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Barriers to Employment among Unemployed Drug Users: Age Predicts Severity

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Abstract

Background—Drug users in treatment or exiting treatment face many barriers to employment when entering the job market, such as low levels of education and technical skills, and low levels of interpersonal skills. As a result of these and other barriers, employment rates in these groups are generally low.

Objective—This article examines the existence and possible predictors of specific barriers to employment related to interpersonal and technical skills in a sample of participants enrolled in a therapeutic workplace intervention for substance abuse.

Methods—In Study I ($N = 77$), we characterized and examined predictors of participant scores on a staff-rated scale of interpersonal skills (Work Behavior Inventory). In Study II ($N = 29$), we examined whether participants had lower levels of computer knowledge than job seekers in the general population, and investigated possible predictors of computer knowledge in the sample.

Results—In general, participants in Study I displayed low levels of interpersonal skills, and participants in Study II scored lower on the computer knowledge test than job seekers in the general population. Older participants tended to have lower levels of interpersonal skills and lower levels of computer knowledge.

Conclusions and Scientific Significance—These results suggest that providers of workforce development services for drug users in treatment or exiting treatment should attend to these specific barriers to employment, which may also be more pronounced among older clients.

Keywords

computer skills; employment; employment barriers; social skills; substance abuse

INTRODUCTION

Drug users in treatment or exiting treatment face many barriers to employment when entering the job market in addition to drug use itself (1,2). As a result, employment rates in

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Declaration of Interest

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these groups are generally low and range from 15% to 35% (3–5). Some barriers to employment relate to environmental issues, such as residence in areas with few employment or career opportunities (6) and poor access to childcare (7), while other barriers involve low levels of education and skills necessary for employment in the modern workforce (8–10).

Employment skill sets may involve job-specific “hard” skills, such as how to operate a backhoe, or general skills such as the ability to work on a personal computer. Computing is “widely considered to be the most far-reaching generic skill of the modern era” (11, p. 95), and information and technology literacy constitute important skill sets in today’s job market (12). In fact, there is evidence to suggest that job seekers with higher levels of computing skills and information and technology literacy skills in the general population find jobs sooner (13) and have higher earnings (14) than those who possess these skills to a lesser degree.

In addition to hard skill deficits, chronically unemployed drug users may lack general “soft” skills that are not job specific, but nonetheless constitute an important skill set from the perspective of employers (8,15,16). Soft skills involve preemployment behavior, such as interviewing skills as well as on-the-job behaviors, including punctuality and consistent work attendance, appropriate dress, personal grooming, and hygiene (17). Yet another important soft skill set pertains to interpersonal or social skills, including getting along with supervisors and peers, knowing where to turn when difficult issues arise, communicating clearly and professionally, and seeing things from an employer’s perspective. There is evidence to suggest that soft skills may be deficient in chronically unemployed drug users (8).

Job-related skills and employment barriers appear relevant to the problem of drug addiction because employment has been associated with improved retention in treatment (4), increased abstinence from drugs (17–19), and improved social functioning (19). Perhaps as a result of employment barriers, the types of jobs available to former drug users are also likely to involve low levels of pay and benefits (20) which may further lead to low job retention. It is hence important to determine the extent of barriers to employment for chronically unemployed drug users in terms of soft skills and hard skills, and possible predictors of such barriers. If predictors of employment barriers can be identified in this population, providers of vocational training services for drug users can provide special attention to clients that have characteristics associated with specific employment barriers.

In the current analysis, we analyzed data derived from a sample of clients in a novel employment-based treatment intervention for drug addiction and chronic unemployment called the *therapeutic workplace* (21,22). Under this intervention, chronically unemployed adults are explicitly recruited and invited to work in an intensive training and employment program in which they are paid approximately \$10 per hour (\$8 hourly pay and approximately \$2 in incentive pay for progress on training programs) for working and can work 4 hours every weekday for 6 or more months. Trainees can redeem their pay in the form of vouchers to various stores in the community. To promote therapeutic behavior change (e.g., drug abstinence or adherence to drug abuse treatment medication), employment-based reinforcement contingencies are arranged for participants, in which they are required to engage in selected behaviors (e.g., drug abstinence or medication adherence) to maintain access to the workplace. In this study, we specifically evaluate the prevalence of employment barriers and predictors of barriers related to soft skills and a specific hard skill: computing skills.

