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A Theatre-Based Occupational Therapy Intervention for Substance Use Disorders: A Non-Randomized Comparison

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By

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Abstract

The purpose of this study was to examine the effectiveness of theatre-based intervention for recovery from addictions. High relapse rates associated with drug use significantly affect one's ability to perform daily occupations, demonstrating the need for increased research regarding this topic. The design for this study was a nonrandomized comparison. Participants were recruited via convenience sample substance use disorder (SUD) treatment facilities, as well as Alcoholics Anonymous (AA) and Narcotics Anonymous (NA) meetings. Participant availability determined placement in intervention or comparison group. The Occupational Circumstances Assessment Interview and Rating Scale (OCAIRS), the General Self-Efficacy Scale (GSE), and the Timeline Followback (TLFB) were used to collect data at baseline, post-intervention, and 6-month follow-up. The intervention was a 6-week theatre group where participants rehearsed to publicly perform a play. A statistically significant difference was found between the baseline and 6-month intervention group GSE and OCAIRS scores. This finding suggests that theatre could be an effective intervention for OT to use in the future to facilitate addiction recovery.

A Theatre-Based Occupational Therapy Intervention for Substance Use Disorders: A Non-Randomized Comparison

Addiction is a significant and growing public health concern that has been particularly difficult to treat. According to the National Institute on Drug Abuse (NIDA), 40-60 percent of individuals treated for SUD will relapse (2014). In addition, nearly 80 percent of individuals recovering from SUD have been reported as relapsing within the first year (Bart, 2012), illustrating the need for change in treatment programs. The purpose of this study is to examine the effectiveness of an occupational therapy (OT) theatre intervention as supplementary to treatment as usual (TAU) in reducing relapse rates and improving quality of life in people with addictions.

A number of factors have been suggested to facilitate addiction recovery, including positive social interactions (Vallejo, 2011), cognitive challenge (Houston et al., 2014), pharmacological interventions to ameliorate cravings (Park & Friedmann, 2014; Bickel, Koffarnus, Moody, & Wilson, 2014) and participation in meaningful activities, (Hoxmark, Wynn, & Wynn, 2012). Although many treatment programs are deemed “successful”, the high and unwavering relapse rates in those with addictions remains a concern.

According to Wasmuth and Pritchard (2016), theatre interventions would benefit those recovering from addictions for several reasons. Participation in theatre productions can facilitate positive social interactions, help with cognitive deficits through memory training, and provide opportunities for occupational participation as people abstain from drug use. Theatre also provides temporal structure and requires participants to manage their time as they are expected to regularly attend rehearsals and final performances. An intervention involving theatre can offer

those with addictions the opportunity to have a sense of purpose and identity while participating in positive habits, roles, and routines.

A number of empirical studies reflect these claims. For instance, a mixed methods study by Fenech (2009) describes positive effects such as enjoyment and treatment engagement resulting from an interactive drama performance in participants with impaired neurological functioning. A multimodal study involving a drama intervention for veterans with PTSD also provides evidence to support decreased symptoms of the disorder, while simultaneously improving self-esteem (Rademaker, Vermetten, & Kleber, 2009). Results also indicated increased self-efficacy, a key factor in successful rehabilitation in individuals with SUD (Konopik & Cheung, 2012).

A pilot study by Wasmuth and Pritchard (2016) indicated a theatre-based OT intervention to be a feasible and acceptable intervention to facilitate addiction recovery. Wasmuth and Pritchard's study provided preliminary positive outcomes; however, the study was limited in that there was no comparison group, and the sample consisted solely of veterans (2016). In order to adequately examine the effectiveness of Wasmuth and Pritchard's (2016) intervention program, researchers in this study will investigate whether a 6-month theatre intervention including TAU is more effective than only TAU in reducing both short and long term substance use, and increasing quality of life in persons with SUD. Variables related to client self-efficacy, values, roles, personal causation, interests, habits, and environment will be used to measure quality of life. (Haglund & Forsyth, 2013). A wider scope of participants will also be included to explore effectiveness beyond the veteran population.

