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Effectiveness of Two-Way Prayer Meditation in improving the psychospiritual well-being of people with substance use disorders: A pilot randomized controlled trial

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Abstract

Background: The study goal was to conduct a preliminary evaluation of a spiritual intervention called Two Way Prayer Meditation's (TWPM) effectiveness on the psychological distress, self-esteem, and spiritual well-being of people with substance use disorders.

Methods: This study employed a randomized controlled trial design with pretest and posttest. In total, 134 adults in four residential recovery programs participated in the study and were randomly assigned to either the TWPM group or the treatment as usual group. Primary and sensitivity analyses were conducted using linear mixed modelling. Hedges's g was used to estimate treatment effect sizes.

Results: Both primary and sensitivity analyses found significant treatment effects on daily spiritual experiences (Hedges's g= .62), reliance on God (g= .49), private religious practice (g= .36), and positive religious/spiritual coping (g= .68). Treatment effects on psychological distress (g= .33), self-esteem (g= .41), and overall spirituality self-ranking (g= .32) reached significance in the primary analysis but not in the sensitivity analysis.

Conclusions: This study found evidence of TWPM's effectiveness in improving some aspects of the spiritual well-being of adults with substance use disorders. TWPM was also found to be promising in decreasing psychological distress and increasing self-esteem.

Keywords: Prayer, Substance use disorders, Psychological distress, Self-esteem, Spiritual well-being, RCT.

Introduction

In 2018, 20.3 million Americans aged 12 and older had an alcohol or drug use disorder.[1] These disorders exact large economic and human tolls.[2] Individuals with substance use disorders (SUD) commonly experience psychospiritual problems, including psychological distress (e.g., depression and anxiety), low self-esteem, and spiritual crisis.[2–7] These psychospiritual problems may lead to substance use and poor SUD treatment outcomes, such as suicide, more adverse substance-use-related consequences, treatment drop-out, and relapse.[7–12] However, substance use treatment programs often focus on changing substance use behaviors, but pay little attention to improving psychospiritual well-being. Patients or clients might have better outcomes if programs employed integrated approaches that address such needs simultaneously using multiple treatment approaches.[3] Integrated treatments for comorbid substance use and psychospiritual problems have consistently been found to be superior to single-focused treatments.[13–16]

Prayer is a spiritual practice that holds promise as an effective ingredient of integrated treatment to improve both substance use and psychospiritual well-being.[17,18] In the present study, spirituality is defined as the universal and fundamental human quality of searching for meaning, well-being, and profundity through connections with oneself, others, and the universe, and spiritual interventions are defined as treatment or prevention efforts that include a key spiritual component.[19–21] Research supports prayer's effectiveness in reducing substance use. Lambert and colleagues conducted four studies on the subject: two experimental, one cross-sectional, and one longitudinal; all four showed that prayer frequency is inversely associated with alcohol consumption.[18] In addition, in a study of individuals with alcohol use disorders (AUDs), volunteers' prayers for them (i.e., intercessory prayer) did not reduce drinking, but those with AUDs who prayed drank less.[22] A cross-sectional survey conducted in Iran found an inverse

relationship between prayer practice and alcohol, drug, and tobacco use among college students.[23] Research also indicates prayer's positive effects on well-being in the general population.[24] However, research on prayer's effectiveness in improving psychospiritual well-being among people with substance use disorders is lacking. As a step to narrow this research gap, the present study examined the effects of a prayer intervention called Two Way Prayer Meditation (TWPM) on the psychological distress, self-esteem, and spiritual well-being of individuals with substance use disorders.

Two Way Prayer Meditation

TWPM is a spiritual intervention that was an essential part of the Oxford Group and early Alcoholics Anonymous (AA) program. Pioneer AA members considered it more essential for recovery than attending meetings. When AA separated from the Oxford Group, it retained a spiritual foundation, but left TWPM behind as a formal element to distinguish itself from its Oxford Group origins.[25,26] In a nutshell, TWPM consists of the following steps in which participants should (1) first be quiet, relaxed, and open their heart to a higher power as they define it (e.g., nature, arts, God, spiritual self, Buddha, the universe, the divine within); (2) ask the higher power for assistance with the problem or situation they are facing and write down the problem/situation/question; (3) be conscious of and open to the thoughts, ideas, and impressions that come into their mind and heart; (4) write down everything that comes into their mind as the higher power speaks to them; and (5) test to see which thoughts originate from the higher power according to the following standards: Are these thoughts completely honest, pure, unselfish, and loving? TWPM practice is two-way as it allows conversations between the person praying and their higher power. TWPM also allows the person to test whether the thoughts/answers are from a higher power instead of their ego/critical self/addictive self by documenting the conversations

on paper and examining them. By practicing TWPM, one can learn to access a higher power that is completely honest, pure, unselfish and loving whenever they need strength and assistance.