STUDY I

The purpose of Study I was to determine predictors of scores on a staff-rated measure of soft skill behaviors in the therapeutic workplace. An earlier study by Carpenedo and colleagues (23) suggested that participants in the therapeutic workplace may lack soft or interpersonal skills. This study is different in that we used a standardized rating scale of soft skills and collected reliability observations for each participant, whereas Carpenedo and colleagues (23) based their data on a register of observed professional demeanor violations and collected no reliability data. This study hence constitutes the first attempt to reliably typify soft skill behaviors of participants in the therapeutic workplace. This study also represents the first attempt to characterize job terminations from gainful employment for substance abusers in treatment.

As predictors, we used three demographic variables that have been demonstrated to be related to employment and employment barriers in drug users: education, sex, and age. Higher levels of education are associated with higher levels of employment in heroin users (24). Female drug users have more employment barriers than men (7), are less likely to be employed after treatment (17), and younger clients are more likely to be employed following discharge from drug use treatment (17). We also included as predictors two measures from the Job Termination Interview (JTI) (25): time since last job held and the type of termination from last job held. We hypothesized that longer absences from the labor market and unsatisfactory terminations from last job held would both be associated with lower levels of soft skill behaviors.

METHOD

Study Participants and Setting—The therapeutic workplace is a research facility based in Baltimore, MD, devoted to addressing the interrelated problems of addiction and poverty. While enrolled at the therapeutic workplace, all participants worked on computer-based vocational training programs, which focused on improving typing and keypad entry skills. Participants for the current analysis ($N = 77$) took part in one of three clinical trials conducted at the facility during the study period, and inclusion criteria varied across the three clinical trials. Inclusion criteria as they relate to the current analysis were that participants had to be between the ages of 18–65 years, have been without employment in the 30 days prior to intake, not receiving methadone treatment at intake, and be opioid dependent. Cocaine use was an additional inclusion criterion in one of the trials.

Measures

Demographic Variables: Demographic variables were collected at intake via the Addiction Severity Index-Lite – Clinical Factors (CF), Clinical/Training Version (26). A summary of demographic variables can be found in Table 1.

Job Termination Interview: To determine duration since last job held and type of termination from last job held (satisfactory vs. unsatisfactory), staff administered the JTI to participants at intake (25). The JTI was originally developed to characterize causes of job terminations among people with psychiatric disorders, and this study represents the first application of this interview to substance abuse populations. In the current analysis, unsatisfactory reasons for leaving a previous job were being terminated or quitting without other job plans (25).

Work Behavior Inventory: Two staff members who interacted with participants on a daily basis independently completed the Work Behavior Inventory (WBI) (27) for each participant 2 months after intake. Regular job duties of staff raters included reading general study

procedures to participants on the first day after intake, assisting participants with training program questions, administering mastery tests on training programs, electronically signing participants in and out of the workplace, and monitoring participants for unprofessional behavior.

The WBI is a situational assessment rating scale that was developed to evaluate vocational rehabilitation of people with mental illness in areas relating to work performance, social skills, and interpersonal skills. The WBI consists of five subscales (Social Skills, Cooperativeness, Work Habits, Work Quality, and Personal Presentation). Each subscale is comprised of seven Likert-type questions that are rated on a five-point scale (1 = area consistently needs improvement and 5 = area of consistent superior performance), yielding a scale score ranging from 7 to 35; higher scores indicate higher levels of job functioning. The WBI is characterized by excellent internal consistency indices and has demonstrated discriminant validity between mentally ill and substance abuse populations (24). We therefore selected this inventory to assess soft skill behaviors in our sample. The following subscales were included in the current analysis: Social Skills, Cooperativeness, and Personal Presentation. We did not include subscale scores for work habits and work quality, as scores on these scales were not considered indicative of participants' interpersonal and social skills. In addition, some of the items for the Work Habits Scale do not lend themselves well to work on self-paced computerized training programs (e.g., "Takes initiative when work is available" and "Takes breaks only when scheduled").

Inter-rater reliability among ratings of staff members was measured across all participants using the intraclass r (28) for subscale totals. Reliability indices were good ($>.60$) for all three scales used in the present analysis ($r = .62$ for Social Skills, $r = .78$ for Cooperativeness, and $r = .71$ for Personal Presentation).