Background

The Diagnostic and Statistical Manual of Mental Disorders, 5th Edition (DSM-5) defines addiction as involving both substance-related and addictive disorders. Substance-related disorders are a combination of the DSM-IV categories of substance abuse and substance dependence. In order to have a substance-related disorder, the DSM-5 requires that the individual present at least two to three symptoms from a list of eleven symptoms that characterize the disorder. For the purpose of this study, both substance-related disorders and addictive disorders will be referred to as addictions. The background information summarized in this study describes areas of focus that directly impact individuals with addictions. These impacted areas have also been shown to support the use of a theatre intervention as an effective form of treatment.

Occupation

According to the American Occupational Therapy Association (AOTA), occupation is defined as “daily life activities in which people engage; they occur over time, have purpose, meaning and perceived utility to the individual, and can be observed by others” (American Occupational Therapy Association, 2014, p. 6). Occupations include activities of daily living (ADL), instrumental activities of daily living (IADL), education, work, play, leisure, and social participation (AOTA, 2014).

Addiction and Occupation

According to Hoxmark et al. (2012), individuals with SUD reported that they participated in fewer of activities (occupations) after the onset of abusing substances compared to before the abuse began. Activities were examined through a questionnaire developed specifically for use in this study. The questionnaire was administered when the individuals were admitted to an inpatient substance abuse rehabilitation program. Decreased participation in occupations also

correlated to a decline in patients' overall wellbeing, which was assessed using a 5-item version of the Wellbeing Index (WHO-5). Patients also indicated that they desired a greater number of activities in the future compared to their current state. In summary, this study indicated that helping individuals with SUD regain positive activities could not only decrease their substance use, but also improve their overall wellbeing (Hoxmark et al., 2012).

Peloquin & Ciro (2013) incorporated the concept of regaining positive activities as part of a population-centered life skills group for women in recovery from SUD in a residential facility. The life skills group met for 60 minutes and focused on themes deemed important in substance dependence literature. The group meeting consisted of preparatory methods, purposeful activities, and discussion of topics. Using a survey designed specifically for the study, high levels of perception of satisfaction and personal engagement in the life skills group were determined.

Executive Function

Executive function is a broad term that is associated with a variety of cognitive processes occurring within the prefrontal lobes of the brain (Goldstein, Naglieri, Princiotta, & Otero, 2014). Three executive functions are prevalent in addiction literature: response inhibition, decision-making, and cognitive flexibility.

Response inhibition represents a person's ability or motivation to refrain from engaging in a particular behavior—that is, a person is able to inhibit a behavioral response to an internal or environmental cue such as drug-seeking in response to physiological craving (Jentsch & Pennington, 2014). According to these authors, whether or not a person demonstrates response inhibition depends the level of motivation to engage in the behavior as well as the level of motivation to refrain from it. However, deficits in response inhibition, possibly related to

neurophysiological changes resulting from addictive behavior, are often present in persons with addictions. Longitudinal research indicates these deficits precede addictive behaviors more often than not (Jentsch & Pennington, 2014).

People with addictions often make the decision to engage in immediately rewarding behaviors and accept the consequences, rather than abstain (Dong & Potenza, 2014), and are also more likely to choose immediate over delayed rewards (Bickel et al., 2014). In addition to response inhibition deficits, studies have shown that people who generally engage in high-risk decision making are at a higher risk for alcohol and/or gambling dependency (Harvanko, Schreiber, & Grant, 2013).

Cognitive flexibility is the ability to efficiently transition from one situation to another (Dong, Lin, Zhou, & Lu, 2014). According to Dong et al. (2014), this efficiency includes the ability to transition and adapt to different situations as well as the speed with which one can make these transitions. One study that focused on the addictive behavior of heavy drinking indicated that the more alcohol that was consumed, the more negatively cognitive flexibility was impacted (Houston et al., 2014).

Self-Efficacy

Self-efficacy is another prevalent concept within addiction literature. A study published by Kouimtsidis, Reynolds, Coulton & Drummond (2012) investigated therapeutic outcomes in two groups of people with opioid addictions in relation to self-efficacy before and after treatment. The first group received methadone maintenance treatment (MMT) plus cognitive behavioral therapy (CBT); the second group received only MMT. Self-efficacy “to resist the urge to use drugs” (Kouimtsidis et al., 2012, p. 255) was measured using the Drug Taking Confidence Questionnaire (DTCQ) which consists of eight self-report questions; results

