

The Role of Nurse-Led Groups in Relapse Prevention

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Abstract

Background: Substance use disorder (SUD) is a debilitating disease with negative consequences for the Veteran's health and wellbeing. The Department of Veterans Affairs (VA) treats more than 1.5 million Veterans annually for SUD in a variety of settings (Lan et al., 2016). There are inpatient, residential and outpatient programs. The residential Substance Abuse Treatment Program (SATP) encompasses comprehensive SUD treatment, which includes traditional psychotherapy, group therapy, pharmacologic therapy, and peer counseling throughout the week. Less structure and therapeutic interaction are available on the weekend, which often translates to higher incidents of relapse. Current statistics show that 75% of in-program relapses occur on Saturday and Sunday.

Purpose: To explore the possibility that residents in the SATP are less likely to relapse if offered nurse-led groups on the weekends, compared to current weekend group programming.

Methods: Nurses received training on Mindfulness-based stress reduction techniques and the facilitation of psychoeducational nurse-led groups. Upon initiation of the project, all Veterans participating in the SATP program were required to attend the Saturday and Sunday groups. Statistical analyses compared the proportions of veterans who experienced a relapse on the weekends before the implementation of nurse-led groups in 2019 and during the implementation phase of the intervention in 2020.

Results: There were 5 (3.5%) total relapses (Monday through Sunday) out of a census of 144 Veterans in 2020, while in 2019, there were 9 (7%) relapses out of 129 Veterans ($p=0.15$, Fisher's exact test, one-sided). Similarly, the number of weekend relapses in 2020 was 2 (1.4%) and 5 (4%) in 2019, respectively. This difference ($p=0.18$, Fisher's exact test, one-sided) did not reach statistical significance but suggests that the intervention has the potential to reduce relapse

rates, both weekend and overall. The objective of the QI project was to reduce weekend relapses by 25% and exceeded this goal, with a 50% reduction in documented relapses in 2020. The QI project was concluded early due to the COVID-19 pandemic; therefore, fewer data points were recorded, and the timeline was shortened.

Conclusion: The outcome of the QI project, although encouraging, lacked conclusive evidence to demonstrate its effectiveness on relapse prevention. Further testing and research are warranted.

Disclaimer Statement

The Contents of this manuscript do not represent the views of the US Department of Veterans Affairs or the United States Government.

The Role of Nurse-Led Groups in Relapse Prevention

One group disproportionately affected by the health consequences associated with drug and alcohol abuse is Veterans. Lan et al. (2016) stated that substance use disorders (SUD) of drugs and alcohol are the most common and costly health conditions among Veterans, with more than one-third of Veterans diagnosed with SUD. Substance use disorder is associated with a myriad of grave health consequences. Teeters et al. (2017) suggested that Veterans who abuse alcohol and drugs are at a much higher risk of developing chronic disease have increased incidents of interpersonal violence, higher rates of depression and suicide, and poorer overall health and mortality. It is paramount that health professionals focus on relapse prevention to extend periods of sobriety, which promotes better outcomes for this at-risk population.

Clinical Problem and Assessment

The Department of Veterans Affairs (VA) has developed comprehensive inpatient and outpatient SUD recovery treatment programs. One of those programs is known as the Mental Health Residential Rehabilitative Treatment Program (MHR RTP). After Veterans recovering from SUD are admitted to the residential program, they receive comprehensive treatment—including traditional psychotherapy, group therapy, pharmacologic therapy, and peer counseling—throughout the week. Less structure and fewer therapeutic interactions are available on the weekend, which often translates to higher incidents of relapse. Research supports introducing nurse-led groups on the weekends as a complementary intervention in relapse prevention (Salberg et al., 2018). A relapse in this setting is defined as any use of illicit drugs or alcohol, as documented by a positive urine drug screen (UDS) for a patient that had previously tested negative.

Mindfulness meditation, a stress-reduction technique, has had favorable results in SUD relapse prevention (Bowen et al., 2014; Carroll & Lustyk, 2018). Registered nurses, who are on the MHR RTP unit around the clock, can conduct mindfulness groups on the weekend. The addition of the nurse-led groups will help keep patients occupied and develop positive social support while teaching Veterans an alternative stress-reduction technique. Teeters et al. (2017) wrote that stress is the number one trigger for relapse among recovering drug and alcohol abusers; therefore, teaching Veterans recovery methods for productively dealing with stress can prevent relapse and extend sobriety.

Project Purpose, Objective and, Question

An estimated 75% of Veteran relapses that occur during MHR RTP treatment happen on the weekend (Saturday and Sunday). The objective of this quality improvement (QI) project is to collect, analyze, verify, and record raw data on relapse occurrences in the SUD program. The goal of this QI project was to reduce weekend relapse rates by 25% and to answer the following clinical question: Are residents in the MHR RTP SUD program less likely to relapse if offered nurse-led groups on the weekends, compared to current weekend group programming?

The population under study is Veterans participating in a residential substance abuse treatment and recovery program (SATP). The intervention proposed is the implementation of nurse-led therapeutic groups on the weekends that focuses on training Veterans in positive stress reduction techniques and mindfulness meditation.

