

Research

The Effect of Autonomy-Supportive Therapeutic Recreation Programming on Integrated Motivation for Treatment among Persons who Abuse Substances

Jaimie Cogswell
Sandra K. Negley

Abstract

According to the National Institute on Drug Abuse (NIDA, 2009) substance abuse is a major public health concern economically impacting society by 67 billion dollars annually. Effective substance abuse treatment could potentially decrease this amount by reducing crime and increasing the psychological health and physical well-being of many Americans. Studies in substance abuse treatment indicate that client motivation for treatment is directly linked to treatment retention and successful recovery. Programs that are autonomy-supportive and based on Self-Determination Theory have shown greater integrated motivation for treatment. Self-determination is inherent to leisure and leisure based interventions are the essence of Therapeutic Recreation treatment. The purpose of this study was to examine the effect of an autonomy-supportive therapeutic recreation program on motivation for treatment and perceived autonomy-supportive environment. Participants took part in one of three research groups or the control group and completed two questionnaires; the Treatment Motivation Questionnaire, measuring integrated motivation for treatment at pre and post treatment phases and the Treatment Climate Questionnaire, measuring perceived autonomy-supportive environment. Although ANCOVA and ANOVA analyses produced nonsignificant statistical results, client feedback supported the use of therapeutic recreation interventions in substance abuse treatment.

Keywords: *Autonomy-support, choice, empathy, integrated motivation, rationale, self-determination theory*

The authors: Jaimie Cogswell M.S. TRS, CTRS, practices therapeutic recreation in the inpatient medical psychiatric unit at the University of Utah Medical Center.

Sandra K. Negley M.S. MTRS, CTRS is an Instructor at the University of Utah, Department of Parks, Recreation and Tourism and is the Coordinator of Therapeutic Recreation.

Address all correspondence to the author at: Jaimie Cogswell, University of Utah Medical Center, Psychiatry, 801-581-2815, Jaimie.Cogswell@hsc.utah.edu

Substance abuse is a major public health concern. The National Institute on Drug Abuse (NIDA, 2009) reports the economic impact of substance abuse on society is an estimated \$67 billion per year. This total includes costs related to crime, social welfare programs, medical care, time lost from work, and substance abuse treatment. Further, NIDA has found that for every dollar spent on substance abuse treatment, four to seven dollars are saved in all other affected areas. Thus, research on effective substance abuse treatment could potentially save Americans billions of dollars per year, reduce crime, and increase psychological health and physical well-being.

Client motivation for treatment has been identified as a factor that influences participation in treatment (Miller, 1985). Specifically, treatment goals at admission (Mertens & Weisner, 2000) and initial integrated motivation for treatment (Ryan, Plant, & O'Malley, 1995) are related to treatment retention. Although both extrinsic and intrinsic motivations dynamically influence a client's participation in treatment, it appears that integrated motivation (the most autonomous form of extrinsically motivated behavior) is positively related to treatment retention (Ryan et al.). In addition, evidence indicates that longer length of stay in treatment is related to better treatment outcomes and greater rates of successful recovery (Barjes, Gordon, O'Grady, & Kinlock, 2004). Thus, providing a climate conducive to supporting and promoting integrated motivation for treatment should result in longer treatment stays and more successful treatment outcomes.

Therapeutic recreation (TR) programs have long been included in substance abuse treatment. For example, common TR approaches such as leisure education

(Rancourt, 1991) and coping skills training programs (Carruthers & Hood, 2002) have been found to contribute to satisfying treatment, enhance effective problem-solving skills, and assist clients in identifying non-chemical alternatives.

Therapeutic Recreation is theoretically grounded in self-determination, which is inherent in leisure theory. Leisure-based interventions associated with TR lend well to an individual's sense of freedom, sense of control, and intrinsic motivation (Stumbo & Peterson, 2004). Studies based on Self-Determination Theory (SDT; Deci & Ryan, 1985) have found that autonomy supportive programs result in greater integrated motivation (Deci, Eghrari, Patrick, & Leone, 1994). Autonomy supportive programs include the elements of providing a rationale, empathic interactions, and offering choices (Deci et al., 1994). Providing a rationale for a desired behavior in an autonomy supportive way (Reeve, Jang, Hadre & Omura, 2002) and implementing at least two of these autonomy supportive elements (Deci et al.) have been shown to result in increased integrated motivation for targeted behaviors.

