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Addressing Job Satisfaction in Nursing Staff Through Mindfulness: A Quality Improvement Project

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Addressing Job Satisfaction in Nursing Staff Through Mindfulness: A Quality

Improvement Project

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Abstract

Background: As the single largest group of healthcare professionals, comprising a workforce of over 4 million in the United States, keeping nurses satisfied in their positions is a vital component of providing quality patient care (Perry et al., 2018). It is estimated that 68% of nurses will experience significant job dissatisfaction at a point in their career (Ayalew et al., 2018). Mindfulness practice, specifically Mindfulness-Based Stress Reduction (MBSR) is a recognized tool to lower work-related stress and increase job satisfaction of nursing staff (Henry, 2014).

Local Problem: The state of the specific microsystem had been high levels of dissatisfaction among nursing staff, specifically 78.4% of survey respondents reporting feeling negatively after a shift more than 50% of the time (Internal data, 2021). As a result, the microsystem had seen a 4% increase in turnover rate in 2021 compared with 2020 data (Internal data, 2021). If allowed to proliferate, widespread dissatisfaction could lead to even more profound turnover and as a consequence, decreased quality of patient care and increased spending on training new staff.

Methods: Through convenience sampling, participants were asked to complete a pre-intervention survey including a 36-question assessment exploring job satisfaction. After, participants were given a flyer instructing on different mindfulness techniques. Flyers were also available in the unit breakroom. Later, a post-intervention survey was distributed to participants on a convenience basis to see if mindfulness practice impacted job satisfaction.

Results: 11 members of the nursing staff participated; 6 completed the pre-intervention survey and 5 completed the post-intervention survey. The average pre-intervention satisfaction score was 146, indicating a satisfied attitude towards job satisfaction. The average post-intervention satisfaction score was 145 which also indicated a satisfied attitude towards job satisfaction.

Conclusions: Ultimately, there was no change in satisfaction scores following the mindfulness intervention. Though continued quality improvement is needed in this area, mindfulness practice in healthcare workers has the potential to be a low cost, easy method towards managing workplace stress.

Keywords: nurse, quality improvement, workplace satisfaction, mindfulness practice

Introduction

Being a nurse is not easy. The long hours, including holidays and weekends, the challenging patients, the emotional exhaustion, and the physical demands can all contribute to decreased job satisfaction and as a result, nurse burnout. As the single largest group of healthcare professionals, comprising a workforce of over 4 million in the United States, keeping nurses satisfied in their positions is a vital component of providing quality patient care (Perry et al., 2018). The large and complex nature of our healthcare system, as well as the continued aging of America, both require a robust nursing workforce, increasing the urgency to keep nurses in their positions and encouraging new nurses to enter the profession (Perry et al., 2018). The ongoing COVID-19 pandemic, which has seen increased patient ratios, staff shortages, and emotional fatigue, has only exacerbated the issue of nurse dissatisfaction.

It is estimated that 68% of nurses will experience significant job dissatisfaction at a point in their career (Ayalew et al., 2018). Decreased job satisfaction, and accompanying turnover, are often influenced by a number of factors, both individual and organizational. Individual factors include burnout, stress, sleep and weight disturbances, personal relationships, and marital status to name a few (Senek et al., 2020). It is important to note that many of these individual factors are dependent on larger organizational factors including ineffective management and commonly high-stress environments (Senek et al., 2020). But job dissatisfaction and nurse stress, two separate, but interrelated factors, have been found to be the most common determinants in turnover (Senek et al., 2020). Increased turnover is certainly not without consequences. Nurse turnover rates are estimated at 13-35% in the U.S. which can have serious financial implications as well as decreased care quality and poor patient outcomes (Perry et al., 2018).

Problem Description

The state of the specific microsystem had been high levels of dissatisfaction among nursing staff, specifically 78.4% of survey respondents reporting feeling negatively after a shift more than 50% of the time (Internal data, 2021). As a result, the microsystem had seen a 4% increase in turnover rate in 2021 compared with 2020 data (Internal data, 2021). Improvement in this area was vital, as further dissatisfaction can lead to even higher turnover and staff shortages on the unit.

One possible intervention was impacting stress levels through mindfulness. This technique has been utilized in the past to increase relaxation while promoting alertness and a greater sense of wellbeing. Though originally used in Eastern religions, mindfulness has seen increased use in Western practice and certainly has potential use for healthcare professionals. Mindfulness practice, specifically Mindfulness-Based Stress Reduction (MBSR) is a recognized tool to lower work-related stress and increase job satisfaction of nursing staff (Henry, 2014). Through the use of guided meditation, relaxation techniques, and emotional/physical awareness, it was suggested that nursing staff can learn how to approach stress and adversity in a more positive way. This process had the potential to teach staff to lessen their work-related stress, reframe negative experiences, and increase job satisfaction (Henry, 2014).

Available Knowledge

A search of available literature was conducted using PubMed, Cochrane Library, and Google Scholar. Phrases used were *mindfulness*, *mindfulness-based stress reduction*, *nursing*, *nursing* staff, *adult hospital setting*, *workplace satisfaction*, and *employee satisfaction*. Studies were omitted if published prior to 2017 to reflect current evidence-based practice. Other exclusion criteria included were studies differing in target population or intervention focus,

studies not in English, studies in which the full text could not be obtained, and studies without

peer-review. Studies were included if they focused on the target population of clinical nurses in

the adult hospital setting and the target intervention of mindfulness-based stress reduction

(MBSR). Furthermore, included studies were required to be in the English language, published

after 2017, and have full-text availability. It is worth noting that many included studies utilized

mindfulness as the target intervention, but also measured other variables related to employee

satisfaction such as burnout, stress, and anxiety.

