Feasibility and Acceptability of an Audio Computer-Assisted Self-Interview Version of the Alcohol, Smoking, and Substance Involvement Screening Test (ASSIST) in Primary Care Patients

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Abstract

Background—This study explores the feasibility and acceptability of a computer self-administered approach to substance use screening from the perspective of primary care patients.

Methods—Forty-eight patients from a large safety net hospital in New York City completed an audio computer-assisted self-interview (ACASI) version of the Alcohol, Smoking, and Substance Involvement Screening Test (ASSIST) and a qualitative interview to assess feasibility and acceptability; comprehension; comfort with screening questions; and preferences for screening mode (interviewer or computer). Qualitative data analysis organized the participants' feedback into major themes.

Results—Participants overwhelmingly reported being comfortable with the ACASI ASSIST. Mean administration time was 5.2 minutes (range 1.6 – 14.8). The major themes from the qualitative interviews were 1) ACASI ASSIST is feasible and acceptable to patients, 2) Social stigma around substance use is a barrier to patient disclosure, and 3) ACASI screening should not preclude personal interaction with providers.

Conclusions—The ACASI ASSIST is an appropriate and feasible approach to substance use screening in primary care. Because of the highly sensitive nature of substance use, screening tools must explain the purpose of screening, assure patients that their privacy is protected, and inform patients of the opportunity to discuss their screening results with their provider.

Keywords

substance use; screening; ACASI; ASSIST; prevention

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INTRODUCTION

Screening and brief counseling interventions for unhealthy alcohol use have gained wide acceptance as part of a public health strategy,[1–5] and are recommended by the United States Preventive Services Task Force for adult primary care patients.[6] In some practice settings, screening for drugs as well as alcohol can be important for clinical care, given the prevalence and health risks of illicit and prescription drug misuse. Screening and brief interventions for substance use are promoted by the federal government and supported by insurance billing codes.[4,7] Yet despite this institution- and policy-level support for substance use screening, routine screening in primary care settings remains limited,[4,5,8,9] due in large part to time constraints.[10–17]

Patient self-administered screening methods have the potential to make substance use screening more feasible in busy primary care settings, by reducing the staff time and resources that in-person interviews demand.[18,19] Computerized self-interview approaches, particularly the audio computer assisted self-interview (ACASI), have proven sensitive for detecting stigmatized behaviors such as substance use and have comparable validity to traditional interview formats.[20–24] Patients may be more comfortable with computerized screening, since it gives them the flexibility to answer questions at their own pace[20] and is less intimidating than a face-to-face interaction for reporting stigmatized behavior.[25,26] Additional benefits are that computerized screening tools retain their fidelity,[27–29] and can be offered in multiple languages.

Despite growing interest in patient-reported outcome measures for primary care,[28,30,31] the acceptability to patients of various approaches to collecting this information has received relatively little attention. Patient attitudes toward the mode of data collection could be particularly important when the questionnaire addresses a stigmatized behavior such as substance use. Self-administered tools could allow for more privacy and encourage more honest disclosure.[25,26,32,33] However, some patients may prefer face-to-face communication, and in-person screening may be more effective for facilitating discussions between providers and patients around behavior change.[34,35]

The present study explored patient attitudes toward self-administered screening using the Alcohol, Smoking and Substance Involvement Screening Test (ASSIST). The ASSIST is a screening and assessment instrument developed by the World Health Organization that identifies use and risk levels for alcohol, tobacco, and seven classes of commonly used illicit drugs.[36] The standard method for administering the ASSIST is via a face-to-face interview, which takes approximately 5–15 minutes to complete and involves calculation of risk based on a standardized scoring system. These requirements have made it difficult to incorporate into medical settings.[5,37]

To facilitate the integration of the ASSIST into primary care, an ACASI version was developed by researchers at New York University School of Medicine.[38] The ACASI ASSIST is self-administered on touch-screen tablet computers. Patients are guided by voice instruction and written text on the computer screen. A recent study conducted with primary care patients at a large safety net hospital found the ACASI ASSIST to have very good test-

retest reliability,[38] and to generate similar results (though with more reporting of illicit drug use) compared to the interviewer-administered version.[39] We report here on findings from qualitative interviews conducted with primary care patients, which aimed to ascertain patient attitudes about the feasibility and acceptability of the ACASI ASSIST.