Based on this rationale, the primary aim of this study was to examine the effects of an autonomy-supportive therapeutic recreation program on motivation for treatment. It was hypothesized that autonomy-supportive therapeutic recreation programs (utilizing empathy and choice; empathy and rationale; or empathy, choice, and rationale) would influence integrated motivation for treatment more than the control group. In addition, it was hypothesized that participants of the autonomy-supportive therapeutic recreation programs would perceive the environment to be more autonomy-supportive than the participants of the control group.

Motivation and Substance Abuse

Treatment

When it comes to addiction, recovery appears to be an issue of motivation. West (2001) points out that:

The severity of the medical, psychological and social harm that can be caused by addiction, together with the fact that it violates the individual's freedom of choice, means that it is appropriate to consider it to be a form of psychiatric disorder: a disorder of motivation. (p. 3)

The primary variable that influences people to initiate behavioral change is motivation (Prochaska, DiClemente, & Norcross, 1992). Motivation is a concept that "concerns energy, direction, persistence, and equifinality—all aspects of activation and intention" (Ryan & Deci, 2000, p. 69). Specifically, motivation is the force that drives human behavior.

De Leon, Melnick, Thomas, Kressel, and Wexler (2000) found significant direct relationships among initial motivation, entry into aftercare, and post-prison reductions in recidivism and drug use among participants in a prison-based therapeutic community.

Additional research also found direct effects of motivation on treatment process and outcomes (Melnick, De Leon, Thomas, Kressel, & Wexler, 2001). Likewise, the Project MATCH Research Group (1998) found that clients who had greater motivation at baseline were more likely to have a strong client-therapist alliance and better recovery outcomes. The client-therapist relationship has already been shown to be linked to retention (Barjes et al., 2004).

Additionally, Ryan et al. (1995) studied initial motivations for alcohol treatment. They distinguished between clients' internal and external motivations for treat-

ment. Internal motivations for treatment may include "hitting bottom" or wanting to change behavior for the self, whereas external motivations may include social pressure, threat of job loss, or legal ramifications if treatment is not sought. Ryan et al. found that clients with internalized motivation for treatment were associated with greater participation and retention. Furthermore, clients with both high internalized motivation and external motivation had the best attendance and retention in treatment. Finally, there was a negative relationship between high external motivation/low internal motivation and treatment retention.

Individuals coerced into treatment through external sources (e.g., the criminal justice system) may not be as motivated for treatment as self-referred individuals (Wild, Newton-Taylor, & Alletto, 1998). It appears that perception of coercion plays a more significant role than actual modality of referral. A review of 11 empirical studies of compulsory substance abuse treatment done by Farabee, Prendergast, and Anglin (1998) provides evidence that treatment retention and successful recovery is not influenced by the actual referral source; whether self-referral or legally mandated into treatment. Half of the studies investigated showed a positive relationship between legal pressure and treatment outcomes. The influencing factor was whether or not the individual perceives they are being coerced into treatment. Moreover, Wild, Newton-Taylor, and Alletto (1998) found that the client's perception of being coerced is likely to increase when the client's autonomy is being undermined. They found that clients who did not believe they had an addiction were more likely to report feeling coerced into treatment. This emphasizes the important role that beliefs play in motivation. The client's perception of control and autonomy plays a more

significant role than referral source (e.g., legal system vs. self-referral).

Self-Determination Theory

Theories can help provide an explanation of behavioral change. Measurement of behavioral change has concerned researchers of health care management (e.g., Grolnick & Ryan, 1987; Ryan et al.; Williams & Deci, 1996). Moreover, measurement of outcomes has become especially important during the era of managed care. Disappointingly, many providers in health care systems lack theoretical frameworks for their programs (Whittinghill, Whittinghill, & Loesch, 2000).

