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Staff Views of Acceptability and Appropriateness of a Computer-Delivered Brief Intervention for Moderate Drug and Alcohol Use

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Abstract

The use of computers for identifying and intervening with stigmatized behaviors, such as drug use, offers promise for underserved, rural areas; however, the acceptability and appropriateness of using computerized brief intervention (CBIs) must be taken into consideration. In the present study, 12 staff members representing a range of clinic roles in two rural, federally qualified health centers completed semi-structured interviews in a qualitative investigation of CBI vs. counselor-delivered individual brief intervention (IBI). Thematic content analysis was conducted using a constant comparative method, examining the range of responses within each interview as well as data across interview respondents. Overall, staff found the idea of providing CBIs both acceptable and appropriate for their patient population. Acceptability by clinic staff centered on the ready availability of the CBI. Staff also believed that patients might be more forthcoming in response to a computer program than a personal interview. However, some staff voiced reservations concerning the appropriateness of CBIs for subsets of patients, including older patients, illiterate individuals, or those unfamiliar with computers. Findings support the potential suitability and potential benefits of providing CBIs to patients in rural health centers.

Keywords

computer technology; primary care; qualitative; SBIRT; substance abuse

Screening, Brief Intervention and Referral to Treatment (SBIRT) holds promise for better identifying and treating persons with problematic alcohol and drug use in primary care and other medical settings (Madras et al. 2009). However, expanding the use of SBIRT, even in communities with ready access to behavioral health and substance abuse treatment, is fraught with barriers such as insufficient clinical staff time for screening and prevention activities, particularly when primary care staff lack training and comfort with the topics of substance abuse (Ghitza and Tai 2014; Yarnall et al. 2003). Even clinics fortunate enough to

have on-site counselors might find that, although they are technically capable of providing brief interventions (BIs) for patients who warrant an intervention, providing BIs might not fit within the budget priorities of the primary care organization and the flexibility required to provide timely services might conflict with more traditional clinical services being provided (e.g., standard outpatient counseling made by appointment). These and other barriers might be even more prominent in medically underserved, rural communities.

Alternative Service Delivery Models: Computerized Brief Interventions (CBI)

The use of computers in screening for stigmatized health behaviors, such as HIV risk behavior and drug use, might have an advantage over in-person screening because patients might be more willing to disclose such behavior using a computer interface (Newman et al. 2002). The use of technology has advanced beyond simple screening and has now been studied as an approach to deliver psychosocial interventions for alcohol and drug use (Ondersma et al. 2014; Wood et al. 2014; Gilbert et al. 2008; Ondersma, Svikis, and Schuster 2007) and other health behavior problems (Moore et al. 2011; Riper et al. 2011; Rooke et al. 2010; Portnoy et al. 2008). Once developed, Computerized Brief Interventions (CBIs) might have a number of advantages compared to in-person interventions, including: low cost, as there is no need for salary support of an interventionist; reliability, because the CBI is delivered in the same way every time; little need for training of behavioral health staff; and little time needed from health care providers who do not need to provide the intervention (Ondersma et al. 2005).

Implementing Evidence-Based Practices

Proctor and colleagues (Proctor et al. 2011, 2009) describe implementation outcomes as distinct from service outcomes, encompassing factors which are often “necessary preconditions for attaining subsequent desired changes in clinical or service outcomes” (Proctor 2011, p. 66). Implementation outcomes include practical factors that can impact whether or not a type of service or practice is implemented (e.g., costs, feasibility), but also reflect provider and consumer perceptions of these practices, such as acceptability and appropriateness, which are believed to be salient for early adoption and can be thought of as necessary but not sufficient for implementation.

Acceptability is largely assessed in terms of the stakeholders' perception that an innovation is agreeable, palatable, or satisfactory for their work setting, based on their knowledge of, or direct experience with, various aspects of the innovation itself, such as complexity, content, delivery, comfort, and credibility (Proctor et al. 2011). The level of analysis for this implementation outcome is generally the attitudes of individual patients or providers, which are used collectively to determine the acceptability of an innovation in a care setting.

Appropriateness in the implementation science literature often refers to the perceived fit of an innovation in a practice setting, related to the innovation's relevance, suitability, compatibility, or usefulness for a localized provider (Proctor et al. 2011). Acceptability and appropriateness are interrelated implementation outcomes; however, a distinction between acceptability and appropriateness is necessary. An innovation might be perceived by staff in a practice setting as acceptable but not appropriate for their localized use, given providers'

skill set, organizational culture, or mission. Although an innovation's appropriateness can influence its perceived acceptability, and vice versa, evidence can be carefully sorted into each conceptual outcome to draw pertinent conclusions. The level of analysis also assists in organizing the data, given that although both outcomes can rely on the individual perception of patients or providers, appropriateness also incorporates a broader look at the organization as a whole.

