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Journal of Family Medicine & Community Health

Short Communication

Efficacy of E-Therapy for Treating Substance use Disorders in Persons who are Deaf or have a Disability

Surendra Bir Adhikari[1], Rick R. Massatti[1], Josephine F. Wilson[2]*, Jo Ann Ford[2] and Jared Embree[2]

[1]Ohio Department of Mental Health & Addiction Services, USA
[2]Department of Community Health, Boonshoft School of Medicine, Wright State University, USA

*Corresponding author
Josephine F. Wilson, Department of Community Health, Boonshoft School of Medicine, Wright State University, 3171 Research Blvd, Kettering, USA, OH: 45420, Tel: 1-937-775-1483; Fax: 1-937-775-1495; Email: josephine.wilson@wright.edu

Submitted: 06 December 2014

Accepted: 15 May 2015

Published: 08 June 2015

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Keywords

- Substance Use Disorders
- Alcohol Abuse
- E-Therapy
- Disability
- Deaf

Abstract

The objective of this research was to explore whether increased exposure to E-Therapy results in more successful therapeutic outcomes for persons with disabilities and substance use disorders (SUD). A Mann-Whitney U test was used to analyze exit interview data on 48 persons who had successfully completed SUD treatment. Clients who received a higher percentage of SUD treatment as E-Therapy had better therapeutic outcomes and those who received fewer therapeutic sessions had less successful outcomes. E-Therapy has critical policy implications and should be promoted as a cost-effective way to provide SUD treatment to persons who are deaf or experience low-incidence disabilities.

ABBREVIATIONS

SUD: Substance Use Disorders; GPRA: Government Performance and Results Act; TAC: Technology Assisted Care; SAMHSA: Substance Abuse and Mental Health Services Administration; CAM: Consumer Advocacy Model; WSU: Wright State University

INTRODUCTION

E-therapy is a remotely delivered treatment using computer-based technology, such as internet-based video phone, videoconferencing; or text message technology. Web-based videoconferencing provides improved access to substance abuse treatment by allowing clients to receive counseling services in their homes [1]. E-therapy was found promising, economically viable, and culturally appropriate for addressing substance use disorder treatment needs of persons who are deaf [2]. Computer-based interventions also led clients to less substance use and higher motivation to change [3-6]. We investigated whether a proportionately higher use of E-Therapy leads to more successful therapeutic outcomes among persons who are deaf or have disability.

MATERIALS AND METHODS

Data was extracted from the Government Performance and Results Act (GPRA) database for the "Technology Assisted Care for Persons with Disabilities" (TAC) grant in Ohio, funded by the Substance Abuse and Mental Health Services Administration (SAMHSA) between October 2010 and September 2013. We specifically analyzed exit interview data on 62 adults (18 years or older) with disabilities and substance use disorders (SUD) who were exposed to E-Therapy. Participants received treatment at the Consumer Advocacy Model (CAM) Program, a culturally and linguistically appropriate treatment program at Wright State University (WSU), which provides traditional and electronically accessible SUD treatment, education and support services to persons with co-existing disabilities. The participants were offered electronic, video phone, or computer-assisted 12-Step treatment, individual counseling and case management by staff fluent in American Sign Language. The WSU Institutional Review Board approved the research protocols for this study. SPSS version 21 (IBM Corp, Armonk, New York) was used for all statistical analyses.

GPRA data included alcohol and drug use, stress and emotional problems attributable to alcohol and drug use, number of days in past month that the client experienced mental health problems, and demographics such as education, employment, and housing. A unique variable ("proportion e-treatment") was created to determine the proportion of sessions that were delivered electronically (i.e., through video therapy and/or text messaging), with higher numbers indicating a greater proportion

of electronic therapeutic services. Another variable ("treatment outcome") was created to determine whether participants had a successful treatment outcome. Participants who completed or graduated from the program were deemed "successful" and those who were terminated from the program were deemed "unsuccessful."

RESULTS AND DISCUSSION

The TAC program enrolled a total of 168 clients at baseline (Table 1). At the exit interview, 62 participants (46 men and 16 women) had been discharged from treatment. Chi-squared analyses showed men and women did not differ significantly with respect to race and age group at the baseline interview [$\chi^2(1) = 0.293$, $p = .588$; $\chi^2(5) = 3.118$, $p = .682$] or at the exit interview [$\chi^2(1) = 0.107$, $p = .744$; $\chi^2(5) = 1.386$, $p = .926$]. Men were significantly more likely to be employed at the baseline interview [$(\chi^2(1) = 4.591$, $p = .032)$], but not at the exit interview [$(\chi^2(1) = 0.152$, $p = .696)$]. At the exit interview, most participants were male, White, and had at least a high school education. Most were employed (54.9%), 18.2% reported alcohol use, and 4.8% abused marijuana and opiates (combined).

Table 1: Demographic Characteristics of Adult Clients with Disabilities and Substance Use Disorders at Baseline and Exit Interviews, 2010-2013.