METHODS

Study Procedures

This analysis is based on semi-structured interviews (focus groups and individual interviews) conducted with participants enrolled in a test-retest reliability study of the ACASI ASSIST.[38] The study recruited participants from the adult primary care clinic waiting area of a large municipal hospital in New York City from April–August 2011. Eligible individuals were required to be current clinic patients, English or Spanish speaking, and between the ages of 18 and 65. The study purposefully sampled patients anticipated to have greater difficulty using the ACASI instrument[40–42] by recruiting a pre-set number of participants who met one of the following additional criteria: less than high school education, 50–65 years old, or primary language Spanish. Composition of the focus groups is shown in Table 1. Those who identified Spanish as their primary language received the ACASI ASSIST in Spanish, while all others received the English language version.

The first 87 participants in the test-retest reliability study were offered participation in a qualitative interview at the time of their second study visit, which took place 1–3 weeks after the initial visit. Of the 87 participants enrolled, 48 (55%) completed the second study visit and participated in either a focus group (n=41) or an individual interview (n=7). Focus groups included 7–9 people each.

English-speaking focus groups included both men and women, most of whom were U.S. born. Men and women were interviewed separately for the Spanish-language interviews. Two focus groups were conducted with Spanish-speaking women, one for women from the Caribbean and another for women from Central America. Because Spanish-speaking males proved difficult to recruit to a focus group, they were instead invited to participate in individual interviews (n=4). Three participants whose ASSIST scores indicated high severity were selected for individual interviews, out of concern that they would be less comfortable discussing their substance use in a group of individuals with little or no substance use.

Focus groups and individual interviews used a similar interview guide, and covered the following subject areas: feasibility of using the ACASI ASSIST; comprehension of ASSIST items; perceptions of the purpose of screening in primary care; comfort with substance use screening questions; preferences for screening by interviewer versus computer; and time spent in the clinic waiting area. English focus groups and interviews were conducted by the study Principal Investigator (author 5), while Spanish focus groups and interviews were conducted by co-investigators fluent in Spanish (authors 2 & 3). All study procedures were approved by the New York University School of Medicine Institutional Review Board.

Qualitative Analysis

All interviews were professionally transcribed. Transcripts were first reviewed against the audio recordings to ensure accuracy and obtain a general sense of common experiences and concerns. Spanish transcripts were translated into English by two members of the research team, and then checked for accuracy by a third investigator. Codes were developed inductively as the transcripts were reviewed, allowing the data to dictate the analytic categories.[43] Text was coded and organized into domains, and domains were subsequently organized into major themes. Coding categories were mutually agreed upon by two of the authors (first and fifth authors), who jointly developed the overarching themes. Common responses and quotes illustrating the most common sentiments were highlighted and grouped together.

RESULTS

Sample Characteristics

The mean age of participants was 47 years (Table 2). Half of participants were foreign born and 46% were non-native English speakers. Computer familiarity varied and 24% of participants reported never having used a computer. Based on responses to the ACASI ASSIST at the initial study visit, 48% of participants reported current use of alcohol, and 35% reported current use of at least one illicit drug. Moderate risk use was more common than high risk use for all substances. Compared with those who completed the first study visit but did not return for the interview or focus group, participants in the qualitative study were older (mean age 47 vs. 41 years). There were no other statistically significant differences between participants and non-participants, though rates of illicit drug use did appear to be higher among qualitative study participants (48% vs. 31%, $p = 0.11$).

Theme 1: Substance Use Screening with ACASI ASSIST is Feasible and Acceptable to Primary Care Patients

The Benefits of Substance Use Screening in Primary Care—When asked how substance use screening information might be used in health care settings, the most common answer (19 comments) was that this information would help improve patient care. Participants explained that screening for substance use helps doctors know their patients better, understand their health conditions, and avoid harmful interactions between illicit and prescribed medications. They discussed the importance of their medical provider knowing their substance use history. As one focus group participant explained,

> "…A doctor will be able to be more helpful towards you knowing that if you have a problem with opiates and things like that. My doctor here in [study site], she's very close to me and she knows my history and she won't prescribe anything with opiates to me" (male, English speaker).

