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Effect of Yoga on Nurse Burnout

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Effect of Yoga on Nurse Burnout: Review of Literature

BY

Marie Schone

A paper submitted in partial fulfillment of the requirements for the degree

Doctor of Nursing Practice

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EFFECT OF YOGA ON NURSE BURNOUT

Effect of Yoga on Nurse Burnout: Review of Literature

This Doctor of Nursing Practice (DNP) Project is approved as a credible and independent investigation by a candidate for the DNP degree and is acceptable for meeting the project requirements for this degree. Acceptance of this DNP Project does not imply that the conclusions reached by the candidate are necessarily the conclusions of the major department.

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Abstract

Introduction: Currently, burnout impacts many healthcare professionals especially registered nurses. Burnout is the result of a relentless work environment that leads to a cumulation of stress that is generally not recognized until late stages. As a result, the quality of care provided to patients is compromised and healthcare professionals show signs of poor health.

Methods: A review of literature was utilized to identify interventions that decrease burnout, specifically focusing on the impact of yoga. A total of 10 articles were appraised and included in the literature review. The review of literature found seven IIB studies and three IIIB studies based on the Johns Hopkins Nursing Evidence-Based Practice model.

Gaps: The studies lacked specific details about the style of yoga utilized, and there was no comparison about which style of yoga had better effects on burnout. There were no studies implemented in a rural setting. Additionally, none of the studies focused on float nurses but rather general or intensive care unit nurses.

Recommendations: Research supports that the implementation of a yoga course can help reduce burnout in healthcare professionals.

Keywords: burnout, Maslach Burnout Inventory, hatha yoga, registered nurses

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Burnout occurs due to prolonged workplace physical and psychological stress that is characterized by three key components – emotional exhaustion (EE), depersonalization (DP), and diminished personal accomplishment (PA) (Cocchiara et al, 2019; Hilcove et al., 2020; Ofei-Dodoo et al., 2020). As workplace stress continues to accumulate, nurses are left with the inability to effectively cope (Cocchiara et al, 2019). Many individuals do not recognize burnout during early stages. Once individuals have identified their accumulated stress, they lack the methods to reduce the components classified within burnout (Cocchiara et al, 2019; Paiva et al., 2017). To help combat burnout within inpatient nurses, research supports that yoga is one solution. Yoga has been associated with mindfulness, breathing techniques, and relaxation.

Significance of Problem

Unfortunately for healthcare organizations, up to 70% of nurses experience burnout (Bakhamis et al., 2019). Addressing burnout is essential as it impacts the employee as well as the quality and perception of care provided to patients (Hilcove et al., 2020; Trigo et al., 2018). If an individual is unable to successfully cope, there is a decrease in production, efficiency, and commitment towards one's role (Ofei-Dodoo et al., 2020). Patient satisfaction has been shown to decrease with an increase in dissatisfied nurses (Klatt et. al, 2015). This results in an increase in turnover which is estimated to cost between \$10,000-\$88,000 per nurse within the United States (U.S.) (Klatt et al., 2015). It is estimated that stress in the general population costs the U.S. \$300 billion annually (Adhia et al., 2010). In addition, an increase in burnout increases the number of sick days a nurse will use (Kowalczyk et al., 2020). For organizations to offset this cost,

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projects and studies need to be conducted to determine how to reduce stress generated in the healthcare field.

PICOT Question

A PICOT question was developed to guide the review of the literature. The PICOT question for this project was among float pool nurses in a rural Midwest hospital (P), what is the effect of an eight-week yoga course (I) compared to current practice of no course (C) on self-reported burnout (O) over a two-month period (T)?

Methods

A review of literature was utilized to identify interventions that decrease burnout, specifically focusing on the impact of yoga. Articles were found using the Cumulative Index to Nursing and Allied Health Literature (CINAHL), Hilton M. Briggs Library, EBSCOHost, PubMed, and SAGE. Search terms included: *nurse, burnout, compassion, stress, stress reduction, mindfulness, mindfulness-based, prevention, yoga, hatha yoga, intervention, Maslach Burnout Inventory, and healthcare*. Inclusion criteria for these articles were publications from 2010 to present due to limited research in this area, published in English, and full-text articles. Articles included in this review of literature focused on nurses, healthcare professionals, and individuals experiencing burnout. A total of 10 articles were appraised and included in the literature review. See Appendix A for the Evidence Table. To rate each level of evidence, the John Hopkins Nursing Evidence-Based Practice (JHNEBP) Evidence Level and Quality Guide was utilized (see Appendix B) (Dearholt & Dang, 2017). See Appendix C for permission to use the JHNEBP model. The review of literature found seven IIB studies and three IIIB studies.

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Evidence Findings

Within the healthcare field, there is significant evidence that healthcare professionals have an increased risk for burnout due to the stressful work environment and inadequate resources for staff (Adhia et al., 2010; de Bruin et al., 2017; Ofei-Dodoo et al., 2020; Rostami & Ghodsbin, 2019). The Coronavirus disease (COVID-19) pandemic presented additional challenges for staff such as a lack of information about how to care for patients and a lack of training to meet patients' needs (Bradley & Chahar, 2020). To help reduce burnout, yoga courses have been implemented. While there is a lack of specific guidelines for yoga interventions, there are some common themes which include mindfulness, increased self-awareness, and incorporating of yoga practice into daily living (Adhia et al., 2010; Alexander et al., 2015; Cocchiara et al, 2019; Riley & Park, 2015).

Causes of Burnout

Burnout can be identified as stress that is not addressed or methods to cope are ineffective (Adhia et al., 2010; Cocchiara et al, 2019). Frequently, burnout is described as containing these three components: EE, DP, and PA (Adhia et al., 2010). The first component is EE, which is defined as a lack of drive or motivation due to inefficient mental and/or physical resources (Wheeler et al., 2011). Generally, EE occurs when a personal conflict arises or when an individual feels that they have insufficient time to complete the necessary tasks (Paiva et al., 2017). DP is the second component of burnout, which is an emotional detachment from one's responsibilities resulting in demotivation, careless attitude, and impersonal connection with others (Paiva et al., 2017; Wheeler et al., 2011). The final component is PA. This concept represents feelings of competency

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and proficiency within the work environment (Wheeler et al., 2011). When PA is compromised, individuals have a damaged self-esteem in their ability to successfully perform a task which in return continues to diminish their PA (Paiva et al., 2017). These elements often arise due to work related conditions.

Common sources that contribute to burnout include staffing shortages, workplace conflict, and heavy patient loads (Hilcove et al., 2020). The U.S. culture also instills work-related pressures such as competition, job insecurity, the need to multi-task, and pressure to adequately perform (de Bruin et al., 2017). When one employee is experiencing burnout, it can have a negative impact on coworkers as it disrupts the flow of work (Adhia et al., 2010). All these aspects cause burnout because the individual is experiencing EE, DP, and/or diminished PA. This altered mindset also decreases an individual's commitment to their organization which can continue to worsen burnout (Hilcove et al., 2020).

Effects of Burnout if Left Untreated

Burnout can result in both mental and physical symptoms that can affect an individual both personally and within the work environment. Short-term burnout exposure in healthcare providers can result in physical abnormalities such as mental instability, flu-like symptoms, and an increase in heart rate and blood pressure (Adhia et al., 2010; de Bruin et al., 2017). Continued exposure to burnout leads to extreme fatigue, depression, deteriorating relationships with family and/or friends, and compromised cognitive functioning. Healthcare providers may also experience diabetes, cardiovascular diseases such as heart attacks, digestive disorders and ulcers, and a weakened immune system (Adhia et al., 2010; de Bruin et al., 2017; Rostami & Ghodsbin, 2019). Registered

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nurses are 50% more likely to abuse illicit drugs than the general population and roughly 5% of nurses are considered alcoholics (Epstein, 2010). Increased substance abuse in nurses also included the use of cigarettes, sleeping pills, power drinks, antidepressants, and anti-anxiety drugs due to a stressful work environment (Jarrad et al., 2018).

When healthcare providers continue to ignore the signs of stress, their work performance is also negatively impacted. Frequently, there is a loss of productivity, a decrease in job satisfaction, reduced commitment to one's organization, and sometimes plans to leave the profession (Adhia et al., 2010; de Bruin et al., 2017; Ofei-Dodoo et al., 2020; Rostami & Ghodsbin, 2019). As the care provider's health deteriorates, it impacts the ability to care for others. When nurses are experiencing burnout, evidence has identified that there is an increase in patient falls, infections, medication errors, and other adverse events (Alexander et al., 2015). The result of burnout within healthcare is a decrease in quality and the perception of care patients receive (Hilcove et al., 2020; Trigo et al., 2018).

Self-Reporting Questionnaires to Measure Burnout

To measure the effects of stress on the nursing population, a variety of self-reporting questionnaires have been utilized. One of the identified questionnaires is the Maslach Burnout Inventory (MBI), which consists of a 22-item scale broke into three subscales to assess burnout (Hilcove et al., 2020). This tool utilizes three identified components which are included in the definition of burnout to assess whether a nurse may be experiencing burnout. These three components are EE, DP, and PA (Adhia et al., 2010). These components also create the three subscales in this questionnaire.

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At the completion of the questionnaire, each of the subscales is assessed for a high score (Mind Garden, 2019). These high scores are identified by using standardized (z) values based on critical boundary calculations published by Mind Garden. Based on which subscales have a high score, a correlating profile is assigned. These profiles include: engaged, ineffective, overextended, disengaged, and burnout. An individual would be identified with the profile of burnout if there was a high score in the EE and DP subscale (Mind Garden, 2019; Ofei-Dodoo et al., 2020). This questionnaire has been identified as reliable and is a validated tool for measuring burnout (Adhia et al., 2010; Hilcove et al., 2020).

To confirm reliability of this tool, the Cronbach's coefficient alpha was utilized, which consisted of three individual internal consistency measures. Maslach and Jackson (1981) reported that the internal consistency estimates were .89 for EE, .77 for DP, and .74 for PA in regard to the MBI for human service personnel. When a meta-analysis was conducted of reliabilities for EE across 98 studies, the consistency estimate ranged from .72 to .95 with the $M = .87$. In an analysis of 93 studies, consistency estimates for DP ranged from .50 to .91 with the $M = .71$. While consistency estimates for the PA scale from a collection of 90 studies ranged from .52 to .87 with the $M = .76$ (Wheeler et al., 2011). Aguayo et al. (2011) also disclosed that consistency estimates with a range between .81 and .92 for EE; while DP ranged from .57 to .82; and PA ranged from .50 to .86. Consistently, EE has the highest reliability estimate followed by DP and then PA. The validity of this three-dimensional structure has been confirmed in numerous studies in a variety of populations (Schaufeli & Van Dierendonck, 1993). The three MBI subscales are also supported by convergent and discriminant validity (Adhia et al., 2010).