SBIRT in Rural Federally Qualified Health Centers (FQHCs)—Sangre de Cristo Community Health Partnership (SDCCHP), a non-profit organization focused on the integration of behavioral health services and medical care for indigent and underserved populations, was part of a nationwide SBIRT demonstration project (Gonzales et al. 2012; Gryczynski et al. 2011; Madras et al. 2009). In 2009, in partnership with Friends Research Institute and two community federally qualified health centers (FQHCs), a randomized clinical trial was undertaken to compare a CBI to an in-person brief intervention (IBI) delivered by a counselor among adult primary care patients with moderate drug misuse (Schwartz et al. 2014). At three-month follow-up, there were no significant differences in self-reported global drug risks or in drug-positive hair samples, although CBI was superior to IBI in reducing some self-reported drug risks. Hence, the trial supported the potential utility of CBI in health care settings.

In the clinical trial, the CBI delivery was handled by research assistants hired by the study who had no other role in the clinics. Thus, participants received CBI without involvement from clinic staff. However, as part of the study's process evaluation, we conducted qualitative interviews with staff at the two participating clinics and explored the potential “fit” of the CBI within these settings. These interviews examined issues that staff might have, or that staff believed their patients might have, which could influence the eventual adoption and implementation of CBI technology in rural health care settings. This study was approved by the Institutional Review Boards of Friends Research Institute and Christus Health.

Methods

Staff Participants

Semi-structured qualitative interviews were conducted with 12 staff members at the two rural FQHCs serving as study sites in New Mexico. Interviewed staff included a nurse, counselor, primary care provider, dentist, an administrative staff member, and the clinic director from each site. The sample was predominantly female (nine of the 12 staff members). Three of the 12 staff members were Hispanic and the remainder were White non-Hispanic.

All staff worked at their clinic prior to the conduct of the parent study and were familiar with SBIRT as delivered by the counselors (the IBI comparative condition for the clinical trial). Both of the counselors were SDCCHP employees who had a portion of their salaries covered by the study and had been providing IBIs prior to the start of the study as part of the SAMHSA SBIRT initiative. They constituted the only staff members interviewed who were directly involved with the parent study; however, all staff had participated in a

demonstration of the CBI as part of a staff orientation prior to the start of the study. Staff participants and researchers were blind to study findings at the time of the interviews.

Procedure

The interviews were completed in-person over the course of three days in July 2011 (the end of the first year of participant recruitment for the parent study). All interviews were conducted by the first author (SGM). The semi-structured interview guides included open-ended questions concerning the inclusion of behavioral health in the primary care setting and aspects associated with screening and providing BIs, as well as issues of cultural/organizational fit for integrating computer-delivered BIs within the clinics. This study focused on the staff's understanding of the barriers and facilitators to implementing the CBI, as well as conditions that could impact the sustainability of such interventions in the future. Interviews lasted between 25 and 60 minutes in length and were digitally recorded, transcribed, and checked for accuracy.

Analyses

Thematic content analysis was conducted using a constant comparative method, examining the range of responses within each interview as well as data across interview respondents. The themes of Acceptability and Appropriateness were identified during the initial coding phase but were not directly queried within the semi-structured interview guide. The staff views and perceptions pertaining to CBIs were compared and contrasted with their descriptions of the traditional, IBI service delivery model, yielding the further delineation of the staff's views of stake-holder group beliefs (e.g., staff/organizational vs. patients).

Results

Staff members identified a high degree of support for their own acceptability of the CBI but conveyed mixed views regarding the appropriateness of the CBI for their patients. This distinction between acceptability and appropriateness of the CBI for patients and within the organization was a major element to emerge from the data. No differences were found in terms of the type of staff interviewed and their views concerning acceptability or appropriateness of CBI, indicating that the views expressed were likely indicative of a shared service setting and shared understanding of the patient population.

Due to the sensitive, potentially stigmatizing nature of drug and alcohol abuse, many staff members described the CBI as preferable to IBI because of its perceived enhanced confidentiality and anonymity, issues which are important when seeking substance use services in rural communities. These confidentiality issues and the resulting potential for honest self-disclosure with CBI were expressed by staff across the two participating clinics. However, CBIs were not viewed as universally preferable to IBIs, with staff noting patient characteristics that could serve as barriers to receiving the CBI, such as patients with more limited comfort or familiarity with computers. They also reported that some patients might be more receptive to the BI content being delivered within an interpersonal interaction.

