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Attitudes Toward Computer Interventions for Partner Abuse and Drug Use Among Women in the Emergency Department

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Abstract

Background—Drug use and partner abuse often coexist among women presenting to the emergency department (ED). Technology offers one solution to the limited time and expertise available to address these problems.

Aims—The aims of this study were to explore womens' attitudes about use of computers for screening and intervening in drug use and partner abuse.

Methods—Seventeen adult women with recent histories of partner abuse and drug use were recruited from an urban ED to participate in one-on-one semi-structured interviews. A coding classification scheme was developed and applied to the transcripts by two independent coders. The research team collaboratively decided upon a thematic framework and selected illustrative quotes.

Results—Most participants used computers and/or mobile phones frequently and reported high self-efficacy with them. Women described emotional difficulty and shame around partner abuse experiences and drug use; however, they felt that reporting drug use and partner abuse was easier and safer through a computer than face-to-face with a person, and that advice from a computer about drug use or partner abuse was acceptable and accessible. Some had very positive experiences completing screening assessments. However, participants were skeptical of a computer's ability to give empathy, emotional support or meaningful feedback. The ED was felt to be an appropriate venue for such programs, as long as they were private and did not supersede clinical care.

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Conclusions—Women with partner abuse and drug use histories were receptive to computerized screening and advice, while still expressing a need for the empathy and compassion of a human interaction within an intervention.

Introduction

Partner abuse is a highly prevalent problem among female patients in the emergency department (ED). Estimates of recent partner abuse among ED patients range from 12 to 19% and of lifetime partner abuse from 44 to 54% (1–5). Substance use is a common comorbid condition with partner abuse; studies in a wide variety of ED settings have reported high rates of substance use among partner abuse survivors, ranging from 29–63% for drug use (5–8) and 19–64% for alcohol use (8,9).

The high prevalence of these co-occurring problems, and the fact that follow-up care for ED patients can be inaccessible (10) makes the ED visit itself an important opportunity for screening and intervention. However, there are many barriers to implementing programs for substance use and partner abuse in the ED setting. ED clinicians work in a high-volume, high-acuity setting with significant time constraints, and receive little training in substance abuse or partner abuse assessments or interventions (11). The institutional resources available to support management of these issues vary widely, resulting in variability in the methods and rigor with which interventions can be delivered (12).

Technology offers a potential solution to these barriers. Computer programs have several advantages that may make them useful in the ED, including anonymity and privacy, little need for direct clinician involvement, and adaptability for cultural and linguistic specificity (13). Computer kiosks have been implemented in ED settings to identify partner abuse and to refer women to social work services (14,15). Computers have also been used in the ED to deliver brief interventions for alcohol misuse (16). In a study by Glass et al, survivors identified through women's shelters or support groups found an interactive partner abuse computer-based program useful and easy to use, and increased their safety planning after completing it (9,17,18).

However, it is not known if women in the ED with co-existing partner abuse and substance use will embrace technology-based screening and interventions. Our research objectives, therefore, were to recruit women with coexisting drug use and partner abuse to explore: 1) The specific barriers and facilitators to participation in an ED computer-based program addressing drug use and partner abuse; 2) Perceptions about divulging drug use and partner abuse through a computer and 3) Perceptions about receiving information and advice about substance use and partner abuse on a computer.

Methods

Study Design

We conducted qualitative, individual semi-structured interviews of women presenting to the ED who reported recent (past 6-month) histories of partner abuse and drug use. Women were recruited from a convenience sample of day and evening, weekday and weekend shifts

in order to capture the full range of ED visits. Adult female patients between the ages of 18 and 65 years fluent in English were eligible to participate; prisoners, patients with a primary psychiatric presenting complaint, and those deemed too sick by the treating team were excluded. Research assistants (RAs) approached eligible patients and asked them to participate in a voluntary women's health survey.

The survey, administered on a tablet-style computer (iPad™), contained questions on a broad range of health-related topics, including nutrition and access to health care, as well as partner abuse and substance use. Potential participants received brief instruction on using the iPad and were offered the option of receiving assistance from the RA in completing it. Those who qualified for the study fully based on answers to the health survey were given a verbal description of the study and a printed consent form. Those who provided written informed consent were scheduled for an interview date one to two weeks after the initial ED visit. The Institutional Review Board (IRB) of the participating hospital approved all study procedures.