Self-determination theory (SDT; Deci & Ryan, 1985, 2000, 2002) is a theory of human motivation. It is an organismic-dialectical metatheory that assumes humans are active, growth-oriented organisms constantly working toward a more elaborate and unified sense of self (Deci & Ryan, 2002). SDT posits that social-environmental contexts can either nurture or frustrate healthy development of the more integrated sense of self. According to SDT's Basic Needs Theory, competence, relatedness, and autonomy are three basic innate psychological needs required for optimal human growth and functioning. Competence is feeling effective in interactions with the social environment and expressing one's

capacities; relatedness refers to feelings of connectedness and a sense of belongingness to others and the community; and autonomy refers to the perception of being the origin of one's own behavior or feeling volitional and free in one's actions. SDT uses Causality Orientation Theory to help explain how social-environmental contexts are measured by their ability to fulfill (or not fulfill) these needs. Attainment of these needs underlies all human motivation (Deci & Ryan, 2002).

Deci and Ryan (2000) developed the self-determination continuum to help describe different levels of motivation (see Figure 1). Amotivation refers to acting without knowing; there is no regulation. Actions are nonintentional, nonvaluing, and without perceived control. External regulation is the most external of the four extrinsic motivations. It refers to behaviors resulting from compliance, external rewards, and punishments. Introjected regulation refers to an internal feeling of obligation, self-control, ego-involvement, internal rewards, and punishments. Identified regulation is somewhat internal and doing something not for the activity itself, but for the outcomes of performing that behavior. It has personal importance and is conscious valuing. Integrated motivation is the most internal of the extrinsic motivations. It involves performing the behavior

Types of Motivation					
Amotivation	Extrinsic				Intrinsic
Non-Regulation	External Regulation	Introjected Regulation	Identified Regulation	Integrated Regulation	Intrinsic Regulation

Figure 1. The Self-Determination Continuum. Adapted from Ryan and Deci (2000).

because it is congruent with the self. The integrated regulations are fully assimilated to the self and “brought into congruence with one’s other values and needs” (Ryan and Deci, 2000, p. 73). On the opposite end of the continuum lies intrinsic motivation, or doing something for its own sake. The activity itself is inherently satisfying, enjoyable, and interesting. Intrinsic motivation is connected to “greater productivity, creativity, spontaneity, cognitive flexibility, and perseverance” (Simoneau & Bergeron, 2003, p. 1222).

Autonomy-Supportive Environments

Autonomy-supportive environments have been shown to positively affect integrated motivation for desired behaviors (Deci et al., 1994; Reeve, Jang, Hardre, & Omura, 2002). Autonomy-supportive environments allow individuals to take ownership of their behavior. Offering a rationale to adopt a specific behavior, displaying empathy or taking the perspective of others, and giving individuals the opportunity to choose are three variables that support autonomy.

Deci, Eghrari, Patrick, and Leone (1994) found that implementing at least two of these variables among subjects dur-

ing an uninteresting activity lead to higher identification and internalization of the behavior. Furthermore, Reeve et al. (2002) found that providing a rationale in an autonomy-supportive way (using non-controlling language) also positively affected self-determination. Based on these findings, it appears that autonomy-supportive treatment programs have the potential to increase internalized motivation for treatment.

Leisure Education

Leisure, by definition, is a personal construct that aligns itself with the principles of self-determination theory and motivation. Specifically, leisure is inseparably connected to freedom of choice and personal or intrinsic motivation (Bullock & Mahon, 2001). The person-centered conceptual model of leisure education is a therapeutic recreation theoretical partner to Deci and Ryan’s self-determination theory. Each component of the model is interconnected to ultimately effect the individual’s satisfaction with lifestyle. Self-determination, skill learning and rehearsal, and awareness focus on the individual’s needs and aspirations (see Figure 2).

