceived as a source of personal failure.

A survey by the American College of Emergency Physicians ([ACEP], n.d.) showed that 45% of emergency room physicians do not feel comfortable seeking mental health treatment. This reluctance continued even though most surveyed reported increased stress due to the pandemic. According to a director at the project facility,

reluctance to seek care is due primarily to the fear of professional repercussions (O. Daya, personal communication, March 22, 2022). Nurses at the project facility only use some of the hospital's available resources (such as behavioral health specialists). The reticence has been related to a fear that the information is not confidential and that it will be reflected in job performance evaluations. Nurses fear being perceived as unable to do their fair share, making them a liability not only to their employer but in their peer's eyes. The trepidation in admitting that one needs help aligns with the ACEP (2020) survey, which found that 73% of physicians did not seek mental health treatment because of a stigma in the workplace, and 57% feared professional reprisal.

For a variety of reasons, nurses infrequently allow themselves to admit to high-stress levels and an inability to cope for various reasons. This perceived show of strength could be due to the fear of professional reprisal or the social stigma associated with stress responses. Nurses should be competent caregivers. It is hard for nurses to admit they need help. Stress must be discussed in the workplace regularly to remove the stigma. It is crucial to establish that talking about stress and getting help is acceptable. By making stress a phenomenon recognized as "normal and temporary," nurses may more freely identify their stress to obtain help without the fear of social stigma.

Interventions for Stress

Job stress and burnout were widely cited as reasons for increased turnover (Fasbender et al., 2019; Lee & Jang, 2020; Lo et al., 2018; Mirzaei et al., 2021). It is essential to prevent the physical and psychological effects of stress on nurses and implement measures to decrease the strength in nurses' turnover intention (Labrague et al., 2020). The literature has identified a variety of interventions cited as helpful in

addressing stress and burnout in nurses.

The first piece to address workplace stress is identifying it and determining its severity. Recognizing a problem, and the severity of the stress reaction is necessary to implement interventions to mitigate it. Many nurses may recognize they are "stressed" but lack the tools to link that stress with available resources. The stress continuum model is an example of how stress can be identified and quantified so it can be addressed (Nash, 2011). This framework was used in the project to allow for self-assessment of stress levels by the participants and then aligned with stress management actions.

Kleis & Kellogg (2020) identified positive activities to address stress, such as self-care, laughter, faith, and meditation, as helpful interventions. Education sessions on stress management and secondary trauma were also helpful. It was also encouraged that nurses take breaks to minimize personal stress. Lee & Jang (2020) claimed that counseling, massage, aromatherapy, and exercise could lower fatigue and stress, and thus decrease turnover intention.

A web-based stress management program for nurses called BREATHE showed improved perceived stress (Hersch et al., 2016). Many phone applications and online programs, such as Headspace, Burnout Breakthrough, and the Tapping Solution, have been developed to address stress and mindfulness. Practical solutions to stress mitigation include decreasing workload, taking breaks, meditating, and journaling.

Healthy Nurse, Healthy Nation Grand Challenge is a social movement that looks to increase the nation's well-being by increasing the health of the nurses caring for it (ANA, 2021; ANA, 2023). The challenge addresses interventions focusing on a healthy work environment, including a nurse's bill of rights. This bill of rights, supported by the

ANA (2023), focuses on working within the scope of practice, supporting ethical practice, nurses as advocates for themselves and patients, fair compensation, safe working practices, and the right to negotiate terms of employment. Nurses can sign up for the challenge and are supplied with tools and online applications that support mental health and resilience in nurses, as well as nutrition, fitness, and rest.

Review and Alignment of Theory

Researchers call for organizations to implement evidence-based measures to intervene in stressors of nurses to reduce turnover rates (Labrague et al., 2020; Lee & Kim, 2020). Nursing theories strengthen and support the implementation of evidence-based practice. The stress continuum model, the Newman system model, and Kotter's change management model were used to guide this project's development and provide a framework for implementation.

Stress Continuum Model

The stress continuum model provides a framework for recognizing and understanding the stress spectrum. This model can be used in the healthcare setting to identify the stress level of nurses, and interventions can be implemented to bring them back to a sense of health. Khanna et al. (2019) further asserted that this model can help reduce stigma by giving a framework for psychological health promotion. This framework allows the participant to identify the level of perceived stress so that interventions can be implemented.

The U.S. Marine Corps recognized that their personnel experienced high stress levels and developed the stress continuum model to identify and quantify the level of stress they were experiencing and promote resiliency. Nash et al. (2011) established four

assumptions that led to the development of programs to promote resiliency. First, stress states lie along a broad spectrum. Wellness and thriving are at one end, and illness and disability are at the other. This assumption aligned with the widely accepted health continuum model, wherein complete health and wellness lie at one end of the spectrum, and illness and premature death lie at the other.

The second assumption is that anyone can be stressed beyond their adaptive capacity (Nash et al., 2011). When an individual is exposed to stressors over a long period, many will express some stress levels. The third assumption is that to be effective, preventive programs must intervene not only before individuals encounter toxic stressors but also after they develop symptoms of distress after being exposed (Nash et al., 2011). Prevention must include methods to assess for a stress response to provide targeted interventions. The fourth assumption is that prevention is only possible by making all possible resources available, including social systems such as leadership, family, community, and cultures (Nash et al., 2011).

Based on these assumptions, Nash et al. (2011) developed the stress continuum model (Appendix A), which includes four color-coded zones: green (ready), yellow (reacting), orange (injured), and red (ill). The green zone is the zone of adaptive coping, optimal functioning, and personal well-being (Khanna et al., 2019; Nash, 2011; Nash et al., 2011). The green zone is not a complete absence of stress but adequate resistance to stress by showing resilience. Characteristics include a high-performance level, calm and steady emotions, confidence in self and others, behaving ethically and morally, getting restful sleep and adequate nutrition, retaining a sense of humor, and remaining socially and spiritually engaged (Nash, 2011; Nash et al., 2011).

The yellow zone is the zone of mild and temporary distress or changes in functioning due to temporary and reversible stress (Khanna et al., 2019; Nash, 2011; Nash et al., 2011). Subjective distress causes anxiety, fear, anger, or sadness. Individuals in this zone may worry and fantasize about withdrawing from the situation or retaliating against those stressors. Physical symptoms may include increased heart rate, sweating, tremors, diarrhea, nausea, distracted, poor attention, slow recall, and decreased problem-solving. Irritability, changes in appetite, difficulty falling asleep, decreased motivation, enthusiasm, or social connectedness also have been reported. Once the stress is alleviated, the symptoms reside without any lasting damage. If the stressors are not alleviated, progression to the next zone of orange will occur over time.

The orange zone is the zone of stress injury. The orange zone is between the yellow zone of average, necessary, and transient stress, and the red zone of diagnosable mental disorders. Here interventions can help prevent the transition into the red zone. Orange zone stress is more persistent from stressors that are intense or exceed the duration of the individual's coping capability (Khanna et al., 2019; Nash, 2011; Nash et al., 2011). Four familiar sources of stress injury are the threat of life, loss of cherished people or parts of self, moral compromise, and cumulative wear and tear (Nash, 2011).

The red zone is where health professionals diagnose mental disorders (Khanna et al., 2019; Nash, 2011; Nash et al., 2011). The most widely recognized disorder is PTSD, but other disorders could be depressive and anxiety disorders or substance abuse and dependence (Nash et al., 2011).

The Neuman Systems Model

The Neuman systems model analyzes the patient's relationship with stress,

reaction to it, and return to baseline to determine health. Stressors can be intrapersonal (internal), interpersonal (relationships), or extra-personal (external) (Neuman, 2002). Nurses constantly encounter environmental stressors, which may cause a stress reaction if their lines of defense are overcome. The model uses prevention to reduce stressors. Three lines of defense are outlined in the model. These include primary defense, which encompasses health promotion; secondary defense, which includes the treatment of stress reactions; and tertiary defense, which maintains wellness after treatment (Neuman, 2002).

