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Religiosity and Participation in Mutual-Aid Support Groups for Addiction

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Abstract

Mutual-aid support groups play a vital role in substance abuse treatment in the United States. A national survey of mutual-aid support groups for addiction was conducted to identify key differences between participants in recovery groups. Survey data indicate that active involvement in support groups significantly improves one's chances of remaining clean and sober, regardless of the group in which one participates. Respondents whose individual beliefs better matched those of their primary support groups showed greater levels of group participation, resulting in better outcomes as measured by increased number of days clean and sober. Religious respondents were more likely to participate in 12-Step groups and Women for Sobriety. Non-religious respondents were significantly less likely to participate in 12-Step groups. Religiosity had little impact on SMART Recovery participation, but actually decreased participation in SOS. These results have important implications for treatment planning and matching individuals to appropriate support groups.

Keywords

Addiction; Treatment; Recovery; Mutual-aid Support Groups; Religiosity

1. Introduction

Mutual-aid support groups, also known as self-help or recovery support groups, are a critical component of the substance abuse treatment system in the United States. In 2004, an estimated 2.1 million people received help through these groups (Substance Abuse and Mental Health Services Administration (SAMHSA), 2005). Mutual aid support groups are not only cost-effective resources; they have also been shown to improve post treatment client success rates (Beattie and Longabaugh, 1999; Etheridge, et.al, 1999). More than 23 million people in the United States aged 12 or older are in need of treatment for an existing problem with alcohol and/or illicit drug use, 9.8% of the entire population (SAMHSA, 2005). The great strain on health care resources has led the treatment system to become increasingly reliant on mutual-aid support groups as complements or alternatives to professional treatment (Humphreys, et al., 1997; Finney, et al., 1996; Collins, 1995; Moos, et al., 1993).

Support groups using the 12-step approach are a major component in the treatment protocols of many treatment facilities throughout the United States. While the 12-step approach has been heralded as the most successful method of treating addiction problems (Carlson, et.al, 1994;

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Hinrichsen, 1990), the approach cannot work unless the people with addiction problems attend the meetings and follow the program's advice. Some individuals find the philosophy and approach of the traditional 12-step programs, such as Alcoholics Anonymous (AA) and Narcotics Anonymous (NA), problematic. This often results in these individuals avoiding attending support group meetings and rejecting the help these groups have to offer. The disconnect between individuals and recovery approaches can have serious negative consequences for the prospects of long-term recovery for these people.

Many individuals leave treatment prematurely (Hser, et.al, 1998), due, in part, to poor matches between clients and treatment programs. The recognition of client population heterogeneity in alcohol and drug treatment has led to efforts to match clients with appropriate treatment protocols (Babor and del Boca, 2004; Gastfriend, 2003; Project MATCH, 1997; Roberts, 1996; Glaser, 1993). In fact, the National Institute on Drug Abuse's (2000) first principle in its *Principles of Drug Addiction Treatment: A Research-Based Guide*, points out that “no single treatment is appropriate for all individuals.” Thus, the provision of better patient treatment is not so much a matter of “what works,” but “what works for whom, and in what setting” (Orwin and Ellis, 2000). If mutual-aid support groups are going to be a major component in treatment protocols, then matching treatment patients to the most appropriate mutual-aid support groups with regard to their individual beliefs and needs may be a critical factor in long-term treatment success.

In this paper, we examine the relationship between respondents' personal religious / spiritual beliefs, the beliefs espoused by their recovery group's program, and respondents' level of participation in these groups. Specifically, we try to determine whether or not having personal beliefs that match group beliefs increases an individual's level of participation in their recovery group program. The analysis is performed on 822 persons surveyed by The Walsh Group in 2005 who were participating in support group recovery programs. The paper begins by discussing the frequent use of mutual-aid support groups in substance abuse treatment. Then, the role of religious / spiritual beliefs in substance abuse treatment is considered and the importance of matching client and support group program beliefs on this fundamental dimension is highlighted. We then use OLS regression to test if participation in a program predicts program success; namely, does participation predict sobriety [e.g. being alcohol and drug free]. Finally, we use OLS regression to test if congruence between an individual's religious / spiritual belief and those of the group in which they participate enhances support group participation.

Many descriptive and naturalistic studies have been conducted that show the successes of 12-step programs. Unfortunately, largely due to the nature of these groups, randomized controlled trials are lacking (Humphreys, 2004; Peele, et al., 2000, Tonigan, et al., 1996; Emrick, et al., 1993). There is also ample evidence of the need for alternative mutual-aid groups (White and Nicolaus, 2005; Hester and Moyers, 2001, Fletcher, 2001; Glaser, 1993). In addition, there is no evidence available indicating that any given mutual-aid support group is more effective than any other self-help group. This lack of evidence is due, in part, to the lack of comparative studies of mutual-aid groups (Humphreys, 2004; Fletcher 2001). The treatment industry direly needs this research, and this study is an attempt to help fill this void in the scientific literature.