Research suggests that certain types of prayer are more effective in improving psychological wellbeing. TWPM overlaps with three types of effective prayer identified in the literature, including colloquial prayer (conversational style of prayer which may incorporate some abstract, non-specific petitions such as asking God for guidance and forgiveness), meditative prayer (concerned with intimate, personal relationship with a higher power and characterized by behaviors such as asking God to speak and then listening for God's answer), and prayers of reception (prayer focused on opening oneself to closeness with a higher power).[27,28]

TWPM has the potential as a helpful adjunct to substance use treatments for several reasons. First, TWPM allows people to define spirituality and a higher power on their own terms and opens prayer practice to individuals who do not have a religious conception of spirituality. Second, TWPM is structured and easy to practice. In the previous TWPM study, over 75% of the 121 participants reported at pretest that they found prayer and meditation to be either "somewhat or very difficult," but at posttest, many participants noted that TWPM helped them overcome this difficulty.[26] Third, TWPM practice can be easily taught by a knowledgeable 12-Step sponsor, counselor, or chaplain or learned through the free printed and video materials readily available on the TWPM website (https://www.twowayprayer.org). Fourth, TWPM's foundation in AA suggests that it is highly compatible with the majority of the substance use treatment programs in the United States, as about 82% of them employ a 12-step model to some extent.[29] Finally, although TWPM has origins in AA, its use is not restricted to 12-step-based programs and can be easily integrated as a component of non-12-step substance use recovery programs as well.

The Present Study

The present study's hypotheses were informed by the only existing study on TWPM, which found that practicing TWPM was associated with an increase in some dimensions of spirituality and positive self-appraisal among a sample of youth engaged in a peer-support recovery group for substance use disorders and their parents.[26] In this previous study, most participants acknowledged having "heard an addict's voice" in themselves speaking words that coaxed them to relapse to substance use. They also identified an "inner critic voice" that often judged them severely and thus caused psychological distress resulting in a desire to use substances to cope.[26] Practicing TWPM may help those in recovery find a positive and loving inner voice, and as a result, overcome self-defeating inner voices as well as the psychological distress they cause. Therefore, this study hypothesized that practicing TWPM will be associated with (1) lower psychological distress, (2) higher self-esteem, and (3) higher spiritual well-being.

The previous TWPM study employed a single group pre- and post-test design, which suffers from a variety of threats to internal validity. This study addressed this limitation by using a randomized controlled trial (RCT) design, which is widely regarded as the gold standard for making causal conclusions. Additionally, while the previous study focused on youth in recovery from substance use problems and their parents, this study investigated TWPM's effectiveness among adults in treatment for substance use disorders. In summary, the present study aimed to examine TWPM's treatment effects on psychological distress, self-esteem, and spiritual well-being among adults with substance use disorders using an RCT (experimental) design.

Methods

Participants

This study was approved by the Internal Review Board of the university with which the authors were affiliated. Study participation was voluntary and anonymous. Participants were recruited from four residential recovery programs in central Texas. These programs offer 12-step classes and meetings, as well as individual and group therapies. Study participation eligibility criteria were: (a) able to speak and read English, (b) have an alcohol and/or drug use disorder, (c) aged 18 or older, and (d) self-reported at baseline to likely remain in the residential program for two weeks (the time of posttest administration). Eligibility criteria were broad to enhance the generalizability of the study's findings. Power analysis indicated that for power of 0.80 with a two-tailed alpha level of 0.05, a sample size of 90 was required.

Design and Procedure

This study employed a randomized, two group design with pretest and posttest (two weeks after pre-test). Figure 1 shows the procedure of the present trial. Recruitment was conducted by the coordinator at each recovery program who verbally described the study and distributed flyers to program residents. Residents were given the researcher's contact information so that they could ask any questions they might have about the study before deciding whether to participate. Participants were assigned to either the TWPM group or the control group by randomly drawing a note from a box that was labeled A or B. Participants drawing A were assigned to the TWPM group, and participants drawing B were assigned to the control group. Due to the anonymous nature of this study, written consent was not required. However, it was stated at the beginning of the pretest questionnaire, "By filling out the pretest questionnaire, you

are giving your consent for your responses to the pretest and posttest questionnaires to be included in the study."

In addition to the treatment participants received from their respective programs, experimental group participants also received a two-hour workshop on TWPM and were encouraged to practice TWPM on their own at least once a day for two weeks. Control group participants received treatment as usual at their respective program, and, if they wished, received the TWPM workshop after the study ended. The developer of the contemporary TWPM practice, who has decades of experience as a recovery program therapist and executive director, conducted the TWPM workshops. Each TWPM workshop included a brief review of the history of TWPM and a step-by-step explanation of TWPM practice. Table 1 shows the steps of TWPM. Following a brief question-and-answer period, experimental group participants were invited to engage in a 5 to 7-minute TWPM practice. The experimental group was asked not to share what they learned about TWPM with people outside the group to prevent contamination effects.

All participants were invited to fill out the pretest questionnaire immediately before the workshop and the posttest questionnaire two weeks later (i.e., after the experimental group participants' two-week TWPM practice). To keep participants' identities anonymous, anonymous participation codes were used to link each participant's pretest questionnaire to the posttest questionnaire. Participants created their anonymous participation codes with either the last four digits of their social security number or the combination of the first letter of their mother's maiden name, the last letter of the name of the state in which they were born, and the month and day of their mother's birthday. After completing the posttest questionnaire, participants who completed both pretest and posttest questionnaires received $10 as compensation for their time.