Nurses have encountered added stressors related to the pandemic. Intrapersonal stressors include fear of contagion and limited knowledge of the disease; interpersonal stressors include changes in relationships and fear of transmission to their families; and extra-personal stressors include inadequate healthcare systems, short staffing, and increased workload (Almino et al., 2021). The Neuman systems model posits that when a nurse experiences stressors, the stressors may breach the nurse's line of defense and cause a stress reaction (Neuman, 2002). The model allows for managing perceived stress by aligning interventions with the e stress continuum model. The goal is to maintain the patient in the "green" level of coping described in the stress continuum model. Health promotion, a primary defense in the Neuman systems model, can be used to maintain this level. Secondary defense involves the treatment of stress, which aligns with using interventions to address perceived stress levels. Using the stress continuum model to identify the stress reaction and supply interventions to address the perceived stress levels, the patient can move from a higher stress level to the green thriving level of coping. The dynamic interaction with the environment aligns with the tertiary defense in the Neuman systems model.

Kotter's Change Management Model

Aspects of Kotter's eight-step process for leading change help guide the project change management process. The first step is to create a sense of urgency (Kotter, 2012), which identifies why the change is necessary and how it will benefit the organization. In step two, a guiding coalition is built. Change agents are identified, and a core group to promote change is developed. Kotter (2012) suggests that the members come from all organizational hierarchy levels to achieve better outcomes. The third step is to form a strategic vision and associated initiatives. A vision is formed, and a volunteer army is enlisted in step four. Subjects of the project are recruited and buy-in is promoted. Frontline caregivers should be included in discussions to promote buy-in and overcome resistance to change (Burnes & Bargal, 2017). Education sessions should be offered to explain the importance of the project, outline the need for change, and discuss the positive impact change can provide. Alatawi et al. (2020) found that supporting nurses with resources and education facilitated evidence-based practice implementation and influenced the quality of care. In step five, the implementation of the project begins. Action is enabled by removing barriers to change (Kotter, 2012).

Short-term wins are generated in step six (Kotter, 2012). Acceleration is sustained in step seven. Step eight includes incorporating strategic changes into the organizational culture. Dissemination of the project can enhance sustainability (Moran et al., 2019). With nursing shortages and increased turnover intentions, turnover rates have increased. Adverse outcomes have resulted from increased turnover, including rising healthcare costs and lower quality of patient care (NSI, 2021; Kalánková et al., 2020). One contributing factor to turnover is job-related stress. While it is recognized that there is an

increase in stress in healthcare facilities, it is often identified in staff only after the turnover. The stigma that society associates with stress may be a contributing factor. This project attempted to utilize the stress continuum model to identify perceived stress in participants and use evidence-supported stress management interventions to address the stress response. The Neuman systems model was used to recognize that the stress response comes from weakening the patient's defense systems, and these systems are strengthened with the stress management techniques provided. Kotter's change management model was used to promote the change in the facility and address the need to decrease turnover to retain the current nursing staff.

Chapter III: Method

Recognizing and managing stress levels is essential in decreasing turnover and maintaining the nursing workforce. This project implemented a program in the acute care setting that identified perceived stress in nurses and patient care technicians with coordinating interventions to address perceived stress levels to decrease turnover intention. A patient-intervention-comparison-outcome-time frame question was formed to meet this purpose. Do nurses and patient care technicians who participate in a stress-less program report lower perceived stress and turnover intention than before participation?

Design of the Project

A program built on the stress continuum model was developed using Kotter's eight-step model to promote lasting change. After obtaining Institutional Review Board (IRB) exemptions and waivers (Appendix B), participants were recruited and completed a pre-survey to assess perceived stress and turnover intention scores. After implementation of the program, post-survey data collection occurred at the three-month mark.

Setting

Data were collected over three months on three nursing units at a private, urban, 1,000-bed hospital in the midwestern U.S. The Surgical Intensive Care Unit (SICU) has 15 private intensive care rooms for critically ill patients awaiting or recovering from surgery. The other two units are step-down units; step-down unit one (4 South) and step-down unit two (4 North). Step-down unit 2 was designated to care for patients diagnosed with COVID-19. Each step-down unit has 18 private rooms for patients with a moderate to high acuity of illness. The patients on these units transition to a general nursing unit once their health improves. In 2021, these units had the highest turnover rates for RNs at

the project facility. The SICU saw 20.9% of its nursing staff leave, while step-down unit one saw 36.16 %, and step-down unit two experienced 24.74%.

Population

Convenience sampling was used to obtain nurses and patient care technicians assigned to the chosen units as participants. Inclusion criteria included job position and unit assignment. Exclusion criteria were a job position that was not a nurse or a patient care technician and those that were not assigned to one of the three designated units. Age, gender, length of experience, or being rotated to other units were not a part of the exclusion criteria.

Implementation

The project manager used Kotter's change management model as a framework for implementation. First, the change needed was identified. Communication was initiated with the organization's leadership and stakeholders. In this case, the problem addressed was the turnover of nurses and patient care technicians. Once the problem was isolated, the cause was analyzed and identified as perceived stress.

Second, the project manager identified appropriate change agents. Conversations with administrators, nursing directors, nurses, and patient care technicians provided feedback on perceptions and intervention suggestions.

Third, the project manager created a product vision. Necessary changes were identified, and the potential benefits were communicated to leadership stakeholders and directors of each unit. The stress project was explained, and the benefits for the units and participants were outlined. The vision was to decrease perceived stress and turnover intention in nursing, resulting in a decreased turnover. Suggestions were taken from

conversations with the change agents and incorporated into the program's design. The IRB committees at the University and facility provided a notice of exemption and waiver of consent for the project (Appendix B).

Fourth, the project manager recruited project participants. The project manager developed an educational plan (Appendix C) utilizing an educational packet (Appendix D), an informational bulletin board, and a brochure. Participants completed voluntary surveys using electronic consent (Appendix E). Microsoft Forms were used for the surveys to ensure confidentiality. Participants were identified only by a random username of four digits and two letters. The survey link and QR code to Microsoft Forms were included in the educational folder and posted on the informational bulletin board. The surveys included demographic information (Appendix F), the Perceived Stress Scale (Appendix G), and the Turnover Intention Scale (Appendix H). The project manager will retain all project documents for a minimum of three years after the close of the project on a secure password-protected cloud account.

As a fifth step, the project manager began project implementation by removing barriers to participation (Kotter, 2012). Lack of participation may have resulted from barriers related to time and fear of retaliation from the facility. The time barrier related to the reluctance of the participants to complete additional tasks was addressed by specifying the time commitment for project participation. The retaliation barrier was overcome by ensuring confidentiality and anonymity.

Levels of perceived stress and applied interventions were identified using the stress continuum model as a framework (Nash, 2011) and the Neuman system model as support. Stress levels were assigned to a color system and were subjective to the

participant's assessment. Participants would begin their work shift by self-evaluating their stress levels using the stress continuum model. Based on these assessments, pre-determined actions could be used to decrease the perceived stress and manage mental health needs before adverse effects occur (Appendices A and I). The actions included a variety of interventions to lower the stress response, such as coloring, meditation, and seeking counseling. These actions were categorized as thriving, surviving, struggling, and crisis actions and linked to the stress level color system. Resources linking to these actions were readily available for the participants on a designated bulletin board in the unit.

Thriving actions included maintaining a healthy lifestyle, staying organized, focusing on the task, breaking tasks into manageable chunks, gratitude, mindfulness, deep breathing, positive statements, laughter, and hobbies. Surviving actions included aromatherapy, adequate sleep, food, exercise, recognizing limits, identifying, and minimizing stressors, using the relaxation room, taking breaks, going outside, coloring, breath box method, spiritual care, reflective journaling, massage, and music. Struggling actions included asking for help, using time off, seeking social support, utilizing colleague well-being services handouts, or behavioral health sessions. A Code Lavender could also be initiated. Code Lavender utilizes evidenced-based stress management interventions to promote relaxation when a stressful situation occurs on a unit. Crisis actions included checking with a manager for resources, seeking consultation, and following healthcare providers' recommendations (Appendices A and I).

Sixth, short term wins were generated (Kotter, 2012). Participants were encouraged to utilize the project resources weekly. The interventions were accessed

through the informational bulletin board. Project resources were available for use by anyone on the unit. Participants had the right to be involved with the project and utilize interventions of their choosing. The availability further promoted the confidentiality of the participants on the units, as even those not participating in the project may have used the resources.

Seventh, project acceleration was sustained (Kotter, 2012). Nursing directors supported the project and added reminders to "check your stress" to morning huddles, further validating the importance and promotion of the project. Weekly rounding by the project manager encouraged the use of the project by the staff, and bulletin boards in the break rooms provided the resources for the interventions and kept the project noticeable. The intrinsic motivation of the nursing staff was appealed to by promoting the concept that the project would better their nursing care by addressing their stress needs. The project manager periodically provided extrinsic motivation, such as thank-you gifts of sweets for the units.