Measures

To detect partner abuse, we used the Women's Abuse Screening Tool (WAST), an 8-item instrument for physical, emotional, and sexual violence (19). Drug use was defined as a positive answer to a modified version of the NIDA-modified Alcohol and Substances Self-Interview Screening Tool (NM-ASSIST) Quick Screen (20). For participants who consented to participation in the study, we also administered more detailed instruments for drug use (full NM-ASSIST, timeline followback (21)), partner abuse (Composite Abuse Scale) (22), and demographics, including age, race/ethnicity, educational level, marital status, and parity.

Interview Instrument Development

We developed a semi-structured qualitative interview guide containing broad questions related to receptivity to, desired format of, and overall acceptability of computer-based partner abuse and drug use interventions. The key research topics addressed by this analysis included: access to and comfort with computers or other technologic devices and participant perceptions about discussing partner abuse and drug use through a computer program. The initial guide was reviewed by experts in qualitative research and in the content areas of partner abuse and substance use interventions and subsequently refined for clarity. Prompts were used to encourage participants to elaborate on their responses, in an effort to capture data as intended in each section of the interview guide.

Data Collection

Participants were interviewed in a private room in the research offices of the Department of Emergency Medicine. Interviews were digitally recorded, transcribed verbatim, and uploaded to NVivo (Version 9, QSR International), a qualitative data management and analytic software program. Recruitment was discontinued when it was clear through iterative analysis that saturation of themes had been reached.

Data Analysis

Initial codes were based on the framework of major topical headings in the interview guide. The coding structure was refined iteratively by coding initial transcripts, identifying additional themes, and modifying and refining existing codes. Research team members reevaluated coding categories routinely to ensure that each coder had the same understanding of the codes and to identify any needed revisions of the coding scheme. The final coding classification scheme was applied to each transcript by two independent coders. Any coding discrepancies or ambiguities were resolved through discussion. An integrated set of codes, consisting of all mutually agreed-upon codes, was entered into the NVIVO database with the final version of each transcript. After coding all transcripts in this manner, an initial thematic framework was developed by summarizing codes by major themes and subthemes. The study team met collaboratively to decide on a final thematic framework and to select illustrative quotes, with effort to represent the full range of responses relevant to each theme.

Results

Of the 17 participants, mean age was 30.6 years (median 28.5 years, range 18 to 50 years). Ten women were non-white: four black/African American, two Hispanic/Latino, one Asian, one American Indian/Alaska Native and two mixed race. Two had attended high school but did not graduate; seven had completed high school or attained a general educational development (GED) certificate; seven had attended some college or were currently attending college; and one had a college degree. Eight were single/never married, three married, one separated, two divorced, and three a member of an unmarried couple. Eight had children. Partner violence and drug use profiles are shown in Table 1.

We identified themes within four areas relating to the acceptability of computer-based interventions for drug use and partner abuse: 1) Perceptions of receiving partner abuse and drug use *screening* via computer; 2) Perceptions of receiving partner abuse and drug use *advice* via a computer; 3) Perceptions of the ED as the setting for computer-based interventions for partner abuse and drug use and 4) Attitudes toward and facility with computers.

Theme 1: Perceptions of computers for partner abuse or drug use *screening*

1.2 The process of divulging partner abuse and drug use can be emotional embarrassing, and anxiety-provoking—The process of divulging partner abuse on the computer was described as difficult and “painful.” Participants related shame around answering the questions, internalization of feelings about abuse, and a strong emotional response to the memories of abuse that the questions elicited:

S5 (age 50): I didn’t feel too good answering them... it just, like, brings me back to the things that happened... And that bothered me a little bit... I always kept everything inside ... I don’t even want to think about it but I know that pain is still there.

Participants related shame in divulging drug use and also anxiety about potential negative consequences, including legal and financial effects.

S10 (age 21): It's just something that, like I told you, I'm ashamed of, of doing it. So it's like, oh God, is everyone looking if I answer it this or that? ...