Outcomes and Measures

Participants were invited to complete each of the following measures at both pretest and posttest. Psychological distress was measured with the Outcome Questionnaire-30 (OQ-30), a well-validated measure comprised of the 30 items from Outcome Questionnaire-45 that are the most sensitive to change.[30] The OQ-30 has high internal consistency (0.93) and test–retest reliability (0.84).[31] Participants were asked to report the frequency of the emotional, cognitive, physical, and behavioral symptoms of psychological distress over the last week. Examples of items include "I feel irritated," "Disturbing thoughts come into my mind that I cannot get rid of," "I have trouble falling asleep or staying asleep," "I have an upset stomach," and "I have frequent arguments." Each OQ-30 item is scored on a five-point scale (0=never, 1=rarely, 2=sometimes, 3=frequently, 4=almost always). The total score yields a range of possible scores of 0 to 120 with higher values indicating higher levels of psychological distress.[31]

Self-esteem was measured with the Rosenberg's Self-Esteem Scale (RSE), the scale most commonly used to assess self-esteem in research studies. A myriad of psychometric studies found that the RSE has good validity and reliability (Cronbach's alpha = .79).[32,33] The RSE requires respondents to rate 10 items on a Likert scale ranging from 0=strongly disagree to 3=strongly agree. The scale contains positively worded items (e.g., "I feel that I am a person of worth, at least on an equal plane with others" and "I feel I have a number of good qualities") and negatively worded items (e.g., "I feel I do not have much to be proud of" and "I certainly feel useless at times"). Ratings of negative items are reverse coded and higher total scores indicate higher self-esteem. Possible total scores range from 0 to 30.

Spiritual well-being outcomes including daily spiritual experiences, private religious practices, positive and negative religious/spiritual (R/S) coping, forgiveness, meaning,

values/beliefs, and overall spirituality and religiosity self-ranking, were measured with the Brief Multidimensional Measure of Religiousness/Spirituality (BMMRS).[34] The BMMRS is one of the most widely used instruments to assess religiosity and spirituality in health, religion, and behavioral research. Previous studies found that BMMRS has fair to high reliability (ranging from 0.63-0.94 for each subscale) and validity using a sample of individuals with substance use disorders and other samples.[35–37]

The daily spiritual experiences domain was designed to measure one's perception of the higher power and of one's interaction with the higher power in daily life (e.g., "I feel God's presence" and "I desire to be closer to or in union with God" scored on a Likert scale from 1="Never or almost never" to 6="Many times a day"). It was measured with six items and the composite score ranges from 6 to 36. Private religious practices (five items) were assessed with items such as "How often do you pray privately in places other than at church or synagogue?" R/S coping included positive and negative R/S coping and was measured with seven items with answers ranging from 1="Not at all" to 4="A great deal". Positive R/S coping reflects benevolent R/S methods of coping with life stressors (e.g., "I work together with God as partners to get through hard times"). In contrast, negative R/S coping indicates R/S struggle in coping (e.g., "I express anger at God for letting terrible things happen").

Forgiveness was measured with three items (i.e., "I have forgiven myself for things that I have done wrong," "I have forgiven those who hurt me," and "I know that God forgives me"); possible answers included 1="never", 2="seldom", 3="often", and 4="always or almost always." Two items ("The events in my life unfold according to a divine or greater plan" and "I have a sense of mission or calling in my own life") were used to assess meaning, using a Likert scale from 1="strongly disagree" to 4="strongly agree". Another two items ("I believe in a God who

watches over me" and "I feel a deep sense of responsibility for reducing pain and suffering in the world") were used to measure values/beliefs, with answers ranging from 1="strongly disagree" to 4="strongly agree". Overall spirituality self-ranking and overall religiosity self-ranking were measured by asking participants to rate the extent to which they considered themselves a religious or spiritual person on a four-point scale from 1="not religious/spiritual at all" to 4="very religious/spiritual".

In addition, we included another spiritual outcome (i.e., reliance on God), because reliance on God is an important construct in the 12-step Model and the previous TWPM study found TWPM to have a significant effect on reliance on God.[24,26,38] Reliance on God was measured with the Christian Inventory of Spirituality's (CIS) Reliance on God subscale. The CIS was designed to measure spirituality in substance use research and has been found to have good reliability (ranging from 0.78 to 0.94 for each subscale) and validity.[39] Reliance on God depicts one's partnership with the higher power for solution to life's problems. It was measured with 15 items such as "I work out problems through spiritual means" and "I work together with God as partners," and was scored on a four-point scale ("not at all", "somewhat", "quite a bit" and "completely"). The total score ranges from 15 to 60, with higher score indicates higher reliance on God.

Several items in BMMRS and CIS used the term "God", with which some participant might not feel connected or comfortable. To address this potential issue, we included in the questionnaire the following statement: "A number of items use the word 'God.' If this word is not a comfortable one for you, please substitute another word that is more congruent with your understanding of god/higher power."

Data Analyses

R was used to conduct descriptive analyses of baseline participant characteristics and to check baseline differences between conditions. Primary analyses were carried out using the lmerTest package in R. To examine whether TWPM and control groups differ in pre-post-test change in outcome variables, intent-to-treat analyses were conducted using linear mixed models with participants nested within recovery programs. Participants were included in the analyses according to the condition to which they were assigned regardless of whether they practiced TWPM or whether they completed the posttest assessment in accordance with the intent-to-treat principle. The difference between TWPM and control groups were represented by the condition x time interaction in the models. Covariates including age, gender, race/ethnicity, marital status, education, R/S affiliation, days in the residential treatment program, whether received substance use treatment previously, most often used substance, length of substance use, substance use frequency, length of sobriety, and whether practiced TWPM before this study were controlled for in all models. Hedges's g was used to estimate treatment effect sizes.