Eighth, strategic changes were incorporated into the culture (Kotter, 2012). The Perceived Stress Scale and Turnover Intention Scale were utilized in a post-survey at the end of the three months of implementation (Appendices F, G, and H). Participants' pre- and post-survey results were compared. Post-survey data about perceived stress were assessed, comparing how it correlated with nursing staff turnover intention rates.

After project completion, the unit directors assumed responsibility for ensuring the sustainability of the interventions. The project manager provided directors data to support the change and resources for use in their unit. The project manager presented information to the Chief Nursing Officer Committee with further disseminated planned to

the retention committee and the Nurse Advisory Committee. The committee members plan to present project findings to the staff on units by disseminating it in shared governance. The project manager presented the project as a part of a shared scholarship day at the affiliated college of nursing. The project is scheduled to be presented at a shared research day for the project facility and at a nursing research day at a local university.

Data Collection

Data was collected by including a QR code linked to the surveys in the educational folder and posting it on the informational bulletin board. The surveys included demographic information, the Perceived Stress Scale, and the Turnover Intention Scale (Appendices F, G, and H).

Demographic variables included age, gender, current position (RN, LPN, or patient care technician), length of experience at the job, whether the participants float or get assigned to various units, and what unit they are typically assigned to (Appendix F).

The Perceived Stress Scale included ten items and used a Likert scale rated from zero to four, wherein participants rate how often they experience the topic in the item (Appendix G). The higher the score, the higher the psychological stress (Cohen et al., 1983; Cohen & Williamson, 1988). This scale was validated, and internal consistency was shown by multiple studies with Cronbach's alpha of 0.78, 0.91, 0.865, and 0.796 (Chen et al., 2020; Cohen & Janicki-Deverts, 2012). Sheldon Cole, author of the Perceived Stress Scale, provided permission to use the survey (Appendix J).

The Turnover Intention Scale utilized three questions measuring participants' intention to leave the organization (Appendix H). These were then rated on a five-point

scale, with one indicating strongly agree and five indicating strongly disagree. The items included (1) I think a lot about the organization: (2) I am actively searching for an alternative to the organization: (3) As soon as it is possible, I will leave the organization. A higher score indicated a weaker intention to leave (Cohen, 1998). This scale was validated, and internal consistency was shown with a Cronbach's alpha of 0.86 (Yang & Chen, 2020). The author, Aaron Cohen, provided permission to use the Turnover Intention Scale (Appendix K).

Once the data was collected, a total score was determined for the participant's perceived stress scale and categorized as high (score greater than 27), medium (score between 14-26), or low-stress level (score less than 13). The turnover intention responses were combined into strongly agree to agree, neutral, or disagree to disagree strongly.

Chapter IV: Results

The project intended to determine whether there was a decrease in perceived stress and turnover intention rates in nurses and patient care technicians after intervention implementation. Pre-survey results (n=25) and post-survey results (n=11) were collected. A significance level of p=0.05 was used to assess statistical significance, and an independent t-test, Fisher's test, and chi-square analysis were employed with the Statistical Package for the Social Sciences (version 29.0) to observe the impact of the intervention on perceived stress and turnover intention.

Results of Data Collection and Analysis

The population inclusion criteria were that participants be RNs, LPNs, or patient care technicians and employees on one of the three chosen units of the facility. All responses met the inclusion criteria. Twenty-five participants completed the pre-surveys, and 11 completed the post-surveys. The pre- and post-participants were not matched.

The initial plan was to use a paired t-test to analyze the data by matching the participant's pre- and post-responses. High turnover and short staffing caused nurses and patient care technicians to be moved from one unit to another, resulting in no guarantee that the same sample was available from the pre- to post-surveys. Both surveys were administered via a QR code and posted on the units for any nurse or patient care technician to access. These challenges resulted in different groups of participants answering the pre-and post-survey. Due to the different groups, an independent samples t-test was completed to determine the significance of the perceived stress data. Since the sample was small and the chi-square assumption was violated, Fisher's exact test was used to examine the categorical data.

Pre-Survey Demographics

A total of 25 nurses and patient care technicians responded to the pre-survey from the three units: 45% worked on step-down unit 1, 20% on step-down unit 2, and 32% on SICU. Participants ages ranged from 18 to older than 60 years of age, with the majority (56%) falling between the ages of 21 and 29. Participants reported years of experience ranging from less than a year to over ten years. Eighty-eight percent reported five or fewer years of experience, with 52% reporting two or fewer. Fourteen were RNs, one was an LPN, and 10 were patient care technicians. Seventy-six percent reported floating to other units. The majority of participants identified as female (92%) and white (88%) (Table 1).

Post-Survey Demographics

A total of 11 (n=11) nurses and patient care technicians responded to the post-survey from three units in an urban acute care hospital. Forty percent of participants worked on step-down unit 1, 10% on step-down unit 2, and 50% on SICU. The participants' ages ranged from 21 to 49 years of age, with 36% falling between the ages of 21 and 29 years of age and 36% falling between the ages of 40-49. Participants reported years of experience ranging from less than a year to over 10 years. Sixty-four percent reported five or fewer years of experience, with 27% reporting two or fewer. Seven participants were RNs, one was an LPN, and three were patient care technicians. Sixty-four percent reported floating to other units. The majority of participants identified as female (90%) and white (91%). (Table 1).

Table 1

Demographic Data

	Pre-survey	Post-Survey

Gender	Male	2	0
	Female	23	10
Position	RN	14	7
	LPN	1	1
	PCT	10	3
Unit assigned	SICU	8	5
	Unit 1 (4S)	15	4
	Unit 2 (4N)	5	1
Float	Frequently	10	3
	Sometimes	9	4
	Rarely	4	2
	Never	2	2
Race	White	22	10
	Black	2	1
	Other	1	0
Age	18-20	1	0
	21-29	14	4
	30-39	9	3
	40-49	0	4
	50-59	0	0
	60+	1	0
Years experience	<1 year	7	1
	1-2 years	6	2
	3-5 years	9	4
	5-10 years	1	1
	>10 years	2	3

Note. Pre-survey *n*=25, post-survey *n*=11

Perceived Stress Scale Statistics

Post implementation of the project, the perceived stress level score for the pre-group was higher *(M = 19.84, SD = 6.29)* than the perceived stress level score for the post-group *(M = 14.36, SD = 6.23)*. The difference between the two means was statistically significant at the 0.05 level (*t = 2.413, df = 34),* as shown in Table 2.

Table 2

Perceived Stress Level Independent Samples t-Test

	Levene's test for equity of variances		significance						95% confidence interval of the difference	
Equal Variances	*F*	*Sig.*	*t*	*(df)*	One-Sided *p*	Two-Sided *p*	Mean Difference	Std. Error Difference	Lower	Upper
Assumed	0.3	0.587	2.413	34	0.011	0.021	5.476	2.270	0.864	10.089
Not assumed			2.422	19.348	0.013	0.025	5.476	2.262	0.749	10.204

Fisher's exact test was also used to determine if there was a significant association between pre- and post-survey results in relation to the item "perceived stress" by category. A statistically significant association was found between the two variables (two-tailed p = 0.041), as shown in Table 3, which aligns with the independent t-test (Table 2).

Table 3

Perceived Stress Chi-Squared Test

	value	(df)	asymptomatic significance (2-sided)	exact significance (2-sided)
Pearson Chi-Square	7.516	2	0.023	0.034
Likelihood Ratio	7.849	2	0.020	0.047
Fisher-Freeman-Halton Exact Test	6.351			0.041
n of Valid Cases	36			

Fisher's exact test was used to determine if there was a significant association between pre- and post-survey results concerning turnover intention item one, "I think a lot about leaving the organization", and turnover intention item two, "I am actively searching for an alternative to the organization." There was no statistically significant association between the two variables found for item one (two-tailed $p = 0.597$) or item two (two-tailed $p = 0.433$).

Fisher's exact test was used to determine if there was a significant association between pre- and post-survey results concerning turnover intention item three, "As soon as possible, I will leave the organization". There was a statistically significant association between the two variables (two-tailed $p = 0.041$), as shown in Table 4.

Table 4

Turnover Intention Item Three Chi-Squared Test

	value	(*df*)	asymptomatic significance (2-sided)	exact significance (2-sided)	exact significance (1-sided)	point probability
Pearson Chi-Square	7.936	3	0.047	0.033		
Likelihood Ratio	8.620	3	0.035	0.033		
Fisher-Freeman-Halton Exact Test	7.104			0.041		
Linear-by-Linear Association	6.337	1	0.012	0.010	0.008	0.007

Note. n of valid cases = 36.