Mindfulness in Nursing: Systematic Review 1

A systematic review by Guillaumie, Boiral, and Champagne (2017) aimed to appraise the

available literature on mindfulness and its effects on clinical nurses. This was a mixed-methods

review, analyzing both controlled and uncontrolled trials, along with qualitative studies that

examined nurse' opinions of mindfulness interventions both during and after participation

(Guillaumie, Boiral, and Champagne, 2017). In total, 32 studies were included for review. The

review found that studies followed the effects of mindfulness on 13 psychological variables,

most commonly anxiety, depression, and stress and less commonly burnout, work satisfaction,

work efficiency, and work energy (Guillaumie, Boiral, and Champagne, 2017). Meta-analysis

suggested that mindfulness training can significantly impact mental health, specifically reducing

depression and anxiety, but showed no substantial impact on work satisfaction (Guillaumie,

Boiral, and Champagne, 2017). Limitations included the small number of randomized control

trials available for meta-analysis, which left little opportunity to statistically measure

interventional data against a control. The systematic review concluded that though the analysis

showed promising data on the impact of mindfulness on anxiety, depression, and stress, "future

research is needed to better understand the long-term impacts of mindfulness on work performance and work satisfaction" (Guillaumie, Boiral, and Champagne, 2017, p. 1029).

Mindfulness in Nursing: Systematic Review 2

A more recent systematic review was carried out by Sulosaari, Unal, and Cinar in 2022. Following *PRISMA* protocol, the review included 11 randomized control trials and quasi-experimental studies, totaling 1009 participants (Sulosaari, Unal, and Cinar, 2022). Outcome measures included stress, anxiety, depression, resilience, job satisfaction, burnout, quality of life, self-compassion, and happiness (Sulosaari, Unal, Cinar, 2022). The review concluded that mindfulness-based interventions "have the potential to enhance the well-being of nurses by decreasing anxiety and depression, and increasing awareness, self-compassion, and resilience" (Sulosaari, Unal, Cinar, 2022, p. 8). However, mindfulness was found to have essentially no impact on job satisfaction (Sulosaari, Unal, and Cinar, 2022). The study explained that job satisfaction includes multiple factors, and the traditional 8-12 week mindfulness training may be too brief to cause a measurable change (Sulossari, Unal, and Cinar, 2022). Limitations for this review are largely due to the small number of studies conducted in this research area. It is clear that more randomized control trials with standardized outcome measures to allow for ease of comparison are needed in this area (Sulossari, Unal, and Cinar, 2022).

Mindfulness Impacting to Stress, Anxiety, Depression, and Job Satisfaction: Randomized Control Trial (RCT)

A study conducted by Ghawandra et al. investigated mindfulness training and its impact on job satisfaction as well as other job-related stress indicators in nurses working in adult acute care units in a large, urban hospital in Malaysia. Nurses reporting job-related stress, anxiety, and depression were invited to participate in a randomized control trial. The intervention group

"attended a 2-hour mindfulness-based training workshop followed by four weeks of self-guided mindfulness training via online modules" (Ghawandra et al., 2020, p. 1090). The intervention and control group were evaluated before and after the intervention using the *Depression, Anxiety, and Stress Scale, Job Satisfaction Scale, and Mindful Attention Awareness Scale* (Ghawandra et al., 2020). The study found increased job satisfaction in 19% of intervention participants as well as 32.4% reporting decreased stress, 26.2% reporting decreased anxiety, and 23.9% reporting decreased depression (Ghawandra et al., 2020). Ghawandra et al. (2020) concluded that "mindfulness-based training is effective in improving anxiety and job satisfaction among nurses" and that mindfulness-based training has the potential to be integrated into hospital training (p. 1091). Some considerations to note included the fact that this randomized control trial was conducted at a single facility across three units. Satisfaction data could be skewed due to the individual culture of the facility. Perhaps this facility promotes a particularly positive or negative workplace culture, leaving the results difficult to generalize. Furthermore, this study was conducted in Malaysia and due to cultural and professional differences in the nursing profession, results may differ in other areas of the world which limits generalizability.

Modified MBSR Impacting Stress, Resilience, and Job Satisfaction: RCT

In a study conducted by Lin et al., 110 participants from adult units in two tertiary-level general hospitals in mainland China enrolled in a randomized control trial. The intervention group attended a weekly 2-hour MBSR seminar for 8 weeks. The study measured baseline data using the *Perceived Stress Scale*, *Positive and Negative Affect Schedule*, *Connor-Davidson Resilience Schedule*, and *McCloskey/Mueller Satisfaction Scale* (Lin et al., 2019). These questionnaires were repeated immediately after the intervention and at a three month follow-up. Lin et al. (2019) found "significant improvement in perceived stress, negative affect, and

resilience immediately after the intervention and at the three month follow-up" (p. 120). In regards to job satisfaction, the study found "no significant improvement immediately after the intervention or at the three month follow-up" (Lin et al., 2019, p. 120). Lin et al. (2019) believes this is "because job satisfaction is a very complex and multifactorial construct that a modified MBSR program may not sufficiently improve in a short period of time" (p. 121). This study is limited due to the small sample size (n=90), a larger randomized control trial may yield more representative data. Also, similar to the above mentioned study, due to cultural differences, this data may not be representative of nurses of different countries. The study claimed that this program has the potential to be implemented in health promotion plans for nursing professionals.

Mindfulness Impacting Burnout and Job Satisfaction: Quasi-Experimental, Correlational Study

A "quasi-experimental, longitudinal, pretest and posttest, correlational study" was performed by Penque in 2019 (p. 38). The participants were sampled from a mid-sized tertiary care hospital in the rural United States. This study aimed to determine the "effects of MBSR on empathy, self-compassion, serenity, job satisfaction, and burnout" (Penque, 2019, p. 40). The 61 total participants completed a pretest phase consisting of a number of survey metrics including the *Brief Mindfulness Inventory, Self-Compassion Scale, Brief Serenity Scale, Index of Work Satisfaction, and Maslach Burnout Inventory* (Penque, 2019). Participants completed an 8-week MBSR program led by a licensed family therapist. Posttest data was collected immediately after the intervention and again three months later. Penque (2019) concluded that the intervention did lessen burnout of participants, while also increasing self-compassion and serenity, but there was little impact on work satisfaction from baseline data. This study was limited due to the fact that there was not a control group and therefore had less opportunity for comparison. Also, the study

was carried out at a single facility, questioning the validity of the results. Finally, the study had a relatively low number of participants. Penque (2019) concluded with the suggestion that MBSR programs may be useful in "reducing work-related stress" (p. 44).