To test whether missing data fell under the missing completely at random (MCAR) mechanism, Little's MCAR test was conducted using R's BaylorEdPsych package. This test is based on the premise that under MCAR at each assessment the calculated means of the observed data should be the same regardless of the pattern of missingness.[40] The result showed that the null hypothesis that data was missing completely at random could not be rejected (p=.222). Mixed models for repeated measures (i.e., the method for primary analyses) is valid under MCAR.[41] Multiple imputation was performed to handle missing data before computing the composite scores for each outcome variable. Sensitivity analyses were conducted by excluding cases with more than minimum number of missing items (e.g., For the psychological distress

model, cases with more than four missing items out of the total 60 pretest and posttest items were excluded. When the outcome's total number of items were fewer than 60, cases with more than two or three missing items were excluded.)

Results

Participant Characteristics

Table 2 presents participant characteristics at baseline. Overall, the sample was largely composed of males (74%). Approximately 60% of the participants were White and 40% were members of racial/ethnic minority groups. On average, participants were 40 years old and had been in their respective residential recovery program for 36 days. More than half were never married, about 30% were divorced or separated, and only 10% were married. The majority of participants (74%) had a high school education or less. More than 60% of participants identified as Christian and 17% described themselves as spiritual but not religious. One third of the participants reported alcohol as their most often used substance, and about another third indicated regular use of multiple substances. More than half of participants had a substance use history of more than 10 years and less than 10% used substances for less than two years. During the 90 days before entering residential treatment, approximately two thirds of participants used substances more than once a day. The majority of participants self-reported being sober for less than three months. Two (3%) TWPM participants and seven (14%) control group participants reported having practiced TWPM prior to the present study.

There were no significant baseline differences between TWPM and control participants on age, gender, race/ethnicity, marital status, education, R/S affiliation, days in the residential program, whether received substance use treatment previously, most often used substance, length

of substance use, and length of sobriety. However, significant group differences were found in substance use frequency and having practiced TWPM before. During the 90 days before entering residential treatment, a larger portion of TWPM than control group participants reported using several times a week (16% versus 8%), less than five times a day (26% versus 13%), and five to ten times a day (25% versus 17%), while more control group than TWPM participants used substances more than 10 times day (37% versus 13%). In addition, more participants randomized to the control group had practiced TWPM prior to the study (3% in TWPM versus 14% in the control group). However, these baseline group differences were controlled for in the primary and sensitivity analyses. Approximately 70% (n=94) of the total enrolled sample (N=134) completed the posttest, and posttest completion rates were 75% (n=62) and 62% (n=32) for the TWPM group and the control group, respectively (Figure 1). Sixty-one participants in the TWPM condition (74%) reported the frequency of their TWPM practice at the posttest. Among these 61 participants, 3% (n=2) reported not having practiced TWPM at all between pre- and post-test, 31% (n=19) reported having practiced once or twice, 66% (n=40) reported having practiced TWPM many times, ranging from three to 28 times. No serious adverse events were reported in either group.

Outcomes

Table 3 summarizes pretest-posttest changes in outcomes and effect sizes. Linear mixed modeling on the full intent-to-treat sample indicated that TWPM participants, compared to control participants, demonstrated significantly greater improvements in psychological distress (condition x time, b= -7.67, standard error [SE]= 3.59, t=-2.14, p<.050, Hedges's *g*= .33), self-esteem (b= .62, SE= .23, t= 2.71, p<.010, *g*= .41), daily spiritual experiences (b= 4.50, SE= .74, t= 6.05, p<.001, *g*= .62), reliance on God (b= 5.00, SE= 1.52, t= 3.29, p<.010, *g*= .49), private

religious practice (b= 3.65, SE= 1.11, t= 3.29, p<.010, *g*= .36), positive R/S coping (b= 1.77, SE= .35, t= 5.07, p<.001, *g*= .68), and overall spirituality self-ranking (b= .37, SE= .14, t= 2.68, p<.010, *g*= .32). Sensitivity analyses results confirmed the statistical significance in daily spiritual experiences (b= 4.23, SE= .94, t= 4.48, p<.001), reliance on God (b= 5.28, SE= 1.68, t= 3.15, p<.010), private religious practice (b= 4.18, SE= 1.38, t= 3.03, p<.010), and positive R/S coping (b= 1.37, SE= .43, t= 3.19, p<.010), but not in psychological distress (b= -3.56, SE= 3.74, t= -0.95, p= .345), self-esteem (b= .43, SE= .27, t= 1.60, p= .114), or overall spirituality self-ranking (b= .29, SE= .17, t= 1.68, p= .098).