Demographic Group	Baseline Interview	Exit Interview
Participants	168	62
Gender		
Male	116 (69.0%)	46 (74.2%)
Female	52 (31.0%)	16 (25.8%)
Race		
White	128 (76.2%)	51 (82.3%)
Other	40 (23.8%)	9 (14.5%)
Age		
18-24	45 (26.8%)	11 (17.7%)
25-34	52 (31.0%)	22 (35.5%)
35-44	31 (18.5%)	9 (14.5%)
45-54	28 (16.7%)	13 (21.0%)
55+	12 (7.1%)	7 (11.3%)
Education		
Less than High School	7 (4.2%)	0 (0.0%)[a]
Some High School	30 (17.9)	7 (12.7%)[a]
High School or equivalent	78 (46.4)	31 (56.4%)[a]
Some College	41 (24.4)	15 (27.3%)[a]
BA or greater	9 (5.4)	2 (3.6%)[a]
Vocational School	3 (1.8%)	0 (0.0%)[a]
Employment		
Employed	68 (40.5%)	28 (54.9%)[a]
Unemployed	88 (52.4%)	23 (45.1%)[a]
Alcohol Use		
Any Use	76 (67.3%)[a]	10 (18.2%)[a]
Use with drugs on the same day	33 (91.7%)[a]	1 (50%)[a]
Drug Use		
Marijuana	45 (26.8%)	2 (3.2%)
Opiate[b]	11 (6.5%)	1 (1.6%)
Cocaine	9 (5.4%)	0 (0.0%)
Sedative Hypnotic	7 (4.2%)	0 (0.0%)
Other[c]	3 (1.8%)	0 (0.0%)

Source: Government Performance and Results Act (GPRA), Technology Assisted Care Grant, Ohio.

[a]Cases with missing values are not included in the calculation for the percentage.

[b]Rx Opioids or Heroin.

[c]Hallucinogen, Methamphetamine, Inhalant, & other.

Abbreviations: Rx: Prescription

We explored whether higher proportion of E-Therapy led to more successful therapeutic outcomes. Among the 62 clients who were discharged, only 48 (77%) successfully graduated. Because the proportions were not normally distributed, we used a Mann-Whitney Utest to analyze the 48 cases. Results indicated that persons with a higher percentage of electronic-based therapy had better therapeutic outcomes than those with less exposure to E-therapy ($U = 69.5$, $p < .05$). On average, 78.9 % of therapeutic sessions were video-or text-based for those persons with successful outcomes; whereas, only 38.2% of therapeutic sessions were video- or text-based for those persons with unsuccessful outcomes. The percent of electronic-based therapeutic sessions received differed significantly by gender ($U = 234.5$, $p < .05$). Typically men received a higher percentage of electronic-based therapeutic sessions compared to women (74.2% vs. 57.0%, respectively). The percent of electronic-based therapeutic sessions received did not differ significantly by race ($U = 208.5$, $p > .05$).

CONCLUSION

This study's finding that intensive E-therapy results in more successful SUD treatment for persons who are deaf or have a disability supports previously published reports indicating that technology holds a particular promise for enhanced culturally and linguistically appropriate treatment for persons who are deaf or experience other low-incidence disabilities [7,8].

Statistical analyses revealed that persons with successful treatment outcomes received 78.9% of their SUD treatment in electronic-based therapeutic sessions. This is a significant finding and has wider policy ramifications of E-Therapy as a significantly viable option for treating SUD in populations with serious unmet treatment needs, including persons who are deaf or have disabilities. First, E-therapy is a cost-effective treatment option because clients do not have to travel and get service at home. Second, the relative ease in using this technology has tremendous potential to enhance help-seeking behavior among deaf and disabled persons to seek treatment for substance use disorders, who otherwise may not be motivated due to various treatment barriers such as mobility (transportation), costs for out-patient and out-of-residence treatment, and social stigma [2,7,8]. With regards to the finding of gender disparities with more men receiving a higher percentage of E-therapy, the policy implication would be to enhance recruitment of more female clients.

The study was limited by a small sample size lacking heterogeneity. It also did not include follow-up data on those clients still in treatment at the end of the TAC grant project. Future research should focus on a more robust comparative analysis of successful treatment outcomes for clients treated: in person, text message technology, internet-based video phone, and video conferencing. SAMHSA has recommended E-therapy for hard-

to-reach populations [9]. Additionally, future research could look into which of the E-Therapy options are most successful for engaging and treating the hard-to-reach populations, like the deaf and persons with disability.

ACKNOWLEDGEMENTS

This manuscript was supported by a Cooperative Agreement (#TI023376) Technology Assisted Care for Persons with SUD and Co-Existing Disabilities from the Substance Abuse and Mental Health Services Administration. The findings and conclusions in this paper are those of the authors and should not be attributed to the Ohio Department of Mental Health and Addiction Services or Substance Abuse Resources & Disability Issues, Wright State University. We thank Captain Stella Jones, LICSW, SAMHSA- CSAT for the release of the GPRA data.

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Cite this article

Adhikari SB, Massatti RR, Wilson JF, Ford JA, Embree J (2015) Efficacy of E-Therapy for Treating Substance use Disorders in Persons who are Deaf or have a Disability. J Family Med Community Health 2(3): 1036.