indicated highest scores from the group receiving MMT and CBT. Kelly and Greene (2013) also investigated the relationship between abstinence self-efficacy and motivation in treatment outcomes through a longitudinal study. To measure abstinence self-efficacy, participants were asked to rate the following question on a scale from 1 (not confident) to 10 (very confident): “How confident are you that you will be able to remain clean and sober for the next 90 days, or three months?” (Kelly & Greene, 2013, p. 930). This single item measure of self-efficacy has been validated as a strong predictor of relapse rates in those with addictions (Kelly & Greene, 2013). Measure for recovery was administered using The Commitment to Sobriety Scale (CSS); this scale includes 5 items to measure motivation of sobriety from drug or alcohol use, and items are measured from 1 (strongly disagree) to 6 (strongly agree) (Kelly & Greene, 2013). These items were then analyzed to see how they relate to treatment outcomes. Results showed that percent days abstinent (PDA) was greatest when both scores of self-efficacy and motivation were high; conversely, PDA was lowest when both were low (Kelly & Greene, 2013). Results from these studies have repeatedly indicated that self-efficacy is a reliable predictor of treatment outcome.

Social Participation

Vallejo (2011) defines social participation as “the extent of an individual’s involvement in social activities of groups or organizations” (p. 92). This can also include social interaction with friends or other peers outside of an organized group. Research has shown that social networks may have an influence on the substance abuse, but results have been inconsistent (Vallejo, 2011). Some studies have shown that high levels of social participation are linked to a reduction of dependence on substances such as drugs or alcohol, but others have indicated that high levels of social participation are linked to an increase in dependence on substances such as

tobacco (Vallejo, 2011). Despite inconsistencies, Vallejo emphasizes that high levels of social participation are linked to a lower incidence of drug use (Vallejo, 2011). It is possible that the nature of social participation may influence its relationship to substance use. For example, in Vallejo's study, individuals who were more involved socially in religious associations were 19 percent less likely to use drugs in their lifetime (2011). Research has also shown that the type of individuals within a social network may have an influence on the substance dependence of its members (McDonald Griffin, Kolodziej, Fitzmaurice, & Weiss, 2011). For example, a study completed by McDonald et al. found that a social network that includes two or more drug users significantly influenced the drug use of its other members (2011). This information is important when developing treatment options; programs may inform individuals that spending time around those who use drugs or other substances may trigger a relapse and also emphasize that having a large number of abstinent friends in one's social network may promote recovery (McDonald et al., 2011). Social participation has also been found to decrease risky behavior overall, which may include drug use, unsafe sex and other illegal activity (Leslie, Ahern, Chinaglia, Kerrigan, & Lippman, 2013).

Treatment

Cognitive Behavioral Therapy (CBT) is an evidence-based intervention used to treat addictions. It is often performed in a group setting, and various forms of group therapy have been suggested to result in promising recovery-related outcomes in persons with SUD. A study by Pagey, Deering, and Sellman (2010) showed that group therapy was important in strengthening interpersonal relationships and could improve treatment retention (Pagey et al.,

2010). Demonstrating CBT's effectiveness in group therapy, Carroll et al. (2012) compared three types of treatments for marijuana use disorder: CBT alone, CBT with contingency management, and contingency management alone. Results showed the CBT group had greater reduction of overall marijuana use, as well as lower relapse rates one year later (Carroll et al., 2012).

Contingency management (CM) and medication addiction treatment (MAT) are other evidence-based treatment methods often utilized in group settings. CM involves positive reinforcement as a motivator for abstinence, whereas MAT works to reduce cravings associated with substance abuse. One CM study included participants trained in CM as well as patients who were part of a methadone treatment facility (Petry, Alessi, & Ledgerwood, 2012). Participants were randomized into either a CM group or a standard care (SC) group. The SC group received daily methadone treatment and therapy meetings; the CM group received contingency management as well as standard care (Petry et al., 2012). Results indicated that participants in the CM group remained in the study significantly longer and achieved "significantly longer durations of abstinence from cocaine and alcohol" (Petry et al., 2012, p. 292) than those in the SC group. MAT can reduce withdrawal symptoms associated with abstinence and create adverse symptoms when the drug of choice is used, resulting in positive treatment outcomes in those with opioid and alcohol addictions (Park & Friedmann, 2014). Common medications for use with alcohol use disorder include: oral naltrexone, naltrexone depot injections, acamprostate, and disulfiram; methadone and buprenorphine are typically utilized with opioid use disorder (Park & Friedmann, 2014). MAT is not only beneficial in reducing substance use, but also in reducing the high mortality rate in those with opioid and alcohol use disorders (Park & Friedmann, 2014).