Discussion

People with substance use disorders commonly suffer from psychological distress, low self-esteem, and decreased spiritual well-being, and the comorbidity of substance use disorders and psychospiritual problems put them in an even more vulnerable position. To alleviate their suffering and aid their recovery from substance use disorders, a more holistic approach should be taken that addresses both their substance use behaviors and psychospiritual well-being. Prayer is a spiritual practice that holds promise as an effective integrated treatment ingredient to improve both psychological distress and substance use.[27] Previous studies found prayer to be effective in reducing substance use.[18,22] However, there is a lack of research on prayer's effects on the psychospiritual well-being of individuals with substance use disorders. The present pilot RCT examined the effects of TWPM on the psychological distress, self-esteem, and spiritual well-being of adults with substance use disorders. This study found evidence of TWPM's effectiveness in improving some aspects of the spiritual well-being of adults with substance use disorders. TWPM was also found to be promising in decreasing psychological distress and increasing self-esteem.

TWPM's Effects

Among this sample of adult patients in residential treatment programs for substance use disorders, TWPM appeared to be a potentially effective add-on intervention for reducing psychological distress. This effect needs further examination as TWPM's effectiveness for psychological distress was supported by the primary analysis but not the sensitivity analysis in the present study. Previous research generally suggests that prayer is associated with decreased psychological distress and improved mental well-being. In an RCT of a prayer intervention for adults with depression and anxiety, the prayer group had significantly less depression and anxiety and more optimism at posttest and one-month follow-up than the control group and the prayer group's improvements in depression, anxiety, and optimism were maintained at the one-year follow-up.[42,43] A cross-sectional study based on a sample of 474 college students in the United Kingdom found that prayer frequency predicted lower depression and anxiety.[44] Similar results were also found in a systematic review based on 26 studies on prayer as an intervention for hospitalized patients as well as in an RCT based on 88 participants from Eastern Orthodox Christian communities.[45,46]

Similar to TWPM's effect on psychological distress, TWPM's effectiveness in improving self-esteem showed some potential but requires further investigation, as a significant effect was found in the primary analysis but not the sensitivity analysis. The primary analysis's significant finding is consistent with a previous study which found TWPM to be associated with greater positive self-appraisal among a sample of youth recovering from substance use disorders and their parents.[26] Previous studies on other prayer practices also yielded similar findings. The study by Maltby et al. suggested that prayer frequency was correlated with higher self-esteem among

college students.[44] A more recent study found positive association between dimensions of prayer and self-esteem among patients with kidney problems in Iran.[47]

We found TWPM to be effective in improving some dimensions of spiritual well-being among individuals in recovery from substance use disorders. Both primary and sensitivity analyses supported TWPM's effectiveness in improving daily spiritual experiences, reliance on God, private religious practice, and positive R/S coping. Significant treatment effect on overall spirituality self-ranking was supported by the primary analysis but not the sensitivity analysis, which indicates a need for further investigation. Dimensions of spiritual well-being that were not significantly associated with TWPM included negative R/S coping, forgiveness, meaning, values/beliefs, and overall religiosity self-ranking.

This study's findings are consistent with the previous TWPM study which found TWPM to be significantly associated with increased reliance on God and the total Christian Inventory of Spirituality score.[26] In addition, results from Boelens et al RCT indicated that those who participated in six weekly one-hour prayer sessions showed significantly greater levels of daily spiritual experiences compared to the control group, and this improved level of daily spiritual experiences was maintained one year after the final prayer session.[42,43] This positive relationship between prayer and spiritual well-being was also found among cancer patients undergoing chemotherapy.[48] Moreover, Stavros's RCT showed that treatment group participants who practiced a contemplative prayer ten minutes daily for thirty days reported significantly higher perceived relationship with God scores compared to the control group.[46]

Limitations and Implications for Further Research

This pilot study is limited by the fact that it was not blinded, and attrition was relatively high (29.9%). However, blinding is difficult and uncommon in social science. In addition,

attrition was primarily caused by participants being discharged from their residential programs and was unlikely to be related to TWPM or this study. The small sample size limits statistical power and generalizability of study findings. Generalizability may also be limited by the absence of random sampling — participants were patients in residential recovery programs in central Texas who volunteered to participate in this study. Therefore, future research should replicate this study with a larger and more broadly representative sample and take measures to prevent attrition. Longer follow-up periods and comparing TWPM to active control conditions such as other psychospiritual interventions would also be useful. Additionally, although we asked the participants in the TWPM condition to not share any information on TWPM with the control group, we could not rule out the possibility that some participants in the control condition learned about and practiced TWPM, leading to contamination effect. Finally, the TWPM workshop was not manualized. Future research should manualize it as well as measure treatment fidelity after manualization.

Conclusion

This is the first RCT to investigate the effectiveness of TWPM, a spiritual intervention that employs conversational prayer techniques. It also contributes to the literature by narrowing the gap in testing prayer's effects on the psychospiritual well-being of people with substance use disorders, a factor that may be as important to recovery as abstinence from alcohol and other drugs. Findings from this pilot study suggest that TWPM holds promise as an intervention to improve the psychological distress, self-esteem, and spiritual well-being of adults with substance use disorders. Larger studies that replicate these findings and evaluate TWPM's long-term effect and mechanisms of change are warranted.

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Figure 1. Consolidated standards of reporting trials (CONSORT) diagram.

