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EFFECT OF JOB SKILLS TRAINING ON EMPLOYMENT AND JOB SEEKING BEHAVIORS IN AN AMERICAN INDIAN SUBSTANCE ABUSE TREATMENT SAMPLE

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Abstract

Employment difficulties are common among American Indian individuals in substance abuse treatment. To address this problem, the Southwest Node of NIDA's Clinical Trials Network conducted a single-site adaptation of its national Job Seekers Workshop study in an American Indian treatment program, Na'Nizhoozhi Center (NCI). 102 (80% men, 100% American Indian) participants who were in residential treatment and currently unemployed were randomized to (1) a three session, manualized program (Job seekers workshop: JSW) or (2) a 40-minute Job Interviewing Video: JIV). Outcomes were assessed at 3-month follow up: 1) number of days to a new taxed job or enrollment in a job-training program, and 2) total hours working or enrolled in a job-training program. No significant differences were found between the two groups for time to a new taxed job or enrollment in a job-training program. There were no significant differences between groups in substance use frequency at 3-month follow-up. These results do not support the use of the costly and time-consuming JSW intervention in this population and setting. Despite of the lack of a demonstrable treatment effect, this study established the feasibility of including a rural American Indian site in a rigorous CTN trial through a community-based participatory research approach.

Keywords

American Indian; Substance Use; Job Seekers Workshop; Employment; Community Based Participatory Research

1. Introduction

1.1 Employment Difficulties in American Indian Communities

Employment problems are often significant in American Indian communities [1] and there are multiple barriers, including historically high unemployment rates and/or a lack of job finding skills, that may contribute to lower than expected job skills and career development [2]. For example, in a study conducted by Martin and O'Connell [3] with adults living in the Pueblos of New Mexico, the average length of employment for the last two jobs participants had worked was less than two years, indicating a lack of stability within those jobs.

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According to study participants, a lack of available jobs was the most commonly reported problem associated with securing employment. Another common barrier was that individual's reported insufficient skills in how to find another job.. Effective interventions that target career development are "needed with minorities, especially the American Indian population, for whom there is the least career information and the highest rates of unemployment"[4]. Employment is challenging to many American Indian communities. Although local economic conditions is something difficult to modify, teaching people more effective ways to find jobs amongst those available is something that can be targeted through interventions.

What specific barriers are unique to American Indians who are looking seeking employment? The effectiveness of job-seeker's efforts can be improved through awareness and subsequent addressing of these specific challenges [5]. Martin [6] investigated differences in career development between urban American Indians and those residing on reservations. Individuals residing on a reservation indicated that a lack of reliable transportation, feelings of cultural conflict, cultural-bound tests and assessments, and the use of English as a second language were significant barriers to employment. Martin found that for many individuals living on a reservation, the need to maintain support networks such as family, home and community were greater than the need to secure employment. This conflict between community and employment may decrease the likelihood that someone would seek employment. Interventions that offer individuals skills for overcoming these significant barriers to employment are needed for American Indians living on reservations and perhaps elsewhere in the country.

1.2 Employment Difficulties in American Indians with Substance use Problems

Likewise, employment problems are also common among individuals receiving substance abuse treatment [7,8]. Several factors contribute to low rates of employment in alcohol/drug dependent individuals including low motivation to work, insufficient skills to obtain a job, a lack of vocational skills necessary to qualify for available work, as well as functional impairment directly related to alcohol/drug use. Additional barriers are faced for underserved populations, such as American Indians, where high unemployment rates and reduced access to resources create additional barriers to employment.

Social support for abstinence and employment are predictors of successful functioning after substance abuse treatment [9]. Several large-scale supported work programs have been attempted using comprehensive vocational assistance programs for drug abusers [10–13]. To date, however, empirical support for the efficacy of such programs is limited because of relatively few studies [14–16], particularly for drug dependent patients.

For example, Roberts [4] conducted a study examining an intensive and individualized multi-phased program offering American Indian parolees with substance dependence a comprehensive assessment, 50 hours of pre-employment and work maturity skills development, ongoing job-retention skills training, career and vocational training, career counseling, field trips, and GED preparation. Results from this study indicated that participants in the program (N=40) had significantly higher job placement (75%) than those in a control group (50%) not participating in the program (N=20). These results suggest that comprehensive career development programs for American Indian clients with multiple barriers to employment can be effective, particularly if an individual approach is used. However, even if effective, such comprehensive programs also require significant financial resources typically unavailable to drug treatment providers, making them expensive and often impractical for large scale implementation.

1.3 Interventions Promoting Career Development

An alternative, potentially more economical approach is to provide targeted training in specific skills needed to find and secure a job. One such program, Job Seekers' Workshop (JSW), was developed by Hall and colleagues [17]. The program targets the skills needed to find and secure a job, such as how to conduct oneself in a job interview and how to identify available employment. JSW was developed specifically for drug dependent individuals and has demonstrated efficacy across several well-designed studies [17–19]. One study of 55 parolees or probationers with documented histories of heroin use found that 80% of individuals randomly assigned to job skills workshop were employed at 12-week follow-up compared to 52% of controls ($p < .03$) [18].