Data Analysis—Participant age, education, sex, time since last job held, and termination type from last job held were used as predictors of WBI scores. We calculated intercorrelations for WBI scale scores and found that the Social Skills Scale was highly correlated with both Cooperativeness ($r(77) = .85, p < .001$) and Personal Presentation ($r(77) = .78, p < .001$), and that the Personal Presentation Scale was also highly correlated with Cooperativeness ($r(77) = .84, p < .001$). Based on these findings, we combined the scales into one average score that was used as a criterion variable in a multiple linear regression analysis.

RESULTS AND DISCUSSION

Figure 1 is a scatterplot depicting the relationship between WBI scores and participant age. Table 2 is a summary of intercorrelations between the predictors used in the model. None of the predictors were significantly correlated. Multiple linear regression was used to predict WBI scores and is shown in Table 3. The model accounted for 20% of the variance in WBI scores ($R^2 = .20$) and was significant, $F(5, 76) = 3.51, p < .01$. Age ($\beta = -.27, p < .05$) and termination type ($\beta = .24, p < .05$) were significant predictors of WBI scores, while education, sex, and time since last job were not.

Participant scores on the WBI indicate that participants in our sample did not consistently demonstrate high levels of professional interpersonal skills. As hypothesized, higher age was associated with lower scores on the WBI, while education, sex, and time since last job were not related to WBI scores. Somewhat surprisingly, unsatisfactory terminations from last job were associated with higher WBI scores. The therapeutic workplace provides base pay for maintained engagement in training programs and participants earn incentives for progress in training. The work is entirely self-paced and participants receive constant feedback about earnings, which may be important differences from most community workplaces. The

therapeutic workplace sets the occasion for participants that prefer self-paced work and limited direct supervision to do well. It is possible that participants that had unsatisfactory terminations in community workplaces had few reasons to display unprofessional behavior to therapeutic workplace staff, argue with other participants, and so on, and therefore scored higher on the WBI than others.

STUDY II

Computing skills and information technology literacy (e.g., Internet) are extremely important generic job skills in modern workplaces (12). To illustrate, the US Bureau of Labor statistics estimates that approximately 77% of all jobs will require at minimum basic computing skills by 2014 (29). As stated earlier, higher levels of computing skills and information technology literacy are associated with quicker entry into the job market (13) and higher earnings (14), regardless of whether the job itself is in the area of computing and information technology. Information technology literacy skills are further important to chronically unemployed drug users, as employers increasingly advertise job openings on their own websites or on commercial websites dedicated to posting job openings (30). Low levels of computer and information technology skills would automatically disqualify job seekers from these positions.

To summarize, computing and information technology skills are fundamental general work skills in today's job market. Low levels of education and work skills in general are common employment barriers among chronically unemployed drug users (8–10). However, little is known specifically about this population's computer knowledge and information and technology literacy. The purpose of Study II was to evaluate computer and Internet knowledge among clients in the same therapeutic workplace as Study I was conducted, to compare participants' knowledge test scores with scores of job seekers in the general population, and to determine predictors of participants' test scores.

METHOD

Participants and Setting—Participants in Study II ($N = 29$) were enrolled in the same therapeutic workplace that served as a setting for Study I, took part in one of two clinical trials conducted at the facility during the study period, and had attended the program for at least 3 weeks. Inclusion criteria as they relate to the current analysis were that participants had to be between the ages of 18–65 years, have been without employment in the 30 days prior to intake, not be receiving methadone treatment, and be opioid dependent.

Measures

Demographic Variables: Demographic variables were collected in the same manner as in Study I. A summary of demographic variables can be found in Table 4.

Prove It Computer Knowledge Test: Participants completed the *Prove It! version 4.0 Computer Literacy – Basic Test* (31), which is a computerized test of computer knowledge. The test consists of 34 multiple choice and true–false questions presented in a fixed order and covers five subject areas: hardware, Internet, safety, software, and the Microsoft Windows® operating system. The test has very good (32) internal consistency reliability (Cronbach's $\alpha = .80$), and its Flesch–Kincaid grade reading level is 5.5. The test's mean ($M = 27.70$) is derived from a sample of community applicants for entry-level administrative positions.

All participants except one completed the test at least 3 weeks after intake to the therapeutic workplace. One completed the test after 2 weeks. Participants could earn \$.20 for each

correct answer. Participants were informed that they would continue to receive a \$8 hourly pay while taking the test. A graduate student or research assistant accompanied participants to the computer in a private testing room and was present for the duration of the test. Participants were instructed to read a brief introduction to the test, which explained the software and how to complete the test. If participants asked for assistance, they did not receive help concerning test materials, but requests for help with taking the test (e.g., increasing text size and help using the mouse) were honored. Participants were not able to minimize or exit the test without completing the test and could not skip questions. After participants were finished they were informed of the number of correct answers.