Synthesis of Relevant Literature

Literature Review

Search Strategy and Data Sources

Electronic database searches of Cumulative Index of Nursing Allied Health Literature (CINAHL) Complete EBSCO, Ovid Full Text Nursing, and ProQuest were used to locate studies that explored the role of nurse-led groups in relapse prevention. Key search terms used include “nurse-led groups,” “relapse prevention,” “Veteran,” “residential rehabilitative treatment program,” “social support,” “mindfulness meditation,” and stress reduction. Only full-text articles within the date range of January 1, 2014, to December 1, 2019 were included. The database search retrieved 2,434 articles. After reviewing them for inclusion criteria and relevancy, 35 studies were included in the review. The following inclusion criteria were applied:

- Randomized controlled trial (RCT), Observational studies, Integrated and Systemic reviews.
- Peer-reviewed journal articles.
- Conducted in the United States and written in the English language.

Review of Literature

Population and Issue

The high prevalence of substance use disorder (SUD) in the Veteran population is well documented. In a recent systemic review, Teeters et al. (2017) suggested that numerous factors contribute to the development of substance use disorders among Veterans. These include deployments, combat exposure, and post-deployment civilian re-integration. Alcohol abuse and opioid addiction are two of the most severe problems that Veterans face. In the Veteran population, alcohol abuse is linked to increased interpersonal violence, poorer overall health, and early mortality. A staggering 42,000 opioid overdose deaths were reported in the United States in 2016, and Veterans may be especially at risk (Hedegaard et al., 2017). Teeters et al. (2017) reported that nearly 25% of all Veterans receiving care at the Veterans Health Administration are

prescribed opioids, leading them to have a much higher risk than the general population for opioid addiction or overdose. The review conducted by Teeters et al. (2017) sought to expose the difficulties VA health care providers face when treating our Veteran population for SUD and conclude that additional research is warranted.

A second systematic review published in the *American Journal of Addictions* examines the epidemiology of SUD among Veterans. In the study, Lan et al. (2016) presented evidence of the irregularities between administrative and diagnostic assessment criteria in diagnosing SUD in Veterans. The method employed in the review was a comprehensive database search. The search produced 3,490 studies, of which 72 studies from 1995 to 2013 met the inclusion criteria. In their analysis of the studies, the authors concluded that due to the irregularities in SUD diagnosis between administrative and diagnostic assessment tools, improved guidelines for clinical screening are necessary. The Department of Veterans Affairs (2019) treats 1.5 million Veterans diagnosed with substance use disorders annually. The likelihood that this number is underestimated due to ineffective diagnostic tools is a critical failure and may suggest an even higher mortality rate among untreated Veterans.

Approximately 21 Veterans die every day from suicide (Hedegaard et al., 2017). Substantial resources and research are being devoted to determining the cause of this tragic problem. A cohort study by Bohnert et al. (2017) attempted to link SUD to suicide risk and mortality among Veterans. The study utilized computerized health records of Veterans from 2006–2011. Their findings showed that Veterans diagnosed with SUD had a much higher risk of suicide ($p < 0.05$). These results provide additional evidence that identifying, diagnosing, and treating Veterans for SUD is paramount in addressing the Veteran suicide epidemic.

Group Setting

Group therapy is a crucial element of a comprehensive SUD treatment plan. Group therapy supports patient engagement, provides a definite form of social support, and, in many cases, occupies the addict's time and mind (Menon & Kandasamy, 2018). In many recovery settings, professional psychiatric nurses complement the comprehensive treatment plan by leading supplemental group therapy sessions. This is known as a nurse-led group.

The results of a recent observational study by Salberg et al. (2018) concluded nurse-led group therapy enhances the patient experience and improves patient satisfaction during inpatient mental health admissions. The study was conducted using a survey of 84 participants. The sample size was small, thus limiting results and validity; however, it still provided evidence that further studies of the intervention of nurse-led groups are warranted.

Group therapy is a proven treatment option for individuals recovering from SUD. In a literature review, Fogger and Lehmann (2017) discussed the importance of another nurse-led group therapeutic approach in the SUD recovery setting. Nurse-led groups that promote stress reduction, the primary cause of relapse, in conjunction with pharmacological and traditional psychotherapy, provide the patient with the necessary tools to stay sober and live a more productive life.

In addition to providing social support, an article in the *Journal of Dual Diagnosis*, confirms that nurse-led groups provide reinforcement to cognitive therapies, and keep patients focused on recovery. Luciano et al. (2014) noted positive social support and engaging in productive activities (staying busy) are essential in preventing relapse and achieving long-term sobriety. Veterans report triggers that are most likely to usurp sobriety are stress and boredom.

Structured Time and Activities

Most comprehensive substance abuse treatment programs consist of structured daily activities, groups, and therapy. Participants benefit from staying busy and focused on recovery. Menon and Kandasamy (2018) found that boredom, loneliness, and fatigue were highly predictive factors in relapse. This result corresponds with the adage that an “idle mind is the devil’s playground,” and staying busy and engaged is an essential element in the successful recovery treatment. Kowalczyk et al. (2017) reported similar evidence in a recent clinical trial conducted in an outpatient buprenorphine treatment program with 118 participants. The study examined the association of daily activities with treatment success. The results showed that time spent with no strict schedule or goal was associated with a higher incidence of cravings, stress, and depressed mood. Their findings indicate that staying busy, adhering to a structured schedule, and participating in therapeutic activities, such as nurse-led groups, could reduce the symptoms that lead to relapse.

Stress Reduction

Stress is the number one risk factor associated with relapse. Engel et al. (2016) defined stress as psychological distress resulting from adverse or demanding circumstances. Traditional treatment for alcohol and drug dependence has focused on prolongation of abstinence, but increasing evidence shows that comprehensive SUD therapy should include stress reduction education and training. In a recent study, Engel et al. (2016) found evidence that higher levels of stress increase the likelihood of relapse. The investigators used the SCL-90-R assessment tool to rate the stress level of 106 participants in their prospective, multi-center randomized study. The results of the study show that the participants with lower scores on the SCL-90-R stress assessment were able to sustain sobriety at much higher percentages than those with high-stress levels. Further evidence that stress reduction is essential to relapse prevention.

