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Facilitating Self-Management of Substance Use Disorders with Online Counseling: The Intervention and Study Design

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Abstract

This paper describes a pilot study using online counseling for court-involved parents who have been charged with child abuse and neglect related to substance use. All families resided in the medically underserved area of Newark, New Jersey and were recruited from halfway houses and the Family Court. The sample consisted of 30 participants randomly assigned to control (n=15) and experimental (n=15) groups. Of the participants, 83% were Black, 13% were White, and 3% were Hispanic. The control group had access to usual face-to-face treatment at a local treatment center where typical court-ordered offenders were referred. Usual face-to-face treatment often involved being wait-listed for periods of months even for a detox bed. The experimental group had immediate access to the online counseling intervention. The online counseling software and the live counseling components of the intervention were developed with a stages of change theoretical framework. Preliminary findings show promise for the feasibility of online interventions for underserved populations.

In today's health care environment, individuals with substance use disorders (SUD) often lack access to treatment, especially when they are poor and without health insurance. According to the Substance Abuse and Mental Health Administration (SAMHSA), between 13 million and 16 million people in the US need treatment for a SUD each year, but only 3 million receive care. The consequences of this health disparity can be devastating, particularly to vulnerable families in underserved areas. Utilizing software created with the theoretical framework of stages of change, online counseling represents an innovative way to reach vulnerable populations in underserved areas. Figure 1 displays the framework that is incorporated into the software with live counselor intervention to assist clients to progress from thinking about change to succeeding at it. The framework also displays a progression from individual to group action. While some participants may not go through all stages, it is our experience that many do. Furthermore, it has been observed that when each stage is tied to specific rewards and sanctions, clients are more likely to progress through all stages.

Substance abusing women have historically been excluded from substance abuse research and treatment. Specific funding for women's treatment centers was not given until the 1980's and it was not until 1993 that federal funds were set-aside specifically for pregnant and parenting women (Finkelstein, 1994). According to SAMHSA's 2000 National Survey of Substance Abuse Treatment Services (N-SSATS), 60% of substance abuse treatment facilities provided special programs or services for women (SAMHSA, 2002). However, this number is misleading. The survey provides data on four programs or services: programs designed for women only, programs specifically for pregnant or postpartum women, services addressing domestic violence, and child care services. About 33% of the facilities provided one program or service, 17% provided two, 8% provided three, and only 3% provide all four programs or services (SAMHSA, 2002). Considering that these issues often overlap and may not be immediately known when a woman enters treatment, these numbers are quite low.

The issues impacting substance abuse among women of color are unique and need to be separately addressed. Women suffering from substance abuse have often been victims of rape, incest, or physical and emotional abuse. Substance abuse disorders have been linked with many other risk factors in women including involvement in criminal acts to obtain drugs (i.e., prostitution), participation in high-risk sexual behavior, instability in relationships, unwanted or early pregnancy, diminished educational achievement, and limited access to employment opportunities (Coridan & O'Connell, 2004). Issues that are not often addressed in treatment and create barriers for substance abusing women of color to seek treatment include:

- Societal and environmental risk – poverty and economic disadvantage are often cited as factors for substance abuse/addiction in African American women
- Diversity – staff needs to be bilingual, racially diverse, and culturally competent
- Safety – treatment providers must make it safe to discuss sexual, emotional and physical abuse without feeling victimized or being sexually harassed
- Access to child care – the largest barrier to accessing treatment for women is leaving their children in the care of relatives or in the foster care system; women also need parenting education and parallel treatment for their children
- Access to transportation – programs should be located on bus or subway lines and provide transportation vouchers to help keep women in recovery.
- Access to healthcare – women with substance abuse problems have higher rates of co- occurring health problems including STDs, reproductive problems, and general health concerns; women also have to rely more on publicly funded treatment than men and have increased chances of being turned away or placed on a waiting list (Coridan & O'Connell, 2004; Ashley, Marsden, & Brady, 2003; McMahon, Winkel, Suchman & Luthar, 2002).