Discussion

The project aimed to evaluate if linking a self-assessment of perceived stress to stress management actions would impact perceived stress levels and turnover intention of nursing staff. The project's goal was to decrease perceived stress and find a 10% reduction in turnover intention.

Responses to the Perceived Stress Scale indicated a decrease in perceived stress, with a mean score for the pre-group (n=25) of 19.84 compared to the mean score of the post-group (n=11) of 14.36. This was further validated with an independent samples t-test and a Fisher's exact test, both showing statistical significance (p = 0.041).

Responses to the Turnover Intention Scale did not indicate a strong change in turnover intention, with 9% (1/11) of participants reporting thoughts of leaving and looking for other positions in the post-survey compared with 8% (2/25) in the pre-survey. When each item was analyzed in the survey, the turnover intention item addressing the intention to leave as soon as possible was the only item that showed statistical significance (p = 0.041).

This correlation between decreased stress and turnover intention further supports the literature stating that the two are related (Fasbender et al., 2019; Ghwandra et al., 2019; Labrague et al., 2020; Lee & Jang, 2020; Mirzaei et al., 2021; Lo et al., 2018). This

alignment is further supported by the Neuman systems model, which promotes preventing stress from overcoming a participant's defense system and moving participants back to a manageable level of perceived stress (Neuman, 2002).

The Neuman systems model describes the individual's interaction with stress, their reaction, and the return to baseline. Stressors can be intrapersonal (internal), interpersonal (relationships), or extra-personal (external) (Neuman, 2002). The project did not differentiate between the types of stressors but sought to address the perceived reaction to them. The interventions associated with the green level of the stress continuum model includes health promotion and maintaining a healthy coping level of stress. Using health promotion correlates with the primary defense in Neuman's systems model. The use of stress management actions in the project connects with the secondary defense of the Neuman system model, which deals with the treatment of stress. Using the stress continuum model to identify the stress reaction and supply interventions to address the perceived stress levels, the individual can move from a higher stress level to the green "thriving" level of coping. This dynamic interaction with the environment aligns with the tertiary defense in the Neuman system model, maintaining a healthy coping level, resulting in better work productivity and interaction with patients.

Based on informal, anecdotal feedback, some aspects of the intervention were reported as helpful in addressing stress levels. The stress continuum model used for this project's framework was perceived to be effective in assessing stress by the participants. Participants voiced that the framework was easy to use and easily aligned with the literature-supported interventions for stress reduction. The fact that there was a designated place to obtain information on these strategies, including how to contact the

facility's behavioral and spiritual care services, was helpful. The phone applications for mindfulness and reflective journaling were reported to impact perceived stress levels. Strategies that could be utilized on the unit during a shift, such as leaving the unit to take a lunch break or taking a walk to decompress were also reported as efficacious.

Implications for Practice

Organizations need to implement evidence-based measures to intervene in the stressors of nurses to reduce turnover rates and impact nursing shortage. Using literature-supported measures to decrease stress among nurses will address the psychological and physiological consequences of job-related stress and reduce the intention to leave. This decrease in turnover will help negate the effects of the nursing shortage and allow qualified healthcare personnel to remain at the bedside for quality patient care.

This project linked stress-reducing interventions with self-identified levels of perceived stress. This connection allows individuals to identify and utilize interventions to bring themselves to a level of healthy stress. This project provided managers with a tool to identify stress issues on the floor and intervene before they become severe and lead to turnover. In addition, while not assessed in this project, an increase in job satisfaction, patient satisfaction, quality of care, saving revenue, and overall nursing retention could be an added benefit.

Limitations

The project had limitations. First, the small sample size may not reflect the breadth of the nursing profession. The sample also affects the project manager's ability to make inferences from the data. Additionally, the project facility's high turnover and short staffing caused nurses and patient care technicians to be rotated across nursing

units, so the same population could not be assessed in the pre-and post-surveys.

The exclusion of managers from the project design posed additional limitations. The lack of manager involvement may have influenced the participation of the staff and the resulting small sample size. Managers can influence organizational change positively (Su et al., 2023). Including the managers in the project would have better-encouraged participation from the staff.

The project manager's inability to contact the same participants from the pre-survey to complete the post-survey also may have limited the results as the participants identified themselves with different codes. There was also limited time to complete this project as it was only carried out over three months, possibly not allowing enough time for the interventions to make an impact on the participants. Including survey questions relating to participants' intent to leave may have resulted in participants not responding truthfully, potentially for fear of retaliation. Literature has shown that it is common for there to be fear of retaliation from the facility (ACEP, n.d.; Gulliver et al., 2012).

Finally, a formal assessment of the effectiveness of the stress management interventions was not completed and would have been an improvement in the project. Without a measurement of the use of the stress-management actions and their effectiveness, it is difficult to state that the project intervention is what drove the decrease in perceived stress and turnover intention. The project facility implemented other measures to address turnover independent of the project, such as pay incentives and flexible staffing schedules. These coinciding interventions may have inadvertently influenced the decrease in stress and turnover recorded in the data.

Recommendations

Long-term assessment measures could include turnover rates by the project facility. Rates are recommended to be assessed at the twelve-month mark and again at twenty-four months, along with the Perceived Stress Scale and Turnover Intention Scale, to show the benefit of the program's long-term sustainability. Further data analysis of the difference in data obtained between the three units could ascertain if a unit had more turnover and reported more stress than the other units. This could direct future intervention.

Future studies using this project should consider incorporating manager involvement in the promotion and design of the project, replicating the project with larger sample sizes, and assessing the effectiveness of specific stress management interventions. Additional research should include assessing the mental health needs of nursing staff and ways to address turnover in the population.

A nursing shortage is occurring nationwide, and initiatives must be implemented to address the growing need for nurses at the bedside. The increase in nurse turnover is only exacerbating the shortage. One of the reasons cited for the increase in turnover is stress in the workplace, particularly during the COVID-19 pandemic. This project strove to implement a program that would allow nursing staff to identify their perceived stress and link it to stress-reducing interventions. The hope was that it would normalize stress reduction interventions, decreasing perceived stress and turnover intention. The project yielded decreased perceived stress and a slight decrease in turnover intention. Change is a new habit that becomes a standard (Burnes & Bargal, 2017). To promote a sustained change, the project facility has plans to discuss the implementation of the project framework across all nursing units. Addressing the issue of perceived stress, turnover

intention can be decreased, and it is believed that this will impact nursing turnover.

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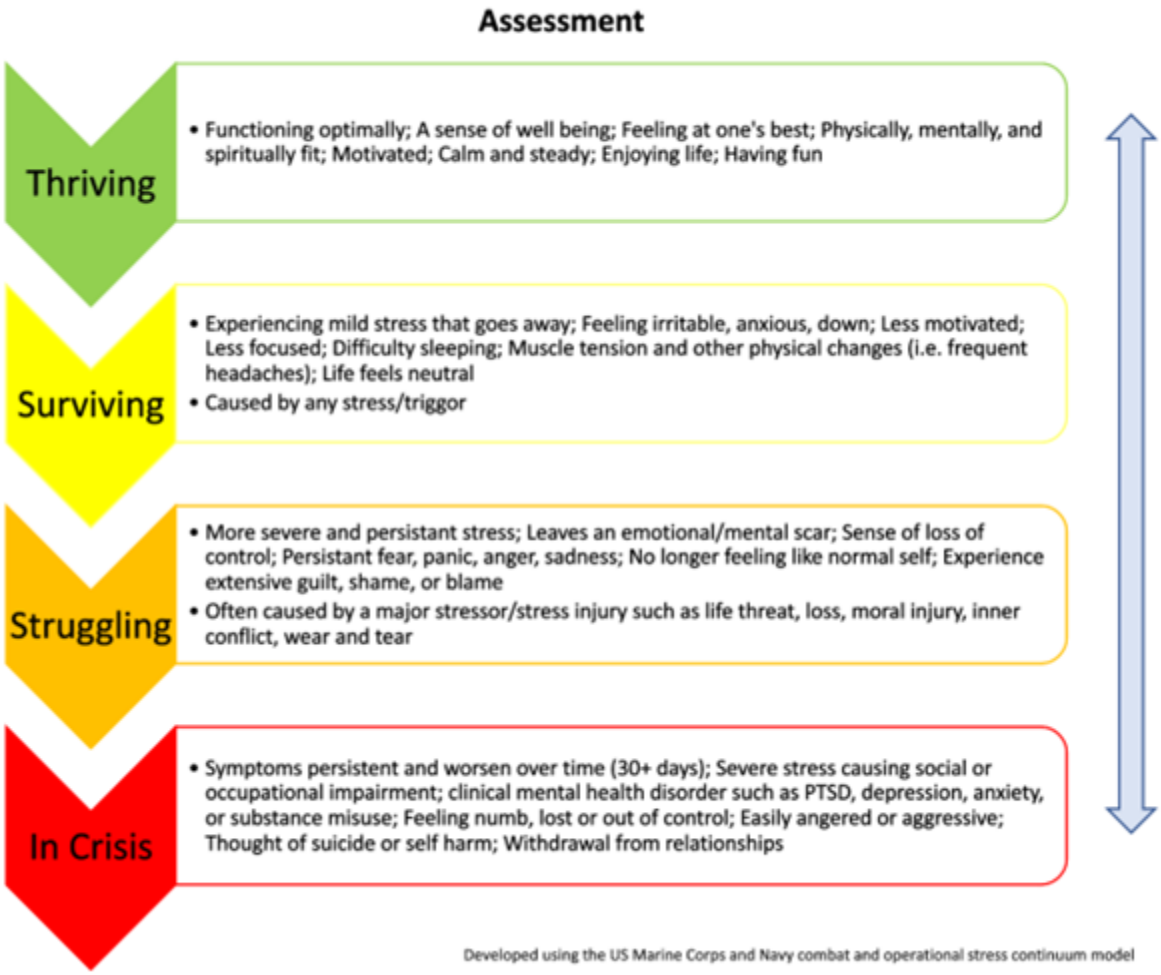
Appendices