Mindfulness-Based Stress Reduction

Recognizing the failures of the traditional “find it, fix it” healthcare approach, the Veterans Health Administration (VHA) has taken steps to transform its healthcare model. These steps include expanding the use and availability of complementary and integrative health (CIH) services for the treatment of pain and mental health conditions. Klingler (2017) wrote that CIH is seen as an essential component of a broader VHA vision based on the Whole Health model, delivering healthcare that centers on the goals and needs of each Veteran. The CIH therapies available to Veterans include acupuncture, chiropractic services, Tai Chi, yoga, and mind-body modalities such as mindfulness meditation, biofeedback, and guided imagery. Nurses are being trained as Whole Health coaches to provide Veterans group instruction on mind-body skills, self-care, and self-awareness. Mindfulness and mindfulness-based stress reduction (MSBR) techniques are the central themes of nurse-led groups in the mental health setting.

Mindfulness-based stress reduction is a meditation technique employed in group-based psycho-social settings. Originating in Buddhism, mindfulness was described by Tang et al. (2015) as the non-judgmental attention to present-moment experiences, which enhances a person’s attention control, emotional regulation, and self-awareness. The simple process is taught to patients as an alternative to avoidant-based coping, such as alcohol or drug abuse.

In 2014, VHA commissioned a team to create an evidence map of mindfulness to connect and qualify its usefulness as a CIH modality. Hempel et al.’s (2014) evidence map provides an overview of mindfulness intervention research and summarizes the patient outcomes of 81 systemic reviews and 109 RCT’s. In a summary of its findings, MBSR showed a moderate and consistent effect on several mental health measures, enhances the quality of life (0.39; 95% CI 0.19, 0.59; in 5RCTs), and improves some aspects of somatic health (0.21; 95% CI -0.38, -0.03;

in 7RCTs). Three systemic reviews within the evidence map addressed SUD treatment and the effectiveness of mindfulness in treating psychological distress. The outcomes were positive overall across six randomized control trials. The authors concluded that mindfulness showed promise and recommended further research to validate its use.

In a randomized controlled study, Bowen et al. (2014) tested the relative efficacy of mindfulness-based relapse prevention (MBRP). They wrote that the objective of the study was to determine how MBRP compared to treatment as usual (TAU) in a 12-step program. There were 286 participants randomly assigned to MBRP and TAU between 2009 and 2012. The results of the study concluded that compared to TAU, the MBRP group showed a 54% decrease risk of relapse to drug use, and 59% decreased risk of relapse to heavy drinking (Bowen et al., 2014).

Many Veterans diagnosed with SUD also suffer from post-traumatic stress disorder (PTSD), and this is often referred to as dual disorders. Previous researchers have studied mindfulness meditation as a treatment for PTSD. In an RCT that examined the effectiveness of mindfulness-based stress reduction for Veterans with PTSD, Polusny et al. (2015) reported that mindfulness meditation resulted in modest improvements in the severity of PTSD symptoms. The RCT of 116 Veterans was conducted from 2012–2013 at the Minneapolis Veterans Administration Medical Center. The primary outcomes were measured using the PTSD severity checklist. The results show that the participants who engaged in mindfulness stress reduction exhibited a 20% decrease in PTSD symptom severity. These results seem to indicate that patients suffering from SUD in combination with PTSD may benefit from the implementation of nurse-led mindfulness group therapy while in an SUD treatment program.

Mindfulness meditation and mindfulness-based stress reduction (MBSR) techniques have shown success in treating a myriad of stress-related conditions. Greeson et al. (2018) reported

that stress-related symptomologies such as pain, sleep problems, fatigue, anxiety, headaches, gastrointestinal complaints, and hypertension account for the majority of primary care appointments. Finding a simple and cost-effective solution is critical to effective disease promotion and prevention. In an observational study, Greeson et al. (2018) reported evidence of a positive correlation between MBSR and stress-related symptoms. Their observations of 322 individuals determined that MBSR was an effective tool in reducing stresses related physical symptoms ($r = -0.21$, $p = 0.004$) and improved sleep quality ($r = -0.38$, $p < 0.001$).

According to Serpa et al. (2014), pain, anxiety, and depression are among the most common secondary diagnosis for Veterans being treated for SUD. Traditional pharmacological interventions for these conditions can interfere with SUD recovery and are rarely utilized during treatment. Therefore, interdisciplinary treatment teams have begun incorporating complementary and alternative modalities like mindfulness to help relieve problematic symptoms.

Serpa et al. (2014) examined 79 Veterans treated for these conditions at an urban V.A. medical center where MBSR skills were introduced in a 9-week group format. The participants completed a pre- and post-MBSR questionnaire, which investigated pain, depression, anxiety, suicidal ideation, and physical and mental functioning. The outcomes of the study were measured using the general anxiety disorder-7 scale, short-form-12 (physical and psychological health), PHQ-9 (depression and suicidality) scale, and PEG scale for pain. The results of the study showed significant improvements in anxiety, depression, and general mental health functionality from baseline to the conclusion of the nine-week class. Although small in scale, this study provides foundational evidence to support the use of MBSR and its effectiveness in treating a variety of SUD related conditions.