When these issues are comprehensively addressed, a successful treatment program will increase rate of treatment completion, increase length of stay, decrease use of substances, reduce mental health symptoms, improve employment, improve self-reported health status, and reduce HIV risk (Ashley, Marsden, & Brady, 2003).

In the last decade, Alemi and colleagues conducted a number of linked studies on the potential impact of various components of online substance abuse treatment. In the early 1990s, Alemi found that repeated use of online services was positively correlated with retention in substance abuse treatment (Alemi, Stephens, Llorens, & Orris, 1995; Alemi, Stephens, Saviers, & Arendt, 1993). In this study, 82 cocaine-using pregnant clients had

access to online services through their telephone line. Of those who had access to online services, 35% used the system more than three times a week. Eighty-two percent of clients who used the system more than three times a week participated in treatment; in contrast to 55% of the clients who used the system less than three times a week or not at all. Frequent users were 1.5 times more likely to be in usual community-based treatment. Similarly, clients who used online services three times a week were 1.7 times more likely to participate in self-care, such as Narcotics Anonymous. Thus, more online use was associated with more treatment and more self-care, two factors that have been shown to predict long-term effective substance abuse treatment.

Study Question

This paper addresses the following question: Is it feasible to use online counseling to improve access to substance abuse counseling for vulnerable populations in underserved areas?

A Rationale for the Study—Each year, one third of New Jersey's 4,000 substantiated child abuse and neglect cases come from Newark. Eighty to ninety percent are estimated to involve parental substance abuse. A majority of the children in these cases are placed in foster care. Because of the *Adoption and Safe Families Act* (ASFA), the fate of these families must be decided within 12 to 18 months of foster care placement. During that timeframe, parents will either be successfully reunified with their children or a termination of parental rights (TPR) will make the children eligible for adoption. With the long standing health care disparities in Newark and the reality of child welfare case loads, very few families are able to access services that enable them to meet the ASFA requirements for reunification. The New Jersey State Division of Addiction Services ranks Essex County first with 42,516 people in need of treatment for heroin, cocaine and other illicit drug disorders. After being wait-listed for six to eight weeks, the typical court-involved mother attends outpatient substance abuse treatment three days per week while living in a homeless shelter.

Method

Participants

Information about the study project was distributed to the case managers of Newark's substance abuse treatment programs and Essex County Superior Court Family Division. All participants were recruited from halfway houses or the Family Court. The Family Court case managers informed eligible clients of the online treatment option, if they did not have access to face-to-face treatment on demand. Thirty participants agreed to participate. Of the participants, 83% were Black, 13% were White, and 3% were Hispanic.

Design and Procedure

If clients volunteered to use the online option, they were randomly assigned to control group (n=15) and experimental group (n=15). The control group had access to usual face-to-face treatment at a local treatment center where typical court-ordered offenders were referred. Usual face-to-face treatment often involved being wait-listed for periods of months even for a detox bed. Both groups received Internet devices with access to the Internet for one year. The experimental group had immediate access to online counseling. Both groups had to comply with urine (or saliva) tests and were requested to complete baseline and periodic questionnaires.

All clients who met the study criteria were eligible and were included in the study on a first-come, first-served basis. Clients were eligible to participate if all of the following conditions were met:

1. Above 14 years of age,
2. Had a substance abuse problem,
3. Judged to be capable of benefiting from outpatient treatment,
4. Members of their household had agreed or would agree to share a computer and maintain a telephone line,
5. Able to type and read at high school level.
6. In addition, each client had to agree to permit the Court, and any medical provider or counselor to release information to the study for the purpose of evaluating the effectiveness of online treatment.

The client also had to be willing to participate in a randomization procedure to establish whether they would receive online or usual face-to-face treatment. They also were required to participate in online counseling that included:

1. Daily contact with a counselor by e-mail,
2. A weekly computer survey of the participant's environment by the computer,
3. Participation in electronic support groups on as needed basis,
4. Bi-weekly urine (or sweat) test, and
5. Face-to-face office visits on demand and as needed.