The purpose of the screening tool was not obvious to all participants, however. Eight participants thought the screening tool was designed for research purposes. They speculated that the ACASI ASSIST might be used for estimating the prevalence of substance use within the patient population, studying substance use among racial/ethnic minorities, or testing whether patients are more honest about their substance use on the computer.

Time for Screening—The time required for screening and the feasibility of completing the ACASI ASSIST prior to a medical encounter were also explored. The mean administration time of the ACASI ASSIST was 5.2 minutes (range 1.6 – 14.8 minutes). With respect to perceptions of wait time in the clinic, 23 participants discussed having to wait before seeing their provider. All of the comments suggested that long wait times are common. Nine participants specified that they typically wait from half an hour to several hours before seeing their provider.

Comprehension Issues with the ASSIST Items—Several items of the ASSIST were confusing for participants. While most participants understood the names of specific drugs queried in the ASSIST, three of them were confused by the terms "cannabis" and "pot." Six participants reported trouble understanding the ASSIST's instructions to report "non-medical use" of prescription drugs. These participants thought non-medical use referred to over-the-counter medications like "aspirin" and "Tylenol" that are not associated with misuse. Participants in one of the focus groups reported having trouble understanding the response categories referring to behavior occurring "in the past 3 months" or "not in the past 3 months" (questions 6–8), and difficulty with a 2-part question that asks whether one has "ever tried and failed to control, cut down or stop using" a substance (question 7).

Acceptability of the ACASI ASSIST—Participants overwhelmingly reported being comfortable with the ACASI screening method. All participants agreed that the computer was easy to use and none reported technical challenges. Twenty participants described the ACASI as "easy," "simple," "fast," and a means of "saving paper."

While many participants (42%) used a computer infrequently, none of the interviewed participants reported having trouble completing the ACASI on the tablet computer. As one English-speaking man shared in a focus group, "I can barely turn a computer on. But I thought I was playing a game or something. It was simple. I like it." A concern that people with limited exposure to computers may feel afraid or confused by the ACASI program was expressed in the focus group with Spanish-speaking women from Central America, but this was not seen as an issue in the focus group with Spanish-speaking women from the Caribbean or in the English-language groups. While lack of computer skills could be a barrier to the use of the ACASI ASSIST, four of the women in this Central American group explained that if patients with limited computer skills were provided an orientation to the computer, they would not have trouble using the computer.

Theme 2: Social Stigma around Substance Use is a Barrier to Patient Disclosure

Fear of Being Labeled as a Substance Abuser—Although the ASSIST was developed as a universal screening tool, some participants perceived it to be specifically targeting people with substance abuse problems. A few participants explained that the focus on substance abuse was apparent to them within the first two items. Because they felt that the purpose of the ASSIST was to identify substance abuse, four participants reported not disclosing any lifetime use of alcohol or illicit drug use because they did not consider their occasional or past use significant enough to report. For example, if a participant only used a substance once, if it was in the distant past, or if it was for a special occasion, (e.g., a glass

of champagne at a New Year's Eve party), they were unlikely to endorse lifetime use. One male focus group participant shared, "I tried marijuana maybe when I was 25, three, four times and then answer no 'cause it's a long time ago." Other participants reported not endorsing any lifetime use of alcohol, for example, because they did not feel their alcohol use rose to the level of abuse. One female focus group participant said, "It's not abuse because you're not doing it every day."

Many participants expressed a view that patients who are engaged in illicit drug use would be more uncomfortable with the ASSIST questions, as compared to non-users. As one Spanish-speaking man shared in his individual interview, "If I were to be asked on a survey about these questions and the time that I've used, and if I'm using now in the last three months, I would probably lie…because it's illegal and you would think that you're going to get caught by the cops or you're always afraid that they're gonna come and get you."