Leisure education is a therapeutic rec-

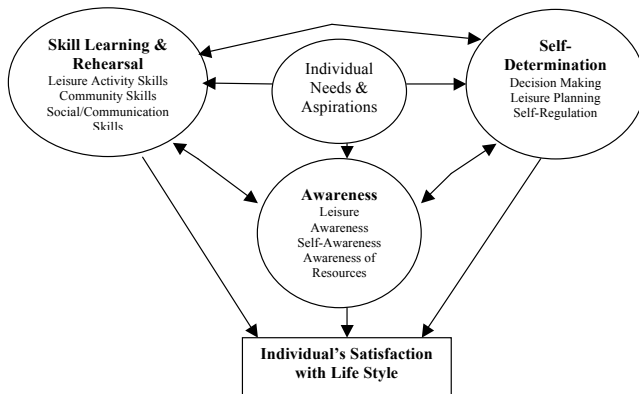


Figure 2. A Conceptual Model for Person-Centered Leisure Education. Adapted from Bullock and Mahon (2001).

recreation modality that develops an individual's understanding of play, recreation and leisure and the need to participate in leisure and recreation activities to maintain a healthy substance-free lifestyle. Because self-determination is an inherent aspect of leisure, and leisure is so closely tied to addiction, leisure education may be an ideal median for facilitating recovery. The following passage from the diagnostic criteria for substance dependence communicates the importance of addressing leisure: "important social, occupational or recreational activities are given up or reduced because of substance use" (APA, 2000). Faulkner (1991) further describes how leisure and addiction interact when stating:

Addiction is a leisure disease, and dysfunctional leisure is a symptom of addiction. Naturally, there are many other factors involved in the creation of an addictive personality. But the linkage between leisure malfunction and addiction is astounding. Most people take their first drink, fix, or pill during leisure hours and as a part of leisure functioning. In that respect, addiction becomes a function of leisure and "dis-ease" of leisure. Once embarked on the addiction trail, people frequently abandon forms of leisure pursuits which do not permit alcohol and/or drug use. At this stage, dysfunctional leisure becomes a symptom of addiction. (p. 6)

Thus, leisure education is a modality of therapeutic recreation services that has the potential to not only address leisure-related aspects of recovery, but to also facilitate integrated motivation to participate in the recovery process.

Summary

Theory and research suggest that an autonomy-supportive TR program based on Deci and Ryan's self-determination theory can have a positive effect on client's integrated motivation for treatment. Perspective taking or empathic interactions can be implicit in one's personality and imperative in the therapist-client relationship. For this reason, the perspective taking element of autonomy-support naturally occurs, and was not considered in this study. This study specifically explored the relationship between motivation for treatment and perceived autonomy-support across four treatment conditions: TR program providing rationale, TR program providing choice, TR program with choice and rationale autonomy-supportive elements, and the control group with participants attending the Life Skills Class. This study examined the following hypotheses:

H1: Motivation for treatment will differ across the four levels of treatment (1-empathy and choice, 2-empathy and rationale, 3-empathy, choice, and rationale, 4-control group).

H2: Client's perception of autonomy support will differ across the three levels of treatment (1-empathy and choice, 2-empathy and rationale, 3-empathy, choice, and rationale, 4-control group).

Methods

This study involved a static group pre-test-posttest design. The independent variable was treatment element (empathy and choice vs. empathy and rationale vs. empathy, choice, and rationale vs. control). The dependent variables in the study were motivation for treatment and perceptions

of autonomy support. The following describes the methods of this study in more detail.

Participants

The sample for this study consisted of 39 participants seeking outpatient substance abuse treatment or entering outpatient treatment as a step-down from residential treatment. Initially, 50 clients enrolled to participate in this study. The majority of the participants were male (female $n = 2$). Participant's age ranged from 20 to 55 years with a mean age of 31.7 years. Thirty-seven participants were referred to treatment by the criminal justice system, four from an outside referral source and nine omitted their answer to this question. Eleven participants did not complete the study due to premature discharge from treatment (e.g., participant repeatedly tested positive for illegal substances and was discharged or participant was removed from treatment and incarcerated).

To maximize sample size, it was necessary to conduct groups in a non-concurrent fashion, meaning only one group was conducted at a time. During the first month of the study, data were collected for half of the control group; the second month, the investigator facilitated the empathy and choice TR program ($n = 6$); the third month, the empathy and rationale TR program was facilitated ($n = 3$), the fourth month, the empathy, choice and rational TR program was run ($n = 9$); and during the final month, additional control group data were collected (total control $n = 21$). This made it impossible to randomly assign participants to groups. Instead, participants were recruited from available clientele at the time each program was to begin. Additionally, participants of the study groups likely attended the Life Skills group (but not the control group sessions) prior to and or after the study period due to their

length of treatment.