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Other questionnaires that can be utilized to measure burnout include a combination of the quality-of-life assessment, the work-life balance rating, an appraisal of career satisfaction, and the Primary Care Evaluation of Mental Disorders Patient Health Questionnaire 2 (PRIME-MD PHQ-2) question screen (Williamson et al., 2018). However, the MBI is preferred because of its strong psychometric properties and measurements of validity that have been identified (Adhia et al., 2010).

Yoga Benefits

To help prevent and reduce burnout, healthcare organizations need to recognize and implement stress reduction interventions that can be carried out in the workplace and do not impede on an employee's work hours (Klatt et al., 2015). One potential intervention is yoga, as this form of exercise can be inexpensive, convenient, and easily accessible (Fang & Li, 2020). Additionally, this intervention is not invasive and does not focus on pharmacological interventions making it a viable option for at-risk healthcare professionals (Alexander et al., 2015). Meditation and breathing skills taught during the scheduled yoga session can also be practiced at home or in the workplace to help reduce stress in the moment (Cocchiara et al., 2019).

Yoga has been identified as a way to reduce stress and job burnout (Adhia et al., 2010). The act of practicing yoga is a series of methods that combines physical and mental well-being to increase self-awareness (Adhia et al., 2010; Cocchiara et al, 2019). Due to the integrated approach, yoga acts as a holistic tool to increase one's conscious awareness while expanding into the unconscious parts of the brain. By increasing an individual's self-awareness, it allows the person to understand their own habits and patterns to help cope with stress (Adhia et al., 2010). With an increase in awareness, an

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individual also has a better method of identifying the cause of stress. While there is a variety of yoga practices, the key components include coordinated movements between the body and soul which incorporate meditation, controlled breathing, and internal reflection to purify one's *chitta* (Adhia et al., 2010; Rostami & Ghodsbin, 2019). *Chitta* is defined as one of the four elements of an individual's mind which is considered the warehouse of memories formed by the thoughts and emotions (Isha, 2020). By integrating yoga practice into one's life, an individual can increase their self-awareness and mindfulness to help them grow and transform their *chitta* (Adhia et al., 2010).

By incorporating yoga into one's life, it can improve self-awareness, coping mechanisms, compassion, sense of control, and mindfulness (Riley & Park, 2015). Mindfulness is defined as a state of awareness and attentiveness of the present time which increases one's ability to combat stress. The state of mindfulness in previous research has been associated with lower levels of stress (Ofei-Dodoo et al., 2020). Other improvements in psychological mechanisms include reduction in anxiety levels and exhaustion symptoms while building emotional resilience as emphasis is placed on the relationship between the mind and body.

Besides changes in psychological elements, yoga has also improved and restored the functioning of the sympathetic and parasympathetic nervous system (Adhia et al., 2010). Without an appropriate coping mechanism for stress, these mechanisms within the body fail to adapt and are unable to adequately compensate. However, with an effective coping mechanism, yoga can help decrease the amount of stress that builds up.

Yoga has been associated with improved musculoskeletal structure, insulin secretion, and increased metabolism (Cocchiara et al, 2019). Additionally, yoga can

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reduce cortisol levels which has been linked to lower levels of stress (de Bruin et al., 2017). With improved physical functions, there is a boost in the immune system and better control of blood pressure and heart rate. Individuals are less prone to muscle tension or strains due to developed strength and flexibility. An increase in cognitive flexibility has also been identified with an increase in attention span and better control of emotional reactions (Cocchiara et al, 2019). By utilizing yoga, short-term and long-term effects on stress management, reduction in burnout, and improved quality of life have been identified (Cocchiara et al, 2019; Rostami & Ghodsbin, 2019). Due to the positive benefits associated with yoga programs, organizations have begun to incorporate yoga sessions into the work environment (Cocchiara et al, 2019).

Yoga for Nurses

To help cope with a stressful work environment, yoga courses that were either six to eight weeks long were recommended for nurses (Alexander et al., 2015; Hilcove et al., 2020; Klatt et al., 2015; Ofei-Dodoo et al., 2020; Rostami & Ghodsbin, 2019). These sessions focused on breathing practices, mindfulness, self-awareness, and gentle stretching (Alexander et al., 2015; Fang & Li, 2020; Cocchiara et al, 2019; Hilcove et al., 2020, Klatt et al., 2015).

A variety of yoga styles have been utilized to help reduce burnout which include hatha yoga, yin yoga, and vinyasa flow (de Bruin et al., 2017; Hilcove et al., 2020; Riley & Park, 2015; Rostami, & Ghodsbin, 2019). Unfortunately, there is limited information regarding the impact that each style of yoga has on burnout in nurses. However, hatha yoga is a practice that is commonly utilized to help nurses as it focuses on stress relief,

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relaxation, and restoration which are key components to help reduce burnout (de Bruin et al., 2017).

Yoga Course Implementation

When creating a hatha yoga course for nurses it would be beneficial to find an experienced yoga instructor to lead the sessions (Adhia et al., 2010; Alexander et al., 2015; Ofei-Dodoo et al., 2020). For ease of participation, it may be beneficial to hold yoga sessions at the participants place of employment and during work hours to prevent added stress (Klatt et al., 2015). Another option would be to host the yoga sessions in an outdoor area as fresh air can improve the effects of exercising (de Bruin et al., 2017).

Take Home Exercises

To help incorporate yoga skills into an individual's home life, take home exercises can be useful. Weekly handouts after each session can be utilized to explain exercises that were taught during the session to offer guidance to the individual (Alexander et al., 2015). Nurses may also benefit from journaling about their yoga practice which allows for reflection regarding self-care and mindfulness (Hilcove et al., 2020). For individuals looking for extra guidance at home, cellphone applications of the nurse's preference can be used (Ofei-Dodoo et al., 2020). The overall goal of utilizing supplementary resources and exercises is to increase commitment to the practice to help increase mindfulness and self-awareness.

Gaps in the Literature

There were several identifiable gaps in the literature. None of the studies focused on float nurses which is the intended population for this proposed project. Most studies focused on healthcare professionals in general or intensive care unit nurses. Another

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identified gap was the lack of implementation in rural settings, so it is unknown whether yoga will be useful in the planned setting. While the identified intervention was yoga, there are a variety of styles, and many of the studies lacked detailed information about the style utilized. There was also no identified research comparing the different styles of yoga and the effect on burnout.

Recommendations for Practice

To help reduce burnout within the nursing population, nurses should participate in a yoga course that focuses on mindfulness. For the best outcome, nurses should participate in an eight-week course with weekly hour-long sessions (Alexander et al., 2015; Klatt et al., 2015; Ofei-Dodoo et al., 2020; Rostami & Ghodsbin, 2019). To instill the yoga practice into the nurse's home life, daily or weekly homework to practice mindfulness should be implemented and tracked by the nurse (Alexander et al., 2015; de Bruin et al., 2017; Hilcove et al., 2020; Klatt et al., 2015; Ofei-Dodoo et al., 2020). When nurses incorporate yoga into their routine, there has been a reduction in burnout for up to six months after the course has ended (de Bruin et al., 2017; Fang & Li, 2020; Rostami & Ghodsbin, 2019).

Conclusion

The healthcare environment is full of stressful situations with limited time to cope and address feelings and emotions (Hilcove et al., 2020). Unfortunately, nurses frequently have an inability to recognize early signs of stress and often have inadequate resources (Cocchiara et al, 2019; Paiva et al., 2017). As burnout within the nursing profession continues to increase, yoga is one intervention that should be utilized to help combat this concern within the profession.

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Appendix A

Evidence Table

Citation	Level of Evidence	Sample/Setting	Participants (n)	Study Design/Purpose	Intervention	Results	Comments; strengths and limitations
Adhia, H., Nagendra, H., & Mahadevan, B.	IIB	Unit Manufacturing sites owned by Grasim Industries Limited in India	Participants opted to partake in the study. Group one was the yoga group (n = 42) while group two was the physical exercise group (n = 42)	Study focuses on if a yoga adopted mindset can reduce burnout experienced by executives	Yoga group participated in 75 minutes of yoga each day for a total of 30 hours and had 25 hours of lecture on the theory of yoga. The control group was provided an equal amount of training for physical exercise and 25 hours of lecture on success factors in life. Pre-and post-measurements	Yoga group had significant reduction in burnout reduction (p = 0.000) from the pre- to post-test measurements. There was also statistical significance difference in the average MBI between the yoga and physical exercise group (p = 0.000).	Yoga mindset can reduce level of burnout compared to physical activity Strengths: Combined self-reporting technique with physical parameters. Control group Limitations: Small sample size

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					on self-report questionnaire and physical parameters such as weight, BMI, BP, Blood Sugar were recorded.		
Alexander, G. K., Rollins, K., Walker, D., Wong, L., & Pennings, J.	IIB	Urban 560-bed teaching hospital	40 nurses, Experimental group n = 20 and control group n = 20	This pilot-level randomized controlled trial serves to examine the impact yoga can have on self-care and burnout amount nurses.	Eight-week yoga course which focused on breathing techniques, basic postural alignment, and mediation. Weekly handouts about that week's practice was also provided.	The group that participated in the yoga intervention had significant improvement in scores related to self-care ($p < 0.001$), emotional exhaustion ($p = 0.008$), and mindfulness ($p = 0.028$), and depersonalization ($p = 0.007$) when analyzing the score from the pre-to post-intervention questionnaire.	Yoga can improve self-care and reduce burnout. Strengths: Statistically significant changes found on multiple components of burnout. Limitations: Small sample size. Self-reporting. No active control group.