1.1 Mutual-aid Support Groups in Substance Abuse Treatment

The 12-step groups, such as AA and NA, are the most widely known and used mutual-aid support groups in substance abuse treatment. These 12-step groups were founded during the formative days of the American treatment system and subsequently became mainstays in substance abuse treatment. In fact, AA and NA are now institutionalized throughout American addiction care (Humphreys, 1999; Sommer, 1997; Taleff, 1997; Brown, 1995; Bewley, 1995; Miller, 1995; Miller and McCrady, 1993; Weisner and Morgan, 1992; Blumberg and

Pittman, 1991), including treatment in prisons and jails (Wilson, 2000; Read, 1990). While 12-step groups remain a large presence in treatment settings, there are also a number of important mutual-aid support groups available today using alternative approaches to recovery. Among these other groups are Secular Organizations for Sobriety (SOS), SMART Recovery (SMART), and Women for Sobriety (WFS).

Mutual-aid support groups share many important characteristics, but there are also many important differences between groups, as well (Humphreys, 2004). Universal characteristics include such things as a shared problem or status by members and an emphasis on experiential knowledge and reciprocal assistance. Important aspects that vary from group to group include the specific program or philosophy of a group and a group's spiritual, religious or secular emphasis. For example, AA and NA both use a 12-step spiritual program that encourages long-term membership in their fellowships and the acceptance of a "Higher Power." In contrast, SOS (2001) emphasizes a secular approach with its Sobriety Priority and use of cognitive tools to support recovery. SMART, which stands for Self-Management and Recovery Training, uses a secular four-point program based in Rational Emotive Behavioral Therapy. WFS, a support group specifically for women, focuses on its New Life Program, which includes a spiritual dimension. The differences between these groups are significant. [Details on the recovery support groups discussed in this article can be found on their websites – see Reference section.]

1.2 Religiosity and Spirituality in Substance Abuse Treatment

According to much of the existing literature, spirituality is a key ingredient in addiction recovery (Hackerman and King, 1998; Miller, 1997; Spaulding and Metz, 1997; Carroll, 1997; Miller and McCrady, 1993; Emrick, et al., 1993). However, definitions of what is spiritual and what is religious often vary from person to person and group to group. In addition, a spiritual or religious approach to recovery may not work for everyone. Many people reject this approach and prefer a more secular path in recovery.

Twelve-step groups are the dominant mutual-aid support group in treatment today. They maintain, "a strong ideology based on the idea that personal change can only be achieved through spiritual belief or conversion;" (Katz, 1993) and consider recovery to be a "gift from God" (Kaskutas, 1999: 3). AA considers alcoholism a "spiritual disease," maintaining that spiritual recovery precedes physical and mental recovery (AA, 1976: 64). The AA "Big Book" points out that "non-believers" should not rely upon reason, but seek faith in God, stating, "there is One who has all power – that One is God. May you find Him now!" (AA, 1976). Thus, AA and other 12-step groups find the source of individual change in divine intervention, though God is often referred to generically as a "Higher Power."

Twelve-step groups describe themselves as "spiritual and not religious;" however, for many this distinction is debatable. AA's founders, Bill Wilson and Dr. Bob Smith, both achieved their sobriety as members of the Oxford Group, a Christian evangelical movement of the 1920s and 1930s. Wilson and Smith later adapted the Oxford Group tenets to create the 12 steps of AA (Atkins 2000; Dick B., 1998; Ragge, 1991; Bufe, 1991; AA, 1985). According to the 12 steps, AA members come to believe in a "Power" greater than themselves, turn their "will" and "lives over to the care of God" as they understand "Him," take an ongoing "moral inventory," confess their wrongs and ask God to remove their "defects of character," make amends to those they have wronged, and pray and meditate to maintain a connection to God in order to know God's will and carry it out. Then, "having had a spiritual awakening," members carry the message to others and strive to practice the principles expressed in the 12 steps in all aspects of their lives. Clearly, the 12-step approach emphasizes a spiritual, some would say religious, path to sobriety.

The 12-step approach is often a successful approach for people with addiction problems (Carlson, et.al, 1994; Hinrichsen, 1990), but this approach can be problematic for those people not spiritually or religiously oriented. Research indicates that some clients have problems responding to the 12-step model (Humphreys, 2004; Fletcher, 2001; Ellis and Velten, 1992). Secular support groups that separate recovery from spirituality and religious beliefs may provide a more appropriate environment to nurture recovery for those with a more secular orientation.

Previous surveys of people in alternative support groups provide evidence that spiritual approaches to recovery may be contra-indicated for some individuals. A survey of the WFS membership revealed that 20% of respondents said they “felt uncomfortable at AA,” 18% felt AA was too negative, 15% “didn’t like the God part or religious aspect” of AA, and 11% disliked the powerlessness concept of AA (Kaskutas 1994). Similarly, in a previous study of SOS members (n = 161), 19% of respondents stated that AA attendance had been harmful for them and 61.3% of respondents said they would not attend another AA meeting. Two-thirds (66.2%) disliked the AA emphasis on religion and a Higher Power and 36.9% disliked AA's emphasis on powerlessness and felt they did not fit in (Connors and Dermen, 1996; SOS International Newsletter, Spring 1993). Clearly, there are people in recovery who do not respond positively to being in a 12-step group program. In addition, a pilot study comparing 48 AA members to 35 SMART Recovery members found that AA members had a greater spiritual orientation and a greater external locus of control when compared to members of SMART (Feifer and Strohm, 2000). These differences in individual orientation can play important roles in whether or not individuals connect with a given recovery support group.