Patients Need to Trust the Provider Viewing Their Screening Results—From the perspective of participants, answering the ASSIST questions requires patients to disclose highly personal information that they sometimes prefer to keep secret. Many pointed out that substance use is stigmatized, and patients who actively use substances fear being judged and embarrassed. This widely-held sentiment was expressed by an English-speaking man who said, "Some people might feel like..the doctor's gonna know I'm a junky. What's the doctor gonna think? I could see some people havin' a problem telling, divulging their innermost vices to a physician." Immigrants in particular may fear the legal repercussions of disclosing use of illicit drugs, which was pointed out by the Spanish-speaking male participants.

Screening for substance use in primary care requires confiding in the medical provider, and participants in seven of the interviews described the importance of privacy, confidentiality and trust as part of the screening process. Very few participants felt comfortable with the idea of nurses and other staff viewing their screening results, and most expressed that they would like the information to be kept private from all except their own medical provider. One Spanish-speaking female focus group participant related, "I'm giving it to my doctor, but not to the nurse, not to anybody else. It's between me and my doctor, not anybody else." Given the sensitivity surrounding substance use, participants in two focus groups discussed how the assurance of confidentiality and having a good relationship with one's doctor could encourage honest reporting of substance use.

Theme 3: ACASI Screening Should Not Preclude Personal Interaction with Medical Providers

Face-to-Face Screening Provides an Opportunity to Explain and Clarify—In all of the interviews, participants identified positive aspects of face-to-face communication with their medical provider. Some felt that face–to-face communication allows a provider to observe non-verbal cues, which, together with self-report, allow for a more complete assessment. As one Spanish-speaking female focus group participant expressed,

> "I think the basic factor of health is interaction. Person to person…Speaking, dialoging, telling, 'Look, it hurts here, it hurts there' or 'I have this, I feel like that.'"

According to participants in three focus groups and two individual interviews, in-person interviews can provide an opportunity for social support that could be lost with computer-based screening. For many participants, the opportunity to explain to a provider the details of their substance use history is imperative. Because of the common fear of being accused or judged as an "addict," the ability to explain in detail what substances are used, and the frequency and quantity of use, was important for some participants. Four participants said that they did not disclose their substance use on the ACASI ASSIST because they felt that they did not have the opportunity to explain themselves. One male focus group participant explained that,

> "I didn't use them according to prescription, what I used was like 10 times. But I never continued taking them afterwards. That is why I had to answer 'never' because then I didn't have the advantage of being able to explain it as if I were talking to a doctor."

The types of social support participants desired from face-to-face encounters with medical providers ranged from the more general, (e.g. empathic listening), to the more specific, (e.g. explaining the screening questions and providing advice). The following statement exemplifies the importance of social support referred to by some of the participants.

> "You don't want to really lose the personal challenge of reaching a person face to face…you don't want to lose that personal touch, you know, that a human being could take and give another human being at the time that he's asking him a very sensitive question." (English-speaking male, focus group participant)

DISCUSSION

This represents one of the only studies to report on patient attitudes toward screening for substance use in primary care,[14] and is the first in-depth exploration of patient views on the feasibility and acceptability of the ASSIST instrument. Strengths of this study include the use of multiple data sources, including the ASSIST results and semi-structured qualitative interviews, and our racially and ethnically diverse sample with widely varying levels of education and computer literacy.

A self-administered approach can address many of the barriers to implementing substance use screening in busy healthcare settings. Specifically, it reduces the time burden on clinical staff[11,13,15,16], and improves the quality of screening by consistently delivering validated questionnaires in a non-judgmental fashion.[27,28] Additional advantages include the potential of ACASI technology to increase the reach of screening to patients with low literacy, and who speak languages other than English.[42,44,45] However, these potential advantages are only relevant if self-administered screening is also feasible and acceptable to patients. We found that patients consider a computer self-administered screening approach to be comfortable, easy to use, and relevant to their medical care. Many participants discussed how self-administration may allow for more disclosure of substance use, particularly among active drug users, as has been demonstrated in other studies of screening for stigmatized behaviors.[46–48] Yet others noted that providing honest responses is not only a reaction to the

way screening is delivered, but also depends on the relationship between a patient and their medical provider, and one's own acceptance of a substance use problem.