Participants were asked to commit to online counseling for at least 15 minutes each day. They were also asked to participate in a face-to-face visit with the online counselor, if needed. Consent was both read and explained to clients. Participation in the online counseling program did not require participation in the evaluation component. In other words, clients could drop out of treatment online or in-person and remain in the data collection for evaluation of the experiment

Minor Participants—The project was open to minors 14 years of age or older if they desired to participate and their legal custodian gave permission. No minors were enrolled in the study.

Household Members or Significant Family Members—The project provided independent passwords and accounts to each adult and teenager living in the homes of the participants. These accounts allowed access to the Internet but not to the counseling system. The system was designed so that the online counselor could call upon these household members or significant family members to spend time with the experimental group participants during high-risk periods for relapse.

Intervention—Online counseling has five components, three of which are electronic and two of which are face-to-face. The first component involves frequent, almost daily, online motivational interviewing that follows the stages of change theoretical framework. The protocols for the online motivational interviews were developed and tested on 300 recovering clients in a previous study. The second component is home monitoring of the client. At weekly intervals, the computer calls the client and assesses their risk of relapse. If risks are high, the counselor may call the client by telephone, engage family members in the care of the client, bring the client in for a visit, or do other previously agreed upon relapse prevention activities. The third component is peer-to-peer support through electronic discussion groups. The fourth and fifth components of the online treatment are not online at all. The fourth component is routine laboratory testing and the fifth component is occasional

face-to-face sessions with the counselor. Counselors were trained in managing patients online. The training they received is available online at http://www.onlineimprovement.com/CompanyWeb/c_training.htm.

Privacy Issues—When the counselor sends or receives an e-mail, the physical e-mail travels from computer to computer until it reaches its intended audience. The e-mail could be easily read and the clients' privacy could be violated. To avoid this problem, all information sent or received online was de-identified – meaning that clients' name, phone number and address were falsified. In addition, clients registered for Internet service under an alias – further de-identifying client's information including de-identifying client's e-mail. The protocol was in compliance with Health Insurance Portability and Accountability Act of 1996 (HIPAA). Even if someone were to intercept the e-mail, he/she would not be able to link it to a specific individual. In this fashion, we were able to preserve clients' privacy despite the inherent insecurity of e-mails. Client's identity and its link to the alias were kept on paper and under lock and key.

The privacy of participant's interactions with the counselor is important to the participant and to the success of the program. Therefore, access to the online counseling system was restricted to registered participants by password and by the internet address of the computer. In addition, participants were asked to use their first name or an alias on the peer-to-peer portion of the system so that intentional or accidental release of information would not violate client confidentiality. If a court order and a release of information was provided by the participant, data on the participant's progress in counseling was shared with the Courts. Throughout the project there was no instance where a client's identity was revealed, mistakenly or maliciously revealed.

Potential Risks and Benefits—Besides the liability issue, a number of professional and ethical issues arise related to the use of computers in treatment (Gilbert, 1985; Ford, 1993). For example, there is a possibility that participants may sell the equipment installed in their homes to buy drugs. Our experience with supplying computers shows that there was no or negligible rate of selling of the equipment. This is due, in part, to the fact that the participants need a computer or internet device and access to a Internet Service Provider, which is a more expensive proposition than the device itself. In addition, because all members of the household may use these computers, group pressure may have made it unlikely that the participant would sell the equipment.

In any treatment program, there is a risk that recovering clients may relapse and not only start using drugs but use their new found online contacts to sell drugs. Because participants do not have physical access to each other, the potential risk for substance abuse trade among the clients is reduced. There is also a risk that clients in online support groups may mislead each other. The system provides warnings to alert users not to assume that the advice received from other participants is necessarily correct. In addition, key participants were asked to monitor the content of the support group and alert the counselor as soon as inappropriate messages were posted. When notified, the inappropriate message was deleted or a correction was added. The risk of being misled by other participants is less than in face-to-face support groups, because in online groups all messages are recorded. Therefore, we can review the transcript at any time and if necessary, provide a corrective intervention.