Important differences between individuals and between recovery groups are becoming more evident as more research is conducted on mutual-aid support groups and the recovery community. The literature critical of the “one size fits all” approach to recovery has been steadily growing (DeSena, 2003; Schaler, 2000; Peele, et al., 2000; Gilliam, 1999; Ragge, 1991; Dorsman, 1998; Trimpey, 1996, 1989, Tate, 1993; Ellis and Velten, 1992; Kasl, 1992; Christopher, 1992, 1988; Bufe, 1991, Peele, 1989; Kirkpatrick, 1986). Recent guidelines from the National Institute on Drug Abuse (NIDA, 2000) and the Substance Abuse and Mental Health Services Administration (SAMHSA, 2005) point out that treatment professionals need to help clients find appropriate “self-help” groups and facilitate client participation in those groups. This study provides important new evidence that individuals who are philosophically well matched to support groups are more likely to participate in mutual-aid support groups and that support group participation improves recovery outcomes.

2. Methods

From January through May 2005 The Walsh Group, with the assistance of The Center for Survey Research (CSR) at the University of Virginia, conducted a national survey of people in recovery for substance abuse problems who were currently attending mutual-aid support groups. Respondents were contacted through mutual-aid support groups and data was collected using both mailed and on-line anonymous surveys. Dr. Atkins developed the questionnaire, pre-tested it with members of all the targeted groups, and revised it with the assistance of CSR staff. The mailed survey questionnaires and return envelopes included no identifying marks. They were distributed at group meetings and completed mailed questionnaires were returned to CSR for data entry. The web version of the survey was designed and maintained by CSR. To assure anonymity, respondents obtained an id and randomly generated password from one site and then proceeded to a second, independent site that housed the online survey site where they would use their id and password to enter the survey. The id and password enabled respondents to leave the survey and return to complete it later if need be. CSR conducted reliability checks for data entry and tracking, merged the web and mail surveys with an indicator

as to source, and prepared the final data file for analysis. The authors then conducted the data analysis.

Identical survey questionnaires were administered via mail and on-line survey procedures. The on-line version of the survey took an average of 30.46 minutes to complete. T-tests revealed there were no significant differences between those who completed the mail survey and those who completed the survey on-line with respect to participating in one's primary self-help group ($t = 0.099$; $p = .921$) or number of days one has been sober ($t = 1.87$; $p = .062$). These are the two central variables in our analysis.

2.1 Sample Selection

The targeted groups included both 12-step groups (AA and NA) and non-12-step groups (SOS, SMART, WFS). All five of these targeted groups were invited to participate in the project through their national offices. SOS and SMART facilitated recruitment by providing national mailing lists of active groups and posting links on their websites to the online version of the survey. Active groups from SOS and SMART were randomly selected by state and the group coordinators on the lists provided by these groups were mailed questionnaire packets as well as scripts and instructions for distributing the surveys to participants at their meetings. Some additional mailed surveys were distributed at selected SOS and SMART meetings per these groups' requests. The 12-step groups, because their "The Twelve Traditions" preclude organizational involvement in research, could not provide mailing lists, but invited researchers to distribute surveys at open meetings. Thus, an alternative recruitment strategy was required and 12-step respondents were recruited through personal contacts in 12-step recovery and at open meetings. Personal contacts were given packets of questionnaires and asked to distribute them at meetings and through their own 12-step contacts. The research team also attended open meetings, asking permission from members prior to the meetings and then distributing surveys outside the meeting rooms after the meetings had concluded. An individual from the recovery community also volunteered to help recruit 12-step respondents on-line, and after getting permission from sites' hosts, posted information on the survey and the on-line survey link on two 12-step chat groups. WFS was included in the survey via the on-line version, which was advertised in their monthly newsletter and on their website. Surveys were mailed to those WFS members who preferred not to use the on-line survey and contacted us requesting a paper version of the survey. Members from other recovery groups who inquired about the survey were also invited to participate on-line. All respondents were provided informed consent in compliance with all National Institutes of Health regulations [45 CFR 46].

In total, 1,067 persons responded to the survey. Of these, 51 were not in recovery, 38 failed to indicate if they were in recovery, and another 54 did not identify a primary recovery group. These 143 cases were not included in the analysis. The remaining 924 cases are all people in recovery who identified a primary recovery group with which they were currently associated. Of the 924 usable cases, 270 completed paper surveys returned by mail (29.2%) and 654 completed the survey on-line (70.8%).