Mindfulness Impacting Job Satisfaction, Positive Affect, and Resilience: Correlational Study

In 2019, Lin, Liu, and He enrolled 1,043 clinical nurse participants across five hospitals in urban areas of mainland China. The correlational study aimed to investigate the relationship between mindfulness practiced in daily life and job satisfaction as well as the roles of positive affect and resilience (Lin, Liu, and He, 2020). Self-report questionnaires were utilized to gather data on the four variables. Through Pearson's correlation analysis, Lin, Liu, and He found "mindfulness to have a positive effect on job satisfaction" (2020, p. 52). The positive correlation was found "due to the mediating role of positive affect and resilience" (Lin, Liu, and He, 2020, p. 50). This study is not without its limitations. First, without an intervention method, the positive correlation between mindfulness and job satisfaction cannot be directly attributed to mindfulness practices. Perhaps other factors were at play. Also, self-report questionnaires could be at risk for response bias. Perhaps mostly dissatisfied employees participated in the survey. Finally, the study was conducted in China where cultural differences may exist compared to nurses in other parts of the world. This study did have a large sample pool, which lends more credibility to the results. The study claimed that mindfulness has real world applications, and that "nurse managers should recognize the importance of mindfulness and incorporate mindfulness training into health promotion and employee management plans for hospital nurses (Lin, Liu, and He, 2020, p. 52).

Mediating Factors of Trait Mindfulness and Job Satisfaction: Cross-Sectional Study

A 2018 quantitative, cross-sectional research study by Raza et al. explored the relationship between trait mindfulness and job satisfaction with the mediating role of work-family balance and the moderating role of work-family conflict. 306 nurses working in public-sector hospitals in a large city in Pakistan were recruited for participation (Raza et al., 2018). A questionnaire was distributed seeking information regarding "trait mindfulness, work-family balance, work-family conflict, job satisfaction, and turnover intention" (Raza et al., 2018, p. 14). The study concluded that trait mindfulness was associated with higher job satisfaction, and lower turnover intention (Raza et al., 2018). Also, it was found that trait mindfulness and job satisfaction were mediated by work-family balance (Raza et al., 2018). The study concluded that "mindfulness is a beneficial concept for organizations" and some proposed interventions are to "add recruitment tests to check candidates ability for mindfulness, as well as implementing training to improve capacity for mindfulness in current employees" (Raza et al., 2018, p. 15). This study was limited due to the self-reported nature of the questionnaire, which could lead to response bias. Also, without the use of a control group, it can be difficult to relate the correlation directly to trait mindfulness. Finally, the study was carried out in public-sector hospitals in one country, which may limit generalizability.

Mindfulness, Job Satisfaction, and Teamwork: Retrospective Study

A retrospective study was carried out by Monroe et al., in 2021. The aim of the study was to analyze job satisfaction and teamwork after the *Project7* program was implemented in a 25-bed observation acute care unit compared to other units that had not implemented *Project7* (Monroe et al., 2021). *Project7* is a "mindfulness intervention that includes a voluntary mindfulness pledge aimed at improving job satisfaction and teamwork . . . it seeks to develop

internal self-awareness, emotional intelligence, and strives to maintain connection and appreciation of others by enhancing relationships within a team" (Monroe et al., 2021, p. 190). Data was compared against six other units for a total of 23 responses. The study determined that the *Project7* unit had "significantly higher scores in job enjoyment compared to all other acute care units" (Monroe et al., 2021, p. 192). In terms of teamwork, the *Project7* unit did not have the highest score when compared to the other units (Monroe et al, 2021). This study is not without its limitations. The retrospective nature does not allow for pretest and posttest, limiting control of variables. Furthermore, the sample size was relatively small which could lead to data being biased or skewed. The study concluded that *Project7* is a relatively easy and low-cost method to improve job satisfaction and teamwork (Monroe et al., 2021).

Evaluation

There is significant available evidence on the link between mindfulness and increased job satisfaction. The data suggested there may be a correlation between mindfulness and job satisfaction, but there is certainly space for more quality improvement on the subject, especially with mindfulness as the sole variable. It was largely determined that mindfulness can improve anxiety, depression, stress, and other psychological factors, but its relationship with job satisfaction can be further studied. Ideally, longitudinal randomized control trials would most accurately capture the complexity of job satisfaction and its relationship with mindfulness over time. Pretest and posttest measures would also be needed to compile baseline data and compare to intervention data. A large sample pool would also be needed to control for response bias. Though the studies reviewed varied in their results, most concluded that mindfulness training had real world application for clinical nurses in wellness and workplace training programs.

Implications for Quality Improvement

As previously stated, the available evidence showing a relationship between mindfulness training and job satisfaction was rather contradictory. Some studies showed a negligible correlation between the two factors, while others showed inconclusive data. Many past studies have analyzed mindfulness with a variety of other factors, including job satisfaction, but very few have specifically investigated mindfulness and job satisfaction alone. This certainly alluded to a need for further focused quality improvement in this area. A targeted mindfulness intervention paired with job satisfaction measurements was needed. More targeted investigation could have produced an alternative solution to nurse turnover, perhaps saving healthcare institutions millions of dollars while improving quality of care.

Rationale

The PDSA model (Plan, Do, Study, Act) was used to guide this project as job satisfaction is a multifaceted issue and it is possible that one cycle of PDSA may not adequately impact the problem.

Plan

In this section of PDSA, the problem was defined, as well as the undesired current state and the desired outcome in the future state. This also included assessing the context of the problem, possible successful interventions, and the measures needed to study the proposed intervention.

Do

The *Do* section of PDSA required carrying out of the proposed intervention and collecting data based on the plan. Also during this phase, it was important to track any unexpected problems or interesting observations to later reflect upon.

Study

During the *Study* phase, it was important to analyze the gathered data to see if the proposed intervention resulted in the desired outcome or if there was no change at all. This is also where the data is analyzed for unplanned effects of the intervention and any data trends. Data analysis tools were used in this section to determine if the change was caused by the intervention and to what degree.