Addiction Craving Reduction

In an RCT of 117 residents of a substance abuse treatment program, Shorey et al. (2017) examined whether mindfulness-based stress reduction (MBSR) and acceptance group therapy would positively affect substance use treatment outcomes. The primary issues of interest were substance craving, dispositional mindfulness, and psychological flexibility. The results of the study show that the effect size differences between groups were small. However, the MBSR group reported lower drug cravings ($d = .23$) and higher psychological flexibility related to substance use ($d = .20$) compared to the control group.

In a secondary analysis of an RCT of 57 participants, Enkema and Bowen (2017) studied the effectiveness of mindfulness practice on reducing cravings and relapse occurrence. They recognize the significant role that cravings play as a predictor of relapse and hypothesize that incorporating mindfulness practice into SUD treatment will improve remission maintenance and lower the risk of relapse. The study used the Penn Alcohol Craving Scale (PACS) to assess alcohol and drug craving and its frequency, intensity, and duration. The 57 participants (77% male) attended an 8-week SUD aftercare program that incorporated mindfulness practice groups. The control group received standard pharmacological and therapeutic aftercare only. The results of the study showed that the association between craving and use was stronger for those who engaged in fewer days of formal mindfulness practice per week and weaker for those who reported practicing more days per week. Based on these findings, Enkema and Bowen (2017) recommend that group facilitators inform participants that mindfulness practice can reduce relapse associated cravings and encourage them to practice mindfulness regularly.

Researchers have also studied mindfulness meditation as a complementary treatment for opioid dependence relapse prevention. In a feasibility study, Bowen et al. (2017) examined outcomes for 15 patients enrolled in a 6-week methadone treatment program. They found that

patients who received the mindfulness intervention reported reduced depression and opioid withdrawal cravings. In the systematic review of the effect of mindfulness interventions on smoking cessation, De Souza et al. (2015) found similar results. They wrote that the evidence gained from the 198 articles they reviewed supported mindfulness as a successful complementary intervention for smoking cessation and maintenance. However, the researchers suggest that due to small sample sizes and heterogeneity of the mindfulness measures, mindfulness-based stress reduction should be further studied to substantiate its effectiveness.

In a small clinical trial of 34 participants, Carroll and Lustyk (2018) attempted to prove that those individuals who practice mindfulness and mindfulness-based stress reduction techniques will exhibit positive physiological effects (lower blood pressure, heart rate, anxiety, and cravings) versus the control group. The control group was given standard relapse prevention (RP) or treatment as usual (TAU). The researchers introduced stressors and measured how each group reacted and recovered in all categories. The results were mixed, but the mindfulness group showed significant differences in two categories: self-reported anxiety and cravings. Carroll and Lustyk (2018) reported that the group practicing mindfulness-based stress reduction showed a statistically lower number of occurrences of cravings. The change in craving from baseline to stressor showed significant differences between the mindfulness group (-0.05) and the TAU group (1.62). In the category of self-reported anxiety, results show a 2.2 rating increase in the mindfulness group versus a 16.9 rating increase in the TAU group, indicating excellent effect for MBSR.

Synthesis of Significant Findings

Search Outcome

Database search results included six systemic reviews, four RCTs, four clinical trials, five observational studies, a cross-sectional study, a meta-analysis, two cohort studies, two peer-reviewed journal articles, a CDC data brief, and an evidence map. A modest amount of research exists on this new topic, and more work needs to be done. As recovery programs adopt mindfulness into their comprehensive treatment plans, more data will be available to quantify the results of the mindfulness intervention as a relapse prevention strategy.

The existing literature and research found in this review suggest that mindfulness, as a nurse-led group intervention, has a strong potential to transform the way modern medicine approaches substance abuse treatment and relapse prevention. Mindfulness meditation as an adjunct treatment is a simple, cost-effective, holistic approach that can be taught by registered nurses in a group setting. Unfortunately, this intervention is relatively new, and the strength of research on the subject is weak. The RCTs and clinical trials found to support the intervention consisted of small, overwhelmingly male sample sizes and lacked diversity. Also, there is very little research on the effectiveness of a nurse-led group intervention. Although promising, an overarching theme in all studies and reviews was the necessity for additional research. Adequate evidence exists to support the implementation of nurse-led mindfulness groups as a quality improvement project, with a high probability of producing positive results.

Framework

The middle range theory of social support, which examines the interaction of personal relationships and health promotion, was chosen to guide this QI project for Veterans suffering from SUD. Abstinence and relapse prevention are the central focus of all health promotion and restoration efforts. Drevenhorn (2018) defined social support as an interconnection that forms in

a group setting, which leads people to believe they are cared for, valued, and a member of a network of communication and mutual obligation. The nurse-led group intervention facilitated the development of new relationships and teach valuable relapse focused stress reduction techniques to the group.

Social support and the restoration of an addict's social identity are two powerful motivators during the recovery process. Dingle, Cruwys, and Frings (2015) wrote that people with SUD lose critical social connections and relationships when actively engaged in substance use and seek to restore their social support network during recovery. Therefore, harnessing their desire to reconnect through participation in nurse-led groups is an evidence-based approach to support recovery and help to rebuild the Veteran's social support network.

The nurse-led group intervention is grounded in the foundational principles of the social support theoretical model. There are five sub-categories in the theory of social support. They include social networks, perceptions of support, the provider's helpful behaviors, reciprocal support, and types of positive interactions provided (Fitzpatrick & McCarthy, 2014). The nurse-led group setting is ideal for cultivating these ideals and developing healthy social support mechanisms for Veterans who participate. Social support has been examined in a variety of research efforts, but there has been controversy surrounding how best to validate measurements of its effect.