Two other random assignment studies tested JSW in methadone maintenance patients [19,20]. Both compared JSW to a control group (provision of vocational materials). The first study targeted 49 job-seeking methadone patients. At 3-month follow-up, JSW participants were over three times more likely (50%) than controls (14%) to have a job or training placement ($p < .05$) [19]. The second study targeted 60 unemployed methadone maintenance patients. Again, more experimental (52%) than control (30%) participants were employed at 12-week follow-up, although the difference failed to reach statistical significance. In this study, it was noted that JSW was ineffective for patients who had not worked in the past 5 years. Even when a job seeking intervention is given, unemployment for a period longer than 5 years appears to be a significant barrier to future employment.

These studies provide empirical support for the efficacy of a behaviorally based job seekers' workshop designed to help drug dependent patients find and secure employment. However, these studies were conducted a few decades ago, in small, relatively homogeneous samples of primarily methadone-maintained individuals. Significant technological advances have occurred since that time in relation to not only job skills training, but also job seeking.

Another advantage of the JSW model is that there are data concerning its dissemination and adoption by community drug treatment programs. The same research group that developed JSW also experimentally examined methods for disseminating the workshop in a study that involved 198 drug treatment programs across 6 states [20]. Programs were randomly assigned to a 1-day technical assistance site visit dissemination program, a training conference dissemination program, or a printed material control group. Results of this study indicated that in-person training, either by conference or site visit, produced higher rates of program adoption (20–30% adopting) than the control condition that relied solely on mailed materials (4% adopting).

Since the 1980s, there has been a proliferation of vocational services for under represented populations including welfare recipients and ex-offenders [21]. All such programs incorporate skills training comparable to that delivered by the Job Seekers' Workshop. However, most go beyond this core training to provide job placement and follow-up services. Job placement through formation of direct alliances with employers is a specialized vocational service that goes beyond the scope of resources available to most community drug treatment programs; particularly those in underserved areas. Job retention services are also viewed as a specialized vocational service. Job retention is of particular concern for individuals with substance use disorders. In a recent study of supportive employment counseling for persons with severe mental illness, outcomes were poorest for those with co-morbid substance use disorders [22]. Although job retention services were not part of the present study, job retention was an outcome measure due to the importance of this issue.

The implementation of JSW is costly; it requires special training of staff and dedicated provider time. An alternative is to provide similar information to patients via automated

presentation, as through video or DVD instruction. Such packages are available for a fraction of the cost of initial staff training, and if effective could be provided at low cost and with minimal demands on provider time. Video/DVD instruction for job interviewing skills is a relatively new development that has received little if any investigation as to its potential for utilization with medical, psychiatric and/or drug-abusing patients. One study evaluated a return-to-work goal-setting program that was counselor-guided vs. a videotape focusing on return-to-work-related issues for coronary heart disease patients. It was expected that the goal setting group would have a higher percentage of eligible worked weeks than the video-tape group and that the goal-setting group would also show greater improvement in self-efficacy, self determination, commitment to work, life satisfaction, depression and anxiety at follow-up. The results of the study, however, indicated no significant differences in the goal-setting group and the videotape group in terms of the percentage of eligible worked weeks. Both the goal-setting group and the videotape group enjoyed improvement in self-efficacy and depressive symptoms. No differences were found between the two groups on the other psychosocial variables described [23].

In summary, American Indians are confronted with multiple barriers to employment. Unemployment is a chronic problem in drug dependent individuals, and methods to enhance rates of employment are needed, particularly for individuals living in underserved areas. While comprehensive vocational training programs may be impractical for most drug treatment programs, a program providing more basic training in the skills needed to secure and maintain a job has widespread applicability. To date, there has not been a study investigating the effectiveness of such lower-intensity vocational services in American Indian individuals with substance use disorders. If these programs are effective, it would be feasible for them to be adopted by many community drug treatment programs.

1.4 Current Study

The purpose of this study was to implement the Job Seekers' Workshop (JSW), a 12-hour job search-training program, in an American Indian addiction treatment program, and to evaluate its outcomes in comparison to the Job Interview Videos (JIV), a 40-minute two-part video. This randomized, between-group study evaluated both acceptance of the JSW or JIV training model as well as compared the effectiveness of the two interventions (JSW vs. JIV) for increasing rates of employment among study participants. This National Institute on Drug Abuse (NIDA) Clinical Trials Network (CTN) protocol was identified by the Na'nizhoozhi Center Inc. (NCI) as a priority for implementation in their treatment program, meeting a critical need of the people they serve. Implementation at NCI provided a unique opportunity to evaluate this intervention with an American Indian sample. This study provided valuable information about an ancillary service that is of high importance to NCI treatment providers and the people they serve. If rates of employment among people with drug use problems could be increased, this would have a significant positive impact on public acceptance as well as cost-benefit ratio of drug abuse treatment services.