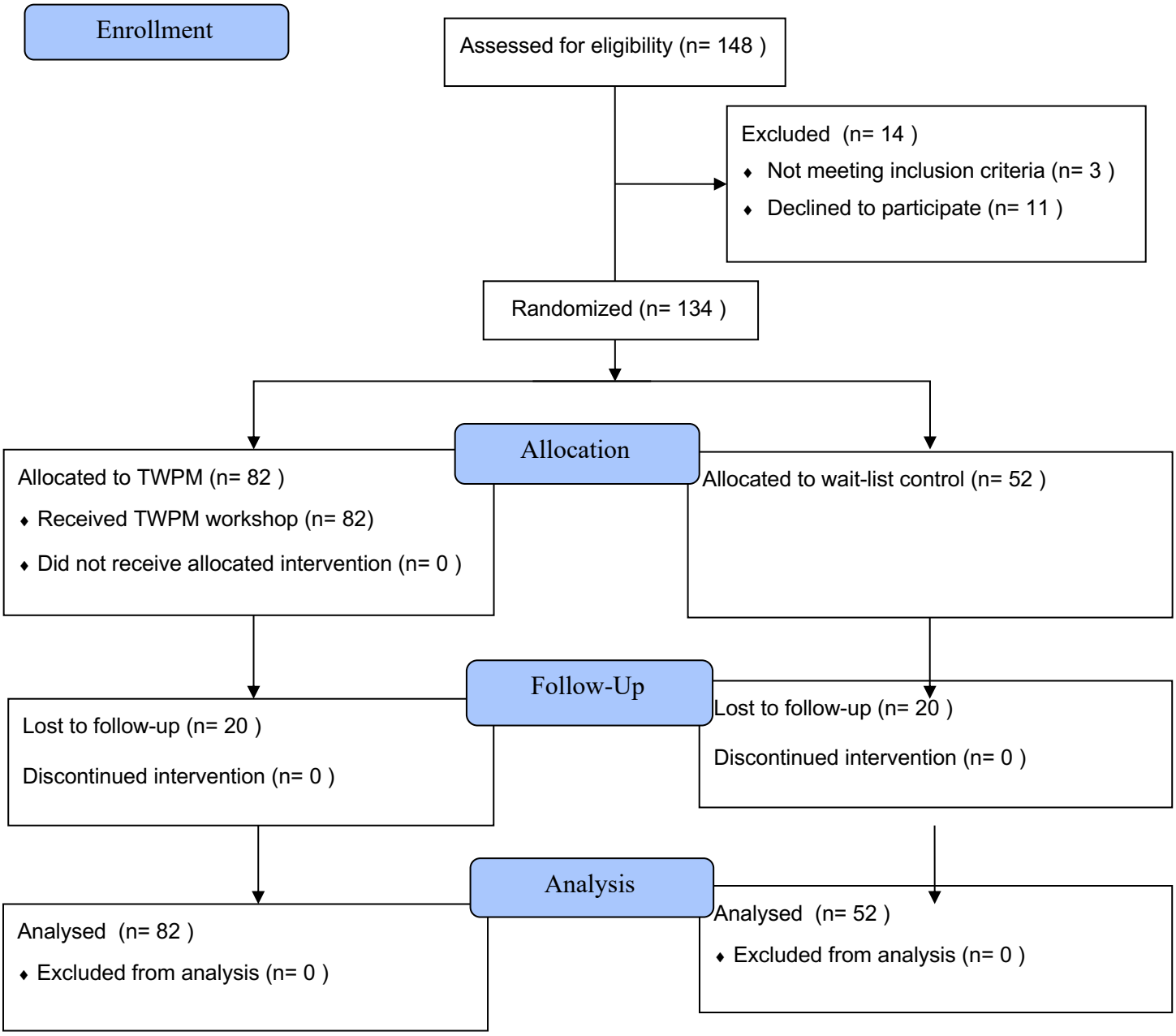

Table 1. How to Practice Two Way Prayer Meditation (TWPM).

Preparation:

- ***Commit*** to having a quiet time with a higher power (as you define it) for a minimum of 10 to 20 minutes daily for two weeks.
- ***Practice*** it each morning. (*Get up earlier if need be. If for any reason you miss a morning, that's OK, simply begin counting the two-week period over again.)*
- ***Choose*** a sacred space - a quiet place where you can be alone. It should be comfortable and inviting. Reserve it only for prayer, if at all possible.
- ***Buy*** a notebook to write down your thoughts - have it ready when you begin.

Start:

- ***Sit*** in a comfortable, upright posture.
- ***Read*** *a short passage from a source of literature that is sacred to you.*
- ***Breathe*** deeply 2 or 3 times - let go of all tension and worry with each outward breath. (Add any other relaxation techniques, prayers, petitions or practices you find helpful.)
- ***Write*** a question. **A very honest question that captures your real need.** If you have a problem that's troubling you where you really need the higher power's guidance, briefly write it down and ask for help. *Here are some examples:*
    1. ***God,*** I've tried getting sober before – please tell me what I need to do that's different this time. *(If you're already sober, look at other addictions or behaviors in your life that have you stuck and ask for guidance with them.)*
    2. ***The Universe,*** I feel so alone - separated from you and from others, please help me feel connected.
    3. ***The Divine Inside of Me,*** I'm withdrawing / I'm isolating again - moving further away from my spouse (or my child). Please tell me what I should do.