Motivational interviewing (MI) is another type of treatment associated with SUD. This treatment type has been identified as an effective method for behavioral change in adults with SUD by combining “characteristics of client-centered therapy with cognitive behavioral strategies designed to elicit behavior change” (Jensen et al., 2011, p. 433). One study focused on the effects of motivational interviewing in adolescents with SUD (Jensen et al., 2011). Meta-analysis revealed that MI interventions for adolescent substance use produced significant improvements in treatment outcomes (Jensen et al., 2011).

Theatre

Role-playing has been used in therapy to help people with progressive and nonprogressive diseases develop social skills through experimenting with various roles. This has resulted in reduced aggression and increased compliance with treatment (Fenech, 2009). Participants included people with Friedreich’s ataxia, Parkinson’s disease, Huntington’s disease, multiple sclerosis, traumatic brain injury, and/or stroke. Participants who participated in theatrical role playing also reported a “sense of achievement” after the conclusion of the program, and 35 percent of these individuals were already expressing interest in doing another theatre activity. It was reported that staff and residents had a “positive change in community spirit” (p. 122), which led to residents feeling more peaceful during the project.

Theatre has also been studied as a successful modality in a group setting among those with post-traumatic stress disorder (PTSD). In conjunction with other forms of therapy, psychodrama was part of an outpatient group program which provided these treatments on a weekly basis to veterans with PTSD over the course of 21 weeks. Treatment goals were similar to what they would be in individuals with addictions, with emphasis on targeting chronic symptoms, increasing overall quality of life, and preventing relapse. The results of this program

illustrated a decrease in psychopathology, depression, and anxiety in relation to participants' PTSD symptoms. Coping strategies and self-esteem improvements were also noted as an effective outcome from pre-to post-treatment (Rademaker et al., 2009). Although this study was deemed successful, effects of psychodrama were reportedly difficult to interpret due to the study's multimodal design. Konopik & Cheung (2012) researched the therapeutic effects psychodrama exclusively in 13 patients in a mental health and chemical dependency program. Sessions were conducted biweekly for two hours, with group participation varying each session. Results from this study indicated increased self-efficacy and hope for the future (Konopik & Cheung, 2012).

Current studies of theatre interventions are limited in their design. Studies indicated changes in pre/post outcomes but did not compare outcomes to those of comparison groups; it is therefore unclear if results were due to the theatre intervention alone. To address this gap in the literature, this study's design included a comparison group.

Methods

Design

The design of this study a non-randomized comparison design. Participants in the intervention group participated in a 6-week theatre project. Participants in the comparison group received TAU, which consisted of 12-step recovery and/or outpatient addiction recovery services. Researchers collected baseline, post-intervention and six-month follow-up data from the intervention and the comparison groups. Mean scores at each point in time were compared within and between intervention and comparison groups.

Participants

To be included participants must meet the following criteria: eighteen or older and involved in SUD outpatient treatment or had to have attended a 12-step meeting within a week of enrollment (however, were not required to remain in treatment throughout the course of the study). Due to the high rate of dual diagnosis (Fernández-Mondragón, & Adan, 2015), participants with coexisting severe mental illness (SMI) were included. Therefore, our sample consisted of participants with a number of covariates based on other diagnoses/symptoms. Their exclusion would have created a highly unnatural sample that would have limited external validity.

Instruments

Primary outcome measures included the OCAIRS, GSE, and TLFB. The OCAIRS is a 30-60 minute interview that measures client values, roles, personal causation, interests, habits, and environment; it generates a quantitative score that indicates a participant's level of occupational participation (Forsyth et al., 2005). Limited research is available regarding the English version of the OCAIRS, however OCAIRS-Sweden has been found to have moderate inter-rater reliability (0.75), concurrent validity ($r = 0.86$), and content validity ranging from 47-88 percent. Other studies have used the OCAIRS to assess occupational participation among the homeless population (Bradley, Hersch, Reistetter, & Reed, 2011) and among individuals with SUD (Wasmuth & Pritchard, 2016).