S6 (age 26): I don't know who's gonna be reading this and I did this drug. [Laughs.] Who's gonna be looking at this? Are they gonna send this to the cops....?

S5 (age 50): Like, the doctor was asking me, like "Do you do drugs?" And I said no. Because, like, that's not good for your insurance. Like, you don't get as much insurance so I was just, like, no I didn't.

1.2 At the same time, simply divulging partner abuse or drug use on the computer may be a positive experience—Some participants sensed human concern in the questions about partner abuse and drug use and in the care that was put into creating the program for them, making them feel valued:

S4 (age 23): It's like you wanted to know, and you're gonna reflect on my answers, and you're gonna help me out. That's how I see it...It still made me feel like I was somebody, I was a person, I was out there, somebody seen me, like that's—it was yeah. Made me feel good about myself.

Three participants described therapeutic or empowering experiences when divulging partner abuse on the computer. One participant (S7, age 38) compared answering assessment questions to prior counseling, stating it fulfilled a need to "get it off my chest." Another said the questions made her realize how far she had come from an abusive relationship:

S1 (age 40): ...while I was answering those questions, it also kind of for me gave me a little bit of confidence knowing that I have been able to step away...

A third described a breakthrough, "wow" moment around her abuse while completing the assessments:

S9 (age 20): When it's down in front of you, you can, like read it again and you're like, wow...Like I never actually counted how many times this happened to me... I would never let that happen to me again. So it was like, Thank God. Four times and I'm never gonna go more than four times. So it helped in a way.

1.3 Relating partner abuse or drug use to a computer felt comfortable and confidential—The difficulty in divulging partner abuse or drug use was not felt to be due to the computer interface. In fact, many participants felt that the computer made it easier to discuss these topics than face-to-face with a person. One participant (S14, age 20) stated that if a doctor asked her about partner abuse, "I tell them that's not what I came here for," but answered the screening questions "because it was on the computer." S15 (age 27) said that face-to-face, she might be inclined to "skirt the truth" about drug use, "whereas if it's just a computer screen you're like—Eh, well B is the truth. I'm gonna hit B." Many described an initial hesitation in reporting drug use or partner abuse (S10, age 21: 'I double-checked if everyone was looking'), but ultimately trusted the privacy of the program, whether because

of assurances from the RA or their own understanding of security features such as institutional firewalls.

S12 (age 37): I know within the hospital realm that, um, yous have to be security-conscious. You know? So I have no problem—it's on public computers, even my laptop I won't answer questions like that.

S11 (age 30): As long as it's a secure site—just like when you go into other sites that you have to enter your social or whatever, those are secured sites.

Fear of abusive partners discovering their involvement in the program did not emerge as a barrier to divulging information.

Theme 2. Perceptions of computers for partner abuse or drug use advice

2.1 Computers/mobile devices are acceptable, accessible sources of information for advice about drug use and partner abuse—Computers/mobile devices were described as acceptable and accessible for drug use and partner abuse advice, particularly when social supports are unavailable or when information must be accessed privately and safely.

S11 (age 30): I think it would be easier for some people to be able to go online to get the information than actually going and asking somebody... when you're doing drugs a lot of it is discretion. You don't want people to know.

S5 (age 50): If I had someone, like this computer, that was there when the beatings first started, maybe I wouldn't have been so deep into the drugs. Because I was seeking for help but too scared to get it.

One participant (S12, age 37) contrasted advice received through a computer with that from clinicians, who may give advice purely out of professional obligation: "Because they're a doctor and a nurse, they're gonna say that anyway, you know. And I feel sometimes they have to say that."

2.2 Computers are, however, perceived as incapable of replacing humans in providing meaningful, compassionate advice about drug use or partner abuse—In contrast to the positive attributes described in 2.1, participants also identified major limitations of using computers for advice or counseling. Participants felt that computer advice on partner and drug abuse may be impersonal and lacking in empathy, and expressed concerns that computers might fail to provide appropriate validation after they shared experiences. Several said although computers could be helpful, they could not completely replace a person's ability to answer specific questions, share experiences, or offer encouragement:

S3 (age 48): ... you really can't get across an emotional state to a computer. To a person I might be in tears or I might be upset, and that's not going to come across on a computer.