Acceptability

Patient Dimension—Staff members identified the utility of the CBI for patients as preferable in many ways to IBIs. Although delivering information during an in-person BI was common, often counselors supplied patients with brief literature packets or pamphlets for the patient to read at their convenience. The clinic director acknowledged the receptivity-related limitations of this form of information delivery, but was more optimistic about patients' receptivity to information delivered via computer:

So it [CBI] fits in with our society, to begin with, much more so than pamphlets; sheets of paper. I find a lot of things like that thrown in the garbage cans before they even get to their cars. So obviously we've handed them what they consider to be trash and it goes into the garbage can. However, if they have a chance to play with a computer, that's a different matter, they're more receptive.

Another potential advantage of the CBI identified by staff members related to concerns surrounding confidentiality, judgment, and stigma that emerge during an IBI. When patients with potential drug and alcohol abuse, mental health, or co-occurring disorders were introduced to a counselor in the clinic, staff members were aware of patients' feelings of being judged or stigmatized because of the sensitive nature of these health topics. During the initial identification of a behavioral health concern, it was often difficult for patients to be honest with staff members, and many respondents believed that the implementation of a CBI would assist patients in revealing the nature and extent of their concerns about their behavioral health. Staff members reflected on confidentiality concerns inherent in working within small communities and issues that they encountered when they first added SBIRT mental health services to their clinic.

In the beginning, since we're a small community, it was hard because no one trusted that we would keep that information private. And we have some people that work here that are, everyone here is related to everyone so they weren't sure that people were going to want to do it or their family members would find out about it. So it took about maybe a good year to get trust and letting them know that [counselor] was here and she was available.

One staff member metaphorically related the CBI to a religious confessional, allowing the individual to be honest with themselves and others because of their perception of anonymity. This respondent went on to acknowledge the non-verbal communication that can impact the dynamic between a counselor and a patient, especially surrounding behavioral health topics. Feelings of judgment often impeded a patient's ability to be receptive to information a counselor shared, and clinic staff felt as though the implementation of a CBI minimized these concerns.

Yeah [the CBI avatar]'s not, like you say, blinking or licking their lips or sitting back in the chair or moving their hands in any judgmental way. So potentially it seems like it could be more, draw somebody to be more honest than they would be than to not look a person in the eye, right.

One of the predominant patient-focused aspects of CBI acceptability concerned a discussion of age and the patients' level of comfort with computers, or technology in general.

Throughout the interviews, age was often used as a proxy for comfort with technology and a willingness to use the computer as a delivery mechanism for behavioral health information. Clinic staff felt as though the implementation of the CBI would be most acceptable to younger patients, whereas they anticipated push-back from older patients who would prefer an IBI. As one clinical director stated,

I think for some of our younger population, let's say under fifty, maybe under sixty, computers and computers as a source of information is as common place as it comes ... Now people over sixty it's like, what do I want to look at that for? That's a different picture.

An administrative staff member echoed this view, but noted that beyond older patients being “intimidated by” the CBI, they desired to meet with an actual person that provided a “more personal” health care experience.

A lot of the older generation wants you to talk to them, wants you to give them an answer and don't type or type but tell them you're going to do it ... It's more personal and older people like that.

Staff Dimension—Staff also commented on the acceptability of the CBI to themselves and their organization. Staff acceptability concerned how respondents perceived the CBI as improving existing conditions and processes within the clinic. Staff accepted the premise of the CBI innovation, but were much more open to the CBI being implemented at their clinic as long as it would offer some advantage over the IBI, for at least some portion of their patient population (e.g., for younger patients).

Perhaps the most notable advantage respondents mentioned was related to issues of staffing and use of staff time. Once the clinic began using the counselor for both IBIs and non-substance-related psychotherapy, counselor time became constrained, which often resulted in less time being available for the counselor to do all of the IBIs the clinic needed. The clinic director also stated that, because of budgetary constraints, the clinic was often only able to have a single counselor in the office at a time, whereas there might be multiple IBIs being requested simultaneously. As one clinic nurse responded,

It's really a kind of balance of working to kind of just interrupt her for a minute to be able to meet with that patient just to touch base, and sometimes that patient really needs some time. And so sometimes she has to really take time out to meet with that patient. That takes away from her time; takes away from our time.

Staff members were optimistic about the CBI helping to alleviate these new organizational strains related to staffing and staff time. If the clinic were able to use the CBI during crowded appointment times, it would reduce the time strain on the counselor, especially when they were seeing another patient when medical staff requested their assistance to conduct an IBI.