Setting

Participants were recruited from an outpatient program in the greater Salt Lake area. The treatment facility's goal is "to help low/no income, often-homeless individuals achieve long-term recovery from the dysfunctional effects of substance abuse and to return to society as meaningfully employed, responsible citizens." Treatment modalities consist of group therapy, individual counseling, and life skills training. Life skills training are psycho-educational classes that cover a variety of topics including but not limited to relapse prevention, stress management, problem solving, building relationships, conflict resolution, grief and loss, thinking errors, and healthy lifestyles.

Instrumentation

The Treatment for Motivation Questionnaire (TMQ) and the Treatment Climate Questionnaire (TCQ) were the instruments used to measure motivation for treatment and perceived autonomy-support of the recreation therapist/life skills facilitator respectively.

Ryan et al. (1995) developed the Treatment for Motivation Questionnaire (TMQ) to determine the level of motivation and reasons for entering and remaining in substance abuse treatment. The TMQ is a paper and pencil self-report of motivation and reasons for treatment. It uses a 7-point Likert scale (1: not true at all; 4: neutral; 7: very true) to measure participant's evaluation on motivation statements such as "I really want to make some changes in my life" and "I won't feel good about myself if I don't get some help." It measures four factors: internalized motivation (11 items), external motivation (four items), interpersonal-help-seeking (six items), and confidence in treatment (five items). The factors

have been found to be internally consistent with alpha coefficients ranging from .70 to .98. This study only measured internalized motivation, thus the questionnaire was reduced to the 11 items that measure internalized motivation for treatment.

Williams, Rodin, Ryan, Grolnick, and Deci (1998) found that the TMQ accurately assessed patients' internalized motivation and internalized motivation was a strong predictor of adherence to long-term medication regimens. Moreover, Williams and Deci (1996) used the TMQ to assess patients' motivation for smoking cessation and found that cessation at six months was predicted by patients' internalized motivation.

The Health-Care Climate Questionnaire (HCCQ; Williams, Grow, Freedman, Ryan, & Deci, 1998) measured the perceived level of autonomy support in the environment offered by treatment staff. The HCCQ assesses perception of staff's listening skills, providing choice, encouraging open discussion, and supporting participant's role in decision-making. The alpha coefficient for internal consistency has been found to be .90 and above (Williams et al., 1998).

Several studies have used the HCCQ to measure perceived autonomy-support. Williams, Rodin, Ryan, Grolnick and Deci (1998) found that patients who perceived their physicians to be more autonomy-supportive identified autonomous reasons for adhering to their medication regimen than patients who perceived their physicians to be more controlling. Williams and Deci (1996) found that patients' autonomous motivation was predicted by perceived autonomy-support of physicians. These studies portray a clear link between integrated motivation and perceived autonomy-support.

This study adapted the HCCQ to bet-

ter fit the substance abuse treatment setting. The HCCQ was renamed the Treatment Climate Questionnaire (TCQ). Minor wording was changed by the investigator to better suit this population (i.e., "physician" changed to "therapist"). The TCQ also uses a 7-point Likert scale (1: strongly disagree; 4: neutral; 7: strongly agree) for participants to rate their evaluation of the treatment climate (e.g., "I feel my recreation therapist has provided me choices and options"; "My recreation therapist has made sure I really understand my condition and what I need to do"; "I feel understood by my recreation therapist"; "My recreation therapist conveys confidence in my ability to make changes").

Procedures

The interventions in this study were grounded in SDT's concept that an autonomy-supportive environment would likely increase participant's integrated motivation for a targeted behavior (substance abuse treatment). This study included three four-week therapeutic recreation programs exploring the effect of the different autonomy-supportive constructs and one control group of participants involved in the Life Skills Class. Data was collected during the summer of 2006 until the winter of 2007.