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Cocchiara, R. A., Peruzzo, M., Mannocci, A., Ottolenghi, L., Villari, P., Polimeni, A., Guerra, F., & La Torre, G.	IIIB	Review of studies that focused on healthcare professionals – three articles focused on the nurse population, six articles on medical specialists and two articles on dentists.	Included seven clinical trials and four observational studies.	Focused on accumulating knowledge on current yoga practices and how yoga can manage and/or prevent stress and burnout in healthcare professionals.	None	Yoga techniques and mind-body mediation can be utilized to prevent musculoskeletal and psychological issues while improving sleep quality, stress levels, and burnout.	Burnout outcomes had favorable improvements with yoga intervention. Strength: Identified cost-effective solution. Limitations: Small sample groups. Observational studies included.
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de Bruin, E. I., Formsma, A. R., Frijstein, G., & Bögels, S. M.	IIIB	Amsterdam	Participants included 26 individuals who were self-selected or had been referred by the company's doctors due to complaints about stress or burnout.	Pre and post-measurements at the completion and six months after the last session were used to determine the effectiveness of a new training program on workability, anxiety, depression, stress, sleep, and affect in employees suffering from work-related stress.	Six weekly sessions each two hours long which used a combination of restorative yoga, mindfulness, and physical exercise. Coupled with daily practices at home. Final follow-up sessions were held at six-weeks and six-months.	Participants were shown to have a reduction in workability, anxiety, depression, stress, and negative affect with an improvement in sleep quality and positive affect.	Findings showed that new program was effective at reducing components of burnout. Strength: Many of the positive changes were still present at the 6-month follow-up. Limitations: Sample size. Convenience sampling. Lack of control group.
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EFFECT OF YOGA ON NURSE BURNOUT

Fang, R., & Li, X.	IIB	China Hospital of Sichuan University	Female nurses were ages 25-51 years old were randomly placed into yoga group (n = 61) or control group (n = 59)	The Pittsburgh Sleep Quality Index and Questionnaire on Medical Worker's Stress were utilized to assess sleep quality and work stress at baseline and at 6 months.	For six months the intervention group performed yoga more than two times a week for at least 50- 60 minutes which was recorded in an attendance log.	Those that participated in yoga had improved sleep quality (P <0.001) and lower stress levels (P<0.001) when compared to the control group.	This study investigated whether yoga could improve sleep quality and work stress in staff nurses Strength: Limitations: Convenience sample. Single hospital. Self- reported questionnaire.
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EFFECT OF YOGA ON NURSE BURNOUT

Hilcove, K., Marceau, C., Thekdi, P., Larkey, L., Brewer, M. A., & Jones, K	IIB	Community-based hospital system in the southwestern United States	80 healthcare professionals, 41 participated in weekly yoga classes and practiced independently, 39 individuals did not receive the yoga intervention	Randomized controlled trial to assess effect of mindfulness-based yoga on stress, burnout, vitality, sleep quality, serenity, mindfulness, BP, and biomarker of stress, and diurnal salivary cortisol.	Six-week mindfulness-based yoga sessions as well as weekly yoga logs. Data was collected pre-intervention (two weeks prior to intervention) and post-intervention.	Intervention group showed improvement in perceived stress ($p < .004$), burnout ($p < .003$), vitality ($p < .003$), sleep quality ($p < .006$), serenity ($p < .000$), and mindfulness ($P < .008$) when compared to control group. There was no significant change in BP or diurnal cortisol overtime between the two groups.	A mindfulness-based yoga intervention can be effective at reducing perceived stress, burnout, vitality, sleep quality, serenity, and mindfulness Strength: Study design. Short duration – six weeks. Limitations: Assessment measures consisted of self-reported tools.
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EFFECT OF YOGA ON NURSE BURNOUT

Klatt, M., Steinberg, B., & Duchemin, A.	IIB	Intensive care unit	Interventio n group included 34 ICU personnel and wait- list control group	Examined the effects of Mindfulness in Motion on number of breaths/30 seconds, 10- items version of the Connor- Davidson Resiliency Scale (CD- RISC) and 9- item Utrecht Work Engagement Scale	One-hour weekly session for eight weeks with 15-minute presentation about stress and work-related stress followed by a mind-body relaxation. Daily homework included 20 minutes of mindfulness meditation using either CD or DVD.	Using a p <0.05 study found a decrease in number of breaths/30 seconds in six out of the eight weeks. Reduction in resiliency scores from week one to week eight for the intervention group were found to be statistically significant (p=0.0230) while the control group had no change (P=0.7330). The total work engagement scores were statistically significant from the intervention group (p=0.0128) while there was no change in the wait-list control group (p = 0.1349).	Shortened version of Mindfulness Based Stress Reduction shows improvement in resiliency and work engagement. Strength: Easier to find participants to take part in an hour-long session each week. Limitation: Size of control group not disclosed. Need support from organization as class held during work day.
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EFFECT OF YOGA ON NURSE BURNOUT

Ofei-Dodoo, S., Cleland-Leighton, A., Nilsen, K., Cloward, J. L., & Casey, E.	IIIB	Health care professionals at the University of Kansas School of Medicine-Wichita	43 healthcare professionals	Single-sample, nonexperimental design comparing pre- and post-intervention scores measured effects of eight-week yoga course on burnout, depression, anxiety, stress, resilience, and compassion.	Eight-week mindfulness-based yoga sessions with encouragement of individual yoga sessions using app of participants' choice. Data was collected pre-intervention and post-intervention	Statistical significance in regards to MBI-9 personal accomplishment (P<.001); DASS-21 depression (P<.001), anxiety (P<.001), and stress (P<.001); RS-14 (P<.007); SCBS (P<.007). Statistical insignificance found with MBI-9 Emotional exhaustion (P<.084) and depersonalization (P<.704).	A short workplace mindfulness-based yoga intervention can improve personal accomplishment, resilience, and compassion while reducing depression, anxiety, and stress. Limitation: Lack of control group, small sample size
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EFFECT OF YOGA ON NURSE BURNOUT

Riley, K. E., & Park, C. L.	IIB	Peer-reviewed journal articles from 1983-2012 which focused on psychological and biological factors that lead to reduced stress	Five systematic reviews were included in the analysis	Literature review to identify impact of yoga has on psychological and biological factors	None	Relationship between yoga and stress have been associated with positive affect, self-compassion, reduced activity of the posterior hypothalamus and inhibition of salivary cortisol.	Strength: Identified method to effectively decrease psychological and biological factors related to burnout Limitations: Small sample sizes, lack of control group, and non-randomization
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EFFECT OF YOGA ON NURSE BURNOUT

Rostami, K., & Ghodsbin, F.	IIB	Shiraz Medical Sciences Hospitals	70 ICU nurses, Experimental group n = 35 and control group n = 35	Randomized control trial to assess physical, psychological, social relations, and environmental elements of quality of life.	Yoga classes offered to experimental group twice a week for two months. WHO quality of life brief questionnaire collected pre-intervention and post-intervention at month one, two, and six.	Statistically significant improvement in quality of life after first month and continued to improve at month two and six. There were also statistically significant differences between the yoga and control group in relation to the four-subscales: physical, psychological, social relations, and environment.	Yoga was found to have a positive effect on quality of life on burnout in ICU nurse. Strength: Study design. Limitation: Only provided to ICU nurses
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EFFECT OF YOGA ON NURSE BURNOUT

Appendix B

John Hopkins Nursing Evidence-Based Practice Model

Evidence Levels	Quality Ratings
<p>Level I</p> <p>Experimental study, randomized controlled trial (RCT)</p> <p>Explanatory mixed method design that includes only a level I quantitative study</p> <p>Systematic review of RCTs, with or without meta-analysis</p>	<p>Quantitative Studies</p> <p>A High quality: Consistent, generalizable results; sufficient sample size for the study design; adequate control; definitive conclusions; consistent recommendations based on comprehensive literature review that includes thorough reference to scientific evidence.</p> <p>B Good quality: Reasonably consistent results; sufficient sample size for the study design; some control, fairly definitive conclusions; reasonably consistent recommendations based on fairly comprehensive literature review that includes some reference to scientific evidence.</p> <p>C Low quality or major flaws: Little evidence with inconsistent results; insufficient sample size for the study design; conclusions cannot be drawn.</p>
<p>Level II</p> <p>Quasi-experimental study</p> <p>Explanatory mixed method design that includes only a level II quantitative study</p> <p>Systematic review of a combination of RCTs and quasi-experimental studies, or quasi-experimental studies only, with or without meta-analysis</p>	<p>Qualitative Studies</p> <p>No commonly agreed-on principles exist for judging the quality of qualitative studies. It is a subjective process based on the extent to which study data contributes to synthesis and how much information is known about the researchers' efforts to meet the appraisal criteria.</p> <p>For meta-synthesis, there is preliminary agreement that quality assessments of individual studies should be made before synthesis to screen out poor-quality studies¹.</p> <p>A/B High/Good quality is used for single studies and meta-syntheses².</p> <p>The report discusses efforts to enhance or evaluate the quality of the data and the overall inquiry in sufficient detail; and it describes the specific techniques used to enhance the quality of the inquiry. Evidence of some or all of the following is found in the report:</p> <ul style="list-style-type: none"> <input type="checkbox"/> Transparency: Describes how information was documented to justify decisions, how data were reviewed by others, and how themes and categories were formulated. <input type="checkbox"/> Diligence: Reads and rereads data to check interpretations; seeks opportunity to find multiple sources to corroborate evidence. <input type="checkbox"/> Verification: The process of checking, confirming, and ensuring methodologic coherence. <input type="checkbox"/> Self-reflection and scrutiny: Being continuously aware of how a researcher's experiences, background, or prejudices might shape and bias analysis and interpretations. <input type="checkbox"/> Participant-driven inquiry: Participants shape the scope and breadth of questions; analysis and interpretation give voice to those who participated. <input type="checkbox"/> Insightful interpretation: Data and knowledge are linked in meaningful ways to relevant literature. <p>C Low quality studies contribute little to the overall review of findings and have few, if any, of the features listed for high/good quality.</p>
<p>Level III</p> <p>Nonexperimental study</p> <p>Systematic review of a combination of RCTs, quasi-experimental and nonexperimental studies, or nonexperimental studies only, with or without meta-analysis</p> <p>Exploratory, convergent, or multiphasic mixed methods studies</p> <p>Explanatory mixed method design that includes, only a level III quantitative study</p> <p>Qualitative study Meta-synthesis</p>	

Note: From Johns Hopkins nursing evidence-based practice: Model and guidelines (3rd ed.), by Dang, D., & Dearholt, S. L., 2018, Indianapolis, IN: Sigma Theta Tau International. Copyright © 2017 by The Johns Hopkins Hospital/Johns Hopkins University School of Nursing. Reprinted with permission.

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Appendix C**Approval to Use****JHNEBP MODEL AND TOOLS- PERMISSION**

Thank you for your submission. We are happy to give you permission to use the JHNEBP model and tools in adherence of our legal terms noted below:

- You may not modify the model or the tools without written approval from Johns Hopkins.
- All reference to source forms should include “©The Johns Hopkins Hospital/The Johns Hopkins University.”
- The tools may not be used for commercial purposes without special permission.

Effect of Yoga on Nurse Burnout: Methodology

BY

Marie Schone

A paper submitted in partial fulfillment of the requirements for the degree

Doctor of Nursing Practice

South Dakota State University

2021

EFFECT OF YOGA ON NURSE BURNOUT

Abstract

Background: Burnout is the result of emotional exhaustion (EE), depersonalization (DP), and decreased personal accomplishments (PA). When burnout is experienced, it can create an unhealthy environment for the nurses and patients.