Appendix A

Stress Project Assessment



Appendix B

Institutional Review Board Exemptions

Institutional Review Board
4201 South Washington Street
Marion, IN 46953

Tel: 765-677-2090
Fax: 765-677-6647

Notice of Exemption

Influencing Turnover Intention By Addressing Perceived Stress in Nursing
Title of Research Topic

Charity Furcsik, Kathryn Gilreath
Investigator(s)

1775.22
IRB ID Number

The IWU Institutional Review Board (IRB) has reviewed your proposal and has determined that your proposal is exempt from further review by the IRB because the proposed project does not constitute human subjects research. Federal regulations that establish the authority of the IRB provide a specific definition of human subjects research which defines the scope of IRB authority. Your project falls outside the federal definition of human subjects research and is therefore not subject to IRB review.

Please note that this exemption regards only the oversight of human subjects research by the IRB. The IRB has not reviewed any other aspects of the research project and makes no judgement on the merits of the project or its methodologies. All research executed at IWU must conform to all applicable state and federal laws and regulations and to all applicable IWU policies.

Comments:

Ph.D. Chair, Institutional Review Board
September 20, 2022
Date

AULTMAN

October 27, 2022

Charity Furcsik, MSN,
R.N., CNE 2600 Sixth St.
S.W.
Canton, Ohio 44710

RE: Sponsor: Aultman
Title: Influencing Turnover Intention by Addressing Perceived Stress in Nursing

Dear Charity Furcsik:

The application as submitted was screened by the Project Review Committee for exempt status according to the policies of the Aultman Health Foundation. The project has been determined to meet one of the below exemption categories found in 45 CFR 46.104:

D Exempt Category 1- Research in Educational Settings
[S.J. Exempt Category 2 - Tests, Surveys, Interviews, Observation of Public Behavior
D Exempt Category 3 - Benign Behavioral Interventions
D Exempt Category 4 - Secondary Research
D Exempt Category 5 - Public Benefit/Service Programs
D Exempt Category 6 - Consumer Acceptance

The identifiable information being collected and used in this study is not sensitive in nature, and all privacy and confidentiality measures have been adequately addressed. Limited review is not indicated.
A waiver of consent and HIPAA Authorization will be issued by the Human Research Review Board as a separate document, where indicated.

AMENDMENTS: The Principal Investigator is responsible for notifying the Human Research Review Board {HRRB) of any changes in the protocol, participating investigators, procedures, recruitment, or conflicts of interest. Approval is based on the information initially submitted. New procedures cannot be initiated until HRRB approval has been given. If you wish to change any aspect of this study, please communicate your request in writing to the HRRB, providing a justification for each requested change.

As the Principal Investigator for this trial, you should promptly report to the

Human Research Review Board:

a) Deviations from, or changes of, the protocol to eliminate immediate hazards to the trial subjects.

b) Changes increasing the risk to subjects and/or affecting significantly the conduct of the trial.

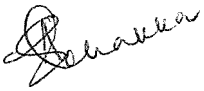
c) All local adverse events that are both serious and unexpected (Unanticipated Problems).
d) New information that may affect adversely the safety of the subjects or the conduct of the trial.

CONTINUING REVIEW: Continuing review for this project has been waived; however, an "Investigator Check-In" process will be instituted. The HRRB staff will send an inquiry on project status in 6 months. If changes are made, or problems occur, that alter the scope of the study such that it no longer meets the requirements for an exemption, it will be necessary for the project to be reviewed by the HRRB.

STUDY COMPLETION: Please notify the HRRB in writing when the research activities, including data analysis have been completed.

Approval for this project is granted under the "Exempt Review" procedures set forth in Aultman Health Foundation policy. The members of the HRRB will be notified of this action. You may begin this project immediately.

Aultman Health Foundation has a Federal wide Assurance [FWA 00003115] from OHRP. The Human Research Review Board is registered with OHRP [IRB 00002749] and is in compliance with 45 CFR 46, 21 CFR 50 and 21 CFR 56. To the extent these Federal regulations are in agreement with the ICH Guidelines, we are also in GCP compliance.

Sincerely, 

HRRB Signatories:
Asha Chakka, MD, FACP
Mathew Delahunty, PharmD, BCPS
Amy Holbrook Smith, MSN/ED, R.N., RNC-OB Aultman Health Foundation
Human Research Review Board

Appendix C

Education Plan Outline·

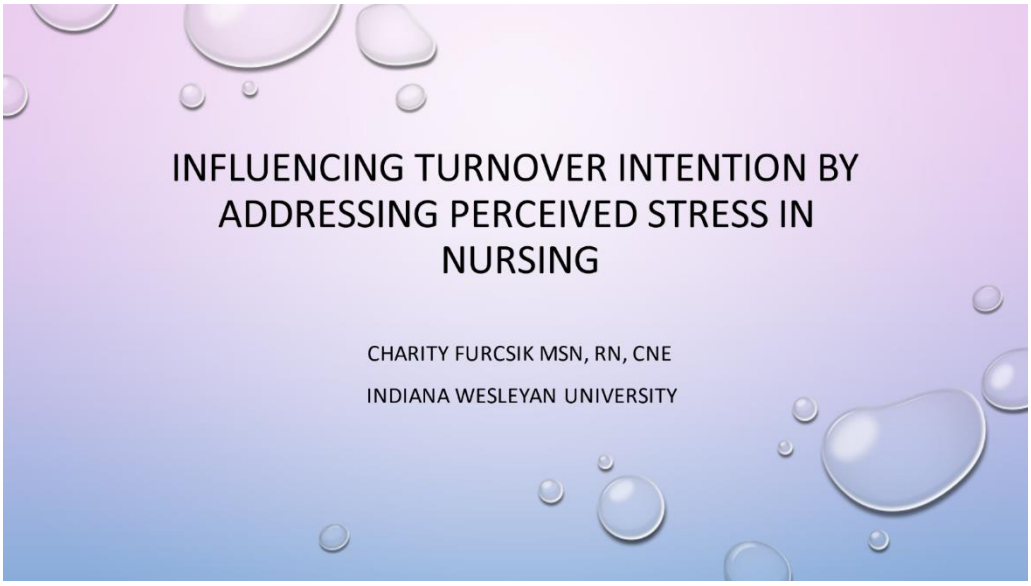
· Educational packet of information placed on the unit detailing the project.

· Printed brochure with the instructions on how to use the project, the stress project assessment image (Appendix I), and a list of the possible actions (Appendix J).

· Bulletin board and printed posters with information. Will include stress project assessment image, examples of stress management actions, and contact information for further resource needs.