Act

In this stage, we learned from either our success or failure and return back to *Plan* to accomplish further improvement cycles and hopefully move the needle on the desired problem.

Specific Aims

The purpose of this project specifically was to focus on workplace satisfaction of nursing staff. Through the implementation of mindfulness-based stress reduction (MBSR), components such as meditation, yoga, body awareness, behavioral awareness, and emotional awareness were aimed to improve workplace satisfaction (Henry, 2014). Current state satisfaction metrics in the microsystem included 78.4% of unit respondents reporting feeling negatively after working a shift more than 50% of the time (Internal communication data, 2021). Satisfaction rates were targeted through mindfulness exercises in self-confidence, patience, personal relationships, communication, stress, empathy, compassion, and self-care (Cohen-Katz, 2005). Nursing staff participants were presented with mindfulness and stress reduction techniques to improve workplace satisfaction. Specifically, this intervention aimed for less than 25% of participants to report feeling negatively after working a shift more than 50% of the time by July 1st, 2022.

Methods

Cost-Benefit Analysis

The cost of implementing the proposed mindfulness-based stress reduction (MBSR) program was virtually none. Complete programs including lesson plans, exercises, and independent study were available online at no cost. This study used a modified version of the *Palouse Mindfulness* program which was created by a certified MBSR instructor and retired psychotherapist (Potter, 2022). Of course time was needed to be invested in this intervention on the part of the investigator and the assembled participants. Participation were to be incentivized with a chance to win an Amazon gift card.

If this MBSR program were implemented on a larger, longitudinal style and carried out by a trained instructor such as a psychotherapist or counselor, the associated hourly rate would apply. In an 8-week program, the cost of employing a licensed counselor for the 2-4 hour weekly practice would be in the range of $1,200-1,800, calculated based on average hourly rate in New Hampshire and Massachusetts (Bureau of Labor Statistics, 2021).

Operating on the theory that decreased job satisfaction is associated with increased turnover (Gebregziabher et al., 2020), the benefit of lessening turnover intention would far outweigh the negligible cost of implementation. According to the National Healthcare Retention & RN Staffing Report, "each percentage change in nursing turnover will cost (or save) the average hospital an additional $328,400" (Shaffer and Curtin, 2020, p. 57). The financial implications associated with high nursing turnover, including hiring and training new staff, costs an average hospital $4.4 million to $6.9 million annually (Shaffer and Curtin, 2020).

Intervention

      Participants were selected on a convenience basis, meaning those present on the day(s) of data collection will be asked to participate. To summarize, the intervention was carried out first with a pre-intervention survey regarding stress and job satisfaction. A QR code was to have been distributed to nursing staff participants to allow for quick, simple access to the survey. This allowed for participants to complete the survey after their shift or during break time. After the pre-intervention satisfaction survey, participants were to be directed to a brief, self-paced module teaching skills and exercises related to mindfulness-based stress reduction. The module completion was estimated to be 30 minutes and was to be available through a smart phone or computer. Following the mindfulness module, participants were to provide a valid email for the post-intervention survey. 1-2 weeks later, participants were to be emailed a Qualtrics link to complete the post-intervention survey to see if the tools taught in the mindfulness module impacted job satisfaction. Participant responses were to be discounted if the post-intervention survey was not completed. Those included in the project were the researcher, the participants, and the nurse manager who gave approval of the survey method and questions.

Study of the Intervention

      The impact of the intervention was to have been studied via post-intervention survey. After completing the pre-intervention survey and completing the mindfulness module, participants were to have been instructed to complete a post-intervention survey identical to the pre-intervention survey. In theory, through statistical analysis, this would measure if there were any changes in job satisfaction, and if the mindfulness intervention was impactful.

Measures

A modified version of Spector's *Job Satisfaction Survey* was to be used for pre- and post-intervention data as shown in Appendix A. Demographic questions were added regarding trait mindfulness practice as well as the type of practice used, and years of experience in the nursing profession. The *Job Satisfaction Survey* was created in 1997 by Paul E. Spector of the University of South Florida. The survey was chosen because of its wide use in public and private sector settings as well as its relatively brief length (Batura et al., 2016). It consists of nine elements, *pay, promotion, supervision, benefits, contingent rewards, operating procedures, coworkers, nature of work, and communication* for a total of 36 questions (Spector, 1997, p. 8). This survey was to quantify participant responses so they could be classified as satisfied, dissatisfied, or ambivalent. Participants were to select answers based on a 6 point Likert scale ranging from *disagree very much* to *agree very much*. *Disagree very much* corresponded to 1 point, *disagree moderately* corresponded to 2 points, and so on. In the total survey, scores ranged from 36 to 108 would indicate a dissatisfied participant, scores of 109 to 144 would indicate an ambivalent participant, and scores of 145 to 216 would indicate a satisfied participant (Spector, 1997). It is important to note that to standardize scoring of negatively worded items, some responses were to be scored opposite to the scale. For example, item 2 in the satisfaction survey (Appendix A) *There is really too little chance for promotion on my job*, *disagree very much* or 1 would be the most positive answer. In scoring these questions, the scale was to be reversed, meaning a rating of *disagree very much* or 1 would really be *agree very much* or 6 (Spector, 1997).

Confirmatory factor analysis of Spector's Job Satisfaction Survey found that the comparative fit index (CFI) and goodness of fit index (GFI) were 0.951 and 0.946, respectively (Tsounis and Sarafis, 2018). CFI and GFI values near 0.95 indicate a good fit of the data

(Tsounis and Sarafis, 2018). In terms of reliability, Cronbach alpha coefficient for the satisfaction scale is 0.87, indicating *good* internal consistency (Tsounis and Sarafis, 2018).

Analysis

Statistical analysis was to be performed in the form of a t-test. Because the same participants were to be evaluated pre- and post-intervention, a t-test would help determine if the mindfulness module had any significant impact on average satisfaction score. In this instance, a t-test would determine if there is a significant difference in the average satisfaction score in pre- and post-intervention phases. Through this analysis, it would be determined if the mindfulness intervention had any impact, or if differences were due to normal statistical variance. Descriptive statistical analysis would be conducted for continuous data gathered for the 36-item pre- and post-intervention Job Satisfaction Survey, as well as total satisfaction scores. This would illustrate central tendency and data spread for the job satisfaction totals.