Methods: Nurses participated in an eight-week yoga course which focused on hatha yoga practices to teach postural alignment, relaxation and meditation, mindfulness, and self-awareness. Those who participated completed the Maslach Burnout Inventory (MBI) questionnaire pre- and post-intervention to measure burnout levels.

Results: The paired sample t-test with a 5% level of significance found a statistically significant reduction in EE ($p = 0.0001$) and DP ($p = 0.0074$) subscale score from the pre- to post-intervention scores. There was not a statistically significant increase in the PA ($p = 0.4026$) subscale score from pre- to post-intervention.

Discussion: By participating in an eight-week hatha yoga course, there was evidence of reduction in burnout components: EE and DP among float nurses. Previous research has found that yoga can improve self-awareness, coping mechanisms, compassion, sense of control, and mindfulness.

Implications for Practice: The implementation of yoga for nurses was associated with a reduction in burnout indicators. This low-cost intervention could be implemented widespread to help reduce nurse burnout and potentially reduce nurse turnover.

Keywords: burnout, Maslach Burnout Inventory, yoga

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Effect of Yoga on Nurse Burnout: Methodology

The healthcare workplace can be a taxing environment that fuels physical and psychological stress which can lead to emotional exhaustion (EE), depersonalization (DP), and diminished personal accomplishment (PA) (Cocchiara et al, 2019; Hilcove et al., 2020; Ofei-Dodoo et al., 2020). Within the United States, 55% of nurses who participated in a job satisfaction survey disclosed that their job was negatively affecting their well-being (Owens et al., 2020). Nurses who are experiencing burnout may have inadequate resources and may be unsure of how to recover (Cocchiara et al, 2019).

Background/Purpose

Bakhamis et al. (2019) disclosed that burnout could be as high as 70% in registered nurses (RNs). When a nurse is unable to effectively cope, there is a disengagement from the workplace decreasing productivity and efficiency (Ofei-Dodoo et al., 2020). There is also a disconnect between the nurse and patient which reduces the quality of care (King & Bradley, 2020). Nurses who are engaged can recognize patient needs while also caring for themselves so they can be emotionally present. To help combat burnout, hatha yoga has been identified as a useful tool to help improve self-awareness, coping mechanisms, compassion, and mindfulness (Riley & Park, 2015).

Significance

Healthcare professionals are at high risk for burnout due to staffing shortages, workplace conflict, and heavy patient loads as well as a lack of resources that help reduce stress (Adhia et al., 2010; de Bruin et al., 2017; Hilcove et al., 2020; Ofei-Dodoo et al., 2020; Rostami & Ghodsbin, 2019). Due to the fast-paced environment, many nurses do not recognize early signs of stress (Paiva et al., 2017). The Coronavirus disease (COVID-

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19) pandemic has further inhibited the ability to recognize stress and has added new concerns as there is uncertainty with how to treat this virus (Bradley & Chahar, 2020). In the National Sample Survey of Registered Nurses, 37% of RNs stated they no longer work as nurses due to burnout or a stressful work environment (McHugh et al., 2011).

Due to the high stress work environment, nurses are also at a higher risk for personal health complications such as diabetes, cardiovascular diseases such as heart attacks, digestive disorders or ulcers, substance abuse, or a weakened immune system (Adhia et al., 2010; de Bruin et al., 2017; Jarrad et al., 2018; Rostami & Ghodsbin, 2019). Burnout can also negatively impact the quality and perception of care that the patient feels they are receiving (Hilcove et al., 2020; Trigo et al., 2018). As a result of burnout, U.S. hospitals lose between \$5.2 to \$8.2 million related to nurse turnover and is the third highest industry for burnout (The University of New Mexico, 2016). To reduce burnout, yoga has been implemented within the nursing population as it helps increase mindfulness and self-awareness (Adhia et al., 2010; Alexander et al., 2015; Cocchiara et al., 2019; Riley & Park, 2015).

PICOT Question

To guide the design of this project, a PICOT question was formulated. The PICOT question for this project was: Among float pool nurses in a rural Midwest hospital (P), what is the effect of an eight-week yoga course (I) compared to current practice of no course (C) on self-reported components of burnout (O) over a two-month period (T)?

Evidence Findings

Burnout is a syndrome in which a person is unable to cope with workplace stress (Adhia et al., 2010; Cocchiara et al., 2019). Strain on the three components of burnout

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(EE, DP, and PA) can be attributed to staffing shortages, workplace conflict, and heavy patient loads resulting in burnout (Hilcove et al., 2020). With stress present in the workplace, increased EE, increased DP, and decreased PA can lead to burnout. When burnout is left untreated, mental and physical symptoms can occur that impact an individual's personal and work life. If signs of stress are ignored, it may result in loss of productivity, decrease in job satisfaction, reduction in commitment to one's organization, and plans to leave the profession (Adhia et al., 2010; de Bruin et al., 2017; Ofei-Dodoo et al., 2020; Rostami & Ghodsbin, 2019). Patient care may also be compromised resulting in an increase in falls, infections, medication errors, and other adverse events (Alexander et al., 2015; Hilcove et al., 2020; Trigo et al., 2018).

Yoga is an inexpensive, convenient, and easily accessible intervention that does not focus on pharmacological interventions (Alexander et al., 2015; Fang & Li, 2020). Skills learned during a yoga course can be implemented within the home or work environment to help reduce and control stress and job burnout (Adhia et al., 2010; Cocchiara et al., 2019). This is done through increasing an individual's consciousness and expanding the unconscious areas of the brain to increase self-awareness (Adhia et al., 2010).

In a stressful work environment, yoga sessions that are six to eight-week long have been found to be beneficial for nurses (Alexander et al., 2015; Hilcove et al., 2020; Klatt et al., 2015; Ofei-Dodoo et al., 2020; Rostami & Ghodsbin, 2019). Hatha yoga uses body postures and movements to improve the body's energy system and overall balance (Woodyard, 2011). To help with the implementation of a yoga course for nurses, an experienced yoga instructor should lead the sessions (Adhia et al., 2010; Alexander et al.,

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2015; Ofei-Dodoo et al., 2020). After the completion of each yoga session, take home exercises help increase mindfulness and self-awareness (Alexander et al., 2015; Hilcove et al., 2020; Klatt et al., 2015; Ofei-Dodoo et al., 2020).

Recommendations for Practice

To help prevent burnout within the healthcare field, organizations need to establish appropriate resources for their employees. Yoga is one potential solution as it is inexpensive, convenient, and an easily accessible resource found to help prevent and reduce burnout in nurses (Cocchiara et al, 2019; Fang & Li, 2020; Rostami & Ghodsbin, 2019). Ideally, the intervention would be held at the place of employment to prevent added stress associated with locating and attending the session (de Bruin et al., 2017; Klatt et al., 2015). Practicing yoga has been associated with an increase in self-awareness which would allow nurses to identify origins of stress and seek personalized solutions to prevent burnout (Adhia et al., 2010; Riley & Park, 2015).

Gaps

One gap identified in the literature was the lack of implementation with float nurses. Previous studies have also been conducted in urban areas, but minimal research has been conducted in a rural setting. Finally, there is little research comparing the distinctive styles of yoga and the effects that each style of yoga has on burnout.

Methods

Frameworks, Theories, and Models

The evidence-based practice model used to establish a practice question, evaluate literature and translate the intervention into practice is the John Hopkins Nursing Evidence-Based Practice (JHNEBP) Model (Dearholt & Dang, 2017). The theoretical

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framework that guided this project was Orem's Theory of Self-Care which promotes activities that help maintain one's health and well-being (Orem, 1971). To guide the implementation of the yoga intervention, the Consolidated Framework for Implementation Research (CFIR) was applied (Damschroder et al., 2009). This framework allowed for thorough evaluation of yoga as a mechanism used to reduce burnout, for the assessment of the facility, and the process of implementation.

Setting

This project was implemented in a level II teaching hospital in the Midwest. The hospital employs 4,000 individuals and has 545 beds. Services offered at this hospital include but are not limited to emergency care, intensive care for all ages, women's health, rehabilitation, and medical/surgical services with a background in oncology, orthopedics, neurology, renal, gastrointestinal, cardiovascular, and pulmonary.

The organization had no formal strategies that focused on preventing or relieving burnout at the time of implementation. Individual departments within the organization focused on how to improve the work environment and build connections within their unit; however, the primary focus is not on burnout.

Sample

This project focused on registered nurses working within the float pool department. The nurses employed in this department work on pediatric, medical/surgical, and critical care units and in the emergency department. All nurses in this department provide direct inpatient care. The majority of the nurses within this department work three 12-hour shifts per week. Nurses work days, nights, or rotate between days and nights. Each nurse is assigned to a unit at the beginning of their shift, and that unit

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changed with each shift depending on where extra nurses were needed. Due to their job role, these nurses adapt and overcome barriers that other nurses may not encounter as they work with different colleagues and patient populations each shift.

Intervention Tool

Yoga Course. The yoga intervention was led by a yoga instructor with more than 12 years of experience. Each session incorporated hatha yoga principles that connects the body with the breath through various techniques. Week one focused on the root chakra located at the base of the spine. Week two used a series of yoga that incorporated the sacral chakra. Week three explored the solar plexus chakra. Week four included movements and breathing that centered at the heart chakra. Week five focused on the throat chakra, while week six emphasized the third eye chakra. Week eight incorporated all seven chakras into a relaxing flow of breathing techniques and poses. For a written description of each week from the yoga instructor, see Appendix C.

The course was eight weeks in length with weekly hour-long sessions. These sessions were held via a web-based video service. Each of the live sessions was recorded so participants could watch the recordings if they were unable to attend the class. With each recording the participants received an electronic copy of a specific handout related to mindfulness, self-awareness, breathing techniques, or yoga exercises to practice at home (see Appendix D). Recommendations regarding how often the participant should practice take home exercises were offered at the end of each session.

MBI. To measure burnout, the MBI was used. This questionnaire consisted of a 22-item scale which includes three subscales – EE, DP, and PA (Adhia et al., 2010; Aguayo et al., 2011; Maslach et al., 1997). The subscale scores were assessed utilizing a

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standardized (z) value (Mind Garden, 2019). To determine a critical boundary based on the group norm the following calculations were used: high exhaustion (EE) at $z = \text{Mean} + (\text{SD} * 0.5)$; high cynicism (DP) at $z = \text{Mean} + (\text{SD} * 1.25)$; high professional efficacy (PA) at $z = \text{Mean} + (\text{SD} * 0.10)$. If an individual's score was above the established standardized (z) value for that subscale, it would be classified as high. All scores that were not classified as high are considered low. Based on the subscale scores, an appropriate profile was assigned to that individual. The five profiles include: engaged, ineffective, overextended, disengaged, and burnout. See Appendix E for the five identified profiles and the correlating high subscales, the yellow circle means the score for that subscale was irrelevant. An individual was assigned the burnout profile if they had a high score in the EE and DP subscale.