Since self-help support groups are based on a participant's independent use of online service, all participants have a right to free speech as long as this right does not interfere with the recovery of other participants (Aughton, 1992). We planned to delete openly aggressive commentaries (e.g., flaming) made in the peer-to-peer portion of the system, but no such occasion arose.

The Internet involves many sites, some of which may have an adverse impact on clients' recovery. The risk of exposure to information that may adversely affect the clients' recovery over the internet is high. Growth of internet games, pornography, and incitement to violence is a concern. To reduce adverse effects of these sites on the clients, we regularly advised clients who have access to a computer about dangers of internet use by sending them suggestions for URLs they may wish to visit.

If online treatment is not effective (as shown by biological markers or self-reported drug use) or if online counseling is unlikely to be effective (as shown by repeated failure of the participant to reduce risk for relapse), the counselor was asked to refer the client to residential treatment and/or face-to-face outpatient modality.

It is important to understand that for many clients online treatment is the only method of reaching them. Our unpublished data from other studies show that of the subjects who seek help, roughly 30% of the clients use both online and face-to-face treatment. Fifty-two percent use only online treatment and do not participate in face-to-face treatment, even when such treatment is available. The remaining clients do not use either online or face-to-face treatment. Therefore, for a large portion of clients, the choice is not between online or face-to-face treatment, but online and no treatment. The risks to the subjects are minimal, as our data show that the alternative to online treatment for many subjects is not in-person treatment but no treatment at all. Furthermore, the study does not restrict in-person treatment, and the participants or the counselor may request more frequent in-person visits.

Subjects are told not to use the system for emergencies. Subjects who have plans for a suicide are brought in for a visit and may be put in protective custody if a psychiatrist decides the risks are high.

Data Collection

Source of data—Data were collected through clients' self-report, random urine tests, counselor's diary of activities, computer records of online activities, and review of accounting costs of treatment programs.

Service units—The computer tracked the number of contacts between the counselor and the participant, days of contacts, and number of responses from the participant. Face-to-face visits were examined by self-report of the client.

Extent of Recovery—This variable was measured as time to positive drug test. The advantages of using time to positive drug test are explained in a separate paper (Alemi, Haack, & Nemes, 2004). Unfortunately, drug tests are not done often enough and they are many missing values. We used our knowledge of other factors to estimate the value of missing drug tests. For example, we assumed that before baseline the client has had a positive drug test as indicated by their report of substance abuse. We assumed that immediately after the exit interview the client would have had a test result similar to most recent test. We also assumed that drug tests can be inferred from the Addiction Severity Index of self-reported drug use. If the client reported drug use, we assumed that, on the day of reporting, the client had a positive drug test. Finally, if the client was arrested for drug use or died because of drug use, we assumed a positive drug test.

Changes in employment—This variable will be measured through the difference of exit and baseline measures of the Addiction Severity Index for Employment Component (McLellan, et al., 1985).

Changes in health condition—This variable was measured as the difference in exit and baseline measures of the Addiction Severity Index Medical and Psychiatric Components (McLellan, et al., 1985).

Changes in homelessness—This variable was measured as the difference in exit and baseline measures of the Addiction Severity Index component for Homelessness Component (McLellan, et al., 1985).

Changes in family & legal problems—These two variables were measured as the difference in exit and baseline measures of the Addiction Severity Index Family and Legal Components (McLellan, et al., 1985).

Use of face-to-face treatment—This variable was measured by self-report. Clients were asked to indicate the number of days in the past 30 days in which they received treatment. In addition, clients were asked to indicate the nature of treatment (e.g. residential, outpatient, etc.). This variable was organized using the questions in the Addiction Severity Index (McLellan, et al., 1985).