Ethical Considerations

Participation was to be on a voluntary basis, and participants would complete informed consent prior to the beginning of the pre-intervention survey. Participants would also be informed that their results are anonymous and confidential.

Participation was to be incentivized with a chance to win a $25 gift card to a local coffee shop, bakery, or restaurant. Incentivizing participation was also an ethical consideration. It is entirely possible that participants were willing to join because of the possibility of a reward. Furthermore, it is possible that participants who experience low job satisfaction would be more likely to partake in the project.

This proposal was reviewed by the UNH Department of Nursing to attest its basis in quality improvement. Due to this review, this proposal is exempt from IRB review.

Results

Results

Initial Steps

Data collection was carried out over a one week period from June 8th to June 15th of 2022. During the pre-intervention phase, nursing staff were asked on a convenience basis to complete the pre-intervention survey. Following the pre-intervention survey, a mindfulness tools flyer was distributed to available staff as well as posted on the unit breakroom bulletin board. Later in the week, post-intervention survey data was collected also on a convenience basis.

Modifications

A few modifications were made to the intervention prior to implementation. First, the mindfulness self-guided module was replaced by a mindfulness flyer (Figure 1) describing different tools to incorporate mindfulness into regular practice. This was modified from a module to a flyer in the interest of time. A module would require significantly more time for participants to complete, which may deter participation. Furthermore, a flyer allowed for easier distribution to staff throughout the unit. Spector's *Job Satisfaction Survey* was also modified, with permission, from its original publication to allow for ease of completion and scoring. All item responses were reworked to reflect least positive answers as a 1 and most positive answers as a 6. A higher score indicated a more satisfied participant and a lower score indicated a less satisfied participant. Incentivization via gift card was also abandoned. This was decided due to logistical difficulties regarding how to enter participants to win the proposed gift card while still maintaining anonymity. Due to the sensitive nature of job satisfaction data, it was decided that prioritizing anonymity over incentivization was necessary.

Process Measures and Outcomes

For both the pre-intervention and post-intervention survey, a QR code was distributed

which allowed for participants to be easily directed to the survey. This also allowed for survey

completion at a time convenient for participants. In total, 13 nurses participated in the project; 6

participated in the pre-intervention survey and 7 participated in the post-intervention survey.

Two responses were omitted from post-intervention data due to declination of informed consent,

therefore data from 11 participants was analyzed.

Table 1

Demographics and Survey Results

Demographic Data	Total Sample (N=6) *n* (%) Pre-intervention	Total Sample (N=5) *n* (%) Post-intervention
Years of experience		
0 to 5	4 (66.7)	3 (60)
6 to 10	1(16.7)	2 (40)
11 to 15	1 (16.7)	0 (0)
16 to 19	0 (0)	0 (0)
20+	0 (0)	0 (0)
Past use of mindfulness		
Yes	4 (66.7)	4 (80)
No	2 (33.3)	1 (20)
Practices used in past (multiple answers allowed)		
Meditation	3	4
Breathing Methods	3	2
Guided Imagery	1	4
Other	0	0
Frequency of mindfulness use		
Never	3 (50)	0 (0)
Rarely	2 (33.3)	0 (0)
Sometimes	1 (16.7)	3 (60)
Often	0 (0)	2 (40)
Feeling negatively after a shift more than 50% of the time Yes		
No	2 (33.3)	2 (40)
	4 (66.7)	3 (60)

Diving into the job satisfaction data, participants answered the 6-point Likert Scale survey in which total scores were interpreted per authors' composite scoring instructions; scores ranging from 36 to 108 indicated a dissatisfied participant, scores of 109 to 144 indicated an ambivalent participant, and scores of 145 to 216 indicated a satisfied participant (Spector, 1997). Pre-intervention survey yielded a mean composite satisfaction score of 146 (SD 26.2, Range 36-216). According to survey scoring, this would indicate an average answer of *satisfied*. Post-intervention participants completed an identical survey which yielded a mean composite satisfaction score of 145 (SD 23.8, Range 36-216). According to scoring, this indicated an average answer of *satisfied*.

Table 2

Job Satisfaction Survey Results

Variable	Composite Mean (M)	Standard Deviation (SD)	Range	Classification
Pretest Satisfaction Scores (N=6)	146	26.2	36-216	Satisfied
Posttest Satisfaction Scores (N=5)	145	23.8	36-216	Satisfied

Contextual Elements and Observed Associations

Due to the fast-paced and at times understaffed nature of the unit, encouraging high participation was difficult. Many nursing staff accepted a QR code and voiced their intention to complete the survey at a later time, but ultimately were not able. Perhaps due to their lengthy and busy shifts, staff aimed to complete the survey, but either forgot, misplaced their QR codes or decided against participation. Competing priorities is certainly a challenge when attempting to obtain data from a busy unit.

Through the use of an unpaired t-test, the p-value was found to be 0.9201, greater than

the 0.05 α level. Mindfulness practice was not found to impact job satisfaction.

CI	df	SE	T Value	P Value
95%	10	15.223	0.1029	0.9201

Interestingly, previous use of mindfulness practice was found to be more common in

novice nurses (0 to 5 years of experience) than experienced nurses (greater than 6 years of

experience), comprising 50% of pre-intervention participants and 60% of post-intervention

participants.

Unintended Consequences

Despite best efforts, achieving a high response rate was difficult. In total, 40-50 survey

QR codes were distributed with 11 responses used for analysis. Furthermore, it is unclear

whether omitting the gift card aspect helped or hindered response rate.

More positively, the distributed flyer did foster a few small conversations between nurses

about mindfulness practice, including the sharing of meditation techniques and past experiences.

Increased dialogue, no matter the size, is seen as a benefit.

One specific incident included a staff nurse showing a relaxation app on her smartphone

to another nurse, including the functionality and her favorite guided meditations. She encouraged

her surrounding coworkers to try the free trial and included that it helped her during stressful

times such as the Covid-19 pandemic.