S8 (age 18): Another human being, who like, gives you feedback... it makes you feel more comfortable that you're getting those responses like, "I can't believe that

happened to you”...But when you’re talking to a computer, it’s more ... direct and cold.

One participant (S3, age 48) explicitly acknowledged the apparent contradiction between her comfort with computer screening and her reluctance to receive advice about drug use from a computer, saying, “It sounds ironic, because I’m more open with the computer but I don’t want to take the advice of the computer.” She pointed out that the very quality that made screening easy (“you’re not looking into somebody’s face”) made advice difficult to take: “I’m not having that personal interaction, so I don’t know if I’d take the advice as much to heart as if it was from a person.”

2.3 Participants may not be receptive to advice about reducing drug use regardless of mode of delivery—Several participants stated that advice related to drug use would be particularly unwelcome and unhelpful. This sentiment was not specific to the delivery system. Participants stated that whether the advice about drugs was received from a person or computer, the reflexive response would be a negative one.

S2 (age 18): ... mostly people that get feedback on drugs, they don’t really... it’s just a thing. You’re still gonna do it... I would personally feel uncomfortable if it was just rushed to me... it’s really hard to give people advice when it comes to drugs and stuff... it’s just an attack for some people.

Theme 3: Perceptions of the ED as the setting for computer-based interventions for partner abuse and drugs

3.1 The ED is seen as an appropriate place to participate in a computer program addressing partner abuse and drugs—Most participants felt comfortable taking part in a computer program addressing partner abuse and drug use during the ED visit, stating either that the location was “as good as any other” or that the hospital would be the *most* appropriate place to engage in such a program, providing validity to the information presented.

S3 (age 48): If I was going to listen to the computer’s advice, I think I’d be more likely to do it in the hospital atmosphere than I would outside the hospital...Just because you’re in a medical atmosphere, it feels like it’s medical advice...

One participant (S17, age 37) stated that the screening program was a welcome distraction from her ED chief complaint (“I was very open to it...I was trying to ignore an injury”). Even participants comfortable taking such a program in the ED, however, emphasized that it must be offered in a private manner.

3.2 However, the program could be incompatible with clinical care and must be delivered with sensitivity to acute clinical needs—One participant pointed out that the computer program could be seen as inappropriate and unwelcome for patients who are uncomfortable and waiting for their chief complaint to be addressed by the ED staff:

S6 (age 26): ...people are in distress when they go there and they don’t really feel like hearing anything about relationships and this and that and drug use. Have you

ever used drugs [mumbles, imitates talking]... And they're like, 'Well, I'm here because my stomach is...' You know?

3.3 Illicit drug use might prevent engagement with the computer program in the ED—

Illicit drug use was raised as a potential barrier to participating in an in-ED intervention. Participants thought that acute intoxication might mean that women would be mentally incapable of completing a computerized program. They also raised the hypothetical possibility that those using “hardcore” illegal drugs may be less likely to divulge drug use due to more serious concerns about privacy:

S4 (age 23): So with people with marijuana I think it's easier to talk to the computer but people who are on the big big type of drugs, I don't think it would be easy for them because they would feel like, “Somebody's out to get me. They're just trying to know that I'm doing something so they can try to lock me up or make me go to intervention.”

Because of this theme, attitudes toward privacy and acceptability were examined among those in the study who endorsed using illegal drugs other than marijuana (e.g., cocaine). However, no differences were found compared to those using only marijuana or marijuana and prescription pills.

Theme 4: Attitudes toward and facility with computer programs

4.1 Participants thought of computers and mobile devices as having diverse and distinct roles in participant's lives—

Over half (eleven of seventeen) of the participants said they frequently used a computer or mobile device, describing a wide variety of reasons for use, including entertainment, social networking, and general information. The social connections, in particular, seemed important to the women; one stay at home mom (S15, age 27), described her mobile device as her only connection to the outside world. Ten of seventeen participants stated they used the computer/mobile device for health information for themselves or friends or family. Importantly, a few women defined distinctions between mobile device and computer use, with computers associated with productivity, school and work, and cellphones related to social connections and immediate, practical functions such as finding places and getting needed facts or information.