Appendix D

Educational Packet



Hello,

I am a graduate student completing a project as a requirement of an DNP program. I am conducting a survey on perceived stress and turnover intention in nursing staff. I am seeking registered nurses, licensed practical nurses, and patient care technicians who work on 4 North, 4 South, and SICU to participate.

The nursing shortage and turnover rates in nursing are at a critical high, especially since the COVID-19 pandemic. Literature has shown that one reason nurses leave the profession is due to stress. This DNP project aims to influence turnover intention in nursing by addressing perceived stress.

Your participation is voluntary and confidential. Should you choose to participate, you will be asked to complete an electronic survey. For four months, you will participate in a stress reduction project. After four months, the same survey will be repeated.

Please read this information packet and if you are interested in participating, use the QR code below to access the pre-survey. This survey will take you less than 5 minutes to complete. For additional information please contact me at charity.furcsik@myemail.indwes.edu.

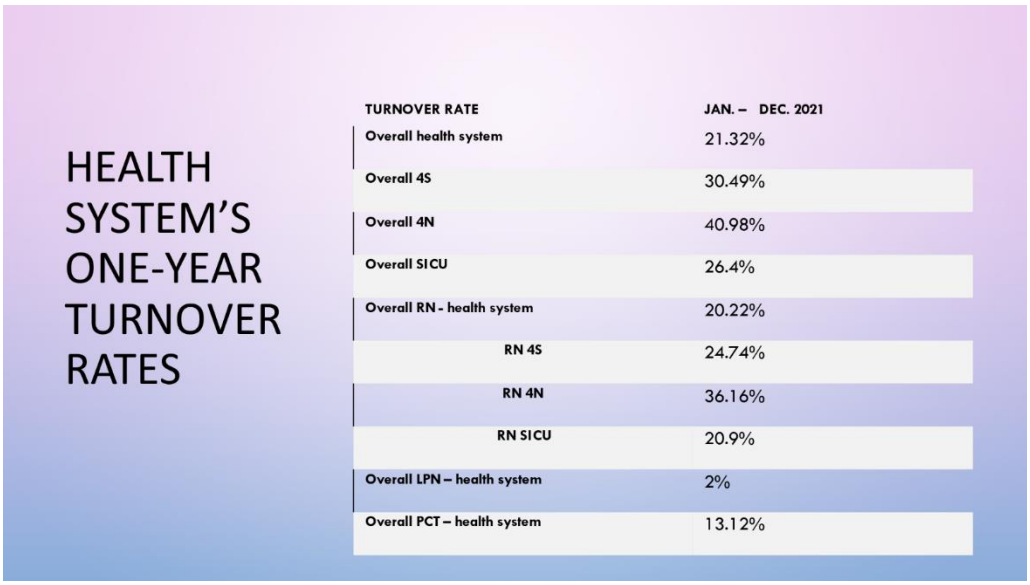
Thank you in advance for participating!

Sincerely,

Charity Furcsik MSN, RN, CNE

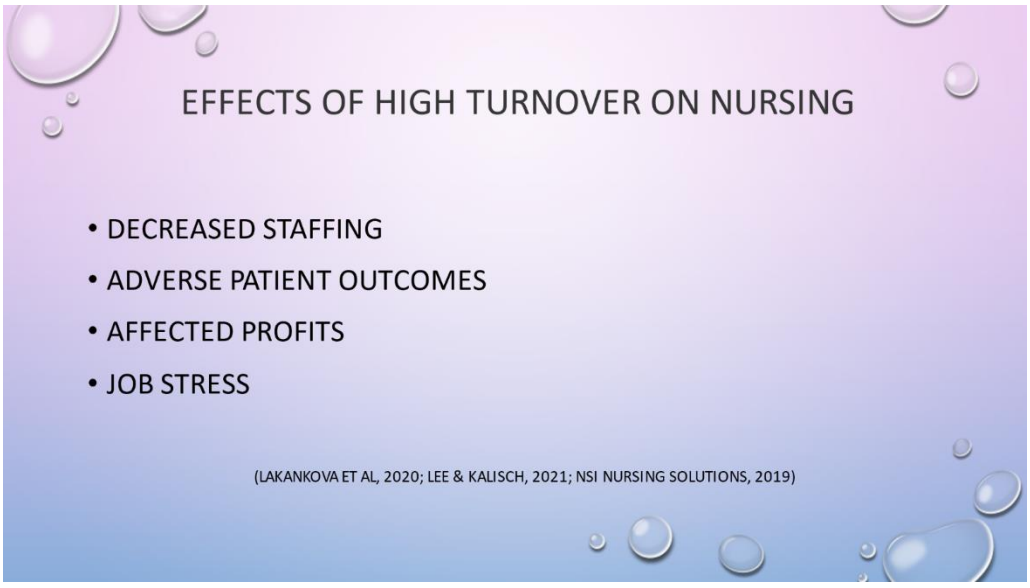
Nursing Shortage:

Nurses are among the most sought-after professionals in the United States. The U.S. Bureau of Labor Statistics (2022) states that there are over 203,000 registered nurse job openings per year with many of the openings resulting from turnover. The nursing shortage is exacerbated by a national turnover rate of 19%, with nurse turnover of 18% in the first year and rising to 66% by the second year of employment (NSI Nursing Solutions, 2019). The COVID epidemic has only exacerbated the problem with many hospitals reporting a lack of nurses (Serrano et al., 2021). In 2021, The American Nurses Association declared there to be a nursing staffing crisis (ANA, 2021). One study found that 66% of those surveyed have considered leaving the profession (AACN, 2021).



This facility has suffered from turnover:

In 2021, the project hospital reported a turnover rate of 21.32%. Nursing staff (nurses and patient care technicians) accounted for 34% of the turnover. When analyzing the exit surveys, it was found that one reason that nurses were leaving was due to an increase in stress.

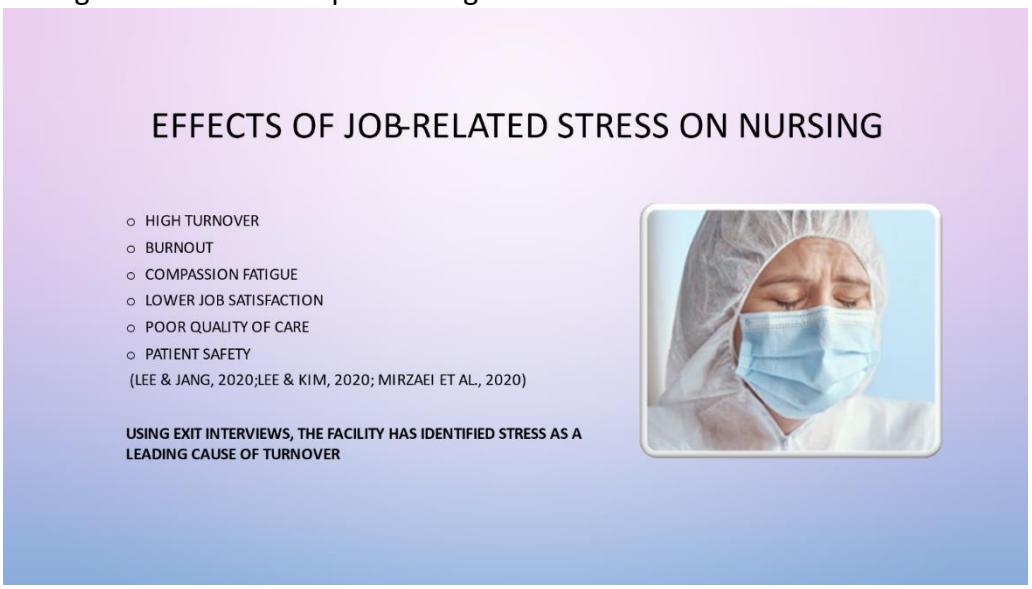


Effects of high turnover:

High turnover rates lead to decreased nurses on the floor. This can lead to what one author referred to as missed, rationed, or unfinished nursing care. Gaps in nursing care decrease patient safety and quality of care, possibly leading to a decrease in patient outcomes.