Missing Data

As previously stated, two post-intervention surveys were discounted due to

incompleteness, including rejection of informed consent. Rejection of informed consent prevents

the investigator from including any associated data from the participants.

Discussion

Summary

Key Findings

The overall key findings included that mindfulness caused no specific change in job satisfaction in nurses on an adult medical-surgical unit. Furthermore, data revealed that nurses with less experience were more likely to utilize mindfulness practice in some capacity.

Though data did not show an association between mindfulness practice and job satisfaction, only one cycle of the Plan, Do, Study, Act model was carried out. It was anticipated that impacting job satisfaction would not be feasible with only one cycle of change. Job satisfaction is a complex issue with many interrelated factors, and it was unlikely that a meaningful impact could be achieved through one improvement cycle. From here, alterations can be made to the improvement project the hopefully move the needle on the issue.

This quality improvement project aimed to decrease the percentage of nurses feeling negatively after working a shift more than 50% of the time from 78.4% to less than 25%. Interestingly, pre-intervention data showed 33.3% of participants reporting feeling negatively after a shift more than 50% of the time. Post-intervention data revealed 40% of participants reporting feeling negatively after a shift more than 50% of the time. Perhaps due to the small sample size, the group was not representative of the feelings of the unit when compared with the assessment completed during the problem description phase. It is also possible that staff satisfaction had increased through other efforts since the collection of satisfaction data reported almost a year ago or, perhaps feeling negatively after a shift is not as closely related to job satisfaction as initially thought. It is possible multiple other variables are at play.

Strengths of the Project

Though the number of participants was less than ideal, the data collected still provided insight into staff satisfaction and the use of mindfulness practice by nursing staff. Perhaps the most profound strength of the quality improvement project is the conversations generated from data collection. When learning about the aim of the project, many participants entered into discussions regarding their use of mindfulness as well as other methods used to relieve stress and improve mental health. Methods to note included taking breaks outside, sharing meals with coworkers, and integrating physical activity into their regular schedules. Though the intervention may not have impacted workplace satisfaction, shedding light on the issue and generating conversation can still be valuable.

Interpretation

The data collected during the implementation phase of this project showed no significant change in job satisfaction after the mindfulness intervention. Available studies analyzing the linkage between mindfulness practice and job satisfaction are limited. Current literature shows a measurable relationship between mindfulness and other factors such as anxiety, depression, and stress, but very little data exists regarding job satisfaction. Some of the available literature shows an established relationship between mindfulness practice and job satisfaction (Henry et al., 2014; Ghawandra et al., 2020). Others show a weak relationship between the two variables (Raza et al., 2018). More commonly the literature expresses no relationship between the two factors (Penque, 2019; Lin et al., 2019). Systematic reviews in this area show limited results in the relationship between mindfulness and job satisfaction, but further research is needed (Guillaumie, Boiral, & Champagne, 2017). Results obtained during this quality improvement project are more congruent

with the majority of data collected on this subject, but leaves room for further investigation into the relationship between the specific variables.

Though the project did not have a measurable impact on its participants or the targeted system, it did spark conversations regarding mindfulness practice as well as teach nursing staff different mindfulness techniques. Though the project did not reach as many participants as desired, encouraging the addition of mindfulness practice into the routines of just a few nurses is positive. Perhaps the impact is further reaching than is measurable. The mindfulness flyer was posted in the breakroom where all staff could see. It is possible that other staff members, who were not necessarily participants, read the flyer and learned something new. Though this is not measurable, it could have positively impacted the greater system.

One major reason for differences between the observed and anticipated outcome is participation. It is possible that this project could have uncovered a tangible relationship between mindfulness and job satisfaction had there been more participants. The chief contextual element to blame in this instance is competing priorities in the microsystem. High participation was difficult to achieve when competing with the time dedicated to patient care. Often staff members were simply too busy to participate. But this is the nature of the microsystem, and perhaps with more time and resources, higher participation would be attainable.

Furthermore, outcomes may have differed from those anticipated due to the complex nature of job satisfaction. Numerous factors can interact to affect job satisfaction, including stress management and mindfulness (Lin et al., 2019). It is possible that tackling mindfulness alone was not sufficient to adequately impact job satisfaction.

Although no direct savings can be attributed to the project, there is great potential in educating nursing staff about mindfulness. If only a handful of staff learn to incorporate

mindfulness into their daily life and better cope with stress, it is possible they can achieve improved satisfaction and remain in their position. The cost of implementing a mindfulness in-service or incentivizing other stress reduction techniques pale in comparison to the anticipated costs of high turnover.

Limitations

This quality improvement project was certainly not without its limitations. The most prominent factors related to internal validity were participation, funding, and time. As addressed previously, the relatively low participation rate was limiting to the results. It is possible that due to the low participation rate, the data collected did not adequately capture the problem and therefore did not show a relationship between mindfulness practice and job satisfaction. Perhaps with a larger group of participants, the data may have revealed more definitive trends.

Funding and time were also limiting factors. With more resources, participation could have been incentivized, yielding higher rates of participation. Furthermore, previous successful projects in this area obtained favorable results through long-term mindfulness training conducted by a professional (Sulosari, Unal, and Cinar, 2022). Due to constraints in funding as well as the brief timeframe allowed for this project, full-time longitudinal mindfulness interventions were not possible.

The single focus of the intervention may also have been a limitation. As previously mentioned, job satisfaction is a complex, multifaceted problem with both internal and external factors at play. Pay, time off, coworkers, superiors, healthcare demand, patient acuity, staffing shortages, personal issues, mental health, as well as stress management can all interact to affect overall job satisfaction. Focusing on just one factor, stress management as leveraged by mindfulness interventions, may not have accurately captured the solution to the problem.

Furthermore, it is possible that these factors could differ in their effect on job satisfaction depending on the individual as well as depending on the day the individual is surveyed. It's possible that a participant was surveyed on a particularly high-acuity day with inadequate staffing. They may have produced a lower satisfaction score because it was a stressful day compared to a different day with lower-acuity patients and adequate staffing. Work satisfaction can be highly individual and variable.