The GSE is a 10 item self-report measure used to measure general self-efficacy (Casida, Wu, Harden, Chern, & Carie, 2015). General self-efficacy includes “various domains of functioning in which people judge how efficacious they are, and is of specific interest when targeting well-being and health behaviors in patients” (Nilsson, Hagell, & Iwarsson, 2015). The GSE has good validity and good test-retest reliability that ranges from .69 to .80 (Nilsson,

Hagell, & Iwarsson, 2015). This outcome measure has been used to assess general self-efficacy among individuals with SUD (Wasmuth & Pritchard, 2016) and individuals with Parkinson's disease (Nilsson, Hagell, & Iwarsson, 2015).

The TLFB is a 10-30 minute self-report measure that assesses alcohol use, cigarette use, and illicit substance use (Robinson, Sobell, Sobell, & Leo, 2014). The TLFB has high test-retest reliability that ranges from .92 to 1.0 (Lam, Fals-Steward, & Kelley, 2009), as well as convergent and discriminant validity for use with alcohol and other drug addictions (Fals-Stewart, O'Farrell, Freitas, McFarlin, & Rutigliano, 2000).

Procedures

Recruitment and Enrollment. Researchers recruited a convenience sample from two SUD treatment facilities in a large midwestern city as well as from open 12-step meetings including AA and NA. Participants were not given any payment or compensation for participation. Researchers informed potential participants about this study via a recruitment announcement at recruitment sites during a regularly scheduled meeting. In addition, clinicians informed their clients about the opportunity to participate in this study. Interested clients had the opportunity to talk with the principal investigator following the regularly scheduled meeting where the study was announced. The principal investigator provided more information, reviewed informed consent documents, and if clients were still interested, informed consent documents were signed. All participants were assigned a number, which was logged electronically. A rehearsal schedule was determined based on the greatest availability time of participants; participants were allocated to the intervention group or a comparison group based on whether their schedules allowed them to attend.

Twelve participants were allocated to the intervention group and three to the comparison group based on availability (this allocation process is detailed below). Four participants of the intervention group dropped out. Reasons for dropping out included recent employment, participation in recreational therapy, relapse and loss of contact, or choosing not to participate. Of those individuals in the comparison group, one dropped out. The reasoning was undetermined due to inability to reach this participant.

Training. Prior to implementation of the OCAIRS, researchers were educated and trained to perform the assessment interview and score the results. Researchers practiced use of this tool amongst each other, while trading roles as interviewer and interviewee. Researchers were deemed competent in administering this assessment tool by a university professor.

Data Collection. Three researchers performed interviews and assessments with participants at baseline (the week prior to the intervention), post-intervention (within a week of the final performance), and six months after the intervention. Interviews were recorded, transcribed, and de-identified. Data collection was performed at recruitment sites. OT graduate students performed all interviews and assessments. The OCAIRS, GSE, and TLFB were initially scored by the researcher that performed the interviews/assessments. To ensure reliability of data, a second researcher who was blind to the participant's identity, date and time of the interview (e.g. baseline or follow-up) then performed a second rating on each OCAIRs assessment by listening to de-identified interviews.

Data Analyses. Regarding OCAIRS and GSE scores, independent samples t-tests were performed to analyze any between-group differences at baseline, post-intervention, and six-month follow-up points. Homogeneity of variance was assessed by Levene's Test to ensure

Equality of Variances. One-way ANOVA was used to analyze change over time in each group, with post-hoc Bonferroni corrections and cohen's d effect size calculations.

Intervention. The intervention group rehearsed and performed a play, written specifically for this project. Rehearsals took place three times a week for six weeks. Each rehearsal session lasted 3 hours. Rehearsals consisted of a gentle physical warm-up, team-building exercises, reading the script with varying role assignments, discussion of characters and scenes, and a wrap-up during which participants could reflect upon the day's work and express any concerns. At each rehearsal, a professional director, professional actor, and OT were present. The director was in charge of leading discussions, assigning roles for the script read-through, designing and teaching 'blocking' to the participants (where to enter, where to stand, etc.), and deciding upon costumes, lighting and stage design. The professional actor served as a peer mentor to the other actors. The professional actor also memorized all parts and was able to fill in for any roles if a participant dropped out or was unable to perform for any reason. The actor helped to carry the scenes and promote a successful experience to both the other actors and the audience. OT helped individuals with techniques for memorizing lines and blocking, provided stress and anxiety management techniques, and helped to modify and adapt individual roles to promote a successful experience.