On the first day of each TR program, participants completed the TMQ (pretest measure of integrated motivation for treatment) and therapeutic recreation assessment to gain insight on the leisure and recreation functioning of the client. Information gathered from the TR assessment helped the facilitator guide groups' discussion on the importance of substance free leisure participation. On the final day of the program, clients completed the TMQ (posttest measure of integrated motivation for treatment) and the TCQ. The TCQ was used only as a post-test measure to evaluate

the study groups' climate.

Each TR program implemented eight one-hour sessions provided twice a week for four weeks. Topics covered in the TR program mirrored topics addressed in the life skills psycho-educational classes. Specifically, the TR program addressed eight topics: relationships, relapse prevention, problem solving, stress management, effective communication, social support, using leisure and recreation as a modality

to enjoy life, and goal setting. The sessions were modeled and adapted from Group treatment for substance abuse: A stages-of-change therapy manual by Mary Velasquez, Gaylyn Maurer, Cathy Crouch, and Carlo DiClemente (2001). Table 1 shows examples of how each treatment was facilitated. These sample treatments for Managing Stress are mirrored throughout all eight sessions.

Data Analysis

Table 1

Managing Stress Example Modeling Facilitation Techniques for Treatment Groups

Empathy and Rationale Treatment

The facilitator will emphasize providing a rationale for treatment throughout this session. The facilitator states: *Thank you all for coming to treatment tonight. I know it is difficult to attend treatment after a long day at work. Making the commitment to understand your stress and to learn better ways of managing stress is an important component of your treatment. As you work to make significant changes in your life, your ability to handle stressful situations will be challenged. This is especially true since the most common coping response to stress, in the past has been using or drinking. Learning how to manage stress as a part of treatment is important to your recovery. Attending treatment group tonight will help you learn techniques to better handle your stress and prevent relapse.*

Empathy and Choice Treatment

Providing choice, or the illusion of choice, will be imperative during this treatment program. On day one of the program, the facilitator will discuss the topics covered during the subsequent sessions, and offer the group the opportunity to choose the order that the topics will be discussed. The facilitator will state: *Thank you all for coming to treatment tonight. I know it is difficult to attend treatment after a long day at work. Tonight, we will be discussing stress management and focusing on relaxation. A variety of experiential techniques can be helpful in learning to managing stress. We have the choice between a guided imagery meditation, a progressive muscle relaxation, a light stretching and movement exercise with a few simple yoga techniques, or we can go for a walk with a process circle at the end. Which would you like to choose for tonight?*

Other opportunities to provide choice are evident in this session. For example, during the mediation the facilitator can offer the clients to either close their eyes or gaze downward at the floor. The facilitator can let the group choose the pace and distance of the walk. The goal of this treatment program is to provide the group with as many choices in the treatment process as possible.

Combo Treatment

The combo treatment utilizes all three autonomy-supportive elements: providing a rationale, giving choices, and taking the perspective of the clients. Applying all three techniques in this session, the facilitator will state: *Thank you all for coming to treatment tonight. I know it is difficult to attend treatment after a long day at work. Making the commitment to understand your stress and to learn better ways of managing stress is an important component of your treatment. As you work to make significant changes in your life, your ability to handle stressful situations will be challenged. This is especially true since the most common coping response to stress in the past has been using or drinking. Learning how to manage stress as a part of treatment is important to your recovery. Attending treatment group tonight will help you learn techniques to better handle your stress and prevent relapse. A variety of experiential techniques can be helpful in learning to managing stress. Tonight you have the choice between a guided imagery meditation, a progressive muscle relaxation, a light stretching and movement exercise with a few simple yoga techniques, or we can go for a walk with a process circle at the end. Which would you like to choose for tonight?*

Data were cleaned, screened, and entered into SPSS 14.0. The hypothesis concerned with motivation for treatment was tested with a one way Analysis of Covariance (ANCOVA) with the pretest of motivation as the covariate. The second dependent variable, perceived autonomy-supportive climate, was measured. Group differences were examined with a four level Analysis of Variance (ANOVA).

Results

Analysis

Mean scores across groups are reported in Table 2. TMQ Pretest means were consistently high across all groups leaving little opportunity for any treatment to have a significant effect on motivation. Treatment group TMQ Pretest means were slightly higher than the control group. In addition, all groups rated the environment relatively autonomy-supportive. One reversed score item on the TCQ was exempted from data analysis due to inconsistent scoring as evidenced by low correlations with the other scale items.