Respondents were asked what group they considered to be their primary group. Because of their similarities with respect to spirituality and religiosity, we combine AA, NA and other 12-step groups into a single "12-Step groups" category. Respondents were classified as members of either 12-Step groups ($n=161$), SOS ($n=104$), SMART Recovery ($n=321$) or Women for Sobriety ($n=236$). An additional 102 cases were classified as members of "other groups." These included Moderation Management, Rational Recovery (RR no longer officially endorses the support group approach), LifeRing Secular Recovery, and others. These other recovery groups were too diverse in their approach to combine for analysis purposes. We therefore exclude these cases from our analysis here. Consequently, the sample used in our analysis included 822 respondents.

2.2 Sample Characteristics

The mean age for respondents was 47.0 years, ranging from 18 to 82. The sample was 58.8% female and 41.2% male. The gender distribution was skewed by the participation of Women for Sobriety in the survey, which is a women-only group. If we remove WFS from the sample, the breakdown is 58.1% male and 41.9% female. Our sample was primarily white (90.3%), with 9.7% being “non-white.” Fifty-one percent of the respondents were married (31.8% were in their first marriage), 20.7% were single, 3.4% were separated, 22.7% were divorced and 2.2% were widowed. The mean annual family income was approximately \$55,000. Thus, the sample was primarily white and middle class.

Most of the respondents were long-time substance users before entering recovery, with 78.8% reporting having used their primary drug of choice for more than 10 years and another 8.4% having used for 7 to 10 years. Overall, 30.5% of the respondents reported having been in jail, 35.5% had been hospitalized for drug treatment, and 21.4% had been hospitalized for psychiatric treatment at least once in their lifetime. Nearly half (48.7%) had been in outpatient treatment at least once in their lifetime, with 16.5% doing so more than once. Only 27.7% reported having never relapsed after first entering recovery, with 40.4% reporting relapsing more than 3 times.

The respondents' first drug of choice was typically alcohol. Over three-fourths of respondents listed alcohol as their “drug of choice.” Prescription drugs (9.6%), marijuana (6.2%) and cocaine (3.9%) followed alcohol as the most common primary drugs of choice. The second drug of choice for respondents was marijuana (25.0%), prescription drugs (21.5%), alcohol (15.6%), and cocaine (9.2%). Just over 70% reported being multi-drug users. The vast majority of respondents (82.7%) said there was a history of substance abuse in their family and 51.8% said there was someone in their family with a current substance abuse problem.

While our sample was not selected randomly, it appears to be reasonably representative of the recovery-group population when compared to the few other studies of mutual-aid support groups available that had random samples. For example, in AA's 2004 random sample of its members they found that 89.1% were white and the average age of AA members to be 48 years (AA, 2006). Similarly, Kaskutas' (1994) survey of entire membership of Women for Sobriety found the average member to be white and 46 years of age. Connors and Dermen's (1996; Christopher, 1992) random sample survey of SOS members found them to be 99% white with an average age of 47 years. No previous surveys of SMART Recovery participants have been conducted. Hart's (2001) national random sample survey of the recovery community found it to be 61% male and 39% female, middle aged, and with 79% being white; however, only 52% of those in Hart's survey said they participated in “self-help” groups. It appears that participation in mutual-aid support groups is more likely for people who are white and middle class, which is reflected in our sample. Sample limitations are difficult to overcome given the importance of anonymity for these groups. Most importantly, the current sample does provide adequate variation in the variables of central interest (i.e. religiosity, program participation, and sobriety). Thus, we consider the data, while limited, the best available data to address the question at hand.

2.3 Operational Measures

The analysis includes a series of regression analyses to determine if (1) respondents who participate in a mutual-aid support groups are more likely to remain sober and (2) if those respondents whose religious beliefs match those typical of their primary recovery groups were more likely to participate in recovery groups. The first dependent variable, *sobriety*, was measured by asking respondents the month, day, and year they “got clean and sober.” This date was transformed to the number of days the respondent had been “clean and sober.” The

dependent variable is the natural log of the number of days the respondent had been sober. The natural log was taken to correct for extreme skewness. Once the log transformation was performed, the variable was normally distributed.

The second dependent variable, *program participation*, was measured using a nine-item scale that was created by combining seven five-point Likert-scale items on group related behaviors and two variables that measured the respondents' frequency of attendance in recovery support groups. The seven Likert items included questions on how often respondents participated in group discussions at meetings, led meetings, helped set up or cleanup at meetings, read group literature outside of meetings, helped newcomers, talked with members outside of meeting settings, and did things with other members that were not directly recovery related [e.g. dinner, the movies]. Values for each item were coded as never = 0, rarely = 1, sometimes = 2, often = 3, and very often = 4. An item asking respondents the number of meetings they attended in the past month was also included. This item ranged from 0 to 7 (7 or more times in the past month). Finally, an item asking respondents about the number of different groups they attend was included. This item ranged from 0 to 6 (five or more groups). The nine items were combined into an additive index ($\alpha = .800$).