Another element adding strain on staff time was the variance in length of time allocated to an IBI. One counselor stated that the biggest barrier to completing IBIs was “being brief.” Often, the counselor mentioned, the BI opened up a much larger discussion with a patient

about issues surrounding their drug use, anxiety, or depression, and the initial “brief intervention” would become less “brief.” This variance in care delivery was problematic for staff, because the length of the IBI was dependent on issues of staffing and timing that were not related to the patients' needs or level of required care. The implementation of a CBI was acceptable to many staff members largely because CBI delivery would relieve some of the demands on counselor time by taking the place of many of the IBIs that only required a brief delivery of information based on an initial assessment. The fact that implementing the CBI would offer the opportunity to improve an existing process was a key component to developing acceptability of the new innovation among staff members.

Appropriateness

Patient Dimension—Staff members mentioned factors related to disability and illiteracy in a discussion of the appropriateness of a CBI for the population they serve. One counselor noted that the CBI could be “hugely effective for a particular kind of patient” but “it has to be appropriate for the population.” Staff believed that the CBI would be an inappropriate approach for a large portion of their patient population that was “disabled,” “illiterate,” or has limited access and experience with computers.

Limited computer access and knowledge were not simply related to patient characteristics, but were an outcome of the remote geographical landscape and poverty in which many patients lived. Staff members noted the 30- to 40-minute travel time it took many of their patients to reach the clinic, and in many of the areas beyond the town's immediate proximity, Internet was not yet available and patients did not own a computer. In addition, for those patients that did have Internet capability in their homes, staff thought that the cost of owning a desktop, laptop, tablet, or smart-phone was prohibitive for the average income level of the area. Staff believed that these factors combined to create an overall lack of familiarity with computers and computer-based technology, which resulted in staff questioning the appropriateness of fully implementing a CBI at the clinic.

Staff/Organizational Dimension—Discussions surrounding the appropriateness of the CBI in the clinic setting also extended to the appropriateness of the CBI for the staff and larger organization. For example, the counselors elaborated on an overall evolution of the IBI from a patient-active discussion of topics related to behavioral health to a patient-passive intervention where they simply conveyed information and statistics to the patient. According to the counselors, this change received positive feedback from the patients, who might not have been ready to acknowledge any behavioral health issues. When asked directly about how the IBI evolved in the clinic setting, one counselor noted:

I think at this point we give them a little bit more statistical information ... you know, stuff like smoking a joint is like smoking five cigarettes in a row ... and this what it does to your lungs. ... In the beginning it was more “how do you feel about your drug/alcohol use?” I mean we still say those things ... but it was, it was less hard data driven. ... I found that people responded to that, to give them information about, you know, drugs and alcohol was usually a kind of an eye opener.

This shift in the nature and structure of the IBI opened up an opportunity for the CBI to be used in the clinical setting as an alternative to IBI. A second factor aiding support for the appropriateness of the CBI in this clinic setting was related to inconsistent utilization of the IBI by nurses and physicians. Staff members, especially counselors, noted that the implementation of behavioral health initiatives within the clinic was a difficult process. But even after medical staff members were on-board with the idea of SBIRT, counselors still recognized that the level of discretion maintained by nurses and physicians in the initiation of a BI impacted quality of care. Some nurses and doctors were more willing than others to bring in the counselor for a BI, and the point at which a medical provider considered a patient appropriate for receiving a BI varied from provider to provider. One physician mentioned being unwilling to use the designated counselor introduction, and preferred to introduce the idea to patients in their own way. In addition, physicians also had discretion whether or not to bring in the counselor for a BI at all, sometimes taking it upon themselves to conduct a BI with a patient:

Physician: I'll talk to them about if, say, they're positive on their alcohol screening. I'll say, "you know you scored positive on this. You're either at risk drinking or you know, you're borderline alcoholic. Do you have any interests in cutting back?" ... So I try and assess where somebody's at in that sort of realm of where they're at with wanting to cut back on whatever it is that they're doing. And if they're in that phase where they are not going to do anything about I mean, what's the point? And I'll always ask if they want to talk to [COUNSELOR]. But then sometimes they'll say "no."