In 1981, Norbeck developed a new model for utilizing and measuring multiple dimensions of social support in research known as the Norbeck Social Support Questionnaire (Fitzpatrick & McCarthy, 2014). There were three main variables: total network support, functional support, and loss of support. Fitzpatrick and McCarthy (2014) stated that Norbeck's

model confirms that adequate social support can be effectively measured and linked to improved health outcomes in a wide range of research.

In an article published in the *Journal of Rehabilitation*, Chronister, Chou, Frain, and Cardoso (2008) conducted a meta-analysis of research on the relationship between social support and rehabilitation related outcomes. They divided the meta-analysis into three outcomes: perceived satisfaction, perceived availability, and received social support. Several clinical implications were identified in their study. Ultimately, the researchers confirmed that there is a correlation between social support and improved rehabilitation outcomes.

A second study by Chronister, Chou, Fitzgerald, and Liao (2016) focused on determining whether people with psychiatric disabilities could be clustered into high and low social support groups using various social support characteristic variables. The results of the study showed that persons clustered into the group with the highest level of social support were (a) less likely to attend outpatient aftercare therapy, were (b) more likely to be living with family or friends, (c) had fewer changes in employment since age 18, (d) had additional support providers, (e) were less lonely, and (f) reported a better quality of life and mental health recovery long-term.

Adams et al. (2017) wrote that early research on the stress process model affirms that social connection and social support resources are the most useful for protecting wellbeing when the person experiences many stressful events, such as detox and recovery. The results of their cross-sectional study of 700 Veterans in the Geisinger Health System, in Northeastern Pennsylvania, showed a strong correlation between three variables. Adams et al. (2017) found that veterans who reported high levels of social support had a lower risk of developing depression, suicidal ideation, and had lower rates of lifetime mental health service usage.

Similar to group therapy, nurse-led groups can facilitate a feeling of enhanced social support by the participant. Often, patients who suffer from SUD do not have stable or positive social support at home with their family or friends. Stevens et al. (2014) found that a group setting provides patients an opportunity to gain self-efficacy, a key component of relapse prevention. They describe self-efficacy in the context of abstinence, as the patient's perceived ability to exert control over substance using behaviors. Their exploratory study of 31 individuals provides evidence to support this theory, and they conclude that social support, gained through group therapy, promotes self-efficacy, and improves abstinence.

Project Design

Quality Improvement Model

The QI model utilized for this project's implementation was the Plan-Do-Study-Act (PDSA) process. Taylor et al. (2014) described PDSA as a four-stage cyclic learning approach to adapt changes and facilitate improved healthcare outcomes. The planning phase included a thorough assessment of the problem. The interdisciplinary workgroup then strategized to determine which evidence-based approach would be most useful to address the issue. After gaining stakeholder approval, the next step was to test the proposed change, followed by observing the results and making necessary adjustments before acting on what was learned.

The planning stage included a needs assessment. The interdisciplinary leadership team recognized a disproportionately high incidence of relapses occurring on the weekends (Saturday, Sunday, and Monday holidays). Pooled relapse data revealed that 75% of all in program relapses arise on the weekend. The team met several times to develop a plan to reduce weekend relapses by 25%. The construct of the team's comprehensive research and collaborative discussions was

the introduction of nurse-led weekend groups. The group structure, psychoeducational content, and staff training plan followed.

Mindfulness meditation, a stress-reduction technique, and tenant of the VHA Whole Health approach was identified as the focus of the new nurse-led groups. The DNP student attended the Center for Mind-Body Medicine (CMBM) training in Orlando in preparation for subsequent training of MHR RTP nursing staff. The CMBM skills manual (Gordon, 2019) was used to develop training materials, and the following training sessions included instruction on group facilitation, and stress reduction modalities: meditation, soft belly breathing, mindfulness, guided imagery, biofeedback, and autogenic techniques.

The project implementation phase involved a 60-day test of the nurse-led group intervention. The typical length of stay for Veterans in the SUD program is 28-days. During the four week program, Veterans attended eight nurse-led weekend groups. Approximately 150 Veterans, primarily male, were expected to participate in the weekend mindfulness sessions. The groups were scheduled at 11:00 a.m. on Saturday and Sunday. The mindfulness-based skill-building groups followed the same basic structure. They began with a brief overview of the Whole Health topic, which was followed by an opening meditation, brief sharing, and didactic and experiential instruction before closing with mindfulness meditation. A description of these groups is located in Appendix B. The staff member who conducted the group utilized a lesson plan that included a detailed outline, didactic, and script for experiential meditations for each of the eight groups. De-identified data indicating the number of weekend relapses that occurred during the test period were collected and analyzed to evaluate the success of the intervention.

Staff training, led by the DNP student, included three classes: Introduction to Group Facilitation and Mindfulness Meditation, Teaching Veterans Guided Imagery, and Introduction

to Whole Health Concepts. Twelve registered nurses (RN) and 8 licensed practical nurses (LPN) completed the training. After completing the three-part training, the nurse shadowed the instructor during a group session. The final requirement for competency included successfully conducting a group session with instructor evaluation. Upon completion of training and validation of competency, the nursing staff was expected to lead the weekend groups. The DNP student performed a formative assessment throughout the intervention phase to ensure the interrater delivery of the intervention as designed.