The independent variables of central interest for the analyses are the respondent's degree of religiosity and belief in a higher power. Fifteen five-point Likert-scale items were analyzed using a principal component factor analysis. The items loaded on two dimensions, and the two-factor solution explained 64.5% of the variance in the fifteen items. The first dimension represented the respondents' religiosity as reflected in items such as "Religion gives meaning to my life" and "I am sometimes very conscious of the presence of God." The second dimension represented the respondents' belief in a Higher Power. The items reflecting this dimension included "my Higher Power helps me stay sober and drug free" and "my recovery group and its members are guided by a Higher Power." The results of the factor analysis and the wording for each of the fifteen items are presented in Table 1.

Another variable of central theoretic interest is in which mutual-aid recovery support group the respondent participated. Respondents were asked which recovery group they considered their primary group. Those respondents who indicated their primary groups were SOS, SMART Recovery, Women For Sobriety or traditional 12-step programs (e.g., A.A. or N.A.) were included in the analysis. Mutual-aid support group was modeled as a series of dummy variables with traditional 12-step groups being the comparison group (i.e. SOS, SMART, WFS are compared to 12-Step).

In addition to these central variables, we control for age, number of three closest friends in recovery programs (0 = "none" to 3 = "all three") and if the respondent was in a committed relationship (0 = not with someone, 1 = together with someone). We also control for the respondent's perception of the seriousness of their drug / alcohol problem. This item ranged from 1 ("not really a problem") to 7 ("an extremely bad problem"). Gender was also initially controlled for in all of the models. Gender was not a significant predictor in any of the models; yet, since WFS is a women-only group, the inclusion of gender raised issues of multicollinearity. Since gender failed to predict any of our dependent variables (and was not related to them in a bivariate analysis), gender was removed from all of the models. Finally, we fit the interactions between religiosity and the respondent's primary recovery support group. The data were centered prior to creating the interactions to avoid problems of multicollinearity (see Aiken and West 1991).

2.4 Analysis

The analysis proceeds in three stages. Since the data are technically clustered (i.e. respondents are nested within primary self-help groups), in the first stage we determine if hierarchical

models are needed by fitting a variance component model with group as a random effect. We then turn our attention to predicting the ultimate goal of any recovery program: namely, we predict the number of days respondents have been clean and sober. Finally, in the third stage, we investigate the factors that can predict the extent to which respondents participate in their recovery support groups.

3. Results

3.1 Mutual-aid Support Groups, Religiosity, and Recovery Outcomes

Since the data are clustered and it is possible that respondents from the same type of mutual-aid support group would be more similar than respondents from different types of mutual-aid support groups, we begin by testing if a hierarchical linear model is needed. To test if primary support group must be fit as a level-two variable, we conduct a variance component model predicting sobriety with group as a random effect. [Technically, the dependent variable is the log of number of days sober as discussed in the previous section. For brevity, we refer to this variable as days sober; however, the reader should remember the resulting coefficients are for the log of days sober.] The interclass correlation coefficient accounted for only 5.1% of the variance in days sober due to a group effect. This effect was not statistically significant (Wald $\chi^2 = 1.11$; $p = .267$). Thus, the difference in number of days sober is among respondents, not between mutual-aid support groups. Consequently, we can confidently treat the observations as being independent and do not need to fit hierarchical models to account for the nesting in the data (Rabe-Hesketh and Skrondal 2005).

Next, we use OLS regression to predict number of days clean and sober. None of the interaction effects between religiosity and the respondent's primary recovery support group were statistically significant; thus, these terms were removed from the model and the equation was re-estimated. The model was found to violate the assumption of homoscedasticity (White's $\chi^2 = 24.60$; $p < .05$). To correct for this problem, a weighted-least squares regression was performed.

All other assumptions of OLS regression were adequately met. The weighted-least squares model was significant ($F = 20.16$; $p < .001$) and explained 30.8% of the variance in days of sobriety. Age was the best predictor of remaining clean and sober ($\beta = .272$). The number of close friends the respondent has who are also in recovery programs was also positively related to sobriety ($\beta = .240$) and the second best predictor in the model. The extent to which respondents participated in their mutual-aid support groups was positively related to sobriety ($\beta = .177$). No other variable approached statistical significance. Most notably, there were no significant differences between the various types of mutual-aid support groups. This finding replicates the variance component model previously discussed. Moreover, the respondents' level of religiosity was unrelated to remaining clean and sober. Similarly, the other dimension from our factor analysis, belief in a Higher Power, was also unrelated to remaining clean and sober. Table 2 presents the results of the analysis.

3.2 Religiosity and Participation in Mutual-aid Support Groups

From this analysis, it is evident that participation in a mutual-aid support group is beneficial to the respondents. Moreover, it is evident that which mutual-aid support group the respondent selects has little influence on his or her success at remaining sober. The logical question then becomes what affects participation in a mutual-aid support group. To address this issue, we conduct an OLS regression predicting the respondents' participation in mutual-aid support groups. The independent variables include the seriousness of the alcohol / drug problem, age, number of close friends in recovery programs, religiosity, belief in a Higher Power and the type of mutual-aid support group in which the respondent is involved. In addition, the model

included the interactions between support group and religiosity (SOS by religiosity, SMART by religiosity, WFS by religiosity) and support group and belief in a Higher Power (SOS by Higher Power, SMART by Higher Power, WFS by Higher Power). None of the interactions between support group and belief in a Higher Power achieved statistical significance in this initial model. These terms were removed from the model and the trimmed model was re-estimated. Table 3 presents the results of that analysis.

