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Identifying substance misuse in primary care: TAPS Tool compared to the WHO ASSIST

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ABSTRACT

Background: There is a need for screening and brief assessment instruments to identify primary care patients with substance use problems. This study's aim was to examine the performance of a two-step screening and brief assessment instrument, the TAPS Tool, compared to the WHO ASSIST.
Methods: Two thousand adult primary care patients recruited from five primary care clinics in four Eastern US states completed the TAPS Tool followed by the ASSIST. The ability of the TAPS Tool to identify moderate- and high-risk use scores on the ASSIST was examined using sensitivity and specificity analyses.
Results: The interviewer and self-administered computer tablet versions of the TAPS Tool generated similar results. The interviewer-administered version (at cut-off of 2), had acceptable sensitivity and specificity for high-risk tobacco (0.90 and 0.77) and alcohol (0.87 and 0.80) use. For illicit drugs, sensitivities were >0.82 and specificities >0.92. The TAPS (at a cut-off of 1) had good sensitivity and specificity for moderate-risk tobacco use (0.83 and 0.97) and alcohol (0.83 and 0.74). Among illicit drugs, sensitivity was acceptable for moderate-risk of marijuana (0.71), while it was low for all other illicit drugs and non-medical use of prescription medications. Specificities were 0.97 or higher for all illicit drugs and prescription medications.
Conclusions: The TAPS Tool identified adult primary care patients with high-risk ASSIST scores for all substances as well moderate-risk users of tobacco, alcohol, and marijuana, although it did not perform well in identifying patients with moderate-risk use of other drugs or non-medical use of prescription medications. The advantages of the TAPS Tool over the ASSIST are its more limited number of items and focus solely on substance use in the past 3 months.

1. Introduction

In recognition of the health problems associated with substance use and the need for an efficient approach to screen and assess substance-using individuals in primary care settings, the World Health Organization (WHO) developed the Alcohol, Smoking and Substance Involvement Screening Test (WHO ASSIST Working Group, 2002). The ASSIST consists of seven questions regarding each of 10 classes of substances and a question about drug injection. Items cover lifetime use and frequency of use in the past-3 months as well as various problems associated with the use of these substances. The ASSIST was found to have good concurrent, construct, and discriminant validity among a sample of 1047 primary care and drug treatment patients in six countries spanning five continents (Humeniuk et al., 2008). Substance-specific involvement scores were developed to separate respondents into low-, moderate-, and high-risk categories for each substance. In developing the ASSIST, it was thought that the moderate-risk category, in particular, would help to identify individuals who otherwise might go undetected in health care settings (Humeniuk et al., 2008), while those with high risk scores were appropriate for referral to specialist addiction treatment services. A moderate-level substance risk score on the ASSIST

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was subsequently used as an inclusion criterion in a multi-site study of brief intervention in primary care (Humeniuk et al., 2012), that demonstrated the utility of the ASSIST in providing actionable data to triage patients to particular interventions.

Although the ASSIST has subsequently been studied across a variety of diverse populations, including adults with first-episode psychosis (Hides et al., 2009) and adolescents (Gryczynski et al., 2014), its widespread implementation has been hampered by the instrument's length (requiring 5 to 15 min to administer) and complex scoring system (Ali, Meena, Eastwood, Richards, & Marsden, 2013; McNeely et al., 2014). In order to overcome these barriers to adoption, a computerized version of the full ASSIST that can be self-administered and scored automatically has been developed (Kumar et al., 2016; McNeely, Strauss, Rotrosen, Ramautar, & Gourevitch, 2016; Wolff & Shi, 2015). In addition, Ali et al. (2013) developed a short version of the ASSIST, termed the ASSIST-Lite, based on factor and item-response theory analyses of pooled data from previous validation studies of the ASSIST. This shortened version of the ASSIST has 3 items each for tobacco, cannabis, stimulants, sedatives, and opioids and 4 items for alcohol. The first item for each substance asks about any use in the past 3 months. Individuals who respond 'yes' to use of a substance are administered two (or for alcohol, three) subsequent items specific to that substance. For tobacco, the two items were drawn from the Heaviness of Smoking Index (Diaz et al., 2005) and the Fagerström Tolerance Questionnaire (Tate & Schmitz, 1993), not the original ASSIST, and ask if the respondent smoked 10 or more cigarettes/day and if they smoked within 30 min of waking. For the non-tobacco substances, the items are drawn from the ASSIST and vary depending on the substance. These items query loss of control (alcohol and opioids), concern expressed by others (alcohol, opioids, cannabis, sedatives, stimulants), urge to use (cannabis and sedatives), and frequency of using (i.e., weekly or greater; stimulants). Participants reporting use of alcohol receive an additional item that asks about frequency of having 4 (for women) or 5 (for men) more drinks on a single occasion. Scoring was also simplified such that a score of 2 or greater for all substances except alcohol (which required a score of 3) yielded an acceptable level of diagnostic accuracy for identifying DSM-IV substance dependence.