    (Notice the different names being used for God. Choose the name that feels right for you. If you are struggling to find a name, you may start with "Unknown God" or "God, if you exist.")
- ***Listen*** for the higher power's voice, with your pen & notebook in hand. If the connection isn't immediate and words do not come into your mind, use your imagination, especially when you're first making conscious contact: Say to yourself, *"If God were to speak to me this is what God, or Love, or Divine Wisdom might say:"*_____
- ***Write*** the words that come into your mind. Try not to edit them. Only listen and write. *(If thoughts come that you think are not from a higher power write them down anyway. Put them in brackets if you like and then try to re-focus on listening for the higher power's voice. In time, you will come to distinguish a higher power's voice more clearly from the raucous voices of the ego.)*
- ***If stuck,*** write your own name or write, *"My child"* or *"My precious"* or some other term of endearment that a loving higher power might use when speaking to you.
- ***Stop*** *w*riting when it becomes strained.
  Feel the closeness of a higher power as you come to experience real **conscious contact.**

Following your Guidance:

- ***Share*** your writings weekly with your therapist or a sponsor. Or share with another individual who is also practicing TWPM. You may find that their writings contain some particular spiritual guidance for you or yours for them.

- ***Check*** your guidance. Does it pass the test: Is it Honest, Pure, Unselfish and Loving?
- ***Act*** on your guidance – but only if it passes the test – and if it is a major move, check it also with your therapist, a sponsor, or others who also practice TWPM.

Table 2. Baseline characteristics of participants (N=134)

	TWPM (n=82)	Control (n=52)	Total (N=134)	Baseline Balance *p*
Age: M (SD)	41.95 (12.37)	39.02 (12.45)	40.20 (12.39)	.388
Gender: n (%)				.894
Female	21 (25.93%)	12 (23.08%)	33 (24.81%)	
Male	59 (72.84%)	39 (75.00%)	98 (73.68%)	
Other	1 (1.23%)	1 (1.92%)	2 (1.50%)	
Race/Ethnicity: n (%)				.802
Black/African American	11 (13.58%)	9 (17.31%)	20 (15.04%)	
Latinx	9 (11.11%)	6 (11.54%)	15 (11.28%)	
White	48 (59.26%)	32 (61.54%)	80 (60.15%)	
Multiracial	12 (14.81%)	5 (9.61%)	17 (12.78%)	
Other	1 (1.23%)	0 (.00%)	1 (.75%)	
Marital Status: n (%)				.417
Married	9 (11.25%)	5 (9.62%)	14 (10.61%)	
Widowed	4 (5.00%)	0 (.00%)	4 (3.03%)	
Divorced or Separated	24 (30.00%)	17 (32.69%)	41 (31.06%)	
Never Married	43 (53.75%)	30 (57.69%)	73 (55.30%)	
Education: n (%)				.964
Less than high school	11 (13.75%)	7 (13.46%)	18 (13.64%)	
GED (Certificate of High School Equivalency)	17 (21.25%)	13 (25.00%)	30 (22.73%)	
High school graduate	29 (36.25%)	21 (40.38%)	50 (37.88%)	
Associate's degree	12 (15.00%)	6 (11.54%)	18 (13.64%)	
Bachelor's degree	8 (10.00%)	3 (5.77%)	11 (8.33%)	
Master's degree	1 (1.25%)	1 (1.92%)	2 (1.52%)	
Doctorate degree	2 (2.50%)	1 (1.92%)	3 (2.27%)	
Religious/Spiritual Affiliation: n (%)				
Christian	54 (66.67%)	33 (63.46%)	87 (64.41%)	.138
Jewish	0 (.00%)	0 (.00%)	0 (.00%)	
Muslim	0 (.00%)	0 (.00%)	0 (.00%)	
Buddhist	1 (1.23%)	0 (.00%)	1 (.75%)	
Hindu	0 (.00%)	0 (.00%)	0 (.00%)	
Atheist	3 (3.70%)	0 (.00%)	3 (2.26%)	
Agnostic	1 (1.23%)	3 (5.77%)	4 (3.01%)	
Nothing in particular	0 (.00%)	3 (5.77%)	3 (2.26%)	
Spiritual but not religious	14 (17.28%)	9 (17.31%)	23 (17.29%)	
Don't know	3 (3.70%)	3 (5.77%)	6 (4.51%)	
Other	5 (6.17%)	1 (1.92%)	6 (4.51%)	
Days in the Residential Program: M (SD)	30.88 (36.72)	44.76 (41.01)	36.29 (12.39)	.052
Received Substance Use	58 (72.50%)	27 (55.10%)	85 (65.89%)	.067