Although the Variable Inflation Factors (VIFs) did not indicate serious problems of multicollinearity, we tested each set of interactions separately to avoid possible multicollinearity in the regression space. With respect to the significance of the various predictor variables, the results were identical when the full model was run and when the models including only one-set of interaction terms was run. In the final model, the largest VIF was 4.72, well below the level of 10 generally used to consider multicollinearity a problem. In addition, none of the condition indices were alarming high (see Fox 1997). Thus, we are confident that multicollinearity was not a serious problem in the model. The model also met the other assumptions of OLS regression. The error terms were normally distributed and homoscedastic (White's $\chi^2_{10} = 15.38$; $p > .05$).

The trimmed model was significant ($F = 19.58$; $p < .001$) and explained 30.1% of the variance in program participation. Religiosity ($\beta = .384$), having friends in recovery ($\beta = .368$) and age ($\beta = .159$) were all positively related to program participation. Relative to those in traditional 12-step programs, members of WFS ($\beta = -.211$), SMART ($\beta = -.193$) and SOS ($\beta = -.191$) were less likely to participate. The seriousness of the respondent's drug / alcohol problem and their belief in a Higher Power failed to be significant predictors of program participation. Most interestingly, however, two interaction terms achieved statistical significance.

The interaction between SMART and religiosity ($\beta = -.158$) and the interaction between SOS and religiosity ($\beta = -.163$) were statistically significant. Both of these terms indicate that religiosity is less effective in stimulating program participation in SMART or SOS than it is in traditional 12-step programs. In fact, the influence of religiosity is reduced from an unstandardized effect of 2.94 to 0.91 for SMART members. Thus, for every unit increase in religiosity for traditional 12-step members, there is an average increase of 2.94 on the program participation scale. However, for every unit increase in religiosity for SMART members, the increase in participation is only 0.91. For members of SOS, the different influence of religiosity on program participation is even more pronounced. For SOS participants, religiosity is inversely related to program involvement. While traditional 12-step members' participation increases by 2.94 for every unit increase in religiosity, there is a *decrease* of 0.71 in participation for members of SOS for every unit increase in religiosity.

3.3 Religiosity versus Spirituality

Religiosity is clearly an important variable in treatment success; however, the issue of requiring people to attend spiritual-based or religion-based recovery programs is a point of contention for many people in recovery. Twelve-Step groups maintain that they are spiritual programs and not religious in nature. Many people disagree; however, and court decisions have generally held that they are religious in nature (Peele, et al, 2000; Conlon, 1997). We tried to address this point of contention in our survey. Three items were included on our survey, using a 5-point Likert scale, to see if respondents agreed with statements related to the spiritual or religious nature of 12-Step programs. Again, strong differences between the groups were evident on all of these items among the survey participants from the various recovery groups as revealed in their responses to these questions.

When respondents were asked if they agreed with the statement, “spirituality and religion are not the same thing,” 60.0% of 12-Step participants and 59.6% of Women for Sobriety participants strongly agreed, compared to 40.6% of SMART Recovery participants and 32.3% of SOS participants. The difference in opinion between the groups on this was statistically significant ($p < .001$). In response to the statement, “The 12-Step program of AA and NA is spiritual; it is not religious,” 70.9% of 12-Step participants strongly agreed or somewhat agreed, compared to 32.0% of WFS participants, 16.8% of SMART participants, and 7.1% of SOS participants. Again, the difference between the groups was statistically significant ($p < .001$). Finally, in response to the statement, “AA and other 12-Step groups are very religious in nature,” only 38.9% of 12-Step participants strongly agreed or somewhat agreed. The numbers were much higher for the other groups: 87.0% of SOS members, 86.3% of SMART participants and 60.1% of WFS participants either strongly agreed or agreed somewhat that 12-Step groups are very religious in nature. Again, the differences between the groups was statistically significant ($p < .001$). Thus, the survey responses reveal a strong and significant difference of opinion between groups' participants on whether or not 12-Step programs are spiritual or religious in nature.

The difference between the groups in terms of their views on the spirituality or religiousness of 12-step programs did not change when controlling for whether or not the respondents thought religion and spirituality were the same thing. Comments from survey respondents on the role of religion and spirituality in recovery demonstrate the importance of this issue. For example, one participant of SMART stated that, “AA's use of religion as spirituality turned me off immediately.” Similarly, a SOS participant with a secular bent noted that, “AA delayed my recovery by several months.” Contrast this with this comment from a 12-step respondent who said, “God is the only reason I am sober today,” and one can easily see the need for support group alternatives that provide good matches between individual beliefs and program philosophies for anyone seeking help, and sensitivity to this issue with regard to treatment and recovery.