Response bias could have also been a limiting factor. It is possible that participants chose to partake in the survey if they had strong positive or negative job satisfaction. This could have skewed the central tendency of the data. Also, selection bias is possible to have occurred. Nursing staff were asked to participate on a convenience basis. It is likely that due to this sampling rather than random sampling provided a participant pool that was not representative of the overall target population, which limits generalizability.

Finally, the internal validity was limited due to shortcomings of the intervention. The design focused on different pre- and post-intervention groups, with the assumption that the post intervention group had seen the mindfulness flyer and changed their habits to incorporate mindfulness more often into their daily practice. Because of the use of different pre- and post-intervention groups, it is difficult to determine if any changes in practice were due to the mindfulness flyer or other factors. Perhaps participants had seen the flyer and altered their habits, or perhaps they had utilized mindfulness practice on their own volition, as typical with nurses who have been in practice less than five years.

Due to these factors affecting internal validity, this project has limited generalizability. If it were repeated, many modifications would be appropriate such as the use of a paired pre-intervention and post-intervention group undergoing long-term mindfulness training conducted

by a professional. This would be an area for further PDSA cycles. Ideally, participants would be systematically interviewed post-intervention to elaborate on any personal challenges or benefits they found in the project.

Some efforts were made to minimize the limitations of this project. For example, initially the project aimed to follow a longitudinal model for data collection, following the same pre- and post-intervention group. This was ultimately abandoned due to constraints in maintaining anonymity. It was determined that maintaining anonymity while exploring the sensitive subject of job satisfaction was more valuable than following a longitudinal design. It is unclear whether this helped or hindered data integrity.

Also, the project initially incentivized participation by offering a chance to win an Amazon gift card with completion of the pre- and post-intervention survey, but again maintaining anonymity while contending with the logistics of issuing a gift card proved challenging. The gift card idea was ultimately abandoned.

The intervention design was also modified to include a mindfulness flyer rather than a mindfulness module. Though a mindfulness module had the ability to include more information and further educate participants on mindfulness practice, it was thought that participation would increase if the intervention was less time-consuming.

Conclusions

Though this quality improvement project was not without its limitations, this work is still useful as it highlights an important area in need of attention in the nursing profession. Though the project did not find a direct relationship between mindfulness and job satisfaction, it did shed light on the issue and leave room for further, more in-depth research on the subject.

Despite the lack of a direct relationship between the two variables, similar interventions

to the one explored have produced favorable results in their impact on job satisfaction (Henry et al., 2014; Ghawandra et al., 2020). Due to its relative ease of completion and low cost of implementation, incorporating mindfulness training into functional microsystems can be sustainable. Perhaps a routine in-service regarding mindfulness practice, or incentives for utilizing mindfulness-focused smartphone apps are easy, quick methods for encouraging attention to mental health, improving stress management, and perhaps improving job satisfaction.

This area of quality improvement has the potential for reach to other contexts like other departments within health care systems, and even other fast-paced, stressful environments. Teachers, service workers, emergency response workers, and many others can employ mindfulness practice if not to improve job satisfaction, then to at least better manage some of the stress generated from their jobs or even from their personal lives.

The results available from this project imply further quality improvement in this area is necessary to determine if there is a concrete relationship between mindfulness and job satisfaction, or if other variables are more at play. From here, appropriate next steps would be to return to the *Plan* phase and begin assessing the microsystem for other factors that could impact workplace satisfaction. A longer duration and more in-depth intervention may help uncover a relationship unable to be found in this project.

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Appendix A

Job Satisfaction Survey (Spector, 1997)

	JOB SATISFACTION SURVEY Paul E. Spector Department of Psychology University of South Florida Copyright Paul E. Spector 1994, All rights reserved.						
	PLEASE CIRCLE THE ONE NUMBER FOR EACH QUESTION THAT COMES CLOSEST TO REFLECTING YOUR OPINION ABOUT IT.	Disagree very much	Disagree moderately	Disagree slightly	Agree slightly	Agree moderately	Agree very much
1	I feel I am being paid a fair amount for the work I do.	1	2	3	4	5	6
2	There is really too little chance for promotion on my job.	1	2	3	4	5	6
3	My supervisor is quite competent in doing his/her job.	1	2	3	4	5	6
4	I am not satisfied with the benefits I receive.	1	2	3	4	5	6
5	When I do a good job, I receive the recognition for it that I should receive.	1	2	3	4	5	6
6	Many of our rules and procedures make doing a good job difficult.	1	2	3	4	5	6
7	I like the people I work with.	1	2	3	4	5	6
8	I sometimes feel my job is meaningless.	1	2	3	4	5	6
9	Communications seem good within this organization.	1	2	3	4	5	6
10	Raises are too few and far between.	1	2	3	4	5	6
11	Those who do well on the job stand a fair chance of being promoted.	1	2	3	4	5	6
12	My supervisor is unfair to me.	1	2	3	4	5	6
13	The benefits we receive are as good as most other organizations offer.	1	2	3	4	5	6
14	I do not feel that the work I do is appreciated.	1	2	3	4	5	6
15	My efforts to do a good job are seldom blocked by red tape.	1	2	3	4	5	6
16	I find I have to work harder at my job because of the incompetence of people I work with.	1	2	3	4	5	6
17	I like doing the things I do at work.	1	2	3	4	5	6
18	The goals of this organization are not clear to me.	1	2	3	4	5	6