2. Method

NCI was originally proposed as one site in a multisite trial CTN 0020: (Job Seekers Training for Patients with Drug Dependence; Svikis, PI) but was later designated as a separate pilot study site due to (1) a number of changes in the protocol that were requested by the Navajo Nation Human Research Review Board (NNHRRB), and (2) the need to protect the NCI data set and keep it separate from the national trial, so as to honor the right of the Navajo Nation to review and approve any use or publication of the data. Changes that were made from the original protocol in response to NNHRRB concerns included exclusion of the Composite International Diagnostic Interview (CIDI), the Risk Behavior Survey (RBS), Addiction Severity Index-Addendum for Women (ASIA), a revision of the Addiction

Severity Index (ASI & ASI-Lite), and a change in the requirement of days involved in treatment from 30 days to 10 days, because the 30 day requirement did not allow people at NCI to complete the workshop prior to their scheduled date of discharge.

2.1 Study Site

The Na'Nizhoozhi Center (NCI) was founded in 1992 to address the problem of public intoxication in Gallup and McKinley County, New Mexico. The agency was formed through a collaborative effort of the Navajo Nation, Zuni Pueblo, City of Gallup, and the County of McKinley. NCI is a 150-bed facility that provides culturally specific treatment programs to meet the needs of the American Indian people they serve. Protective custody services are provided for adults who are picked up by the local police departments for public intoxication or who arrive into emergency rooms intoxicated. State law allows NCI to hold people for protective custody for up to 72 hours. After detoxification individuals can stay for a short while for shelter and can be admitted in to residential treatment. NCI has two residential treatment programs. The First Step program is a western based introduction to treatment based on the first step of AA and is 15 days but individuals can sign up for a second phase and a third phase of 15 days each. The second residential treatment program at NCI, and the one that participants were recruited from for the current study, is Hiina'ah Bits'os Society (or Eagle Plume Society) which is a 60 day program, based on the Navajo "Beauty Way" philosophy that aims to teach people to better respect themselves. It has a capacity of 30 beds.

2.2 Relatives (Participants)

Within the NCI Programs, clients are referred to as "relatives" to acknowledge the unity between the person and the counselor, as well as in keeping with the Dine' K'e (the clanship system) that all Navajos are related. Throughout the remainder of this paper, the term "participant-relatives" will be used to describe participants in this study.

Primary study participant-relatives were drug and/or alcohol dependent individuals who were 18 years of age or older, enrolled at NCI for at least 10 days, categorized as either unemployed (i.e., not having worked at all for the month prior to study recruitment) or underemployed (i.e., having worked no more than 20 hours/week in any given week during the past month), and interested in obtaining a job. For people who were underemployed, the intervention offered the opportunity to improve their work situation, and their outcome measures focused exclusively on new employment (i.e., work other than that present at baseline). In addition, the inclusion of underemployed participant-relatives in the research served not only to improve weekly rates of JSW group attendance, but also to broaden the range of individuals who participated in the intervention. Individuals with sensory deficits (e.g., blind, deaf, mute, etc) that precluded participation in the intervention were excluded. Additionally, individuals who were unable to provide informed consent due to cognitive impairment, psychiatric instability, or language barriers were excluded.

2.3 Recruitment

Several mechanisms were used to identify people for potential study participation. First, flyers describing the study and offering a phone number to contact research staff about study participation were posted in visible areas of NCI. Second, counseling staff were informed about the study and asked to refer participant-relatives who had been in treatment for at least 10 days and were interested in obtaining employment. Third, a research assistant gave a brief description of the study to potential participant-relatives in group settings following group therapy sessions. Those who were interested then met with study staff who explained the clinical trial in more detail. Those who continued to express interest were consented using the University and Navajo Nation Human Research Review Board (NNHRRB)

approved consent form and were scheduled for a baseline assessment. Ability to provide informed consent was assessed using a 10-item quiz that evaluated participant-relative's understanding of the research design and study procedures (e.g., "True or False: There is a 50% chance you will be in the video group; True or False: You don't have to be in this study). Participant-relatives were required to score 80% or above to pass the test. Persons who did not pass the quiz had the opportunity to review the consent form again in Navajo with a member of the research team, followed by two opportunities to re-take the quiz.

2.4 Baseline Assessment

Since JSW sessions were offered each calendar month, baseline assessments were scheduled to occur shortly before the start of the next series of JSW workshops. Baseline assessment focused on participant- relative demographics, alcohol and drug use severity, psychosocial functioning, and drug abuse treatment, as well as employment/work history. Research assistants were fluent in the Dine' (Navajo language) and could rephrase or translate interview questions as necessary. Participant-relatives were compensated $25 for completing baseline assessment.

