Short communication

Measuring smoking knowledge, attitudes and services (S-KAS) among clients in addiction treatment

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ABSTRACT

Background: Addiction treatment programs are increasingly working to address prevalent and comorbid tobacco dependence in their service populations. However at present there are few published measurement tools, with known psychometric properties, that can be used to assess client-level constructs related to tobacco dependence in addiction treatment settings. Following on previous work that developed a staff-level survey instrument, this report describes the development and measurement characteristics of the smoking knowledge, attitudes and services (S-KAS) for use with clients in addiction treatment settings.

Method: 250 clients enrolled in residential drug abuse treatment programs were surveyed. Summary statistics were used to characterize both the participants and their responses, and exploratory factor analysis (EFA) was used to examine the underlying factor structure.

Results: Examination of the rotated factor pattern indicated that the latent structure was formed by one knowledge factor, one attitude factor, and two "service" factors reflecting program services and clinician services related to tobacco dependence. Standardized Cronbach's alpha coefficients for the four scales were, respectively, .57, .75, .82 and .82.

Conclusions: The proposed scales have reasonably good psychometric characteristics, although the knowledge scale leaves room for improvement, and will allow researchers to quantify client knowledge, attitudes and services regarding tobacco dependence treatment. Researchers, program administrators, and clinicians may find the S-KAS useful in changing organizational culture and clinical practices related to tobacco addiction, help in program evaluation studies, and in tracking and improving client motivation.

1. Introduction

Currently over one billion persons smoke worldwide, and over 5 million deaths annually are attributed to tobacco (World Health Organization, 2010). In the United States (U.S.) tobacco control efforts have reduced smoking prevalence from 40% in 1964 to 20.6% currently (Centers for Disease Control and Prevention, 2009; Department of Health Education and Welfare, 1964). However, smoking remains prevalent among persons with alcohol and drug use disorders, and epidemiologic studies report smoking rates for these groups at 34% and 52%, respectively (Grant et al., 2004). Among persons in addiction treatment smoking prevalence ranges from 49 to 98% (Schroeder, 2009). This is true in the U.S., and in many countries where smoking rates have been reported for addiction treatment samples (Amit et al., 2003; Ellingstad et al., 1999; Gossop et al., 2007; Lawal et al., 1998; Nakamura et al., 2003). As one approach to elevated smoking rates, researchers in a number of countries have explored tobacco-related knowledge, attitudes and practices among clinicians (Ceraso et al., 2009; Walsh et al., 2005; Gokirmak et al., 2010).

In the context of high smoking rates in addiction treatment, three studies have concluded that tobacco dependence services are not provided in most U.S. addiction treatment programs (Friedmann et al., 2008; Fuller et al., 2007; Richter et al., 2004). Among program staff, tobacco-related knowledge and attitudes are barriers to providing tobacco services (Guydish et al., 2007). For example, smoking may be viewed by counselors as a low priority when compared to more immediate harms of other drug use, and staff may believe their patients are not interested in quitting (Hahn et al., 1999; Sees and Clark, 1993). Client attitudes may also

affect tobacco services. Clients in one program were concerned that quitting smoking would create nicotine withdrawal symptoms and remove smoking as a coping strategy (Asher et al., 2003). Among clients entering a smoke-free rehabilitation facility, over half thought that smoking should not be addressed along with other addictions (Patten et al., 1999). Efforts to provide tobacco dependence interventions in addiction treatment must address staff and client attitudes about tobacco, while increasing access to tobacco-related services.

Several initiatives address tobacco dependence in addiction treatment. Veteran Affairs Medical Centers initiated practice guidelines for smoking cessation among all patients, including those in specialty addiction clinics (Sherman, 2008). New Jersey licensure standards encouraged all residential treatment programs to adopt smoke-free grounds (Williams et al., 2005), and New York recently required treatment programs to have smoke-free grounds and treat tobacco dependence for all clients on request (Tobacco-Free Services, 2008). Indiana initiated partnerships to support tobacco-free addiction treatment (Indiana Tobacco Prevention and Cessation, 2010), and other states have announced plans to adopt smoke-free grounds in their treatment systems (Oregon Department of Human Services, 2010; Utah Division of Substance Abuse and Mental Health, n.d.).

As such strategies are implemented, treatment programs may measure how those strategies affect client knowledge or attitudes related to tobacco, or whether such policies increase tobacco services. A number of studies have used client surveys for this purpose (Bernstein and Stoduto, 1999; Perine and Schare, 1999; Trudeau et al., 1995), with findings reported for individual survey items. For example, Joseph et al. (2004) used a client survey as one in a number of policy outcome measures, and reported on whether patients were counseled to quit smoking at their last clinic visit. To evaluate the New Jersey policy, Williams et al. (2005) reported on whether clients thought the policy was helpful.