Maslach and Jackson (1981) reported that their Cronbach score estimates were .89 for EE, .77 for DP, and .74 for PA regarding the MBI for human service personnel. The three MBI subscales are also supported by convergent and discriminant validity (Adhia et al., 2010). A copy of the three sample questions from the MBI can be found in Appendix F, and permission to utilize the questionnaire is in Appendix G.

Project Procedure

Prior to the development of this project, approval of this intervention was provided by the float pool director who was a key stakeholder (see Appendix B). Participation in this project was voluntary and recruitment was conducted by the DNP Project Manager using department resources such as work emails provided by the director and the department's social media page (see Appendix H). No nurses were excluded from this project. Nurses who chose to participate in the project were provided

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with information via a handout about the intervention prior to the first session (see Appendix I). Information provided to the nurses included the dates of each session, the length of each session, and an introduction of yoga instructor. The handout also disclosed information about the MBI questionnaire and when the questionnaire had to be completed. An additional email containing the MBI questionnaire and demographic links were also sent prior to the first session.

Each yoga session was led by a certified yoga instructor via a web-based video service. Participants involved in this project were not paid for time spent completing these yoga sessions. The yoga instructor designed each session with a focus on mindfulness, breathing exercises, and stress reduction (see Appendix C). Final approval of each week's session was provided by the DNP Project Manager to ensure alignment with project goals. After the hour-long session, participants received an additional handout to continue mindfulness practices learned during that week's session. The DNP Project Manager made recommendations about how frequently to practice these take home exercises (see Appendix D). Participants completed their MBI using the Mind Garden online platform; Mind Garden owns the copyright for the MBI questionnaire. To access this platform, participants received an email with the link to the questionnaire.

The first questionnaire was completed the week before the first yoga session. There were 14 participants who completed the first questionnaire. Following the eight-week intervention, participants who watched all eight recordings were asked to complete the second MBI questionnaire within two weeks. After eight weeks, 7 participants completed the post-questionnaire. Based on the personalized four-digit code selected by

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the participant, the DNP Project Manager was able to compare the pre and post MBI scores.

Ethical Considerations

Approval from the facility's nursing research council was obtained. South Dakota State University deemed that institutional review board (IRB) approval was not necessary because it was a quality improvement project (see Appendix A). The facility's IRB also determined that this project was not human research (see Appendix B). To ensure confidentiality, participants were asked to insert a personalized four-digit code of their choosing into the MBI survey. See Appendix F for the question requesting each participant's personalized four-digit code. Data collected during this project was not utilized by Mind Garden. The DNP Project Manager and the statistician were the only ones to have access to the data. All data was accessed through the secured Mind Garden online platform. All calculations and analysis were stored on a secure flash drive and will be saved for six years following the completion of the final yoga session.

Results

Demographic Results

Participants were asked to complete the demographic survey before participating in the yoga intervention. There were 14 participants who filled out the demographic survey. All the individuals were Caucasian female nurses with a bachelor's degree. Participants were between the ages of 25 to 60 with a mean age of 36.6 and a median of 30.5. Years of nursing experience ranged from 1.5 to 38 years with a mean of 11.96 years and a median of 7 years. Employment at the current organization ranged between 4 to 40 years with a mean of 12.07 years and a median of 6.5 years. Yoga experience varied

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between participants. Eight stated they were novice (57.14%), four stated they were advanced beginners (28.57%), one was competent (7.14%) and one was proficient (7.14%) (see Appendix K). Only 7 participants completed the eight-week intervention. The DNP project manager was unable to exclude the demographic data from participants who did not finish the intervention.

MBI Results

For this project, 14 participants completed the pre-intervention MBI one week prior to the first yoga session. Following the eight-week intervention, participants were asked only to fill out the post-intervention MBI if they had watched all eight yoga sessions. As a result, only 7 participants completed both the pre- and post-intervention MBI questionnaires. Results from the 7 participants who completed the intervention were compared and the MBI profiles were identified to determine the impact yoga has on nurse burnout.

The MBI has five identified profiles which are assigned based on critical scores determined from the project's MBI subscale scores. These profiles were identified and assigned to the 7 participants who completed the intervention using their pre- and post-intervention MBI subscale scores. Prior to the yoga intervention, 1 participant qualified as burnout, 0 were disengaged, 1 was overextended, 0 were ineffective, and 5 were engaged. The final questionnaire showed 0 participants qualified as burnout, 0 were disengaged, 2 were overextended, 2 were ineffective, and only 3 were engaged (see Appendix L).

All statistical calculations were completed by the DNP Project Manager with a statistician. Normality was determined using the Shapiro-Wilk test which showed all pre

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and post subscale scores were normally distributed. The paired sample *t*-test was used to compare the matched pre- and post-intervention scores to assess the changes in each subscale. By using this test design, it accounted for only the 7 participants that had completed both the pre- and post-intervention questionnaire after watching all eight yoga sessions. The remaining 7 participants who had completed the pre-intervention questionnaire were excluded as they did not finish the intervention and did not complete the post-intervention questionnaire. A 5% level of significance was utilized to determine whether the differences between pre- and post-intervention MBI questionnaire subscale scores. There was a statistically significant ($p = 0.0001$) decrease in the EE subscale score from pre- to post-intervention. There was a statistically significant ($p = 0.0074$) decrease in the DP subscale score from pre- to post-intervention. Even after adjusting for multiple testing due to the correlated subscales, the *p*-values were less than 0.05 for the EE and DP subscale. There was not a statistically significant ($p = 0.4026$) increase in the PA subscale score from pre- to post-intervention (see Appendix M).

Discussion

By participating in an eight-week hatha yoga course, there was a significant decrease in EE and DP which are the key components of burnout. There was not a statistically significant increase in PA scores. If continued, the yoga course should include positive affirmations and more in-depth reflection about daily accomplishments to address PA. Based on the MBI profiles, EE and DP are the two subscales that are used to identify overextended, disengaged, and burnout. A reduction in these two subscales shows significant improvement in reducing and preventing burnout.

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Each week the yoga sessions were hosted live on Zoom. However, one barrier that was identified was the ability to attend the live sessions. All the participants watched the recordings because of time conflicts with the scheduled live sessions. Due to busy work schedules or family obligations, only 7 of the original 14 participants were able to watch all eight weeks and complete the post-intervention questionnaire.

Implications for Practice

This project reduced components of burnout present in nursing staff. By reducing EE and DP the nurses involved in this project are better equipped with resources that increase their self-awareness and mindfulness. With the reduction in EE there is an increase in stability and ability to identify work related stress. By improving scores in the DP subscale, this reflects those participants are more likely to value their time spent with patients. There is also an increase in the desire to provide high quality patient-centered care.

One option for this organization is to offer yoga sessions as an educational curriculum centered around burnout. Another option would be to include this project design in their new hire residency program. Currently, the organization does not have any policies that focus on how to address and reduce nurse burnout.

The organization that hosted this project provides care to a wide variety of patients that are both rural and underserved. However, to provide high quality care to these populations, nurses must be able to care for themselves. When nurses incorporate yoga into their routine, they have increased self-awareness and better coping mechanisms (Riley & Park, 2015). This allows nurses to effectively cope with barriers experienced in the workplace and ensures the best care is provided to the patients.

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Facility Support and Cost

This project was supported by the director for the central resource pool; this individual oversees the float nurses who were offered this yoga course. Fees included the local yoga instructor's fee of \$480 and the \$200 fee to use the MBI through Mind Garden. Participants were not paid for their involvement in this project, and no other incentives were offered. These sessions were held over web-based video service and recommendations for equipment, such as a yoga mat, were made but not required. A \$500 grant was awarded by the Sigma Theta Tau organization and the remaining costs were covered by the DNP Project Manager.

Sustainability

For this project to be successful and to be utilized throughout the organization, the healthcare system will need to recognize the importance of reducing and preventing burnout. At this time, the organization will not continue this yoga class. For the class to continue, this yoga intervention would need to be presented to the organization's committee and funding would need to be established. The barrier at this point is the process that would be required to implement this intervention. Another barrier would be the funding necessary for this intervention to continue. Required funding would consist of salary for the yoga instructor and the organization would need to establish whether individuals would receive their hourly wage. If job satisfaction also increases as a result and reduces nurse turnover, an organization has the potential to save millions of dollars (Nursing Solutions Inc., 2016).

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Recommendations for Further Projects

Further projects could include offering this intervention to other departments within the organization. The organization may want to explore other interventions that have been shown to reduce burnout, such as meditation, therapy sessions, or support groups. Finally, comparing MBI questionnaire results with a larger sample size or control group or waitlist group would be beneficial to determine a true reduction in burnout with the proposed intervention.

Limitations

One limitation identified in this project was the small sample size. This could result in a conclusion that would not accurately represent the population. Based on the outcome of this project it might be appropriate to offer this intervention to a larger sample size. Another limitation within this project could be connected to the type of yoga utilized. This project focuses primarily on hatha yoga, which would lead to limitations about whether other types of yoga would have different effects.

Conclusion

This eight-week yoga intervention provided nurses with resources that they can utilize to acknowledge and address signs and symptoms of burnout. Implementing this intervention is essential as nurses are experiencing work environments that fuel burnout due to the current state of the United States healthcare system. If left untreated the entire system can be impacted, resulting in poor health for the nurses, patients, and an inadequate healthcare organization.

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Appendix A

SDSU IRB APPROVAL

It appears that your study/research/project IS NOT Human Subjects Research and no application to the IRB is required.

If you would like further review because (a) you were uncertain about some of your responses or (b) you need a formal determination that IRB review is not required, click *Next*. Otherwise, you may exit the survey now.

Questions?

Contact us at:

sdsu.irb@sdstate.edu

<https://www.sdstate.edu/research-and-economic-development/research-compliance-human-subjects>

EFFECT OF YOGA ON NURSE BURNOUT

Appendix B

Facility IRB Approval



NOT HUMAN RESEARCH

July 12, 2021

Dear [Marie Schone](#):

The IRB reviewed the following submission:

Type of Review:	Initial Study via Non-Committee Review
Title of Study:	Effects of Yoga on Nurse Burnout: Effects of Yoga on Nurse Burnout
Investigator:	Marie Schone
IRB ID:	STUDY00002426: Effects of Yoga on Nurse Burnout
Special Determinations:	None

The IRB determined, on 7/12/2021, that the proposed activity is not human research. [REDACTED] IRB review and approval is not required.