The National Drug Abuse Treatment Clinical Trials Network launched a multi-site trial examining the validity of a two-step screening and brief assessment for substance use termed the Tobacco, Alcohol, Prescription medication, and other Substance use (TAPS) Tool among 2000 adults enrolled in five primary care clinics across 4 states in the Eastern US (McNeely, Wu, et al., 2016). The TAPS Tool is a two-step screening (TAPS-1) and brief assessment (TAPS-2) instrument. The TAPS-1 was adapted from the NIDA Quick Screen v 1.0 (NIDA, 2016) and the TAPS-2 was based on the ASSIST-Lite (Ali et al., 2013) and modified for the US context (as described below). The TAPS Tool in both self-administered tablet computer (iPad) and interviewer-administered versions was compared to a number of criterion measures, including the DSM-5 SUD criteria, the AUDIT-C, Fagerström Tolerance Questionnaire, and the ASSIST (Wu et al., 2016). The primary analysis of the trial examined the performance of the TAPS Tool using the DSM-5 criteria as the gold standard (McNeely, Wu et al., 2016). The present paper is the first report on the concurrent validity of a modified version of the ASSIST-Lite (i.e., the TAPS Tool) relative to the ASSIST.

2. Methods

The study's methods have been reported in detail elsewhere (Wu et al., 2016). In brief, 2000 adult primary care patients participated from August 2014–April 2015 at five primary care sites in four Eastern US states, including a Federally Qualified Health Center in Baltimore, MD, two practices in Kannapolis, NC, a public hospital clinic in New York City, and a University-based primary care clinic in Richmond, VA (McNeely, Wu et al., 2016). Eligibility criteria were intentionally broad and included being a primary care patient of at least 18 years of age and being at the clinic for a medical visit on the day of recruitment. Patients who did not understand spoken English, were physically unable to use the iPad, or had already participated in the study were excluded. Willing patients meeting eligibility criteria provided verbal informed consent to Research Assistants (RAs) after reviewing an IRB-approved consent form.

The order of administration of the self-administered tablet computer version or interviewer-administered TAPS Tool was determined by an electronic data capture system, which randomized participants in a counterbalanced order, such that 50% of the participants were first administered the TAPS Tool by the RA followed by self-administration of the TAPS Tool on a tablet computer (iPad). In order to accommodate low-literacy patients, the tablet included an optional computer-assisted audio self-interview that read questions and response options out loud. The other 50% of the participants were administered the TAPS Tool in the reverse order. After both formats of the TAPS Tool were completed, the RA then administered criterion measures, including the ASSIST, to each participant. The RA provided participants with $20 after completion of the measures.

In the past 12 months how often have you:

- used any tobacco product? (for example cigarettes, e-cigarettes, cigars, pipes, or smokeless tobacco)
- had 5 or more drinks (men)/ 4 or more drinks (women) containing alcohol in one day?
- used any drugs including marijuana, cocaine or crack, heroin, methamphetamine (crystal meth), hallucinogens, or ecstasy/MDMA?
- used any prescription medications just for the feeling, more than prescribed or were not prescribed for you?
    - Prescription medications that may be used in this way include
        - Opiate pain reliever (OxyContin, Vicodin, Percocet, Methadone)
        - Medications for anxiety or sleeping (for example: Xanax, Ativan, Klonopin)
        - Medications for ADHD (Adderall, Ritalin)

Response options: Daily or almost daily, Weekly, Monthly, Less than monthly, Never

Fig. 1. TAPS-1.

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