The ACASI ASSIST may still require some in-person communication. One major theme that emerged from the qualitative data was that substance use screening information is highly personal, and that some patients may feel accused of having a substance use problem in response to the ASSIST questions. An orientation to the ACASI ASSIST could help to engage patients and put them at ease. This corroborates Goldstein et al.'s finding that older patients with less education may benefit from an orientation to the computer device to help them feel comfortable.[23] The orientation should include a description of the purpose of the screening, the types of people who will have access to the information, reassurance that the screening results will not impact their care, and encouragement to follow up with their medical provider to discuss their answers and obtain advice. This orientation could be delivered via computer, but for some patients an in-person introduction by clinical staff may be preferred.

The current study also has its limitations. First, not all participants in the test-retest reliability study returned for the second study visit, and this reduced the pool of participants for the qualitative interviews. Dropout from the main study does not appear to have selectively recruited those who were more comfortable using technology, since no significant differences in computer use were found between participants and non-participants. Attrition also does not seem to be due to discomfort with reporting substance use, as participants in the qualitative sample reported higher rates of drug use compared with non-participants. Second, the principal investigator of the reliability study and developer of the ACASI ASSIST led the English speaking focus groups, which may have introduced social desirability bias.

Conclusions

The results of this study suggest that the ACASI ASSIST is acceptable to patients, and that a computer self-administered approach should be considered as a strategy for reducing barriers to screening in primary care. Computerized methods can facilitate the collection of patient reported information, and are congruent with trends toward integrating patient-reported information into electronic medical records[30,49] and using online portals for patients to access their health information.[30] An ACASI ASSIST could be completed on a tablet computer or kiosk in the waiting area, or even at home via an internet portal prior to the medical visit, and have its results incorporated into the electronic health record at the point of care. The process could be further streamlined by pairing the ACASI ASSIST with a very brief computer self-administered pre-screen,[31,50] which would allow the ASSIST to be delivered as an assessment only to those who screen positive.

Because of its highly sensitive nature, any substance use screening approach must explain to patients the purpose of screening and to assure them that their privacy is protected. The intention of screening as a health promotion activity, with relevance for people at all levels of risk for substance use disorders, should be emphasized more than what is currently included in the written introduction to the ASSIST. Finally, many participants expressed a

desire to discuss their substance use with their medical provider and to explain the circumstances of their substance use history so that their providers can aid them in making informed decisions about their care. Face-to-face discussion with the medical provider should remain an option for those patients who feel uncomfortable reporting their substance use in a standardized self-administered survey.

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Table 1

Composition of Focus Groups

Characteristics	Group 1 Spanish language	Group 2 Spanish language	Group 3 Age <50	Group 4 Age 50–65	Group 5 Education <High school
Language	Spanish	Spanish	English	English	English
Country of origin	Puerto Rico, Dominican Republic, or other Caribbean	Mexico, Central America[*]	Any	Any	Any
Age	<50 years	<50 years	<50 years	50–65 years	Any
Education	<4-year college	<4 year college	>=high school or GED	>=high school or GED	<high school or GED
Sex	Female	Female	Mixed	Mixed	Mixed
Number of participants	8	7	9	8	9

[*]Central America: Guatemala, El Salvador, Honduras, Nicaragua, Costa Rica, Panama

Table 2

Demographic characteristics of the 48 participants

Characteristic	N (%)
Age	
Mean, SD	47, 8
Range	28–62
Sex	
Female	26 (54)
Male	22 (46)
Race/Ethnicity	
Black	16 (33)
Hispanic	28 (58)
White	2
Other	2
Foreign Born	24 (50)
Primary language	
English	26 (54)
Spanish	21 (44)
Other	1
Education	
<High school	23 (48)
High school or GED	8 (17)
College/graduate school	15 (31)
Other	2
Income	
<$5,000	9 (19)
$5,000 to $24,999	28 (58)
$25,000 to $99,999	4
$100,000 to >$200,000	1
DK/refused	6
Employment	
Unemployed	15 (31)
Employed	20 (42)
Disability/SSI	10 (21)
Other	3
Computer in the home	
Yes	30 (63)
No	18 (38)

Characteristic	N (%)
Frequency of computer use	
Several times per day	10 (21)
Once a day	10 (21)
Several times per week	7 (15)
Once a month or less	7 (15)
Never	13 (27)

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