Although this project has been determined not to be human research, the use and disclosure of Protected Health Information (PHI) is still subject to [REDACTED] operational approval and HIPAA requirements. If the IRB has not approved a waiver of HIPAA authorization, you may still be required to obtain HIPAA authorization. Here is a [link](#) to a HIPAA Authorization form (Medical Information Release). Please contact the [REDACTED] Privacy Office at [REDACTED] for questions related to meeting [REDACTED] privacy and HIPAA requirements after you have obtained the appropriate operational approval for your project.

This determination applies only to the activities described in the IRB submission and does not apply should any changes be made. If changes are being considered and there are questions about whether IRB review is needed, please submit a study modification to the IRB for a determination. You can create a modification by clicking **Create Modification / CR** within the study.

For questions please contact the IRB Office: [REDACTED]

EFFECT OF YOGA ON NURSE BURNOUT

Appendix B Facility Approval



3/08/21

Re: Letter of Agreement for Onsite Nursing Research/EBP/PI projects and studies [REDACTED]

This is to confirm that we agree to collaborate with **South Dakota State University** on EBP project entitled **Effects of Yoga on Nurse Burnout**, conducted by **South Dakota State University** graduate student/faculty **Marie Schone**.

After review and approval by the [REDACTED] Nursing Research Council, nursing projects and studies are referred to [REDACTED] Research and the [REDACTED] Institutional Review Board (IRB) to determine Human Subjects research status, level of risk, or exemption from Board review.

Procedures for this project/study include: The project will consist of an eight-week yoga course taught by a local yoga instructor held via a web-based video service. Prior to the first session the participants will complete the Maslach Burnout Inventory (MBI) questionnaire using the Mind Garden Platform. After the eight-week course, participants will complete the second MBI questionnaire. This study will not include patients, so there will be no review of medical records. If a minimum of information is necessary to the project or study, and is to be collected from patient medical records, data access is approved by the [REDACTED] Privacy Office. Precautions are in place so that information will not be identifiable.

We understand that any protected health information, such as names, addresses, social security numbers, medical record numbers, account numbers, birthdates, admission and discharge dates, that is abstracted from medical records for research purposes will be completely de-identified. To ensure confidentiality, participants will be asked to insert a personalized four-digit code of their choosing into the MBI Questionnaire that will not be shared. De-identified data will be kept on a password protected flash drive, accessible only to the principal investigator. There will be no data transfer. Analysis will be conducted on inaccessible, password protected computers. Aggregate [REDACTED] clinical data will remain confidential and will not be shared outside of the organization without specific authorization.

This letter confirms that we are aware of the conduct of this project in **Central Resource Pool** and agree to collaborate with the investigator.

Sincerely,

Emilee Geddes
Emilee Geddes
Central Resource Pool Director

Kelly Hefti
Kelly Hefti MSN, RN, CNP
Vice President Nursing and Clinical Services

3/9/2021
Date

3/10/2021
Date

Site Contract

Emilee Geddes, Director of the Central Resource Pool, will allow Marie Schone to implement her DNP project within the Central Resource Pool. This project will focus on whether or not yoga has a positive impact nurse burnout.

Tentative dates:

- Sessions will start the first full week of May, 2020 and will continue for 8 consecutive weeks
- Classes will be held weekly
- Each class session will be 1 hour in length
 - o Dates may change depending on progression of project and approval from SDSU school board

x Emilee Geddes
Signature

11/11/2020
Date

EFFECT OF YOGA ON NURSE BURNOUT
Appendix C

Weekly Yoga Outline

8 Week Chakra Series

1. **Root Chakra/Red/Foundation**
 - a. Basic pranayama, nostril breathing
 - b. Root chakra properties
 - i. Basic needs
 - ii. A sense of belonging
 - iii. Safety
 - c. Root chakra poses
 - i. Easy seat
 - ii. Cat/cow
 - iii. Foundational flow
2. **Sacral Chakra/Orange/Creativity**
 - a. Pranayama, nadi shodhana (alternate nostril breath)
 - b. Sacral chakra properties
 - i. Sexuality/sensuality
 - ii. Creativity/fluid movement
 - iii. Self-expression
 - c. Sacral chakra poses
 - i. Crescent lungs
 - ii. Goddess
 - iii. Butterfly
3. **Solar Plexus Chakra/Yellow/Passion**
 - a. Pranayama, Kapalhati (breath of fire)
 - b. Solar Plexus Chakra properties
 - i. Fire, drive, passion
 - ii. Core strength
 - c. Solar Plexus chakra poses
 - i. Boat
 - ii. Plank
 - iii. Downward facing dog
4. **Heart Chakra/Green/Love**
 - a. Pranayama, box breath
 - i. 4-part inhale
 - ii. 4-part hold
 - iii. 4-part exhale
 - iv. 4-part hold
 - b. Heart Chakra properties
 - i. Love
 1. To self, to others
 - ii. Compassion
 1. To self, to others
 - c. Heart Chakra poses
 - i. Anahatasana (heart melting pose)
 - ii. Camel
 - iii. Child's pose
5. **Throat Chakra/Blue/Communication**
 - a. Pranayama, Ujjayi breath
 - b. Throat Chakra properties
 - i. Communication
 1. Speaking, listening, being heard
 - ii. Self-expression
 - c. Throat Chakra poses
 - i. Supported bridge pose
 - ii. Cat/cow
 - iii. Shoulderstand (we didn't do this one)
6. **Third Eye Chakra/Indigo/Consciousness**
 - a. Pranayama, ujjayi or box breath
 - b. Throat Chakra properties
 - i. Conscious awareness
 - ii. Sub/unconscious awareness
 - iii. Vagus nerve
 - iv. Connection to pineal gland
 - c. Throat Chakra poses
 - i. Child's pose w/forehead to the floor
 - ii. Forward fold
 - iii. Dolphin
7. **Crown Chakra/Violet or White/Awakening or Connection**
 - a. Pranayama, 61-point body scan meditation
 - b. Crown Chakra properties
 - i. Enlightenment
 - ii. Connection to self/all chakras open
 - iii. Connection to space and surroundings
 - c. Crown Chakra poses
 - i. Rabbit pose
 - ii. Headstand (did not practice this)
 - iii. Tree pose
 - iv. Easy seat
8. **Full class**
 - a. Pranayama, ujjayi
 - b. Poses
 - i. Everything is fair game now!
 - ii. Use what you've learned and experienced to move your body in ways it responds well to keep going

Note. From K. Brouwer, DNP Project yoga instructor, 2021. Reprinted with permission.

EFFECT OF YOGA ON NURSE BURNOUT

Appendix D

Take Home Handouts

Week 1

The 4-7-8 (or Relaxing Breath) Exercise

This simple exercise is a great technique to counteract stress and its harmful effects. There is a good reason why the 4-7-8 Breath is so effective: It activates the parasympathetic nervous system, leading to a lower heart rate and blood pressure and increased mental calmness. For best results, practice it several times a day, not just when you feel stressed.

Although you can do the exercise in any position, if you are seated, sit with your back straight and both feet on the floor. Place the tip of your tongue against the ridge of tissue just behind your upper front teeth, and keep it there through the entire exercise. You will be exhaling through your mouth around your tongue; try puffing your lips out as you do this.

- Exhale completely through your mouth, making a whoosh sound.
- Close your mouth and inhale quietly through your nose to a mental count of **four**.
- Hold your breath for a count of **seven**.
- Exhale completely through your mouth, making a whoosh sound to a count of **eight**.
- This is one breath. Now inhale again and repeat the cycle three more times for a total of four breaths. (Weil, 2016, "Breathing exercise 2", para. 2)

The absolute time you spend on each phase is not important; the ratio of 4:7:8 is important. If you have trouble holding your breath, speed the exercise up but keep to the ratio of 4:7:8 for the three phases. With practice, you can slow it all down and get used to inhaling and exhaling more and more deeply.

This exercise is a natural tranquilizer for the nervous system. Unlike tranquilizing drugs, which are often effective when you first take them but then lose their power over time, this exercise is subtle when you first try it but gains in power with repetition and practice. Do it at least twice a day. You cannot do it too frequently. Do not do more than four breaths at one time for the first month of practice. Later, if you wish, you can extend it to eight breaths. If you feel a little lightheaded when you first breathe this way, do not be concerned; it will pass.

Once you develop this technique by practicing it every day, it will be a very useful tool that you will always have with you. Use it whenever anything upsetting happens - before you react. Use it whenever you are aware of internal tension. Use it to help you fall asleep. This exercise can not be recommended too highly. Everyone can benefit from it.

Note. From E. Schellinger, 2019. Reprinted with permission.

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Appendix D (Continued)**Week 2****Take Five****The 5/5/5 Breath Exercise**

- Breathe in slowly through your nose to the count of five.
- Hold your breath to the count of five.
- Very slowly breathe out through your mouth to the count of five.
- Do this for five minutes.
- Repeat 5 times throughout the day or as desired. (Jahr, 2012, "Take Five Method")

Everyone's breath is different. Breathe in to whatever count works best for you. For example, if breathing in and out slowly to the count of 3 works best, that is okay.

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EFFECT OF YOGA ON NURSE BURNOUT

Appendix D (Continued)

Week 3

Guided Imagery Script

“Once you are seated or lying still, close your eyes and begin by taking three slow deep breaths through your nose, filling up your belly, releasing slowly. Take another breath, seeing if you can send the warm energy of your breath to any place in your body that feels tense or sore...invite your body to release tension it doesn’t need with the exhale....some parts release quickly, others take more time....notice a response....allow unwinding to happen....see if you can feel your breath going to all the places needing attention, beginning with the top of your head and slowly working down to the soles of your feet where your muscles are tense....allow your breath to loosen and soften....as you do this, you begin to feel safe, comfortable, and relaxed...any unwelcome or distracting thoughts that come to mind can be released with the exhale...so for a moment, your mind can be a clear space in stillness...and your body settled into a position of complete relaxation...now create in your mind an image of a beautiful place...this is a special place where you feel safe and you can find refuge from your cares...you might choose a place you’ve already been...or one you’ve always wanted to visit...or one you just imagine as being peaceful and restorative ...look around and notice what you see with your eyes...the colors and shapes....the details of the scenery...both to your right and left, above and below your head....notice what is there...listen to the sounds of this special place...allow your ears to become familiar with what you hear, whether it’s sounds of nature or beautiful music...notice what you feel against your skin...whether it’s a soft breeze or balmy stillness, warm or cool, allow yourself to absorb the feeling....breathe in the fragrance of this safe and relaxing place....spend as much time as you need in this place....rest and be at peace....allow all your senses to take it all in, with feelings of gratitude....know that you can come back to this place any time you wish for respite and relaxation....that each journey to this place acknowledges and engages the wisdom of your body....bathing each cell with healing love, supporting the restorative work it was designed to do....when you are ready....look for a path that leads away from the spot where you have been resting, preparing yourself to return to the outer world....take a moment to review your experience....notice if there is something to bring back with you....to remind you to use your mind and body this way....when you are ready, you may return more relaxed and refreshed, with a sense of peace and confidence about all that lies ahead for you.”