Comparison Group. Variance found within the comparison group resulted from the recruitment of participants from both outpatient facilities and 12-step programs within the community at large. Participants were not required to maintain participation in outpatient treatment or 12-step programs; therefore, some participants may not have received TAU.

This research study was approved by the University Institutional Review Board.

Results

The sample of participants included 15 individuals involved in SUD treatment at the time of enrollment. Participant demographics are depicted in Figure 1, and participant drug of choice is depicted in Figure 2. Three participants were using substances throughout the duration of the intervention; one participant had been clean and sober for one month at the start of the intervention, one for two months, two for five months, two for six months, and one for nine months. In addition, two participants had been clean and sober for more than nine years. Three participants that dropped out did not report on their substance use. Due to inconsistency in participants' reports of drug use at different points in time, data from the TLFB was not statistically analyzed. Participants were asked about their mental health history, but only five responded. Of the five, one reported having no history of mental health comorbidities while the remaining four specified co-morbidities including ADHD, depression, anxiety, and bipolar disorder.

As depicted in Table 1, paired samples t-tests indicated no significant differences between intervention and comparison group mean OCAIRS or GSE scores at baseline, post-intervention, or six-month follow-up. Levene's test indicated equality of variance.

Table 2 illustrates change over time on OCAIRS and GSE scores in the intervention and comparison groups. One way analysis of variance (ANOVA) indicated a significant change from baseline to longest follow-up in the intervention group on OCAIRS and GSE mean scores. A Bonferroni correction indicated that OCAIRS mean scores significantly increased from post-intervention to 6-month follow-up and from baseline to 6-month follow-up with a large effect size. A Bonferroni correction on GSE scores indicated a significant change from baseline to 6-month follow-up with a large effect size. Levene's test indicated equality of variance among all

groups being compared. Changes in mean OCAIRS and GSE scores over time in the comparison group were not statistically significant.

Discussion

A study by Wasmuth and Pritchard (2016) examined if theatre was a feasible intervention for veterans with SUD. However, this study did not have a comparison group and the sample consisted solely of veterans. The current study adds to this literature by comparing the theatre intervention with TAU to a comparison group that only received TAU. At the various points in time (baseline, post-intervention, and six-month follow-up) no between group differences were found. Although the sample size was very small, particularly in the comparison group, analyses demonstrated a significant difference over time in the intervention group regarding self-efficacy and OCAIRS scores, but not in the comparison group. Significant change in GSE scores were noted between baseline and six-month follow-up but not between shorter intervals, suggesting this is a long-term, slow change that may be impacted by many factors. However, this change was not present in the comparison group, thus it may be related to participation in the theatre intervention. Significant changes in OCAIRS scores were observed at each point of measurement, illustrating steady and more rapid change.

Fenech (2009) used interactive drama to determine its effects with individuals with neurological deficits at a long-term care facility. Results indicated that 73 percent of staff and 81 percent of residents at this facility reported a positive change in “community spirit” (p. 122). Sixty-seven percent of residents attributed positive meaning toward rehearsals, including feeling valued and liked by their peers (Fenech, 2009). Nearly 90 percent of residents also reported being so engaged in rehearsals that they “lost track of time” (Fenech, 2009, p. 122). Similar to

findings in the current study, Fenech's findings demonstrate positive social engagement and enhanced self-efficacy through participation in an interactive drama project.

Another study using a theatre-based approach for patients in a mental health hospital also indicated positive effects. Eighty-five percent of patients reported feeling "lighter" after participation in just one rehearsal (Konopik & Cheung, 2012, p. 16). Other positive changes included enhanced self-worth and awareness, as well as recognition of emotions and innermost thoughts from a new viewpoint (Konopik & Cheung, 2012).