2.4.1 Assessment Measures

The Addiction Severity Index-Lite: *(ASI-Lite NN)* queries information regarding seven areas of a patient's life: medical, employment/support, alcohol, other drug use legal, family / social relationships, and psychiatric problems. The ASI-Lite has demonstrated good reliability and validity [24]. In each domain, summary "composite" scores are typically calculated and provide an indication of severity in each area, defined as a need for additional treatment/services. The version administered for this protocol omitted all items required to compute the family-social composite, one item from the Employment composite, and two items from the Legal composite. Composite scores were re-scaled to adjust for these missing items. While the NN version of the ASI created for this study corresponds closely to the ASI-Lite, the psychometric properties of the instrument remain under investigation. Internal consistency of the Employment composite during the follow-up period was high (Cronbach's $\alpha = .83$); internal consistency of Medical, Alcohol, and Psychiatric composites was in the low range, while internal consistency of the Drug and Legal composites in this period was unacceptably low.

Urine Drug Screen (UDS): Urine samples were collected in drug test cups with temperature-controlled monitoring. Urine toxicology tested for the presence of cocaine, opiates, methadone, THC, PCP, amphetamines, barbiturates, tricyclic antidepressants, methamphetamines and benzodiazepines.

Alcohol Breathalyzer (AB): An alcohol breathalyzer measured recent alcohol use.

Wide Range Achievement Test (WRAT-3)-Reading subtest only: The WRAT-3 reading subtest assesses reading decoding and assigns a standard score and grade level for reading. The WRAT-3 has excellent reliability and validity and is frequently used both for clinical/ educational as well as research purposes to measure academic achievement [25].

Participant Tracking Form (PTF): The PTF collects information (e.g., name, address, and telephone number) for at least 3 other friends/family members of the participant and who may facilitate subsequent research efforts to locate the family member for follow-up assessment.

Vocational Survey Pre-Treatment (VSP): The VSP is an interviewer-administered measure of the relative's vocational history and related life experiences. It was developed

specifically for this study. In the present study the VSP demonstrated adequate internal consistency (Cronbach's α=.74). Pre-treatment items focus on employment history, previous job satisfaction, attitudes and response to unemployment (e.g., depression), self-efficacy expectations for specific job skills, as well as financial and social support systems. In addition, the instrument collects more detailed information about the participant-relative's longest job as well as any jobs he/she has held in the four weeks prior to admission to residential care.

Timeline Follow Back Interview for Employment (TLFB-E): The TLFB-E uses the standard timeline follow back methodology to collect employment-related information (e.g., days worked, number of hours worked per day). The TLFB was originally developed to measure alcohol consumption in problem drinkers, using a calendar to assist them in providing retrospective estimates of the target behavior (i.e., drinking) on a day-to-day basis over a specified time period. It has also been adapted for use in tracking other behaviors such as episodes of violence and gambling behavior [26]. The TLFB has demonstrated moderate to high levels of reliability and validity when used to measure drinking and drug use [27,28]. It was recently selected as the best measure to use in treatment outcome studies of alcohol abuse/dependence [29]. In the present study, TLFB-E was used to collect data on daily employment status (worked/did not work, number of hours worked). At baseline, it was used to confirm that participant-relatives met study criteria for unemployed or underemployed during the four weeks prior to admission to the residential program.

2.5 Randomization

Following completion of the baseline assessment, participant-relatives were randomly assigned to either the JSW or JIV study groups with stratification on the basis of employment history (employed at all in past five years, including either full-time or part-time work) and current employment categorization (unemployed or underemployed).

2.6 Study Conditions

2.6.1 Job Seekers' Workshop (JSW)—The current intervention was modeled closely after the Job Seekers' Workshop (JSW) developed by Sharon Hall and colleagues [17]. JSW was manualized by the Center for Substance Abuse Treatment (CSAT; *cf*. [19], and designed to improve job-seeking skills, especially interviewing skills. The CSAT manual for JSW served as the template for the current protocol. Some modifications were necessary to modernize the original portfolio of skills needed to successfully compete in the present job market. For example, computer-based job search techniques have become an essential element of "job seeking," and, when applicable, were discussed in JSW as a source of job leads. JSW is based on the premise that information and practice in job acquisition skills will facilitate job placement [17]. Using focused, individualized education and practice, with videotape feedback and small group discussion, the aim of the training was to decrease the anxiety felt by many drug dependent persons when approaching the seemingly insurmountable task of getting a job. The JSW was administered in three, four-hour small-group sessions that included individualized videotape feedback. Specifically, sessions focused on locating available jobs, included tasks such as making "cold calls" during the session, completing a job application, and composing a resume. Primary emphasis, however, was placed on rehearsing the job interview. Each role play was videotaped, then replayed to provide participants with an ability to watch and critique themselves while also receiving individualized feedback from other JSW group members and the facilitator. This activity was integral to each JSW session.