Content of Online Counseling—Online counseling was organized around the stage of clients' recovery. Over the course of this study and in other studies involving large numbers of clients, we have noticed a progression in treatment. The stages we noted with regard to online counseling are as follows (see also Figure 1):

1. Accessible and pre-contemplation. Client has agreed to and does participate online. Client receives messages and within a short interval (24 to 48 hours) responds to the messages. Client is interested but not committed to any action. During this phase, clients solved operational issues, received training on use of the system, described the nature of their lives and came to self insight about why they are experiencing problems in their lives.
2. Contemplation. The client explored the consequences of the substance use and why he/she is ambivalent about change. During this phase the counselor would ask clients to articulate what they liked and disliked about drug use. The purpose of this stage is to help the client understand the risk and rewards involved. In the Newark project, the risk was loss of custody of children. The reward was reunification with children. For court involved clients, court hearings are strong enforcers of the risk and rewards.
3. Commitment to individual action. During this phase, the client initiated change and planned with the counselor on how to succeed. The counselor's role was to increase the level of planning and details regarding the client's resolutions.
4. Maintenance and relapse. The client examined factors that are leading to his/her relapse and thought through actions he/she can take to increase the time between relapse. One advantage of online counseling is that it is available to the client right after lapse into drug use and it might reduce the duration and severity of relapses.
5. Pre-contemplation for group action including organization of family and friends. During this phase, the client invited friends and family to help the client in the recovery process. Children sometimes communicate directly with counselor about the client's condition. One child e-mailed the counselor that the client had signed herself into detox and was doing well. Interest to help is expressed, but the partner or significant other may also be involved in substance abuse. Partners sometimes request to have online counseling for themselves.

6. Family and friends contemplation. During this phase, clients work with partners or friends to analyze daily routines and the environment in order to understand the triggers and determinants of drug use.
7. Family and friends commitment to action. Family and friends take steps to improve the environment. Family supports the client's effort in self-managing the SUD.
  - Adjustment of routines. The participant, friends, and family members work to adjust daily routines to make it unlikely for the participant to continue with the substance use.
  - Substitute activities. The family and friends work to create new, fun activities that occur at the same interval as the substance use and that do not have the consequences of the substance use.
  - Spirituality and community. The participant regularly participates in religious or spiritual activities and feels a sense of belonging to a community. Many e-mail messages have a spiritual theme.
8. Maintenance and relapse. The client publicly displays data generated by the computer about success and actively engages friends and family members to evaluate his/her progress. Each relapse is analyzed to find out new ways of changing the environment and daily routines. The client and the friends and family members examine failures and identify additional adjustments to their daily living activities to increase the intervals between relapses.

Discussion

This paper described the design of a project intended to improve access to substance abuse counseling and to improve a participant's ability to self-manage their substance use disorder through the use of technology. The online counseling software was developed with stages of change as the guiding framework. The project was carried out in the medically underserved area of Newark, New Jersey. Participants were vulnerable parents involved in the Family Court system and had been charged with child abuse and neglect related to substance abuse. The legal issue at stake was the custody of the children. Implementation of this project has been a success and is still in progress. Preliminary findings are promising.

In implementing the project, we often faced a number of myths about online counseling. It is important to clarify that no one treatment approach is best for everyone. All individuals are distinctly different and the course of online counseling is unique for each person. Furthermore, online counseling does not duplicate face-to-face sessions. These two methods of counseling differ in frequency of contact, ease of contact, availability of non-verbal cues, affinity between counselor and the nature of topics discussed. Because of near daily short contact, online counseling focuses on today and tomorrow and tends to ignore what has happened several years ago or what will happen in weeks or months. The focus of online counseling is much more functional and time dependent. Despite the differences between online and face-to-face counseling, both can lead to improvements in patient outcomes. Neither one replaces the other. We have seen online counseling increase participation in face-to-face meetings. We have also seen clients who are in face-to-face contact, asking for and receiving online sessions. These are two different modalities for delivery of substance abuse treatment.

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Figure 1.
Counselor Works with Client through Various Stages for Individual and Group Action