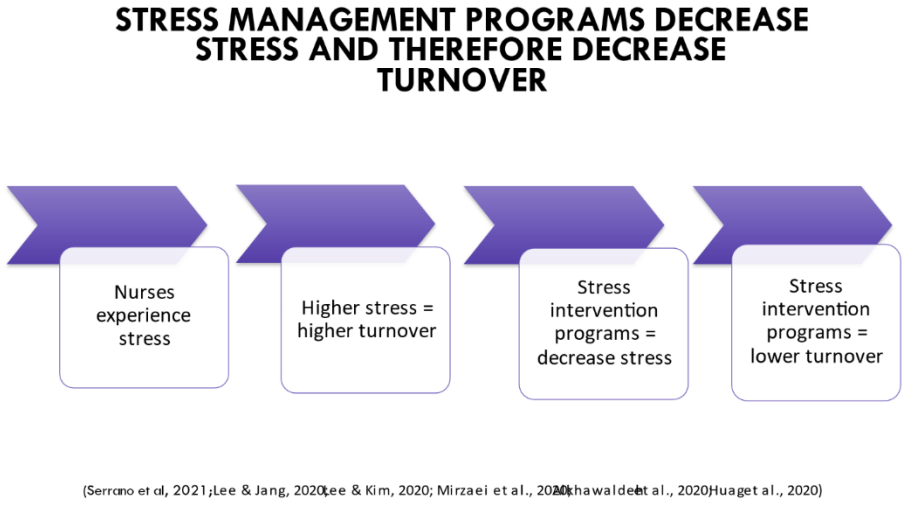
Turnover has also affected profit. The average hospital loses over $4-7 million dollars a year due to turnover. Each percent change in nurse turnover will cost the average

hospital an additional $328,400 (NSI Nursing Solutions, 2019). This budget loss affects the organization's overall profit margins.



Stress causes turnover:

Job-related stress has a positive correlation with the turnover intention rate of nurses (Lee & Jang, 2020; Lee & Kim, 2020; Mirzaei et al., 2020). The high turnover has increased the reported stress on nurses. Persistent high-stress levels impact work activities and job performance, leading nurses to experience burnout, compassion fatigue, lower job satisfaction, additional high workplace turnover, poor quality of care, and patient safety.



Implementing stress reduction programs improves turnover

Stress is a cause for nursing turnover. Implementing stress management interventions within health care organizations assists nurses in reducing job-related stress and improve coping strategies for dealing with stress (Alkhawaldeh et al., 2020). Implementing evidence-based measures to intervene on nurses' stressors, improving organization culture, and fatigue have been found to reduce turnover rates (Lee & Jang, 2020; Minjeong et al, 2022; Galatda et al., 2019; Yim et al., 2017, Labrague et al., 2020; Lee & Kim, 2019).

Purpose of the project

This project aims to impact the perceived stress in nurses and patient care technicians to address the turnover intention rates. Over time, it is anticipated that the project will impact the actual turnover rates of this population at this facility.

Possible benefits of the project

Possible benefits of the project could include a decrease in perceived stress, turnover intention, and training expenses in the budget. Also, the project could increase job satisfaction, patient satisfaction, quality of care, saved revenue, and retention of nursing staff.

How the project works

The project's plan is to implement a program in the acute care setting that not only identifies perceived stress in nurses but connects relevant stress management actions to each level of stress.

1. Self-check at the beginning of a shift.
    - Assess stress "color" using self-reflection.
    - Identify the color feeling based on the definitions in the boxes on the infographic below.
    - Choose an action from color action box.
    - Use that action today.
    - Evaluate self at the end of the day. Did the action help?

Stress-less

Image source: shutterstock.com

It's OK to not be OK

Stress has become so prevalent on nursing units that it is considered normal. To care for our patients, we must first care for ourselves.

Assessment

Thriving
- Functioning optimally; A sense of well being; Feeling at one's best; Physically, mentally, and spiritually fit; Motivated; Calm and steady; Enjoying life; Having fun

Surviving
- Experiencing mild stress that goes away; Feeling irritable, anxious, down; Less motivated; Less focused; Difficulty sleeping; Muscle tension and other physical changes (i.e. frequent headaches); Life feels neutral
- Caused by any stress/triggor

Struggling
- More severe and persistant stress; Leaves an emotional/mental scar; Sense of loss of control; Persistant fear, panic, anger, sadness; No longer feeling like normal self; Experience extensive guilt, shame, or blame
- Often caused by a major stressor/stress injury such as life threat, loss, moral injury, inner conflict, wear and tear

In Crisis
- Symptoms persistent and worsen over time (30+ days); Severe stress causing social or occupational impairment; clinical mental health disorder such as PTSD, depression, anxiety, or substance misuse; Feeling numb, lost or out of control; Easily angered or aggressive; Thought of suicide or self harm; Withdrawal from relationships

Developed using the US Marine Corps and Navy combat and operational stress continuum model

Assessment: Self reflect on what you are feeling

Analyze: Identify the color that you are feeling today

Plan: Choose an action from that color action box

Implement: Use the action today

Evaluate: Did using the action help with coping with the stressors you were feeling? While looking at the color chart, did you move from one color to another?

For more information on the stress project, contact charity.furcsik@aultmancollege.edu

Thriving Actions
- Maintain healthy lifestyle
- Stay organized, don't overcommit
- Focus on the task at hand
- Break tasks into manageable chunks
- Gratitude
- Mindfulness
- Controlled, deep breathing
- 10 Positive statements
- Laugh out loud
- Involve yourself in a hobby

Surviving Actions
- Aromatherapy
- Get adequate sleep, food, exercise
- Recognize limits
- Identify and minimize stressors
- Relaxation room
- Take your breaks
- Leave unit on break if possible – go outside
- Coloring therapy
- Breath box method
- Meditation
- massage
- Utilize Spiritual Care
- Visit the chapel
- Reflective journaling
- Engage in social interactions
- Music
- There's an app for that
- AHA Fight Stress Infographic

Struggling Actions
- Ask for help
- Schedule Paid-Time-Off (PTO)
- Code Lavender (team)
- Talk with someone
- Seek social support instead of withdrawing
- Colleague Well-being Services flyer
- Behavioral Health sessions

Crisis Actions
- Check in with manager for resources
- Seek consultation as needed
- Follow health care provider's recommendations

So many times, as nurses we function in the yellow/orange section and that is

considered “normal.” Nurses are so used to caring for others that we sometimes neglect to care for ourselves. We do not want to be seen as not being ok or to let our team down by not shouldering our share of the work, so we continue on without asking for help. This project would help to recognize stress reactions and "normalize" seeking out assistance.

Thanks again for taking the time to read this information. Should you be interested in participating, please click the QR code below.

For those that are not familiar with how to use a QR code: Open the photo app on your smart phone. Point the phone at the QR code as if you were taking a picture. The website will pop up. Click on the website and it will take you to the survey.

If you would like to participate and do not own a smart phone or cannot access the QR code, please type in the link below into your search engine. https://forms.office.com/r/R6eSR40GPN

Appendix E

Consent for Participation in an Electronic Survey

Hello, we are conducting research concerning perceived stress and turnover intention in nursing staff. We are seeking registered nurses, licensed practical nurses, and patient care technicians who work on 4 North, 4 South, or SICU to participate.

The nursing shortage and turnover rates in nursing are at a critical high, especially since the COVID-19 pandemic. Literature has shown that one reason nurses leave the profession is from job-related stress. This DNP project aims to influence turnover intention in nursing by addressing perceived stress. Your participation is voluntary and confidential. Should you choose to participate, you will be asked to complete an electronic survey. For four months, you will participate in a stress assessment project. After four months, the same survey will be repeated.

After reading, please confirm your participation in this survey by clicking “continue.”

· I understand that the purpose of this project is to address perceived stress to influence turnover intention.

· I certify that I am over the age of 18 and am participating in this survey of my own freewill. I recognize that some or all of the questions contained in this survey may be of a sensitive nature and may cause discomfort. I understand all survey answers will be held in strict confidence and may be used by the researchers for future publications.

· I authorize Charity Furcsik of the Indiana Wesleyan University School of Nursing and any designated research assistants to gather information regarding my responses to questions asked on this survey. This survey will ask about my perceived stress levels and turnover intention and will take approximately 15 minutes to complete. If I agree to take part in this project, I understand that I will be asked to complete the survey questions listed

on the following pages. I understand that my responses will be utilized for research and may become part of a published journal article or scholarly presentation.

· I recognize that I will not receive monetary compensation for participating in this survey. Conversely, there are no monetary costs to me for participating.

· I certify that my participation in this survey is voluntary and recognize that I may withdraw at any time. I understand that I am free to skip any question I do not feel comfortable answering. There is no obligation for my participation, and I may withdraw at any time.

· I understand that Charity Furcsik will be available for consultation should I have any additional questions regarding the research being conducted.