JSW sessions were offered consecutively, two sessions in the first week, and one session in the second week with a make-up session scheduled at the end of the second week. Snacks

and beverages were provided to ensure participant-relative comfort. Additional JSW make-up sessions were scheduled as necessary.

2.6.2 Job Interviewing Video (JIV)—The Job Interviewing Video (JIV) used for the study was developed by the Career Consulting Center (http://www.careercc.com). The JIV session consisted of two videos: The first video: The Interview I: Mastering the Job Interview (20 Minutes) reviews five must know questions of interviewing (e.g., make a positive impression, communicate skills, answer problem questions, follow up after the interview); types of interviews; and seven phases of interviewing (e.g., opening moves, interviewing, closing the interview, following up). The second video: The Interview II: Answering Problem Interview Questions (26 Minutes) reviews ten basic questions (e.g., why don't you tell me about yourself, why don't you tell me about your personal situation, why are you looking for this sort of position and why here, what would your former employer/teacher say about you).

A member of the research staff arranged for viewing of the videos and provided an outline of the two videos for each week the JSW sessions were being offered. Snacks and beverages were provided to ensure participant-relative comfort and to minimize premature departure from JIV presentations.

2.7 Training and Fidelity Monitoring

Intervention training was provided by two JSW experts, one being a member of the original research team that developed and empirically validated the efficacy of JSW [17]. Two NCI providers learned to deliver the intervention from JSW experts during three training sessions lasting approximately four hours each. JSW facilitator training consisted of two full days of didactic and experiential learning, including role-play exercises. The two NCI facilitators then practiced the intervention with at least one group of pilot drug dependent persons, submitted audio tapes of these sessions, and obtained feedback and guidance from training experts prior to launch of the clinical trial.

Because the majority of participant-relatives participating in JSW spoke Dine' (Navajo language), and the two JSW facilitators were fluent, all workshop sessions were delivered in Dine' with some English used when certain concepts were not translatable to the Dine' language. This ensured understanding and full participation of all participant-relatives. A Dine' speaking fidelity monitor who was trained by a JSW training expert utilized audiotaping and a Likert-type rating scale developed by the training experts to monitor fidelity. The fidelity monitor was on-site and provided verbal feedback regarding the ongoing fidelity of workshops to the JSW facilitators at NCI in weekly meetings that were attended by all study staff at NCI. The JSW facilitators at NCI were also given the opportunity to discuss any fidelity concerns or problems with the translation of the workshop to the Dine' language with the Dine' speaking JSW training expert. While the fidelity monitoring differed from the National Protocol it was a significant cultural accomplishment to deliver the workshop into the native tongue of the Navajo participant-relatives. This accomplishment was believed to outweigh the benefit of sticking to a fidelity monitoring system that was designed for the English spoken national protocol. The JIV Facilitator did not require any specialized training, as the intervention was a video presentation in English viewed by the participant-relatives. However, the JIV facilitator was also fluent in the Dine' language and was able to answer any questions the participant-relatives had about the videos in English and/or Dine'.

2.8 Follow-up

Follow-up assessments were conducted at one, three, and six months following baseline assessment and randomization. At each follow-up, all participants completed follow-up versions of the ASI-Lite NN, VSF and TLFB-E for the time that had elapsed since the previous assessment. Research assistants were fluent in Dine' (Navajo language) and could rephrase or translate interview questions if/when necessary. To minimize dropouts during follow-up, compensation was dispensed on an escalating schedule. Specifically, participants received $20 for 1-month, $30 for 3-month, and $40 for 6-month follow-up assessments. In addition, participants who completed all three follow-up assessments received a $40 bonus for study participation. All attempts were made by research staff to obtain follow up data within the specified windows. However, given that many participant-relatives lived on the reservation and/or in remote rural areas, follow-ups were permitted outside of the "ideal window". In addition, across all three follow-up periods, approximately half of the interviews were completed via telephone, rather than in person. In such cases, all self-report measures were obtained but urine and breath samples could not be obtained to assess for recent alcohol and drug use.

2.9 Regional employment data

In order to explore the possible effects of local economic conditions on employment outcomes, measures including population density, rural/urban status, and per capita income were assembled from Census Bureau data for 2000, the most recent census data available. County-level unemployment rates for participants' home regions at the time of the study onset were concatenated from the NM Department of Workforce Solutions.

2.10 Analysis Plan

The study had two primary hypotheses. First, participant-relatives in the JSW group would be more likely to report either employment in a taxed income job or placement in job training during the 3-month follow-up than would participant-relatives in the JIV group. Second, participant-relatives in the JSW group would report working or enrollment in job training for significantly more hours in the 3-month follow-up than subjects in the JIV group.

Two variables served as primary outcomes: 1) time (number of days) to employment, defined as either a new taxed job or enrollment in a job-training program within the follow-up period, and 2) total hours either working or enrolled in a job-training program within the follow-up period. The source of information for both variables was the Timeline Follow Back Interview for Employment (TLFB-E). Both variables were treated as continuous measures. The 3-month timeframe was selected for primary analysis because that is the time period most likely to be influenced by the workshop intervention. Data from the longer-term 6-month outcome was intended to provide information primarily on job retention.