In the evaluation phase of the project, a detailed assessment of QI project results and recommendations were presented to the DNP preceptor, key stakeholders, and the participating VA medical center's research committee. The QI project, although prematurely halted due to the COVID-19 pandemic, was considered successful and therefore adopted into standard practice. A group facilitation policy and protocol are currently under development.

The project outcome was measured by the number of reported weekend relapses before the implementation of the intervention and the number of weekend relapses reported after implementation. For this project, a relapse was represented by the presence of a positive urine drug screen, contradicting a baseline negative UDS result. The time frame for the project was 4 months. Sixty days of de-identified pooled data with the number of pre-implementation relapse rates were compared to 60 days of post-implementation relapse rates to measure the effectiveness of the intervention.

Sustainability

The service chief determined initiating nurse-led groups would be an appropriate intervention for relapse prevention and serve a secondary purpose: (a) increase nursing engagement, (b) expand the R.N.'s role in the collaborative treatment team, and (c) increase

access to care and services. The stakeholders agreed that the QI project intervention would align with the organizational mission and objective, and therefore stakeholders pledged support for efforts to sustain this change process. Minimal financial costs were anticipated, as existing staff facilitated the nurse-led groups during regularly scheduled tours of duty. Appendix A shows the descriptive budget for \$412 in miscellaneous administrative supplies for the QI project. Outside funding and grants were not solicited, and the student's personal funds covered all expenses.

A detailed plan for ongoing monitoring and sustainability of the intervention was developed. The first step included mandated education and training for all nursing staff. The second step was to secure a designated space and schedule the clinic. Group room space has been booked for Saturday and Sunday at 10:15 a.m. until noon through 2020, and the clinic has been designed (CWY MH SATP). A template for documenting attendance/participation in weekend groups was created, and testing of the intervention is complete. The MHRRTTP Assistant Nurse Manager is developing a new policy and protocol to establish nurse-led weekend groups as the standard practice. At this time, COVID-19 social distancing precautions and rules limiting group size have prevented the nurse-led groups from taking place. Once the restrictions are lifted, weekend groups will resume as planned.

Instrument

For this project, pooled pre- and post-intervention data on the number of positive UDS results that occurred on Saturday and Sunday were obtained from the electronic medical record (EMR). Multiple UDS exists in each patient record. Urine drug screens are conducted upon admission to the program to establish a baseline, randomly throughout the Veteran's stay, upon return from the therapeutic pass, and as indicated when Veteran displays substance using behaviors. All abnormal UDS results prompt a confirmatory sample. Indications of UDS are

noted in the patients' records. The standard UDS tests for the presence of Methadone, Amphetamine group, Buprenorphine, Phencyclidine, Oxycodone, Urine Alcohol, Cannabinoids, Barbiturate group, Benzodiazepines, Opiate group, and Urine Creatinine levels.

All UDS were analyzed at the onsite laboratory using the Beckman Coulter AU5800 Analyzer. The Beckman Analyzer is considered a leader in pathology and lab processing equipment with 98% reliability (Beckman Coulter, Inc., 2019). A recent study of three academic institutions that implemented the use of Beckman Coulter analyzers independently completed performance validation on the precision, linearity/analytical measurement range, method comparison, and reference range of the new tool (Zimmerman et al., 2015). The Beckman AU5822 analyzers showed consistent precision, linearity, and correlation results in all three locations.

Ethics

The Health Insurance Portability and Accountability Act (HIPAA) covers the use of protected health information for QI purposes. Since participation in the project was not deemed a risk or burden to patients, participant consent was not required. No patient identifiers (e.g., names, birthdates, social security numbers) were recorded. As with most QI projects, the risk for harm to patients was minimal. In contrast, this QI project showed marked improvements in patient outcomes. In the testing phase, precautions were taken to prepare for events requiring escalated care. The facility's recovery specialist was on standby if further assessment or intervention was warranted. Strict adherence to data security, storage, and privacy policies was observed. No external or internal funding or research grants were obtained for the implementation of this project, and the findings will be used for internal improvement only.

Data Stewardship

Sylvia and Terhaar (2018) argued that data stewardship, or the management and oversight of an organization's data assets, encompass the entire process that designated accountable data managers use to carry out their fiduciary responsibilities to manage the collection, storage, level of identification, aggregation, procedures for knowledgeable and appropriate use, and release of data. The de-identified data, obtained through the electronic medical record system known as CPRS, was recorded on a Microsoft Excel spreadsheet and stored in a locked office, on an encrypted VHA, signal sign on computer. To reinforce the policy, procedures, and protocol related to data stewardship, a 4-hour mandated course on records management was completed by the researcher during orientation in July of 2019. Supervision for data stewardship and security of personal health records was conducted by Dr. Kelly Fethelkheir, Chief Nurse of Mental Health Service, and a DNP student preceptor.

Evaluation

Data analysis is an essential component of the evaluation stage of a quality improvement (QI) project. Collecting, synthesizing, and analyzing data helps the Doctor of Nursing Practice (DNP) student measure the impact and outcome of the intervention. In this QI project, relapse rates of Veterans in the Substance Abuse Treatment Program (SATP) who participated in weekend nurse-led groups were compared with pooled relapse data of Veterans who were not offered this intervention.

Measurement Tools

The QI project compared the relapse rates between two groups: pre and post-intervention groups. A positive UDS served as evidence of a relapse. The first independent test group was the pre-intervention, baseline comparison group (Group 1). The second independent group received the QI project intervention of weekend nurse-led groups (Group 2). The data were entered into a

Microsoft Excel spreadsheet and stored on an encrypted Veterans Health Administration (VHA) computer. The proposed time frame for the study was 60 days. The project was concluded prematurely due to the COVID-19 pandemic, and only 7 weeks (or 49 days) of data were captured.