· I understand that the answers given to this survey will be maintained by the researcher for a period of no less than three years after the close of the project. The researcher will store all paper copies of surveys in a locked and secured filing cabinet. Additionally, paper copies of surveys and release forms may be digitized and stored electronically on a password-protected hard drive.

· I release any claim to the collected data, research results, publication of or commercial use of such information or products resulting from the collected information.

· If I have any questions or comments about this research project, I can contact: Charity Furcsik MSN, R.N., CNE charity.furcsik@myemail.indwes.edu, or Kathryn Gilreath DNP, ANP kathryn.gilreath@indwes.edu

· If I have concerns about the treatment of research participants, I can contact the Aultman Human Research Review Board at 330-363-6793.

· The survey is designed not to collect e-mail addresses or Internet protocol (I.P.) addresses.

To further maintain confidentiality of the survey, please do not include your name or any other information by which you can be identified in any comment boxes that may be included in the survey.

· BY CLICKING ON "CONTINUE," I ACKNOWLEDGE THAT I HAVE HAD THE OPPORTUNITY TO READ THIS CONSENT FORM, ASK QUESTIONS ABOUT THE RESEARCH PROJECT AND AM PREPARED TO CONSENT TO MY PARTICIPATION IN THIS SURVEY.

Thank you in advance for participating!

Sincerely,

Charity Furcsik MSN, RN, CNE

Appendix F

Demographic Survey

Please choose which of the following best describes you.

· What category below describes your age? 18 -20, 21-29, 30-39, 40-49, 50-59, 60 or older

· What is your gender? Male, Female, Not listed.

· What is your race? White, Black or African American, American Indian or Alaskan Native, Asian, Native Hawaiian or other Pacific islander, Some other race

· What is your job position? R.N., LPN, PCT

· How many years have you worked in this position? Less than 1 year, 1-2 years, 3-5 years, 5-10 years, Greater than 10 years

· How often do you float to other units? Frequently, Sometimes, Rarely, Not at all

· What unit are you assigned? 4 North, 4 South, SICU

Appendix G

Perceived Stress Scale

The questions in this scale ask you about your feelings and thoughts during the last month. In each case, please indicate with a check how often you felt or thought a certain way.

1. In the last month, how often have you been upset because of something that happened unexpectedly?

0 = never, 1 = almost never, 2 = sometimes, 3 = fairly often, 4 = very often

2. In the last month, how often have you felt that you were unable to control the important things in your life?

0 = never, 1 = almost never, 2 = sometimes, 3 = fairly often, 4 = very often

3. In the last month, how often have you felt nervous and stressed?

0 = never, 1 = almost never, 2 = sometimes, 3 = fairly often, 4 = very often

4. In the last month, how often have you felt confident about your ability to handle your personal problems?

4 = never, 3 = almost never, 2 = sometimes, 1 = fairly often, 0 = very often

5. In the last month, how often have you felt that things were going your way?

4 = never, 3 = almost never, 2 = sometimes, 1 = fairly often, 0 = very often

6. In the last month, how often have you found that you could not cope with all the things that you had to do? 0 = never, 1 = almost never, 2 = sometimes, 3 = fairly often, 4 = very often

7. In the last month, how often have you been able to control irritations in your life?

4 = never, 3 = almost never, 2 = sometimes, 1 = fairly often, 0 = very often

8. In the last month, how often have you felt that you were on top of things?

4 = never, 3 = almost never, 2 = sometimes, 1 = fairly often, 0 = very often

9. In the last month, how often have you been angered because of things that happened that were outside of your control?

0 = never, 1 = almost never, 2 = sometimes, 3 = fairly often, 4 = very often

10. In the last month, how often have you felt difficulties were piling up so high that you could not overcome t

0 = never, 1 = almost never, 2 = sometimes, 3 = fairly often, 4 = very often

Individual scores on the PSS can range from 0 to 40 with higher scores indicating higher perceived stress. (Cohen et al., 1983; Cohen & Williamson, 1988).

Appendix H

Turnover Intention Scale

The respondents are asked to indicate their agreement with the following three items on a five-point scale: 1 (strongly agree), 2 (agree), 3 (neither agree or disagree), 4 (disagree), and 5 (strongly disagree) (Cohen, 1998).

(1) I think a lot about leaving the organization.

(2) I am actively searching for an alternative to the organization.

(3) As soon as it is possible, I will leave the organization.

Appendix I

Stress Management Actions

Thriving Actions

- Maintain healthy lifestyle
- Stay organized, don't overcommit
- Focus on the task at hand
- Break tasks into manageable chunks
- Gratitude
- Mindfulness
- Controlled, deep breathing
- 10 Positive statements
- Laugh out loud
- Involve yourself in a hobby

Surviving Actions

- Aromatherapy
- Get adequate sleep, food, exercise
- Recognize limits
- Identify and minimize stressors
- Relaxation room
- Take your breaks
- Leave unit on break if possible – go outside
- Coloring therapy
- Breath box method
- Meditation
- Utilize Spiritual Care
- Visit the chapel
- Reflective journaling
- Engage in social interactions
- Music
- There's an app for that
- AHA Fight Stress Infographic

Struggling Actions

- Ask for help
- Schedule Paid-Time-Off (PTO)
- Code Lavender (team)
- Talk with someone
- Seek social support instead of withdrawing
- Colleague Well-being Services flyer
- Behavioral Health sessions

Crisis Actions

- Check in with manager for resources
- Seek consultation as needed
- Follow health care provider's recommendations

Appendix J

PERMISSION FOR USE OF THE PERCEIVED STRESS SCALE

I apologize for this automated reply. Thank you for your interest in our work.

PERMISSION FOR USE BY STUDENTS AND NONPROFIT ORGANIZATIONS: If you are a student, a teacher, or are otherwise using the Perceived Stress Scale (PSS) without making a profit on its use, you have my permission to use the PSS in your work. Note that this is the only approval letter you will get. I will not be sending a follow-up letter or email specifically authorizing you (by name) to use the scale.

PERMISSION "FOR PROFIT" USE: If you wish to use the PSS for a purpose other than teaching or not for profit research, or you plan on charging clients for use of the scale, you will need to see the next page: "Instructions for permission for profit related use of the Perceived Stress Scale".

QUESTIONS ABOUT THE SCALE: Information concerning the PSS can be found at https://www.cmu.edu/dietrich/psychology/stress-immunity-disease-lab/index.html (**click on scales on the front page**). Questions about reliability, validity, norms, and other aspects of psychometric properties can be answered there. The website also contains information about administration and scoring procedures for the scales. Please do not ask for a manual. There is no manual. Read the articles on the website for the information that you need.

TRANSLATIONS: The website (see URL above) also includes copies of translations of the PSS into multiple languages. These translations were done *by other investigators*, not by our lab, and we take no responsibility for their psychometric properties. If you translate the scale and would like to have the translation posted on our website, please send us a copy of the scale with information regarding its validation, and references to relevant publications. If resources are available to us, we will do our best to post it so others may access it.

Good luck with your work.

Sheldon Cohen
Robert E. Doherty University Professor of Psychology
Department of Psychology
Baker Hall 335-D
Carnegie Mellon University
Pittsburgh, PA 15213

Appendix K

Permission for Use of the Turnover Intention Scale

On 20 Jul 2022, at 19:33, Charity Furcsik wrote:
Dr. Cohen,
I am a nursing doctorate student attempting to complete a project focusing on decreasing perceived stress in nurses to decrease turnover intention. I would like to use the scale used in this study to measure turnover intention of nurses. This project will be presented as a final project as a part of completion of degree. I would like to obtain permission to use the scale used in the following journal article in my project.
An examination of the relationship between work commitment and work outcomes among hospital nurses
https://doi.org/10.1016/S0956-5221(97)00033-X
Thank you for your attention and assistance in this matter.
Respectfully,
Charity Furcsik MSN, RN, CNE
Assistant Professor, Aultman College of Nursing and Health Sciences
2600 Sixth St. SW | Canton, OH 44710, P: 330-363-4312

On 20 Jul 2022, at 15:27, acohen@poli.haifa.ac.il wrote:
Please check whether or not I mention any measure that I used to develop this one. If yes please cite the measure too.
Best success,
Aaron Cohen

Aaron Cohen D.Sc.
Professor (Emeritus) of Management
Division of Public Administration and Policy
School of Political Sciences, University of Haifa
199 Abba Khoushy Ave., Mount Carmel, 3498838.
Haifa, Israel
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