2.11 Data Analysis

Time to employment and time to enrollment in a job-training program were tested using the Cox Regression procedure in SPSS (Cox proportional hazards). This procedure is a time-to event technique, used here to evaluate between-group differences in the amount of time (i.e., number of days) required to either obtain employment or enroll in a job-training program. Analyses focused on baseline assessment scores exclusively and were performed using t-tests. Analyses addressing the number of participant-relatives reporting employment or enrollment in a training program were conducted using chi square tests. Comparisons of predictors of employment were tested using binary logistic regression. This regression procedure is used to test predictors of binary outcome variables and was applied in the

present study to evaluate the probability of obtaining employment or enrolling in a job training program. Analyses focused on hours spent working or in training were conducted using an analysis of variance (ANOVA). Comparisons based on repeated measures over time were tested using multivariate repeated measures analyses of variance (MANOVA).

3. Results

3.1 Participant demographics

Characteristics of participant-relatives who participated in the study are presented in Table 1. As indicated in the table, the majority who participated in the study were male, and all were of American Indian heritage. None of the participant-relatives were of African, Asian, and/or Pacific Islander heritage and therefore those categories were not included in the table.

3.2 Employment history at baseline

Participant-relatives reported that in the baseline month prior to enrollment in the study, on average the maximum number of total hours worked was 5.11, and that on average they had worked 1.81 of the past 30 days. There were no significant differences in these values between participant-relatives in the JSW and JIV groups. A total of 13 participant-relatives reported that they had worked in the previous four weeks, with no significant difference in employment between participant-relatives in the JSW (18.9%) and JIV (6.1%) groups ($\chi 2$ (1, n = 102) = 3.719, p = .054).

3.3 Employment outcomes

The Cox regression procedure did not reveal any statistically significant effect of group membership (JSW and JIV) on time to employment, defined as either a new taxed job or enrollment in a job-training program, during the three months after randomization (−2 log likelihood = 100.932, $\chi^2(1) = 0.002$, p = .961, see Table 2). 34.6% of participant-relatives in the JSW group reported employment at 3-month follow-up, compared with 29.8% in the JIV group. When employment was defined more narrowly to exclude training program enrollment, 32.7% of participant-relatives in the JSW group were employed at three months, compared to 18.4% in the JIV group, a difference that was also not significant.

Mean total work and training hours during the entire 3-month follow-up period were 43.68 hours in the JSW group vs. 55.35 hours in the JIV group. No significant difference was found in working hours between the two interventions (Table 3). A significant difference in training hours was found between the two interventions (JSW vs. JIV), with participant-relatives in the JIV group reporting significantly more training hours than participant-relatives in the JSW group. This significant difference was attributed to a single participant-relative, who reported training hours that were approximately six standard deviations above the mean. When this outlier was removed from the analysis, there was no significant difference between JIV and JSW in total training hours at the 3-month follow-up.

At 6-month follow-up the Cox regression procedure did not detect any significant between-group difference (JSW and JIV) in time to employment, defined as a new job or enrollment in a job training program (−2 log likelihood = 229.370, $\chi^2(1) = .017$, p = .896), with an average of 78.9 days in the JSW group and 77.8 days in the JIV group. 39.6% of participant-relatives in the JSW group reported employment at 6-month follow-up, compared with 40.8% in the JIV group. When employment was defined more narrowly to exclude training program enrollment, 35.8% of participant-relatives in the JSW group were employed at six months, compared to 24.5% in the JIV group, a difference that was not significant.

A significant difference was found on enrollment in a training program, with more participant-relatives who were involved in the JIV intervention enrolled in a training program (n=8) than in the JSW intervention (n=2) ($\chi 2$ (1)=6.599, p = .01). No significant differences between groups in work hours or total work and training hours were found. A significant difference on total training hours over the full 6 month period was found, with a higher mean for the JIV group (F (1,100) = 4.20, p = .043). As in the analysis at three months, this significant difference was attributed to a single participant-relative, who reported training hours that was approximately six standard deviations above the mean. When this outlier was removed from the analysis there was no significant difference between JIV and JSW in total training hours over the full six month period.

3.4 Job search efforts

No significant differences were found between the two interventions (JSW vs. JIV) at 3-or 6-month follow-up on self-reported job-seeking behaviors including making job calls, attending job interviews, looking in the newspaper, looking on the internet, asking a friend about a job, going to an employment agency, filling out a job application, submitting a resume, receiving job offers, or any other type of job-seeking behavior in which a participant-relative may have engaged.