4.2 Potential barriers to program acceptability include low literacy and low computer literacy—

Participants stated dense text and complicated questions would be a barrier to their enthusiasm for participating in a computer-based program.

S5 (age 50): As long as I can understand – it's not like the questions is hard or it's not like it's a whole bunch of big words where you can't understand it.

Facility and confidence with computer programs was another potential barrier to program use. Although most women in our study stated a high degree of self-efficacy in use of computers (S13: “I'm very computer literate”), two participants described themselves as novices (S7: “My two-year-old niece knows how to use the computer better than I do”). Of note, none of the participants reported problems completing the health screening on the computer in the ED during the study enrollment process.

4.3 Participants identified a wide variety of barriers to access to computers/mobile devices outside the ED, including financial constraints, unstable housing, and, potentially, violence—Despite frequent use of computers/mobile devices (Theme 4.2), participants also reported a wide variety of barriers to reliable access. Many did not own a computer/mobile device and could only use one at public places or when they could borrow one. Others possessed outdated equipment with limited capabilities or were unable to pay for an Internet connection. Although none of the women explicitly described partners monitoring or limiting their use of devices as part of abusive/controlling behaviors, one participant (S4, age 23) related being unable to afford to replace her phone after it was broken in a violent argument: “I don’t have a phone... when I had my phone it broke because of the, like, arguing and stuff like that, start slamming stuff, throwing stuff, things like that.”

Discussion

Much of the literature around using technology for sensitive topics such as substance use, partner abuse, and sexual behaviors addresses means of increasing privacy and confidentiality (23,24). However, our participants demonstrated implicit understanding of security systems for Internet-based information and confidence when assured that their information would be secure. Further, participants felt the computer interface could shield them from embarrassment and fear, thus potentially lowering the bar for discussion when divulging abuse and drug use. Many positive qualities were attributed to computer technology by participants, including that it is highly accessible, a reliable source of information, and can provide linkages to other sources of care. These views of technology perhaps should not be surprising in our highly wired society. However, our study also revealed sobering limitations to accessibility of technology. Even with the increasing ubiquity of smartphones, including among ED patients (23), many of our participants described social and financial constraints to routine computer or mobile device access, providing challenges to any interventions or technology-based boosters outside the ED (25).

This analysis also provided a valuable lesson relating to terminology: women made a distinction between computers and mobile phones. Accessing the Internet via a phone was not seen as a “computer” function per se; women in our study related “computers” to productivity and many felt computers were not within their skill set, even those who accessed the Internet routinely from their phones. In response to this, within individual interviews, we adapted our terminology to match the participant’s stated technology use; ultimately, we modified our interview guide from describing our program as a computer program to describing it as a computer, Web- or Internet-based program. From an intervention development perspective, we realized the term “computer” may alienate women who otherwise clearly have the ability and confidence to use online resources.

A surprising finding was that participants did not discuss concerns about their partners’ discovering their involvement in the program. It may be that we recruited a subset of women who felt more comfortable divulging abuse and participating in the study, either because they felt confident in the security and privacy of the program or because their partners were

less of a danger to them. The latter seems unlikely, however, given the high level of physical and sexual abuse reported by most participants.

Women in our study described the detachment of the computer as both a facilitator and a barrier to receiving care for drugs and partner abuse in the ED. For *screening*, women appreciated that the computer interface allowed them to divulge abuse and drug use privately, without embarrassment, perceived judgment, or repercussion. However, when it came to *receiving advice*, empathy and a personalized interaction were desired; the computer interface was, consequently, less appealing. The acceptability of such a program, therefore, may depend on the extent to which it can convey to participants the human concern behind its development. Further, the computer program may be most successful by motivating women to connect to needed immediate or outpatient services.