These issues surrounding adherence to the SBIRT protocol, and organizational procedure and process, contribute to the perception of increased appropriateness for the CBI because of the opportunity to assist the clinic in standardizing practice and quality of care. The CBI was designed as a way for all patients to complete a behavioral health assessment and, based on their responses to the questionnaire, be provided with a corresponding brief intervention. If the CBI were to be fully implemented into these clinic settings, physicians and nurses would no longer maintain the level of discretion over the introduction of the counselor and subsequent BI, because both of these elements would be removed. Therefore, patients would be receiving a BI whenever the initial assessment deemed them appropriate, and all patients would receive a consistent and standard level of care. Ultimately, staff agreed that this was a major goal for health care providers, which translated into increased support for the appropriateness of the CBI in this setting.

Discussion

This qualitative study examined staff views on the acceptability and appropriateness of CBIs for moderate drug use problems among adults receiving primary care in two FQHCs in rural New Mexico. The study was conducted as part of a randomized clinical trial comparing a CBI with an IBI by a behavioral health counselor. The IBI had been provided at the clinic for several years prior to the start of the trial, and staff participants and the interviewer were blind to the findings of the trial at the time the interviews were conducted.

Overall, staff found the idea of providing CBIs both acceptable and appropriate for their patient population. Acceptability centered on availability of the CBI at times when the behavioral health counselor was otherwise occupied. Staff also believed that patients might be more forthcoming in response to a computer program than a personal interview. Indeed, there is evidence in the literature that this is the case with stigmatized behaviors such as drug use and sex risk (Newman et al. 2002). Additionally, assurances of confidentiality and accuracy of reporting for drug and alcohol use might be obtained by offering CBIs that can be accessed via the Internet, such as screening and brief interventions embedded within the clinic's electronic patient portal, rather than requiring CBI administration within the clinic setting. Providing such options would also reduce the travel burden for those patients with home Internet access. Treatment barriers such as long travel distances and mental health stigma were also identified by primary care providers (PCPs) interviewed as part of a qualitative study comparing how PCPs approach mental health issues for low-income rural women (Colon-Gonzales et al. 2013). However, two of the providers in that study also mentioned that some rural patients might prefer to speak about such issues with their PCP instead of a mental health provider (or, in our case, a computer) because of familiarity and comfort with the preexisting doctor-patient relationship.

Some staff did have reservations concerning the appropriateness of CBIs for subsets of their patient population, including older patients, illiterate individuals, or those who might be unfamiliar with computers. These concerns were not based on the staff's experience using the CBI, because it was the research assistant (RA) in the trial who oversaw its use. Rather, they were general considerations. Of note, the ages of participants in the parent study ranged from 18 to 85 years, and the trial found that the relative effectiveness of the CBI was not moderated by participants' level of prior computer experience (Schwartz et al. 2014). It is possible that prior computer experience did not moderate outcomes because the CBI design was simple—it used a touch screen interface commonly used in banks and smartphones. Additionally, the CBI avatar spoke audibly to participants, possibly addressing staff concerns regarding patient literacy. Perhaps for these reasons, the RAs reported no particular difficulties in using the CBI based on participants' age or reading ability.

Beliefs regarding appropriateness of CBIs for older adults are reflective of findings from an examination of a computerized screening for alcohol and drug use among adults in a more urban outpatient psychiatric practice conducted by Satre and colleagues (Satre et al. 2008). They found that older patients at treatment intake were less likely to complete the computerized screening as compared to younger patients (i.e., those under 60 years of age); however, they were unable to determine whether the differences were due to patient preferences or staff assumptions regarding the suitability of the computer screening for older adults.

The study had a number of limitations. First, the interviews were conducted a year after the launch of study recruitment and several years after SBIRT was implemented within the clinics as part of the SAMHSA initiative, so some of the associated barriers and facilitators associated with providing SBIRT services may have been forgotten or resolved organically during the implementation process. Second, the majority of the staff interviewed did not have hands-on experience with the CBI, just an initial orientation to the computer program,

and therefore their opinions were not grounded in its actual clinic-wide use. Also, because patient interviews did not include questions specific to the CBI, patient and staff perceptions on this issue cannot be compared. Finally, the study's generalizability is unknown due to the limited sample and unique setting within rural FQHCs. Nevertheless, these results provide insights into staff views of CBIs, which are likely to become more widespread.

Future research should examine the acceptability and appropriateness of CBIs for older patients, as comfort and familiarity with computers may have expanded among older adults in the past few years. Similarly, staff assumptions regarding patient competence should be considered when examining differences in CBI screening or intervention for different populations, such as older patients, or those believed to have limited English or literacy levels. Finally, patients themselves should be asked to compare the acceptability of receiving behavioral health and substance use interventions provided by computers versus receiving those services from either behavioral health or primary care physicians. Having answers to these questions could help bridge the service gap and bring acceptable and appropriate substance use screening and intervention to largely underserved rural communities.

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