3.5 Participants' satisfaction with JSW and JIV interventions

As a part of the follow-up assessment process participants were asked to rate their satisfaction with the two job-seeking interventions. Independent samples *t*-tests indicated that the JSW and JIV group leaders were rated as equally positive and helpful to the participants and that the interventions were viewed as equally helpful in making the participants feel more confident about their job interviewing abilities. Overall, responses to both interventions were very favorable. All items were rated, on average, 4 or higher on a 5-point Likert scale (5 = strongest endorsement).

3.6 Substance use outcomes

Composite scores from the ASI-Lite NN and urine drug screen data were used to measure self-reported alcohol and drug use over the course of the study. Abstinence was analyzed using a repeated-measures multivariate analysis of variance (MANOVA). Although alcohol use changed significantly over the follow-up period (F(3,288) = 3.754, p = .011), there was no significant difference in alcohol use between the JSW and JIV interventions (F(3,288) = .704, p = .550). Overall, substance use outcomes were very good in both groups, with 26 (25.5%) reporting any use of alcohol and drugs during the past month at 3-month follow-up, and 21 (20.6%) reporting any use in the past month at 6 months. Of the participants who completed follow-ups in person and assented to urinalysis (n=21) across the six-month follow-up period there was one positive urinalysis for opiates, and none for cocaine across the six-month follow-up period.

3.7 Potential moderating variables

Potential moderating variables were also explored as possible predictors of vocational outcomes. Intake data were assembled from the ASI-Lite NN, Wide Range Achievement Test, pre-treatment Vocational Survey, and demographics form for participant-relatives enrolled in the study. Analyses were conducted to determine whether these variables were predictive of employment status. Participant-relatives with higher total reading scores on the WRAT were significantly more likely to be employed at the six-month follow-up ($\chi^2(1)$ = 5.577, p < .02). The odds of employment increased for every one-unit increase on the WRAT (OR = 1.06, p < .03). The unemployment rate in participant-relatives' home region was also a significant predictor of employment at the three-month follow-up ($\chi^2(5)$ =

11.773, $p < .05$). The odds of employment at six months decreased with higher regional unemployment (OR=.576, $p < .05$). Older participant-relatives were also more likely to be employed at the six-month follow-up ($\chi^2(1) = 4.247$, $p < .04$). The odds of employment at six months increased with increasing age (OR = 1.042, $p < .05$). The number of taxed income jobs participant-relatives held since their 18th birthdays also predicted employment at six months ($\chi^2(1) = 6.520$, $p < .02$). The odds of employment increased for each additional job held (OR = 1.091, $p < .02$). Gender and tribal affiliation were not significant predictors of employment at any follow-up.

4. Discussion

The study was successfully implemented and the interventions were well received by all participant-relatives and program staff. Although both groups showed some gains in employment from baseline to the 3-month follow-up, overall rates of employment remained low at follow-up, averaging less than 50 total hours worked within the three months following randomization. Significant differences in the primary outcomes were not detected between the JSW and JIV interventions with respect to time to employment, rates of employment, or total work and training hours. Because of the design of the study, it is not possible to say whether the lack of a treatment effect indicates that neither treatment worked, or that both were modestly effective.

In contrast to the vocational outcomes, the substance use outcomes in this study were quite positive. The persistence of unemployment and underemployment among study participants cannot be attributed to a lack of improvement with respect to substance use. We cannot exclude the possibility that longer follow-up would have revealed significant effects. For example, in their long-term study of a Therapeutic Workplace intervention on treatment engagement and retention in heroin and cocaine-dependent women, Silverman and colleagues (2002), found wide variability in timing of participant responsiveness to the intervention. Some individuals responded to treatment early; others, who appeared unresponsive to treatment within the first 6 months to 2 years, later initiated long periods of sustained attendance and drug abstinence. However, given the lack of greater benefit, the 3- and 6-month data in the current study do not support the use of the more costly and time-consuming JSW intervention in this population and setting.

One possible explanation for the lack of differential treatment effect in spite of the greater intensity of the JSW intervention is that the format or content of the JSW intervention may not be well-suited for the participant-relatives participating in the study. Additionally, the timing of this intervention may not have been appropriate; that is, individuals were dealing with other concerns related to recovery during the early stages of residential treatment, and a program focused on job-seeking skills may have been received more favorably later in recovery. However, the results of the present study parallel those found in the CTN 0020 main trial for participants in outpatient treatment that found no significant differences between JSW and Treatment as Usual (giving participants a brochure about job placement centers in the community). This could suggest that the intervention was not well-suited for types of employment problems being experienced by individuals in today's job market.