4. Discussion

The results of this analysis indicate that, while which mutual-aid support group one attends is unimportant, being actively involved in a mutual-aid support group significantly improves one's chances of remaining clean and sober. Similarly, provided one participates in a mutual-aid support group, his or her religiosity and belief in a Higher Power does not directly influence the chances of remaining sober. Involvement in a group directly increases the amount of time one stays clean and sober.

This research indicates that one's religiosity significantly influences the likelihood of participating in a mutual-aid support group program. Clinicians must take this fact seriously when referring patients to self-help programs. Being religious increases one's participation if they are a member of a traditional 12-Step support group or Women for Sobriety. Being religious has little influence on participation if one belongs to SMART Recovery. Being religious decreases one's participation in the support group program if the individual belongs to SOS. Conversely, non-religious people are significantly less likely to participate in traditional 12-Step programs. Consequently, matching an individual's philosophical beliefs to that of their mutual-aid support group can indirectly increase the number of days they remain sober by directly increasing the extent to which he or she participates in mutual-aid support groups.

While this research has limitations, most notably the sample was not randomly collected; little can be done to overcome this limitation given the nature of the study participants. These groups depend on the anonymity of their members and securing a sampling frame is practically

impossible. Another potential limitation is the possible effect that different recruitment strategies may have had on recruitment, especially with regard to using personal contacts for AA and NA and mailing lists for SOS and SMART Recovery. There is no way to determine the impact this may have had on response rates for the groups participating in this research. It should be noted here that we made inquiries to the World Services Offices of both AA and NA and also contacted several Area Service and regional organizations for AA and NA in an effort to employ a mailing list recruitment strategy for these groups similar that used for SOS and SMART. The replies from all of these 12-step organizations at each level was that they could not participate in the survey at an organizational level because the Twelve Traditions precluded them doing so. We were invited to recruit respondents at their open meetings and did so. The personal contacts that were members of 12-step groups were located in several different states. They were each given numerous questionnaires to distribute at meetings, just as the SOS and SMART mail contacts were asked to do, as well as through their own networks of recovery group contacts. Additionally, many 12-step members were recruited to participate in the survey on-line. WFS joined the project after funding had been secured and the budget could not be adjusted to do the large scale mailing to their members at that point in the study. Thus, WFS participants were recruited on-line and through their newsletter and, with the exception of a few members who requested a paper version of the questionnaire, all completed the survey on-line. While having to use these differing recruitment strategies was certainly not an ideal situation, we were able to recruit a sufficient sample for each group that included ample variation on the key variables here. Further, as stated earlier, we found no significant differences between mail and on-line survey responses on our central variables of interest. Therefore, we believe the impact of these differing recruiting strategies were negligible. Nevertheless, the influence of the different recruiting strategies cannot be accounted for in our research. While we do not believe this limitation to be fatal, our readers are cautioned to keep this limitation in mind.

Another issue of concern in this type of research is possible self-selection of people into groups that match their beliefs and how this might influence results. While there is likely some degree of self-selection involved for many of the respondents, the influence of this on results is difficult to determine. Most respondents whose current primary group was either SOS, SMART, or WFS, had attended a 12-step group as their first support group and now indicated a preference for one of the 12-step alternatives. Their prior personal experiences with 12-step groups are reflected in their opinions of those groups reported in the survey. Nevertheless, if everyone whose beliefs matched a given group's beliefs attended that matching group, we could expect all the respondents from that group to have responses that are very homogeneous in nature. We examined interclass correlations per primary recovery groups and our variables of interest; however, and found this not to be the case in our sample. We do not believe the influence of self-selection differed dramatically by group and, therefore, we do not believe self-selection to present a serious problem with regard to our findings reported here.

Another limitation is that no direct measurement of the degree of the program's religiosity or spirituality was made. Thus, it is impossible to assess directly the match between a participant's beliefs and their primary group's beliefs. Instead, we rely on "ideal types" to estimate a group's level of religiosity and belief in a Higher Power that is based on the various group's literature and published documents. Yet, despite a common philosophy, there can be substantial heterogeneity among groups with respect to their degree of religious emphasis. While we recognize this lack of direct measure of specific group's beliefs is problematic, we do not believe it seriously threatens the basic findings of this research. Firstly, respondents were asked the extent to which they agreed with the beliefs of the various groups. Several statements were taken verbatim or virtually verbatim from each group's literature regarding central tenets of their program's beliefs and embedded in various blocks of Likert-scale questions in the survey to determine a respondent's level of agreement with these statements. Correlating these with

the respondents' primary group demonstrates that there is considerable agreement between the members of a group and their group's "ideal type" belief system. For example, the correlation between being a 12-step member and a belief in a Higher Power is .578. Conversely, the correlation between a belief in a Higher Power and SOS and SMART membership is $-.241$ and $-.393$, respectively. Similarly strong correlations are found between being a SMART member and agreeing with SMART beliefs ($r = .478$) and being a WFS member and agreeing with WFS beliefs ($r = .314$). Secondly, the extent to which a specific group does not emphasize the belief system we assign to them based on the larger group's teachings would introduce unreliability to our measure. That is, the extent to which a specific 12-step group is not religious, for example, would add measurement error to our analysis because we assume the group would be religious. Adding this error can only weaken the observed relationships. While future research should certainly attempt to measure each specific group's beliefs directly, the current study most likely underestimates the importance of a good match between an individual's beliefs and that of his or her primary recovery group. Thus, while we recognize the limitations of the research, we maintain these are the best available data to address the research question. The analysis reveals critical dimensions to be considered in matching individuals to appropriate support groups that may increase participation in mutual-aid support groups in substance abuse treatment and recovery and improve long-term recovery outcomes.