Data Analysis—In order to determine if scores of Study II participants on the computer knowledge test differed from test scores of community applicants for entry-level administrative positions, we compared the mean score of participants with the test's mean score using a one-sample *t*-test (test value = 27.70) (27). Participant age, education, and sex were used as predictors of test scores in a multiple linear regression analysis. We hypothesized that age would be inversely related to computer skills (33,34), and that education level would be positively related to computer skills (33). Some studies have found that females may self-report less computer knowledge than men (35), while others have found no effect of sex on perceived computer knowledge (36). However, it appears that females have less interest in computers than males in the general population, as women are less likely than men to seek out education and careers in computer science (37,38). We hence hypothesized that females would score lower on the computer test.

RESULTS AND DISCUSSION

On average, participants answered less than half of all questions correctly, and computer knowledge deficits appeared to exist across all difficulty levels and content areas. Figure 2 displays participants' performance on individual questions categorized by difficulty and content area. Participants' average score on the computer knowledge test was 15.20 (SD = 5.7) items correct. This was significantly different from the test's average value $t(28) = -11.09, p < .001$.

Multiple linear regression was used to predict *Prove It* test scores and is shown in Table 5. The model accounted for 52% of the variance in test scores ($R^2 = .52$) and was significant, $F(3, 28) = 9.06, p < .01$. Age ($\beta = -.67, p < .01$) was a significant predictor of test scores, while education level and sex were not. Figure 3 is a scatterplot depicting the relationship between the percentage of correct items on the *Prove It* computer knowledge test and participant age.

Participants in our sample scored lower than a sample of job seekers in the general population applying to entry-level administrative positions. As hypothesized, older participants had lower levels of computer knowledge. Contrary to our hypotheses, education level and sex were not related to computer knowledge.

Our sample for Study II was relatively small, and further research is certainly warranted to establish if these findings have generality. Another possible weakness of this study is that we were not able to find a standardized computer knowledge test, and hence know little about the characteristics of the population on which the comparison test average from the *Prove It! version 4.0 Computer Literacy – Basic Test* is based. Rather than developing our own test, we purchased the rights to use a commercially available test frequently used in human resources for placement in entry-level administrative positions in community organizations. As a result, we believe that we selected a valid test of employment-related computer knowledge and a reasonable comparison group for our sample.

GENERAL DISCUSSION

The pattern that emerges from both Study I and Study II is that older participants can be expected to have greater barriers to employment in terms of computer knowledge and managing interpersonal relationships at work, and that drug users in treatment have lower levels of computer knowledge than job seekers in the general population. These results suggest that providers of workforce development services for drug users in treatment or exiting treatment should carefully attend to these specific barriers, which may also be more pronounced among older clients. Approximately half of all terminations from last job held were classified as unsatisfactory, which suggests that participants may have had problems maintaining jobs.

Our results may in part explain why attempts to prepare drug users in treatment or exiting treatment for gainful community employment have resulted in poor outcomes. McIntosh and colleagues (39) found that receiving any kind of employment-related assistance regardless of modality was highly correlated with obtaining paid employment following treatment, but only 10% of participants were employed at 33-month follow-up assessment. Most vocational training programs to date have focused on preemployment behaviors (locating job opportunities, job interview skills, and so on). Vocational problem-solving skills (VPSS) training involves activities such as realistic goal setting for employment, identifying resources for employment opportunities, and taking appropriate steps to obtain a job. Providing clients in methadone maintenance treatment with 10 sessions of VPSS did not have a positive effect on employment outcomes at 6-month follow-up in one study (40), and another study found that VPSS did not result in an increase in motivation to become employed or an increase in specific job-seeking activities for the same population (41). Lidz and colleagues (8) provided participants with (1) training in vocational problem solving, (2) a job seeker's workshop, or (3) both. None of the interventions resulted in improved participant employment outcomes.

It is not clear why employment interventions for unemployed drug users have largely failed to promote employment. A likely reason is that most employment interventions provide only relatively brief training and emphasize fairly quick entry in the workforce. It is possible that the barriers to employment that exist for chronically unemployed drug users cannot be overcome with brief training. The data from this study suggest that a lack of computer skills and interpersonal skills, particularly among older clients, may present significant employment barriers to this population. Brief training will do little to overcome these barriers. Training in locating job opportunities, job interview preparation, and brief training in vocational problem solving may simply not be enough to compensate for years or decades away from gainful employment and educational settings.