Treatment Previously: n (%)				
Most Often Used Substance: n (%)				.770
Alcohol	31 (38.75%)	13 (25.00%)	44 (33.33%)	
Marijuana	3 (3.75%)	4 (7.69%)	7 (5.30%)	
Meth	11 (13.75%)	9 (17.31%)	20 (15.15%)	
Spice	0 (.00%)	0 (.00%)	0 (.00%)	
Speed	1 (1.25%)	1 (1.92%)	2 (1.52%)	
Heroin	5 (6.25%)	2 (3.84%)	7 (5.30%)	
Cocaine	1 (1.25%)	0 (.00%)	1 (.76%)	
Crack	3 (3.75%)	3 (5.77%)	6 (4.55%)	
Multiple answers	23 (28.75%)	18 (34.62%)	41 (31.06%)	
Other	2 (2.50%)	2 (3.85%)	4 (3.03%)	
Length of Substance Use: n (%)				.264
Less than 2 years	7 (8.86%)	5 (9.61%)	12 (9.16%)	
2-3 years	7 (8.86%)	1 (1.92%)	8 (6.11%)	
3-5 years	5 (6.33%)	6 (11.54%)	11 (8.40%)	
5-8 years	9 (11.39%)	5 (9.62%)	14 (10.69%)	
8-10 years	6 (7.59%)	9 (17.31%)	15 (11.45%)	
Substance Use Frequency: n (%)				**<.050**
Never	4 (5.06%)	3 (5.77%)	7 (5.34%)	
Once in a while	4 (5.06%)	5 (9.62%)	9 (6.87%)	
Once a week	1 (1.27%)	1 (1.92%)	2 (1.53%)	
Several times a week	13 (16.46%)	4 (7.69%)	17 (12.98%)	
Once a day	6 (7.59%)	4 (7.69%)	10 (7.63%)	
Less than five times a day	21 (26.58%)	7 (13.46%)	28 (21.37%)	
Five to ten times a day	20 (25.32%)	9 (17.31%)	29 (22.14%)	
More than 10 times a day	10 (12.66%)	19 (36.54%)	29 (22.14%)	
Length of Sobriety: n (%)				.109
Under 1 month	42 (52.50%)	19 (36.54%)	61 (46.21%)	
1-3 months	29 (36.25%)	17 (32.69%)	46 (34.85%)	
3-6 month	4 (5.00%)	8 (15.39%)	12 (9.09%)	
6 months to 1 year	4 (5.00%)	6 (11.54%)	10 (7.58%)	
1-2 years	0 (.00%)	1 (1.92%)	1 (.76%)	
2-3years	0 (.00%)	0 (.00%)	0 (.00%)	
More than 3 years	1 (1.25%)	1 (1.92%)	2 (1.52%)	
Practiced TWPM Before: n (%)	2 (2.50%)	7 (13.73%)	9 (6.87%)	**<.050**

Note. M=mean. SD=standard deviation. *p* values are from tests of differences between the TWPM group and the control group and are based on t-tests for continuous variables and Pearson's chi-square test for categorical variables. Relative frequency (%) was calculated with missing cases excluded. "Length of Substance Use" was measured with "How long did you use

your most often used substance?" Substance Use Frequency" was measured with "How often did you use alcohol or other drugs during the 90 days before entering this recovery program?"

Table 3. Intervention effects on outcome variables (N=134).

Outcome		TWPM Mean (SD)	Control Mean (SD)		*p*	Effect Size
Psychological Distress				Group x Time	**<.050**	.33
	Pre	50.67 (23.26)	52.75 (23.18)	(Sensitivity)	(.345)	
	Post	37.61 (17.40)	47.36 (20.35)			
Self-Esteem				Group x Time	**<.010**	.41
	Pre	3.89 (1.52)	3.69 (1.59)	(Sensitivity)	(.114)	
	Post	4.82 (1.18)	4.00 (1.56)			
Daily Spiritual Experiences				Group x Time	**<.001**	.62
	Pre	24.40 (7.16)	24.90 (6.95)	(Sensitivity)	**(<.001)**	
	Post	28.64 (6.07)	24.64 (6.74)			
Reliance on God				Group x Time	**<.010**	.49
	Pre	32.82 (10.34)	33.72 (10.84)	(Sensitivity)	**(<.010)**	
	Post	40.82 (8.45)	36.73 (8.21)			
Private Religious Practice				Group x Time	**<.010**	.36
	Pre	23.28 (9.99)	23.10 (9.66)	(Sensitivity)	**(<.010)**	
	Post	28.02 (7.85)	24.19 (7.93)			
Positive R/S Coping				Group x Time	**<.001**	.68
	Pre	8.46 (2.58)	8.73 (2.51)	(Sensitivity)	**(<.010)**	
	Post	9.89 (2.13)	8.39 (2.76)			
Negative R/S Coping				Group x Time	.226	.24
	Pre	5.62 (2.32)	5.44 (2.61)	(Sensitivity)	(.527)	
	Post	4.58 (1.92)	4.90 (2.10)			

Forgiveness				Group x Time	.342	.19
	Pre	9.41 (1.97)	8.96 (2.28)	(Sensitivity)	.820	
	Post	10.29 (1.73)	9.56 (2.12)			
Meaning				Group x Time	.054	.30
	Pre	6.30 (1.46)	6.27 (1.51)	(Sensitivity)	.374	
	Post	6.69 (1.33)	6.22 (1.43)			
Value, Beliefs				Group x Time	.168	.21
	Pre	6.49 (1.05)	6.44 (1.35)	(Sensitivity)	.491	
	Post	6.57 (1.14)	6.27 (1.07)			
Overall Religiosity Self-Ranking				Group x Time	.925	.01
	Pre	1.44 (0.97)	1.21 (0.94)	(Sensitivity)	.765	
	Post	1.55 (1.04)	1.31 (0.96)			
Overall Spirituality Self-Ranking				Group x Time	**<.010**	.32
	Pre	2.09 (0.89)	1.96 (0.93)	(Sensitivity)	.098	
	Post	2.34 (0.79)	1.92 (0.88)			

Note. SD= standard deviation, R/S=religious/spiritual.