4.1 Implications

Since religiosity influences group participation and increased participation improves recovery outcomes, client religiosity must be considered in treatment planning. Heavy drinkers and drug users find a sense of belonging in the use-promoting subcultures that feed their substance abuse. Mutual-aid support groups provide people in recovery with an alternative subculture that promotes abstinence (Hawdon, 2005). For an individual to make a strong connection with a recovery group, he or she must connect with the philosophy of the recovery group. Individuals who have a higher level of religiosity can more readily connect with the philosophies of groups such as AA, NA, and, for women, WFS, and more easily find a sense of belonging in these recovery communities. For others who have low levels of religiosity, and especially for those who have a decidedly secular or "scientific" worldview, it may be very difficult to fit in with spiritually based recovery programs. Individuals with this type of personal philosophy are more likely to feel that sense of belonging in secular support groups that do not use a spiritual approach, such as SOS or SMART Recovery, and are more likely to continue participating in these secular groups, thus improving their prognosis for long-term abstinence.

This study provides more evidence that in recovery "one size does not fit all" (Robert Wood Johnson Foundation, 2001), and that matching clients to appropriate support groups according to their individual beliefs can have a positive impact on their program involvement and, ultimately, on their treatment outcomes. As White and Kurtz (2005) point out, "It is time that the multiple pathways and styles of recovery fully permeated the philosophies and clinical protocols of all organizations providing addiction treatment and support services." We could not agree more.

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Table 1

Factor Analysis of Religiosity Items

Item	Communality	Factor Loading Dimension 1 Religiosity	Factor Loading Dimension 2 Higher Power
I get strength from religious / spiritual beliefs	.694	.734	.393
Religion gives meaning to my life	.604	.742	.233
I am sometimes very conscious of the presence of God	.746	.779	.374
Religious faith is better than logic for solving life's important problems	.622	.627	.479
All good deeds are ultimately rewarded	.459	.665	.131
I feel something unseen gives me strength to face life when I need it most	.645	.639	.486
My death does not end existence. My spirit will live on.	.612	.758	.192
A person should follow his own conscience – not prayer – in deciding right and wrong	.489	.558	.421
Science is better than religion in trying to explain how things work	.522	.603	.399
Praying is a waste of time for me	.649	.753	.287
A person can be happy and enjoy life without believing in God	.460	.606	.305
My Higher Power helps me stay sober and drug free	.802	.437	.782
It is important for me to turn my will and my life over to the care of God	.838	.373	.836
When I have a problem I turn it over to my Higher Power and things work out okay	.800	.315	.837
My recovery group and its members are guided by a Higher Power	.729	.155	.839

All items were coded so higher scores indicated greater religiosity and belief in a Higher Power.

Two-factor solution explained 64.5% of the variance in the fifteen items.

Eigenvalues = 8.43 and 1.24, respectively

Table 2
Weighted-Least Squares Analysis of Logged Number of Days Clean and Sober

	Coefficient	Standard Error	Standardized Coefficient
Program Participation	.045**	.013	.177
Number of Friends in Recovery	.418**	.093	.240
Age	.054**	.009	.272
Religiosity	.104	.135	.052
Belief in Higher Power	.026	.144	.014
Seriousness of Drug / Alcohol Problem	.095	.073	.056
SOS member	-.248	.399	-.033
SMART member	-.366	.300	-.087
WFS member	-.332	.271	-.077
Constant	1.573*	.689	

Model F = 20.16; $p < .001$; $R^2 = .308$

*
p < .010

**
p < .001

Table 3

Regression Analysis of Program Participation

	Coefficient	Standard Error	Standardized Coefficient
Religiosity	2.94***	.652	.384
Number of Friends in Recovery	2.97***	.352	.368
Age	.122**	.030	.159
Seriousness of Drug / Alcohol Problem	.383	.245	.063
SOS member	-4.73*	1.71	-.191
SMART member	-3.02*	1.09	-.193
WFS member	-3.63*	1.04	-.211
Belief in Higher Power	1.078	.570	.143
Religiosity by SOS member interaction	-3.65*	1.44	-.163
Religiosity by SMART member interaction	-2.03**	.740	-.158
Constant	20.01***	2.19	

Model F = 19.58; $p < .001$; $R^2 = .301$

* $p < .05$

** $p < .01$

*** $p < .001$