Seven weeks of de-identified data with the number of pre-implementation relapse rates were compared to 7 week post-implementation relapse rates to measure the impact of the intervention. The QI project's goals and objectives formula used to calculate the outcome (proportion difference) is shown below as numerator and denominator:

$$\frac{\text{Number of Veterans in Group 2 attending nurse-led groups who relapse on Sat/Sun}}{\text{Number of Veterans in the SATP (Census)}}$$

$$\frac{\text{Number of Veterans in Group 1 who relapse on Sat/Sun}}{\text{Number of Veterans in the SATP (Census)}}$$

The variables of interest (Appendix C) included the ratio of Veterans in SATP, which was acquired through the hospital census. A second variable was the ratio of Veterans who relapse (on the weekend) during their admission to the 28-day SATP program. The two samples (pre- and post-intervention) can be assumed to be independent due to the constant change in Veterans admitted to the 28-day SATP program. The average daily census fluctuates from 19–25. The final data were analyzed using Fisher's exact test.

The AI-Therapy Statistical tool was used to determine the power of the experiment and the likelihood that the two data sets would be significantly different from each other. The criteria used for the tool was: independent groups, two tails, effect size 0.5, significance level 0.05, and groups A and B were 50 each. The tool computed a power of 0.697, which is not very strong, primarily and due to the small sample size. There were 25 beds in the SATP 28-day SUD

program; therefore, the sample could not exceed 150 participants. Gerstman (2015) stated that the power of a hypothesis test is between 0 and 1; if the power is close to 1, the hypothesis test is very good at detecting a false null hypothesis.

Dissemination

In February 2019, a copy of this DNP project proposal was formally submitted to the Bay Pines VA Research Committee for review. This resulted in approval to proceed and a formalized letter waiving VHA IRB approval. The DNP proposal was submitted in December 2019 to the Jacksonville University IRB board for review and approved in January 2020. The findings of the QI project were reviewed with the Chief of MHR RTP, Chief Nurse of Mental Health, and other key stakeholders at the debriefing session in April 2020.

The DNP student has also submitted the project results to high impact, peer-reviewed journals deemed appropriate based on the project design and findings. These include the *Journal of Addictions Nursing*, the *Journal of Holistic Nursing*, and the *Journal of Psychiatric and Mental Health Nursing*. A poster presentation will be displayed at the Jacksonville University Annual Research Symposium, the 5th Annual Nursing Research and Evidence-Based Practice Fair at C.W. Bill Young VA Medical Center and the 2020 VISN 8 Improvement and Innovation Forum.

Results

During the pre-work phase of the QI project, 100% of the nursing staff in the MHR RTP completed Whole Health mindfulness and group facilitation training. Also, group room space was secured and clinical documentation was created. Upon Jacksonville University IRB approval, the DNP student initiated the weekend nurse-led groups, which began on February 1, 2020. During the QI project, data were collected. Pooled relapse data for Veterans in the

implementation group was then compared with pooled pre-implementation relapse data to assess the effectiveness of the intervention. See Appendix C for extracted data.

Statistical analyses were conducted to compare the proportions of veterans who experienced a relapse on the weekends, before the implementation of nurse-led groups in 2019, and during the implementation phase of the intervention in 2020. There were 5 (3.5%) total relapses (Monday through Sunday) out of a census of 144 Veterans in 2020, while in 2019, there were 9 (7%) relapses out of 129 Veterans ($p=0.15$, Fisher's exact test, one-sided). Similarly, the number of weekend relapses in 2020 was 2 (1.4%) and 5 (4%) in 2019, respectively. This difference ($p=0.18$, Fisher's exact test, one-sided) did not reach statistical significance but suggests that the intervention has the potential to reduce relapse rates, both weekend and overall. The objective of the QI project was to reduce weekend relapses by 25% and exceeded this goal, with a 50% reduction in documented relapses in 2020.

Fisher's exact test is appropriate for smaller samples. The sample was smaller than anticipated as the COVID-19 outbreak precipitated a premature conclusion of data collection. Data were collected for 7 weeks, which was short of the 60-day design intended. On March 18, 2020, the delivery of the intervention, nurse-led groups, was deemed unsafe, and a social distancing protocol was instituted to prevent the spread of COVID-19. The project stakeholders met to discuss alternate delivery models such as virtual groups; however, the logistics and fluid nature of the pandemic response limited opportunities.

Contextual factors that may have impacted the results include a COVID-19 response measure, in week seven of the project, which restricted visitors and limited therapeutic passes. There were no recorded relapses in week seven. It is possible that isolating Veterans from outside influences, positive or negative, such as family and friends, may have had a bearing on

unanticipated substance use or relapse. At this time, all group therapeutic activities have been put on hold, which will negatively impact the sustainability of the project.

The outcome of the QI project, although encouraging, lacked conclusive evidence to demonstrate its effectiveness on relapse prevention. Further testing and research are warranted. A detailed synopsis of project results and recommendations has been disseminated to key stakeholders via skype meeting on May 1, 2020. A poster presentation was scheduled for May 8 at the participating VA research center's symposium, but the event was canceled due to COVID-19 and a new date has yet to be announced.