Multi-item scales offer an alternative to individual items, giving comparability across studies, more stable estimates of underlying constructs, and known psychometric properties (Allen and Yen, 1979). The barriers to quitting smoking in substance abuse treatment (BQS-SAT) assesses whether respondents think that quitting smoking would lead to nicotine withdrawal symptoms or urges to use other drugs (Asher et al., 2003). The nicotine and other substance interaction expectancies questionnaire (NOSIE; Rohsenow et al., 2005) measures expectancies concerning the effects of smoking on addiction recovery. These measures are tailored to addiction treatment samples, but do not measure knowledge of the hazards of smoking, or tobacco services clients may receive while in treatment.

Delucchi et al. (2009) reported on a staff survey with scales assessing smoking-related knowledge, attitudes and practices (S-KAP). This paper reports on a similar survey of smoking-related knowledge, attitudes and services (S-KAS) among clients. The S-KAS may be useful to addiction treatment programs, or county, state or regional treatment systems, who want to assess whether their tobacco strategies are associated with changes in client knowledge or attitudes, or with tobacco services clients receive. The S-KAS is not a measure of client smoking cessation outcomes. It is designed to measure conditions that support clients in quitting smoking: knowledge of the hazards of smoking, attitudes about treating smoking in the program where they are enrolled, and tobacco-related services they receive.

2. Methods

Data were collected in the course of another NIDA funded study testing an organizational intervention to improve tobacco depen-

dence treatment in residential programs (Ziedonis et al., 2007). Cross-sectional client samples were interviewed pre-intervention. Data collection began in all sites at the same time but the intervention was implemented sequentially, enabling a second pre-intervention sample in two sites, giving five samples ($n = 50$ per sample) and 250 interviews.

Clients in residential treatment for at least 14 days were eligible. This ensured some time in program during which clients may have received tobacco-related services. Smokers and non-smokers were eligible. While smokers are more likely to receive tobacco dependence services, the knowledge and attitudes of both smokers and non-smokers can reflect the organizational climate of the program, and may change in response to policy interventions, staff training, or client groups concerning tobacco.

The survey contained 40 items. Knowledge items were selected from the CDC Adult Tobacco Survey (Centers for Disease Control and Prevention, n.d.) and the California Adult Tobacco Survey (California Department of Health Services, 2004). Items concerning attitudes toward treating tobacco dependence and tobacco-related services that clients received were drawn from prior research (Borrelli et al., 2001; Glynn and Manley, 1989; Goldstein et al., 1998; Joseph et al., 1990; Velasquez et al., 2000).

In each agency a research liaison posted sign up sheets and screened those signing for inclusion criteria. Most clients were interested because participation involved a $20.00 incentive. As the sign up procedure did not yield the desired sample size ($n = 50$), the program liaison invited any eligibles who had not expressed interest to participate. Finally, the liaison monitored new admissions and, when they met time-in-treatment criteria, recruited them.

For interested clients, the liaison arranged a phone appointment with the research interviewer. At the time of the appointment, the interviewer called the program liaison, who indicated the client's clinic identification number and left the room. The interviewer completed verbal informed consent and conducted the interview. No participants declined at this stage. After the interview the client brought the liaison back to the phone, the interviewer verified completion, and the liaison provided the incentive to the client. As the census of each program was lower than the recruitment target, these procedures continued in each clinic for approximately 10 weeks, until 50 clients had been interviewed. Study procedures were approved by the Institutional Review Board of the University of California, San Francisco.

3. Results

Four eligible clients declined participation. An unknown number were lost because they left the program after becoming eligible but before the phone interview. Mean age was 35.3 (SD = 10.0), 55.5% were women, and frequently reported drugs were opioids (29.6%), alcohol (29.2%), and crack/cocaine (24.4%). Most (70.8%) were White, 19.6% were African American, and 85.2% smoked.

Exploratory factor analysis with Varimax rotation was used to examine the underlying factor structure. Items were dropped if endorsed by fewer than 5% of respondents (1 item) or uncorrelated with any scale totals (4 items), and 7 tobacco medication items were collapsed to one. Response codes for 28 remaining items included dichotomous and Likert formats. To achieve a common format, Likert items were coded from 1 (strongly disagree) to 5 (strongly agree) and dichotomous items were coded 1 (no) and 5 (yes).

There were four eigenvalues greater than 1.0 with the last one at 1.18, supporting a four factor solution (Table 1). One factor concerned knowledge about the effects of smoking (Factor 4) and one concerned attitudes toward treating smoking in the current program (Factor 3). Two scales concerned tobacco services that clients received from their clinician (clinician services, Factor 1) or services