(2014, Wagner & Thompson, Chapter 12 from *Integrative Nursing Management of Pain* by Kreitzer & Koithan, *Integrative Nursing*)

Note. From *Integrative Nursing Management of Pain* in *Integrative nursing*. Wagner & Thompson, 2019. Reproduced with permission of the Licensor through PLSclear.

EFFECT OF YOGA ON NURSE BURNOUT

Appendix D (Continued)**Week 4****Take a Breath: Mindfulness Meditation**

Sitting still and focusing on the breath (mindfulness meditation) can ease the body and settle the mind. Find a quiet place where you can sit uninterrupted for 5 or 10 minutes. You may want to set a timer so you don't have to think about the clock.

Make yourself comfortable in a chair or on a cushion on the floor. When you are ready, close your eyes, or soften your gaze and let it rest on the floor in front of you. Bring your awareness to the sensations of your body, and settle yourself in an alert, upright posture that supports your breathing. Allow your awareness to gently settle on your breath, following it on its journey in through the nostrils, against the back of the throat, down into the lungs and into the belly. Follow the cycle of the breath – the in breath, a slight pause, the out-breath and another pause. Just follow the breath. From time to time you may notice that the mind has wandered into distractions, thoughts or worries. Wandering is what the mind does naturally. When you notice the mind wandering, just gently and kindly direct the awareness back to the breath. Repeat as often as you need to.

You may wonder if you are doing this meditation thing right, or feel frustrated or bored. Just note those feelings as part of the current experience, knowing there is no right way to feel or wrong way to be, then gently bring the attention back to the breath. Learning to accept what is happening in each moment is part of the process. Simply continue returning to the breath until your time has ended or you feel ready to be done.

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EFFECT OF YOGA ON NURSE BURNOUT

Appendix D (Continued)

Week 5

Take a Breath: Mindfulness Meditation

Sitting still and focusing on the breath (mindfulness meditation) can ease the body and settle the mind. Find a quiet place where you can sit uninterrupted for 5 or 10 minutes. You may want to set a timer so you don't have to think about the clock.

Make yourself comfortable in a chair or on a cushion on the floor. When you are ready, close your eyes, or soften your gaze and let it rest on the floor in front of you. Bring your awareness to the sensations of your body, and settle yourself in an alert, upright posture that supports your breathing. Allow your awareness to gently settle on your breath, following it on its journey in through the nostrils, against the back of the throat, down into the lungs and into the belly. Follow the cycle of the breath – the in breath, a slight pause, the out-breath and another pause. Just follow the breath. From time to time you may notice that the mind has wandered into distractions, thoughts or worries. Wandering is what the mind does naturally. When you notice the mind wandering, just gently and kindly direct the awareness back to the breath. Repeat as often as you need to.

You may wonder if you are doing this meditation thing right, or feel frustrated or bored. Just note those feelings as part of the current experience, knowing there is no right way to feel or wrong way to be, then gently bring the attention back to the breath. Learning to accept what is happening in each moment is part of the process. Simply continue returning to the breath until your time has ended or you feel ready to be done.

Note. From E. Schellinger, 2019. Reprinted with permission.

Week 6

Be Playful: Look on the Bright Side

You can turn a small irritation into a brighter moment. Take note of something minor that annoys you, like a red light that brings you to an unwanted stop. Instead of getting irritated or angry, maybe take time to thank the light.

*Thank you red light,
for giving me time to pause,
for reminding me to slow down
for helping keep me and my loved ones safe.*

Can you think of one?

Note. From E. Schellinger, 2019. Reprinted with permission.

EFFECT OF YOGA ON NURSE BURNOUT

Appendix D (Continued)

Week 7

Attend to What You Take In: Mindful Eating

Understanding how we nourish ourselves – mind, body and spirit – is an important part of mindful living. Mindful eating helps us pay attention to the body’s signals and develop awareness of thoughts, feelings and sensations that go with eating.

Begin by choosing a food – the first berry from a bowl, a portion of cheese, or a small piece of bread. Hold it in the palm of your hand and observe it like you have never seen it before. Consider where this piece of food came from. The warm sun and gentle rain that helped it grow. The farmer who tended to the plant. The people who harvested, baked, transported, or sold the item, bringing it to your table. Continue to investigate. Note the color, the texture, the size, the coolness or warmth against your palm. Engage your other senses. What else do you notice? Does it have a smell? If you pinch it gently near your ear, does it make a sound?

Bring the food near your lips, but don’t put it in your mouth. Pay attention to what happens in your mouth, or in the rest of your body and mind in that moment. Then, when you are ready, place the food in your mouth, but don’t start chewing. What happens now? What is the taste, the texture on your tongue? Do you notice anything else?

Finally begin slowly chewing. Notice the sensation of the teeth sinking in, the changes to texture, to flavor. Is there anything else happening? A gurgle in the stomach? More moisture in your mouth? Savor the bite, keeping your mind on the many sensations and thoughts as you finish and swallow. Enjoy the rest of your snack or meal!

Note. From E. Schellinger, 2019. Reprinted with permission.

Week 8

Quiet the Mind

Need a moment’s rest from busy thoughts or a period of frustration? Try these three easy steps to ease your mind and refocus your energy.

- Stop what you are doing and assume an alert, upright posture. If you can, close your eyes. Note what is going on in the body, mind and emotions in this moment. You are not trying to change anything, just observing the moment as it is.
- Shift the attention to the breath. Focus on the movement of the breath or where ever you are most aware of the sensations of the breath in your body - the rise and fall of the chest or stomach or in and out of your nostrils. Just rest in awareness of the breath for a while.
- Allow the attention to widen again to take in the whole body, noticing and accepting whatever sensations are now present.

Each of these steps can take as little as a minute, or as long as you like and time allows. Just taking the time to pause can create a sense of spaciousness, and add a sense of calm to the moment.

Note. From E. Schellinger, 2019. Reprinted with permission.

EFFECT OF YOGA ON NURSE BURNOUT

Appendix E

Pattern of Maslach Burnout Inventory Subscales Across Profiles

Profile	Emotional Exhaustion	Depersonalization	Personal Accomplishment
Engaged	Low	Low	High
Ineffective			Low
Overextended	High		
Disengaged		High	
Burnout	High	High	

Note. From “A message from the Maslach Burnout Inventory Authors,” by Mind Garden, 2019 “<https://www.mindgarden.com/blog/post/44-a-message-from-the-maslach-burnout-inventory-authors>”. Copyright 2019 by Mind Garden, Inc. Reprinted with permission.

EFFECT OF YOGA ON NURSE BURNOUT

Appendix F

Maslach Burnout Inventory for Medical Personnel

Section 1

• Please enter a personalized four digit code (Use the SAME code each time the MBI survey is completed):

Items marked by * are required.

• 1. I feel emotionally drained from my work.

Never	A few times a year or less	Once a month or less	A few times a month	Once a week	A few times a week	Every day
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• 15. I don't really care what happens to some patients.

Never	A few times a year or less	Once a month or less	A few times a month	Once a week	A few times a week	Every day
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• 19. I have accomplished many worthwhile things in this job.

Never	A few times a year or less	Once a month or less	A few times a month	Once a week	A few times a week	Every day
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Note. Maslach Burnout Inventory-Human Services Survey for Medical Personnel: Sample of 3 out of the 22 questions. From Mind Garden, by C. Maslach, S.E. Jackson, M.P. Leiter, W.B. Scheaufeli, and R. L. Schwab, 2019, Mind Garden, Inc. Copyright 1996-2018 by C. Maslach, S.E. Jackson and M.P. Leiter. Reprinted with permission.

EFFECT OF YOGA ON NURSE BURNOUT

Appendix G

Maslach Burnout Inventory Permission

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Online Use of Mind Garden Instruments:

Online administration and scoring of the Maslach Burnout Inventory is available from Mind Garden, (<https://www.mindgarden.com/117-maslach-burnout-inventory>). Mind Garden provides services to add items and demographics to the Maslach Burnout Inventory. Reports are available for the Maslach Burnout Inventory.

If your research uses an online survey platform other than the Mind Garden Transform survey system, you will need to meet Mind Garden's requirements by following the procedure described at mindgarden.com/mind-garden-forms/58-remote-online-use-application.html.

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EFFECT OF YOGA ON NURSE BURNOUT

Appendix H

Enrollment Flyer

EIGHT-WEEK YOGA SESSION

DATES:

SEPTEMBER 2ND SEPTEMBER 9TH SEPTEMBER 16TH
SEPTEMBER 23RD SEPTEMBER 30TH OCTOBER 7TH
OCTOBER 14TH OCTOBER 21ST

LIVE SESSION @ 8:00-9:00 AM

PURPOSE OF THIS STUDY:

THIS STUDY WILL ASSESS THE IMPACT THAT YOGA HAS ON NURSE BURNOUT

- SESSIONS WILL BE HOSTED VIA ZOOM BY A LOCAL YOGA INSTRUCTOR
- IF UNABLE TO ATTEND, PARTICIPANTS CAN WATCH RECORDED SESSION
- NO YOGA EXPERIENCE OR EQUIPMENT NECESSARY
- OPTIONAL TAKE HOME EXERCISES
- INCLUDES ONLINE SURVEY BEFORE AND AFTER YOGA SESSION
- NO CHARGE FOR PARTAKING
- MUST BE A FLOAT NURSE TO PARTICIPATE

EMAIL MARIE SCHONE WITH QUESTIONS OR TO ENROLL

Marie.schone@jacks.sdstate.edu

EFFECT OF YOGA ON NURSE BURNOUT

Appendix I

Informational Handout for Participants

8-week Yoga Course Research DisclosureDates:

September 2 nd , 2021	September 30 th , 2021
September 9 th , 2021	October 7 th , 2021
September 16 th , 2021	October 14 th , 2021
September 23 rd , 2021	October 21 st , 2021

Time:

8:00 – 9:00 am

Yoga course:

All of the yoga session will be taught by a local yoga instructor with training in yin, hatha, and vinyasa style yoga. This yoga course will focus on hatha yoga which incorporates alignment, breathing, and full-body relaxation.