Findings from this study suggest that individual characteristics and local economic conditions strongly influence the effectiveness of job-seekers' efforts, consistent with findings previously reported by Kanfer et al. [5] Although participants in this sample were relatively young, age did predict employment rates and employment stability in this sample. It is possible that simply having more years of job-seeking experience may increase an individuals' ability to find and secure a job. Reading level was significantly related to employment during the follow-up period, suggesting that reading ability and/or other factors

related to educational achievement may convey some benefit under the adverse employment conditions experienced by participants in the study. The number of prior jobs a participant held also predicted employment. It is possible that greater work experience made these participants more attractive candidates to potential employers. Further, individuals with a more extensive work history and requisite skills may have also had more reasonable employment expectations than their less experienced counterparts. Silverman and colleagues' (1995), study of 50 pregnant and postpartum women receiving intensive substance abuse treatment services found that occupational interests identified by participants were often not congruent with the skills they currently possessed. Despite difficult local economic conditions, participants who had maintained continuous employment since the age of 18 were more successful in getting a job. Finally, local unemployment rates in this study indicated that jobs were very scarce in some regions. If jobs were not available, participants would have an extremely difficult time finding a job despite their newly acquired job-seeking skills. This ceiling effect may also explain why differences were not observed between the JSW and JIV interventions. Because of the insufficient job opportunities, it may be more important to focus on the community's economic development rather than focusing efforts on job seeking interventions.

The null findings of the present study indicate that further investigation is necessary to identify effective low-cost interventions to improve employment outcomes among American Indians and other populations receiving treatment for addictions. In designing vocational interventions, attention should be paid to the specific barriers experienced by those for whom the intervention is intended, as well as the opportunities provided by the local economy and the strengths of the individual (e.g., culture and family, educational and training opportunities). While some variables that predict future employment—such as local unemployment, age, and work history—are not amenable to employment interventions, it may be possible to improve employment outcomes by designing interventions that are tailored to local economic conditions and individual work histories, abilities, and cultural values.

In spite of the lack of a demonstrable treatment effect, this study established the feasibility of including a rural American Indian site in a rigorous CTN trial through use of a collaborative approach and the incorporation of changes to the national protocol based on community input. This study can serve as a model for the process of implementing national trials in American Indian settings through a Community-Based Participatory Research process.

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Table 1

Demographics and baseline sample characteristics

Characteristic	*n* (%) / *M* ±*SD*		
	JSW	**JIV**	**Total**
N	53	49	102
Gender			
Male	44 (83.0%)	38 (77.6%)	82 (80.4%)
Female	9 (17.0%)	11 (22.4%)	20 (19.6%)
Age	34.77 ±9.44	37.98 ±11.34	36.31 ±10.47
Ethnicity			
Spanish origin, Hispanic or Latino	3 (5.7%)	2 (4.1%)	5 (4.9%)
Mexican, Mexican-American, Chicano	3 (5.7%)	2 (4.1%)	5 (4.9%)
Race			
American Indian or Alaska Native	53 (100%)	48 (98.0%)	101 (99.0%)
Navajo tribe	42 (79.2%)	44 (91.7%)	86 (85.1%)
Other American Indian tribe or tribes	17 (32.7%)	9 (18.8%)	26 (26.0%)
Other Alaska Native tribe or tribes	1 (1.9%)	0 (0.0%)	1 (1.0%)
White	2 (3.8%)	0 (0.0%)	2 (2.0%)
Other race	1 (1.9%)	0 (0.0%)	1 (1.0%)
Choose not to answer	0 (0.0%)	0 (0.0%)	0 (0.0%)
Unknown	0 (0.0%)	0 (0.0%)	0 (0.0%)
Work history			
Worked in the four weeks before enrollment	10 (19.2%)	3 (6.1%)	13 (12.9%)
Number of paid days in 30 before enrollment	2.68 ±6.22	0.88 ±4.44	1.81 ±5.49
ASI Status			
ASI-Lite NN Legal composite	.172 ±.237	.165 ± .237	.168 ±.236
ASI Lite NN Employment composite	.865 ±.233	.860 ±.240	.863 ±.235
ASI Lite NN Medical composite	.054 ±.160	.174 ±.324	.112 ±.258
ASI Lite NN Psychiatric composite	.045 ±.076	.091 ±.159	.067 ±.125
ASI Lite NN Alcohol composite	.107 ±.198	.114 ±.211	.111 ±.230
ASI Lite NN Drug composite	.019 ±.054	.013 ±.038	.016 ±.047

Table 2

Days to employment at 3 months.

Measure	Group	Mean	SD	N
Days to employment	JSW	63.65	15.12	17
	JIV	56.08	18.03	13
	Total	60.37	16.59	30
Days to taxed employment	JSW	60.90	13.76	10
	JIV	56.17	18.24	6
	Total	59.13	15.17	16

Table 3

Total hours from baseline through three months

Measure	Group	Mean	SD	N
Work hours	JSW	43.68	83.04	53
	JIV	47.10	89.87	49
	Total	45.32	85.98	102
$p = .842$				
*Training hours	JSW	0.00	0.00	53
	JIV	8.25	27.26	49
	Total	3.96	19.24	102
$p = .030$				
Total hours	JSW	43.68	83.04	53
	JIV	55.35	98.67	49
	Total	49.28	90.62	102
$p = .519$				

* n.s. when outlier is removed