A few women had a very strong positive response to the screening and assessment questions they took as part of the study recruitment process, describing what sounded like an intervention effect. Although this may suggest a brief computer program may indeed boost self-efficacy, readiness or even change behavior, it is important to note that this effect was described even without the receipt of feedback or messages related to relationship safety and drug use. An alternative explanation for this finding may be “assessment reactivity”: behavioral change simply due to the assessments on a clinical problem, which has been described in substance use research (26), though not in the violence literature. The potential for this effect – which could bias any measurement of intervention effect toward the null – will be important to consider when develop and testing any intervention.

Finally, the ED setting itself has advantages to our participants, including providing medical authority and a private place to engage in programs for these types of sensitive topics. However, it is clear that any program integrated into the ED visit must be delivered in a way that is sensitive to the patient’s immediate clinical needs.

Limitations

Our study included interviews with English-speaking women recruited from a single, urban, academic ED in the northeastern U.S. Therefore, findings may not be generalizable to women in rural or suburban settings, non-English-speakers, or those in other parts of the country. Participants were recruited using an iPad-administered survey, so it is possible that we selected out individuals who were relatively comfortable with computers compared to their peers, biasing results toward acceptability of technology-based interventions. However, we used multiple factors to reduce the possibility of participation bias: the interface was simple, participants received brief instruction on using the iPad, and RAs offered the option of assistance completing screening. Further, no one related discomfort with the technology as a reason for refusing participation, and our recruited sample included some who characterized themselves as having few computer skills. As mentioned above, our sample may be biased if we selected out women most willing to endorse partner abuse and drug use and discuss these issues. Participants also needed to come to the research offices to complete the interview, which selected out those with the freedom and means to do so, a group that may be slightly different from the ultimate target population of the program.

Conclusions

Most women in this study were comfortable with computer and mobile technologies and receptive to computer-based drug use and partner abuse screening in the ED. Although the computer format seems likely to be able to facilitate divulging partner abuse or substance use, a computerized intervention would benefit by simulating the empathy of a human interaction and a feeling of connection to other people. Participant concerns, including emotional distress, complexity or lack of privacy of information, and legal or financial repercussions, must also be anticipated and addressed clearly to maximize receptivity and engagement in the program. Finally, such programs should not be perceived as delaying or superceding clinical care.

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Table 1

Types of Partner Abuse and Drug Use Reported by Study Participants in the Prior Six Months

Subject	Demographics	Partner Abuse Experienced	Drugs Used
1	40 yo, White	Tension and difficulty working out arguments ^a	Cannabis
2	18 yo, Hispanic/Latino	Physical, emotional and sexual abuse	Cannabis
3	48 yo, White	Emotional abuse, threats of sexual abuse	Cannabis, cocaine
4	23 yo, AI/AN ^b	Physical abuse, threats of sexual abuse	Cannabis, prescription stimulants
5	50 yo, Black/AA ^c	Physical, emotional and sexual abuse	Cannabis, cocaine, inhalants, sedatives, prescription opiates
6	26 yo, Black/AA	Physical, sexual abuse	Cannabis
7	38 yo, Black/AA	Emotional, sexual abuse	Cannabis, prescription stimulants, sedatives, prescription opiates
8	18 yo, Asian	Physical and emotional abuse	Cannabis, prescription stimulants, sedatives, prescription opiates
9	20 yo, White	Physical, emotional and sexual abuse	Cannabis, cocaine, prescription stimulants, hallucinogens, prescription opiates
10	21 yo, Hispanic/Latino	Tension and difficulty working out arguments ^a	Cannabis, sedatives, prescription opiates
11	30 yo, White	Tension in the relationship ^a	Cannabis, cocaine, prescription opiates
12	37 yo, Black/AA	Emotional abuse	Sedatives, prescription opiates
13	26 yo, White	Physical and emotional abuse	Cannabis
14	20 yo, White, AI/AN	Emotional abuse	Cannabis
15	27 yo White	Sexual abuse	Cannabis
16	32 yo White	Physical, emotional and sexual abuse	Cannabis, hallucinogens, prescription opiates
17	37 yo White	Emotional abuse	Cannabis, prescription opiates

^a i.e., these patients screened positive for partner abuse by the brief Women Abuse Scoring Test (WAST) but denied other forms of abuse

^b American Indian/Alaska Native

^c Black/African American