Limitations

Analysis of this QI project revealed several limitations. One limitation is that the sample was homogenous and small. Fewer participants limited the power to detect a statistically significant effect. Additional factors were the limited strength of project design, non-randomization, and variability of the populations from the pre-implementation and implementation group. The primary limitation is the existence of factors other than the intervention, which have affected the targeted outcome. The COVID-19 outbreak and subsequent treatment restrictions were considered in the planning or preparation of the project. Inferences on the effect of the intervention on the project outcomes are dubious.

Discussion

Substance use disorder is a debilitating disease with negative consequences for the Veteran's health and wellbeing. Noble et al. (2019) estimated that more than 60% of Veterans will relapse within a year of addiction treatment. Teaching Veterans valuable skills, such as mindfulness meditation, to reduce stress and cravings is paramount to sustained sobriety. In light of the project results, one can conclude that nurse-led groups focused on mindfulness in the

residential SATP setting, may prove to be a valuable tool in the prevention of weekend relapses. According to Czekanski (2016), training registered nurses to facilitate mindfulness-based stress reduction groups is a cost-effective measure to promote veteran engagement, enhance therapeutic relationships, and improve treatment outcomes.

The results of the QI project fall short of conclusive evidence that weekend nurse-led groups will definitively reduce relapses; however, several positive outcomes were observed. During the QI project, recovering Veterans learned valuable stress reduction techniques, which improved their ability to cope with stress and cravings productively. Also, 20 staff members received training on group facilitation and the delivery of mindfulness-based stress reduction.

Implications for Practice

This QI project's results and existing research suggest that mindfulness, as a nurse-led group intervention, has a strong potential to transform the way modern medicine approaches substance abuse treatment and relapse prevention. Mindfulness meditation as an adjunct treatment is a simple, cost-effective, holistic approach that can be taught by registered nurses in a group setting. As the COVID-19 pandemic has forced healthcare and mental health professionals to transform current practices, such as group therapy, a virtual nurse-led mindfulness group is under development. When feasible, the virtual groups will replace traditional nurse-led weekend groups, and additional testing can be performed. The QI team designated the DNP student to conduct subsequent testing in the summer of 2020. No other funding is anticipated, as the equipment and supplies from the initial project (\$421.00) can be reused.

Conclusion

Substance use disorder is a debilitating disease, and if untreated can lead to catastrophic consequences. Over 1 million Veterans are currently receiving some form of SUD treatment

from VHA providers (Noble et al., 2019). Implementing complementary treatment modalities such as mindfulness stress reduction has shown positive results. Delivering psychoeducational instruction on mindfulness techniques in a group setting supports the development of positive social support. Nurse-led weekend groups facilitate important structure on days when less programming exists, and boredom often occurs. Teaching Veterans a safe and effective way to deal with stress may reduce relapses by giving them an alternate coping mechanism, extending their periods of sobriety, and improving their outcomes.

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Appendix A

Quality Improvement Project Budget

Item Cost	Description of Product or Service
\$100.00	Office supplies: paper, ink, copies: for production of promotional flyers, educational handouts, and events calendar.
\$39.00	Amazon Fire to store and play meditation and guided imagery music
\$30.00	\$10.00 per month Prime Music Subscription
\$30.00	\$15.00 (2) Diffuser's for essential oils (2-locations)
\$29.00	Essential oils to promote relaxing environment(Lavender, Eucalyptus, Tea Tree, Lemon Grass)
\$30.00	Dark Chocolate & fruit (for mindful eating exercise)
\$75.00	Biodots (100 count: x3 months) (for Biofeedback & Autogenic exercise)
\$79.00	Poster (production and printing) to display results
\$412.00	Total stimated budget for QI Project

Appendix B

Mindfulness-Based Nurse-Led Group Topic, Didactic and Experiential Description

	<u>Topic</u>	<u>Didactic</u>	<u>Experiential</u>
Group 1	Introduction to Whole Health	Soft Belly Breathing, Mindfulness, and Meditation	Body Scan Meditation
Group 2	Power of the Mind	Biofeedback & Autogenic (Biological Underpinnings of Mind-Body Techniques)	Bio dots-Meditation
Group 3	Rest & Recharge	Sleep Hygiene	Mindfulness Meditation
Group 4	Power of the Mind	Guided Imagery	Garden Meditation
Group 5	Surroundings	Altering Your External Environment to Improve Health and Reduce Stress	Five Finger Mindfulness Meditation
Group 6	Working The Body	Increased Physical Activity for Mental Wellbeing	Mindful Walk or Introduction to Chair Yoga Practice
Group 7	Food & Drink	Introduction to Healthy Eating	Lemon Guided Imagery and Drawing Relationship with Food
Group 8	Spirit & Soul	Emotions	Forgiveness Meditation

Appendix C

Data Analysis Plan

2020 Week #	# Total Census	Number of Relapses % Relapse Per Census	Number of Weekend Relapses % Relapse Per Census
1	18	0	0
2	18	0	0
3	22	(1) 4.55%	0
4	23	0	0
5	23	(3) 13%	(1) 4%
6	21	(1) 5%	(1) 5%
7	19	0	0
	Total: 144	Total: 5 (3.5%)	Total: 2 (1.4%)

2019 Week #	# Total Census	Number of Relapses % Relapse Per Census	Number of Weekend Relapses % Relapse Per Census
1	18	0	0
2	18	(1) 5.5%	(1) 5.5%
3	19	(1) 5%	(1) 5%
4	17	(2) 12%	(1) 6%
5	18	(2) 11%	(1) 5.5%
6	20	(1) 5%	0
7	19	(2) 10.5%	(1) 5%
	Total: 129	Total: 9 (7%)	Total: 5 (4%)