ANCOVA results regarding integrated motivation for treatment indicated non-significant differences across the four groups (Hypothesis 1; see Table 3; $F[3,32] = 1.03, p = .391$). TMQ Pretest scores were significant as covariates, $F(1,34) = 40.10, p < .001$. Perception of an autonomy-supportive climate was also found to be consistent across the four groups with no significant differences occurring (Hypothesis 2; see Table 3; $F[3,34] = .28, p = .842$).

Discussion

Statistical analysis showed no significant differences across group regarding integrated motivation for treatment and perceptions of an autonomy-supportive environment. Both null hypotheses were accepted.

One notable statistical phenomenon in this study was the elevated TMQ Pretest scores. This may indicate that individuals who volunteered to participate in the study were fairly internally motivated to engage in treatment, leaving little room for

Table 2

Mean Scores for Integrated Motivation and Perceived Autonomy-Supportive Climate across Groups

Group	TMQ Pretest	n	TMQ Posttest	n	TCQ	n
control	5.51	21	5.69	21	6.07	18
E & C	6.12	6	5.65	6	6.21	6
E & R	5.80	3	6.12	3	6.38	3
E, C, & R	6.39	9	6.12	9	5.91	9

Table 3
ANCOVA Results for Integrated Motivation

	SS	df	F	p
TMQ Pre ^a	22.79	1	40.10	<.001
I.M. ^b	1.76	3	1.03	.391
Error	19.32	34		
Total	43.87	37		

^a = Treatment Motivation Questionnaire Pretest

^b = Integrated Motivation

change. At the same time, it may be that participants were prone to answering in a manner that they believed to be desired by therapists and other members of their treatment team. This may be even more likely when considering the potential consequences of “failing” the program. Providing a response that indicated a lack of motivation may have been viewed by the respondents as potentially harmful in regard to their successful navigation of the treatment program. Supporting this observation is the fact that the reverse coded item on the instrument was answered inconsistently, which may indicate that some participants attempted to answer with a favorable response without actually closely reading the question. This possibility is further supported by one instance in which the researcher overheard a participant state during questionnaire completion “You don’t even have to read the questions, just do all ‘7’s”.

Limitations

In addition to significant concerns regarding the validity of participant responses, several other limitations should be acknowledged. First, the methods of

this study are not consistent with typical practices. For instance, all study treatment groups were closed; no new participants entered into those groups during the four-week period. Typically, in treatment facilities, group sizes are in constant flux due to continual discharges and admissions to the program. This is a common complication for research conducted in clinical settings. In addition, random assignment to groups was not possible, making it difficult to account for subject characteristics. Related to this, the point at which the program was introduced to the client during their therapy program differed widely, meaning that participants were all at different points in the program as they entered the groups.

Facilitator differences between the treatment and control groups may have impacted the outcome as well. Although the treatment groups’ facilitator remained constant, the control group received instruction during the Life Skills class from a variety of facilitators. The Life Skills class facilitation rotates through the clinical staff (four to six different staff members), and the resulting variation in the focus and technique used by the life skill class facilitators was not accounted for.

Small sample size in treatment groups further complicated efforts to find significance between the TR program and control group. Treatment group sizes six, three, and nine created difficulties in statistically comparing these groups for differences. In addition, the groups were uneven. A small sample size creates difficulty in finding statistically significant results.

One last limitation of the study was the investigator's difficulty recruiting participants for this study. Treatment counselors offered clients an incentive if they participated (i.e., partial fulfillment of treatment requirements). Offering an incentive (external motivator) for participation is a contraindication for this study investigating internalized motivation.