Implications for OT

Findings suggest participation in theatre along with TAU may produce positive changes over time that do not occur with TAU alone. These findings provide promise for the use of theatre as an occupation-based intervention for early SUD recovery. Wasmuth, Crabtree, and Scott (2014) have suggested that addiction is an occupation and that people in early recovery who are abstaining from their addiction are experiencing extreme occupational deficit. Considering this occupational deficit may help OT better understand the low treatment compliance and high relapse rates that exist for people with SUD in early recovery (Wasmuth, et al., 2014). It is imperative that OT provide new occupations to address occupational deficit and bolster recovery efforts. Theatre as an intervention incorporates several components that literature highlights as important for SUD recovery including cognitive challenges, such as reading and memorizing scripts, social participation during rehearsals and performances, and attention to future performances (delayed gratification). Exploration of other occupation-based interventions that incorporate these factors may be beneficial.

Future Work

Future studies of theatre interventions should aim to include a larger sample size. Researchers in this study attempted to recruit from numerous facilities with hundreds of potential participants, yet this remained a challenge. Therefore, one suggestion is performing this intervention with an inpatient population. Fenech (2009) was able to recruit and retain thirty-one inpatient residents with various neurological disabilities for a drama program with positive outcomes. However, performing theatre with an inpatient population may allow researchers to recruit and retain more participants, it would likely produce different results. For instance, the GSE and OCAIRS scores may be higher in the inpatient population because individuals' days are structured for them, they are surrounded by other people in recovery, and there are often rules about maintaining abstinence to remain in the facility. They have less access to drugs and more immediate access to support, and have potentially fewer environmental stressors. By contrast the outpatient population may have less access to direct, continuous support, and greater access to their drug of choice. They may also be in an environment supporting addictive behaviors due to friends, drug dealers, and other triggers (MacDonald et al., 2011; Vallejo, 2011). Therefore, using an inpatient population may increase sample size, it would not provide information about the effectiveness of theatre for people living within the community during the recovery process. However, it may be worth exploring whether the theatre intervention used in this study, adapted for an inpatient population, produces positive outcomes once participants resume community living.

Limitations

A major limitation to this study is the small sample size due to limited recruitment of participants, as well as participant dropout. Some studies indicate people with addictions identify as being in a process of "self-change" (p. 81), and are therefore more difficult to recruit

for research-related interventions, and, if recruited, are more likely to drop out (Garcia-Rodriguez, et al., 2009). Illustrating this point, in the current study, researchers attempted to recruit hundreds of individuals from multiple different treatment centers and open 12-step meetings, yet only retained 15. Five participants were lost due to dropout by the end of this study. In addition to being in a process of self-change, dropout rates are particularly high for this population due to several reasons including sociodemographic variables, withdrawal symptoms, anxiety sensitivity at treatment entry, addiction severity, cognitive performance, personality variables, and variables related to treatment programs and client perception (López-Goñi, Fernández-Montalvo, & Arteaga, 2012). In this study, recruiting from multiple sites including treatment centers and open 12-step meetings was an attempt to address this problem.

Considering the finding that greater variance existed in self-efficacy among dropouts, researchers may consider having a minimum GSE cutoff score to participate - this may reduce incidences of dropouts but will not address the difficulty of recruiting more participants. This latter difficulty may be also be due to the nature of the intervention in this study, which requires a significant time commitment and being on stage; public performance is reported to be the most common social fear among the general population (Jackson, Compton, Thornton & Dimmock, 2017).

Another limitation of this study is the use of a convenience sample from within a limited geographical area, which may not accurately represent the more general SUD population.

A third limitation is that all participants were not receiving the same TAU. Participants were recruited from multiple facilities and programs, hence some participated in outpatient treatment and 12-step programs, and some were involved in just one or the other. Others discontinued their involvement in any treatment. This variability may have impacted both groups because intervention and comparison groups were both also receiving TAU at the time of recruitment.

Furthermore, although all participants expressed interest in participating in a theatre intervention, some were placed in the comparison group due to scheduling conflicts. This may have limited continued motivation to participate in the study.

Conclusion

Theatre-based intervention in addition to TAU resulted in a statistically significant, positive change from baseline to 6-month follow-up in the areas of GSE as well as the constructs measured by the OCAIRS, which include values, roles, personal causation, interests, habits, and environment. This change over time did not occur in the comparison group. Theatre includes elements of cognitive challenge, self-efficacy, delayed gratification, and social participation. Considering substance abuse as an occupation encourages OT to explore occupations that can address occupational deficit in early recovery. OT should further explore theatre and other occupations that include these factors.

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