In the two studies described herein, it was not possible to use interpersonal skills or computer knowledge as predictors of maintenance of employment in the therapeutic workplace. The therapeutic workplace is a model workplace and does not provide competitive employment (21,22). Participants in both studies could attend the workplace as long as they did not engage in serious vulgar or threatening language or behavior, and the most severe consequence possible for these behaviors was temporary suspension (23). As a result, no participants were terminated from the therapeutic workplace in either study, and temporary (1-day) suspensions were extremely rare. Participants in this study would probably not find work with these characteristics in the community, as a result of past and/or current drug use and low levels of education, which may limit the extent to which our findings generalize to actual workplaces. It would, however, be interesting to determine in future studies whether participants that demonstrate high levels of interpersonal skills and demonstrate high levels of computer knowledge obtain and maintain competitive

employment in the community at higher levels than others following discharge from the therapeutic workplace.

Overall, this research suggests that we may need to address employment barriers in this population through more comprehensive training in, for example, basic work skills (e.g., computing) and management of interpersonal relationships. The therapeutic workplace offers a possible vehicle for such intensive interventions. In the therapeutic workplace, participants are employed in a transitional environment in which they can earn vouchers for providing drug-free urine samples and progressing in basic work skills training (21,22). Continued research and development may be needed to improve job outlook for therapeutic workplace participants by enhancing basic academic training and computer skills training programs, and developing programs to promote appropriate social interactions with staff and other participants.

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FIGURE 1. Scatterplot depicting the relationship between Work Behavior Inventory (WBI) scores and participant age. Solid line represents the linear regression fit across all participants.

FIGURE 2.

Percentage of correct answers per item on *Prove It* computer knowledge test by difficulty and content area. Each diamond represents one item on the test.

FIGURE 3.

Scatterplot depicting the relationship between the percentage of correct items on *Prove It* computer knowledge test and participant age. Solid line represents the linear regression fit across all participants. Horizontal dotted line indicates test average of a comparison sample of community applicants for entry-level administrative positions.

TABLE 1

Demographic variables for participants in Study I.

Variable	
Age, <i>M</i> (SD) (years) ¹	44.6 (8.6)
Education completed, <i>M</i> (SD) (years) ¹	11.2 (1.6)
Combined WBI Scale, <i>M</i> (SD) (years)	22.6 (2.8)
Time since last job, <i>M</i> (SD) (months) ²	59.0 (74.1)
Female/male (%) ¹	43/57
Satisfactory/unsatisfactory termination (%) ²	50.6/49.4

Notes: WBI, Work Behavior Inventory; JTI, Job Termination Interview.

¹From the Addiction Severity Index-Lite.²From the JTI.

TABLE 2

Intercorrelations among predictor variables.

Predictors	Time since last job held	Termination type	Sex	Age	Education
Time since last job held	–	–.073	–.071	.131	–.024
Termination type		–	–.145	–.134	.061
Sex			–	–.142	.02
Age				–	.15
Education					–

Notes: $N = 77$.

All correlations were nonsignificant ($p > .05$).

TABLE 3

Multiple regression predicting WBI scores.

Variables	<i>B</i>	<i>SE B</i>	β	Significance level
Age	-.26	.11	-.27	.02
Sex	-2.01	1.23	-.18	.10
Education (years)	.84	.58	.16	.15
Time since last job	.00	.01	-.02	.81
Termination type	4.02	1.81	.24	.03

Notes: $R^2 = .20$. WBI, Work Behavior Inventory.

TABLE 4

Demographic variables for participants in Study II.

Variable	
Age, <i>M</i> (SD) (years) ^{<i>I</i>}	42.85 (8.50)
Education completed, <i>M</i> (SD) (years) ^{<i>I</i>}	11.45 (1.74)
Female/male (%) ^{<i>I</i>}	38/62

Note:

^{*I*}From the Addiction Severity Index-Lite.

TABLE 5

Multiple regression predicting computer knowledge test scores.

Variable	<i>B</i>	<i>SE B</i>	β	Significance level
Age	-.130	.003	-.668	.00
Education	-.004	.140	-.042	.77
Sex	-.062	.049	-.181	.22

Note: $R^2 = .52$.