This study attempted to contribute to the growing body of theory-based TR intervention and efficacy research in the practice of therapeutic recreation; however, many of the methodological challenges faced in other studies were also experienced in this instance. Nation, Benschhoff, and Malkin (1996) performed a comprehensive overview of therapeutic recreation interventions in substance abuse treatment programs. They found that most research is descriptive and there is a high need of efficacy research to advocate for the profession. The methodological challenges of this study are indicators of the difficulty of the task. Carruthers and Hood (2002) experienced similar difficulties when examining a TR coping skills program for individuals with alcoholism. They did report that clients perceived improvement in their coping skills due to participation in the program, but they also confronted some of the same problems this study encountered. Specifically, they stated that "very few clients attended all seven sessions, so no attempt was made to evaluate the coping skills program in its entirety" (p. 165). The current study, however, did attempt to

evaluate all eight sessions as one complete program, which led to the mortality of participants. Consequently, the sample size was reduced, as in the case of TR Program 2 (empathy and rationale) where the end sample size was three.

Recommendations

Despite the lack of evidence to support the proposed research hypotheses, existing theory and research, in general, justify future research on this topic. The following are some recommendations.

The elevated TMQ Pretest score served as a barrier to any potential change that could have occurred. A methodological adjustment may be appropriate. A retrospective TMQ Pretest could be introduced after the TMQ Posttest at the end of programming as an additional measure of motivation for treatment. Response-shift bias can occur when an intervention changes the participant's "evaluation standard with regard to the dimension measured with the self-report instrument" (Howard, 1980, p. 93). Throughout the four weeks, the participant is learning, acquiring new skills, and gaining more insight for his or her reasons for being in treatment. Howard's research would support the use of a retrospective TMQ Pretest to diminish the effects of response-shift bias and more accurately capture the participant's perceived change in motivation over the program period. In other words, retrospective pretesting may provide a more accurate indication of one's functioning prior to the program. This technique may also address the tendency for participants in programs such as this to complete assessments in a manner that they think will most benefit them rather than in a manner that reflects their true perceptions.

A larger sample and randomized clinical trial may also increase the likelihood of finding statistically significant results.

Controlling for participant fatigue and encouraging thoughtful completion of questionnaires may result in a more accurate representation of the participants' level of motivation and perceived autonomy-support.

Future studies may want to explore the option of addressing motivation through program content rather than the program process. This study focused on the autonomy-supportive process through providing choice, perspective taking, and providing a rationale as a way to target motivation. Another option may be to alter the content of the program to target motivation. Integrated motivation is linked to performing behaviors because it is congruent with the self. The identified regulations are fully assimilated to the self and "brought into congruence with one's other values and needs" (Ryan & Deci, 2000, p. 73). Therapeutic recreation programs could include sessions that focus on core values, prioritizing, or self-esteem building. The program content could be altered to explore participants' motivations rather than focusing on other life skills such as communication, problem-solving or stress management. A program's content that focuses on motivation may affect motivation more than a program utilizing a motivational process (autonomy-support).

Statistical outcomes from this study provide little implications for practice. However, anecdotal evidence provides support for therapeutic recreation practice. After all questionnaires were completed, the investigator invited participants to give any feedback on the TR program. Clients reported feeling more engaged, looking forward to group, and excited about the group's planned activity. One client stated he liked the TR group better than Life

Skills because the group was well thought-out, planned, and the clients were able to participate rather than sit in a lecture style class. This study provides interesting anecdotal evidence that warrants future research using qualitative methods.

This feedback also emphasizes the importance of therapeutic recreation in a substance abuse treatment environment. The interactive nature of therapeutic recreation engages participants by using recreation and leisure to teach a life skill that supports recovery. Furthermore, therapeutic recreation's process of assessment, plan, implementation, and evaluation prevents a sometimes all-too-common impromptu group. It stresses the importance of clinician preparedness.

Conclusion

Although this study gained little additional insight into the function of autonomy-support on motivation for treatment, autonomy-support still may prove to be a useful tool in increasing integrated motivation for treatment and, thus, reducing early termination from treatment. Individuals in treatment for substance abuse may benefit from an increased sense of autonomy that, in turn, affects their level of motivation from a more external or interjected to a more integrated form. Clinicians utilizing autonomy-support in their interactions with clients may produce better treatment outcomes. Furthermore, the methodological challenges that came into play led to some specific approaches that can be considered in future research, such as the use of a retrospective pre-test. The nature of the therapy environment warrants exploration of innovative methodologies that can further isolate the impact of TR interventions.

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