		Disagree very much	Disagree moderately	Disagree slightly	Agree slightly	Agree moderately	Agree very much
	PLEASE CIRCLE THE ONE NUMBER FOR EACH QUESTION THAT COMES CLOSEST TO REFLECTING YOUR OPINION ABOUT IT. Copyright Paul E. Spector 1994, All rights reserved.						
19	I feel unappreciated by the organization when I think about what they pay me.	1	2	3	4	5	6
20	People get ahead as fast here as they do in other places.	1	2	3	4	5	6
21	My supervisor shows too little interest in the feelings of subordinates.	1	2	3	4	5	6
22	The benefit package we have is equitable.	1	2	3	4	5	6
23	There are few rewards for those who work here.	1	2	3	4	5	6
24	I have too much to do at work.	1	2	3	4	5	6
25	I enjoy my coworkers.	1	2	3	4	5	6
26	I often feel that I do not know what is going on with the organization.	1	2	3	4	5	6
27	I feel a sense of pride in doing my job.	1	2	3	4	5	6
28	I feel satisfied with my chances for salary increases.	1	2	3	4	5	6
29	There are benefits we do not have which we should have.	1	2	3	4	5	6
30	I like my supervisor.	1	2	3	4	5	6
31	I have too much paperwork.	1	2	3	4	5	6
32	I don't feel my efforts are rewarded the way they should be.	1	2	3	4	5	6
33	I am satisfied with my chances for promotion.	1	2	3	4	5	6
34	There is too much bickering and fighting at work.	1	2	3	4	5	6
35	My job is enjoyable.	1	2	3	4	5	6
36	Work assignments are not fully explained.	1	2	3	4	5	6

Permission to Use Job Satisfaction Survey

Paul Spector <paul@paulspector.com>

To: Abigail Isenberg

Thu 6/2/2022 7:06 AM

Dear Abigail:

You have my permission to use the original JSS in your research. You can find copies of the scale in the original English and several other languages, as well as details about the scale's development and norms, in the Paul's No Cost Assessments section of my website: https://paulspector.com. I allow free use for noncommercial research and teaching purposes in return for sharing of results. This includes student theses and dissertations, as well as other student research projects. Copies of the scale can be reproduced in a thesis or dissertation as long as the copyright notice is included, "Copyright Paul E. Spector 1994, All rights reserved." Results can be shared by providing an e-copy of a published or unpublished research report (e.g., a dissertation). You also have permission to translate the JSS into another language under the same conditions in addition to sharing a copy of the translation with me. Be sure to include the copyright statement, as well as credit the person who did the translation with the year.

The JSS-2 is an improved commercial version for which there is a fee as explained here: https://paulspector.com/assessments/job-satisfaction-survey-2/.

For additional assessment resources including an archive of measures developed by others, check out the assessment section of my website for organizational measures https://paulspector.com/assessments/ and my companion site for general and mental health measures: https://www.stevenericspector.com/mental-health-assessment-archive/
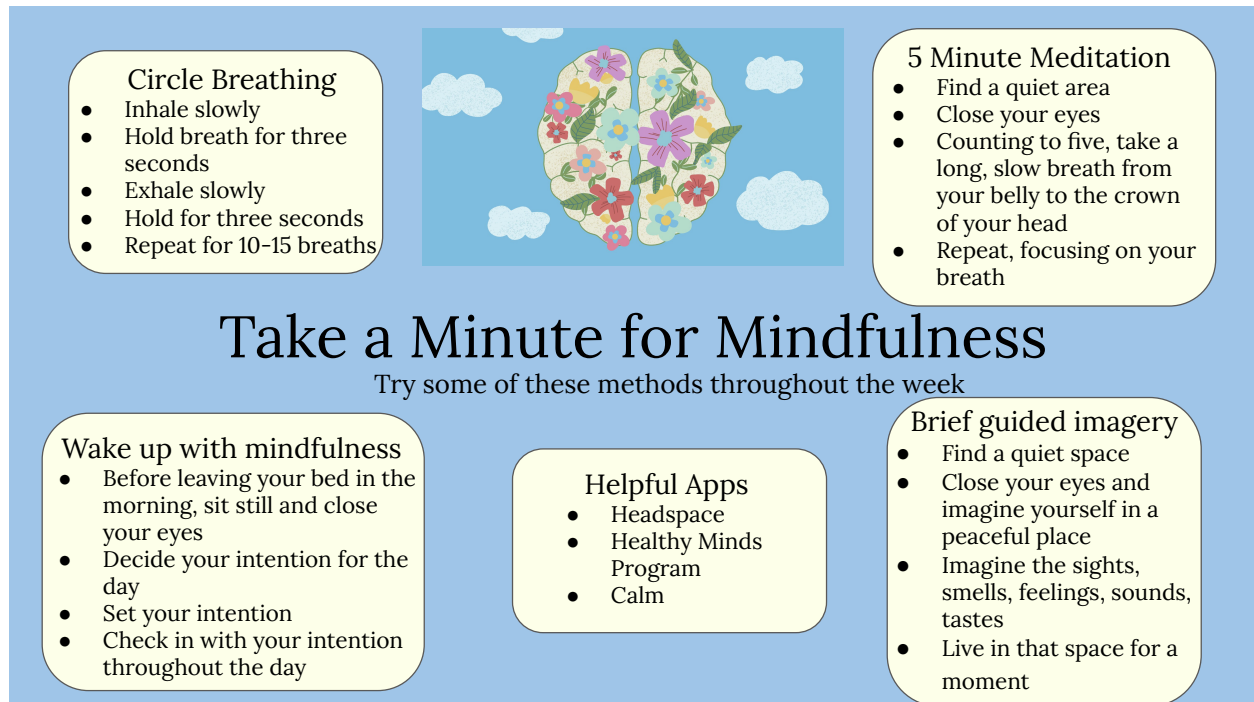
Thank you for your interest in the JSS, and good luck with your research.

Best,

Figure 1

Mindfulness Flyer

Circle Breathing
- Inhale slowly
- Hold breath for three seconds
- Exhale slowly
- Hold for three seconds
- Repeat for 10-15 breaths

5 Minute Meditation
- Find a quiet area
- Close your eyes
- Counting to five, take a long, slow breath from your belly to the crown of your head
- Repeat, focusing on your breath

Take a Minute for Mindfulness
Try some of these methods throughout the week

Wake up with mindfulness
- Before leaving your bed in the morning, sit still and close your eyes
- Decide your intention for the day
- Set your intention
- Check in with your intention throughout the day

Helpful Apps
- Headspace
- Healthy Minds Program
- Calm

Brief guided imagery
- Find a quiet space
- Close your eyes and imagine yourself in a peaceful place
- Imagine the sights, smells, feelings, sounds, tastes
- Live in that space for a moment