Make-up:

If participant is unable to attend the session at the scheduled time, the participant will be required to watch the recording within 24 hours of the class.

Take home exercises:

Participants will be encouraged to complete the take homes exercises three to four times a week. Each exercise should take between five to ten minutes.

Take home exercises will be offered at class or sent via email after each yoga session.

Research component:

Participants will be asked to complete a questionnaire with 22 questions twice during the eight-week yoga course. This questionnaire will be completed via an online platform and participants will receive a link through their email to access this platform. Confidentiality will be maintained by having individual select four-digit number which be used on both pre and post-intervention questionnaire.

The first questionnaire will be sent one week before the first yoga session and will need to be completed before the first yoga class.

After the last yoga session, the second questionnaire will need to be completed in one week.

These questionnaires will be analyzed to assess if there is a significant reduction in scores from the pre to post-test.

EFFECT OF YOGA ON NURSE BURNOUT

Appendix J

Demographic Survey

1. Gender: How do you identify?  0

- Man
- Woman
- Prefer to self-describe, below

Self-describe:

2. Age?  0

4. What is your educational background?  0

- Associate degree
- Diploma degree
- Bachelor's degree
- Master's degree

5. Years of experience as a nurse?  0

3. What is your ethnicity?  0

- White or Caucasian
- Black or African American
- Hispanic or Latino
- Asian or Asian American
- American Indian or Alaska Native
- Native Hawaiian or other Pacific Islander
- Another race

6. Length of employment at current organization?  0

7. What is your yoga experience?  0

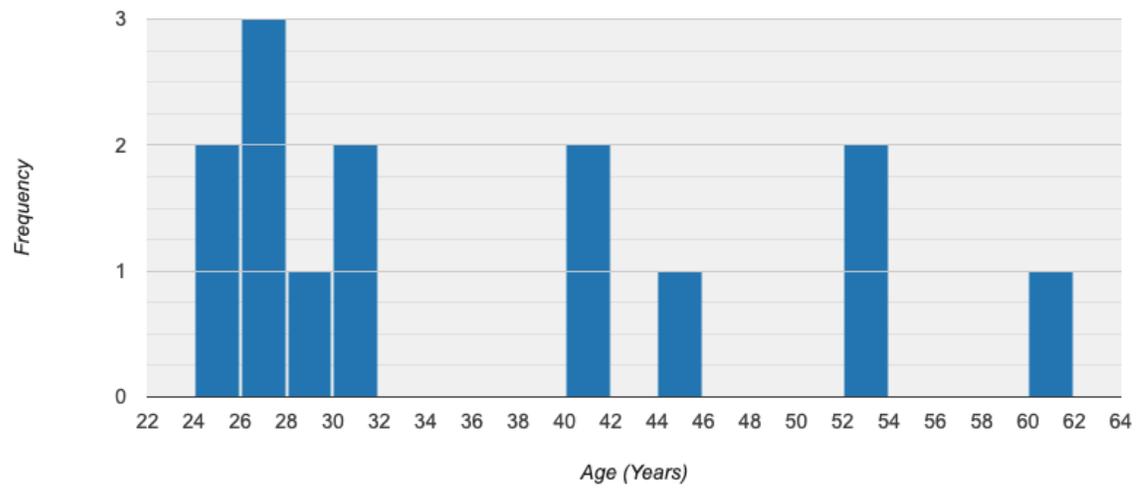
- Novice
- Advanced Beginner
- Competent
- Proficient
- Expert

EFFECT OF YOGA ON NURSE BURNOUT

Appendix K

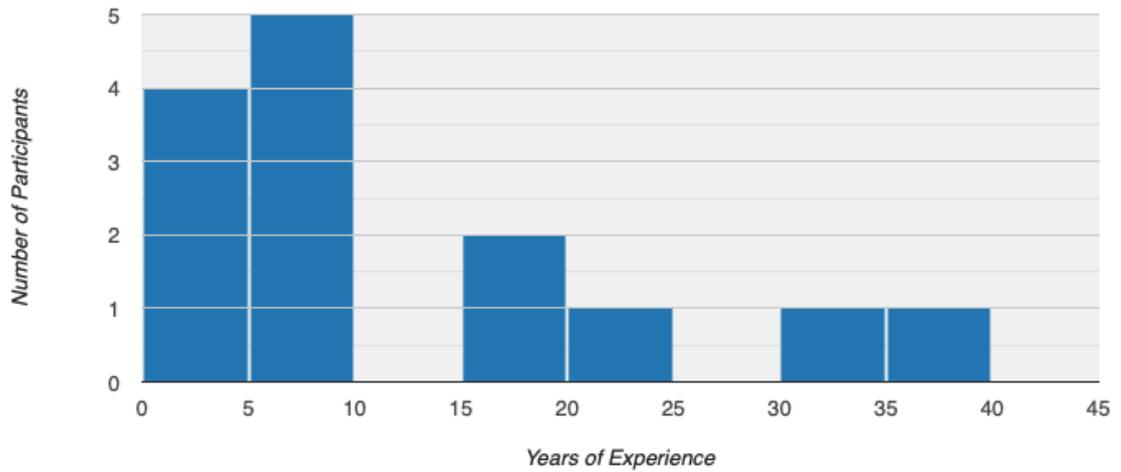
Demographic Findings

Age of Participants



Note. Age in years based on the 14 participants who completed the pre-intervention MBI.

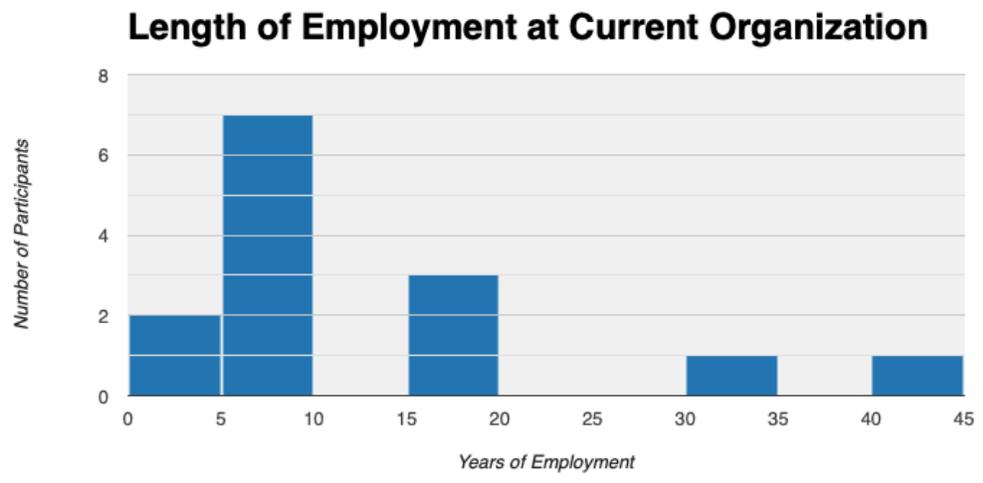
Years of Experience as a Nurse



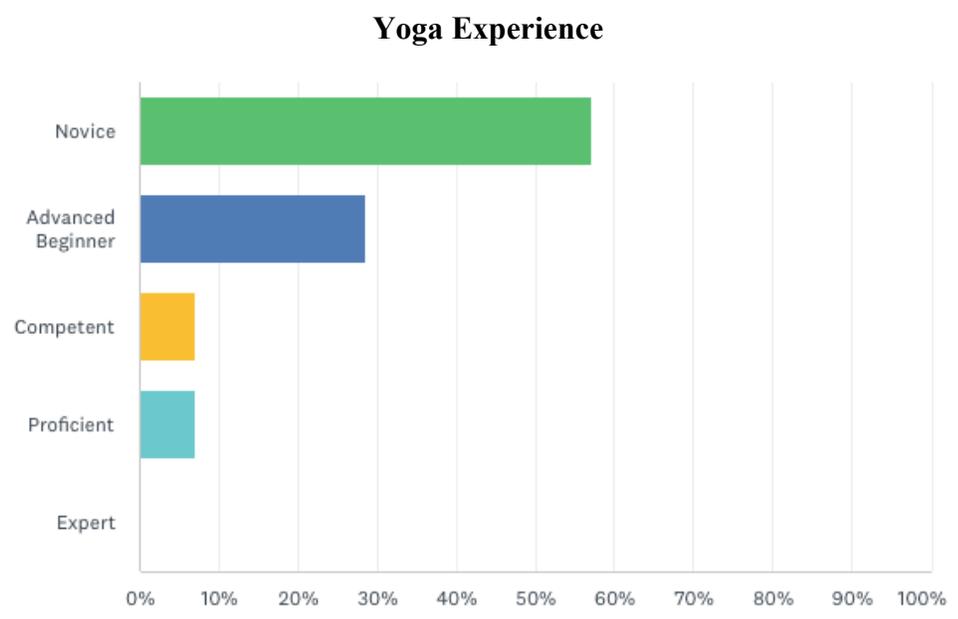
Note. Years of experience as a nurse in 5-year increments.

EFFECT OF YOGA ON NURSE BURNOUT

Appendix K (Continued)



Note. Length of employment in 5-year increments.



Note. Yoga experience reported in percentages based on provided categories.

EFFECT OF YOGA ON NURSE BURNOUT

Appendix L**Burnout Profiles**

Profiles	Pre-intervention	Post-intervention
Engaged	5	3
Ineffective	0	2
Overextended	1	2
Disengaged	0	0
Burnout	1	0

Note. Identified profiles based on the Maslach Burnout Inventory responses from the participants' involved within this study. Profiles were assigned by calculating the critical boundary score based on a mathematical equation provided by Mind Garden.

EFFECT OF YOGA ON NURSE BURNOUT

Appendix M

Maslach Burnout Inventory Results

Means and Standard Deviations for Maslach Burnout Inventory (MBI)

MBI Subscales	Pre-intervention (n=7)	Post-intervention (n=7)	<i>p</i>
	Mean (SD)	Mean (SD)	
Emotional exhaustion	32.0 (9.6)	24.0 (10.4)	*.0001
Depersonalization	14.7 (6.8)	9.6 (4.9)	*.0074
Personal accomplishment	34.4 (5.4)	35.3 (5.6)	.4026

Note. The mean and standard deviation from the three subscales for the pre- and post-intervention Maslach Burnout Inventory questionnaires.

* $p < .05$.