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Online Interventions for Alcohol and Other Drugs

A Review of Recent Research

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Introduction

Alcohol abuse is associated with a wide range of physical, mental, and social harms, with harmful use ranked as the fifth leading risk factor for premature death and disability in the world. Young people are significantly affected, with 18 to 35-year-olds showing the highest peak consumption and greatest risk of short-term harm. As the peak age for binge drinking is 20 to 29 years old, and young people are underrepresented in users of common, face-to-face alcohol services, the internet could be an effective means of engaging this population. Investigating this potential, current research has sought to examine the methods and effectiveness of various online alcohol prevention programs and shown significant positive outcomes in preventing and managing problematic alcohol use.

Undertaking a review of current research on evidence supporting internet-based alcohol intervention programs, White et al. (2010) found that online alcohol interventions demonstrated meaningful reductions in rates of alcohol consumption. In a similar systematic analysis of online and mobile interventions, Giroux et al. (2017) concluded that online interventions were associated with decreases in drug and alcohol use in the short-term, with some demonstrating additional medium-term improvements.

Examining efforts targeting alcohol use in older teens, research by Byrnes et al. (2019) revealed that a family-based, online prevention program was beneficial for families and effective in preventing teen alcohol use. Fearnow-Kenney et al. (2016) analyzed the effects of an online alcohol prevention program on university student-athletes' alcohol use, determining the program effectively identified and changed mediators of alcohol use, and had significant effects on intentions to use harm-reduction strategies and social norms.

Deady et al. (2016) developed and studied the effects of an online, evidence-based program for co-occurring depressive and alcohol problems among young people, finding that the program resulted in significant easement of both depressive symptoms and alcohol use, suggesting substantial implications for public health efforts.

Article 1: Prevention of Alcohol Use in Older Teens: A Randomized Trial of an Online Family Prevention Program

Summary

Increasing rates of alcohol use during teen years create an important public health issue, with alcohol use and related problem behaviors greatly affected by parents, and many aspects of the parent-teen relationship demonstrated to be important for older teen alcohol use. However, family-based prevention programs are frequently focused on younger adults. To address this issue, **researchers examined outcomes for alcohol use and related behaviors for families participating in Smart Choices 4 Teens, an online, interactive, family-based prevention program for older teens, aged 16-17** (Byrnes et al., 2019, pp. 1-4).

In the study, **parents and teens navigated the online program separately and had off-line, structured discussions using hypothetical scenarios of teen alcohol use, designed to promote teen skill building.** Outcomes were measured by intent to treat (ITT) and variations in dosage. In ITT measures at 6-month follow-ups, teens taking the program reported fewer friends who had been drunk in the past six months compared to teens not enrolled in the program, and parents reported higher levels of communication about social host laws. At 12-month follow-ups, parents additionally reported consuming fewer drinks (Byrnes et al., 2019, pp. 4-9).

In program dosage results at 6-month follow-ups, “higher program dosage was significantly related to primary outcomes related to alcohol consumption including a lower likelihood of teens’ reporting any alcohol use the past six months or past 30 days, **less frequent drinking during the past six months and past 30 days, fewer drinks consumed over the past 6 months, and less drunkenness and binge-drinking during the past 30 days**” (Byrnes et al., 2019, p. 14). At 12-month follow-ups, dosage was also positively related to similar outcomes, demonstrating the program’s sustained effects.

Findings from the Smart Choices 4 Teens program suggest that its use is advantageous for families and effective in preventing teen alcohol use, **particularly as parents and teens completed more of the program content—specifically the Alcohol Prevention component.** As delaying the onset of drinking is associated with better results for teens during their adult years, “efforts to engage parents and teens in changing teens’ behaviors and attitudes toward alcohol use should produce beneficial health outcomes in the future” (Byrnes et al., 2019, pp. 14-16).

Article 2: An Online Intervention for Co-Occurring Depression and Problematic Alcohol Use in Young People: Primary Outcomes from a Randomized Controlled Trial

Summary

Integrated treatments for co-occurring depression and problematic alcohol use have been shown to be effective, and the increased availability of eHealth programs presents a novel opportunity to treat these conditions and address the divide between those in need of treatment and those receiving it. **Seeking to fill the gap in evidence-based programs for depressive and alcohol problems among young people, researchers developed the DEpression-ALcohol (DEAL) Project—a Web-based intervention** for young people aged 18 to 25 years aimed at reducing depression and alcohol use—and evaluated its feasibility and preliminary efficacy (Deady et al., 2016, pp. 1-3).

The DEAL Project consisted of **four 1-hour modules completed over a 4-week period involving elements such as mood/drink monitoring, activity planning, mindfulness/ relaxation, and problem solving**. The program demonstrated significantly greater decreases in alcohol use and depression use at post treatment compared to a control group, and positive outcomes were sustained at 3- and 6-month follow-ups. Average depression scores in the treatment group dropped from the “moderately severe” range to narrowly outside the range for “mild depression” at 6 months (Deady et al., 2016, pp. 3-6).

Furthermore, at baseline the treatment group was drinking on average 3 days per week and consuming more than 25 drinks per week. **At 3-month follow-up, participants were drinking just over nine drinks per week, and drinking occasions had halved**. However, although within-group improvements were maintained over the 6-month follow-up, the significant differences between groups were no longer present at long-term follow-up (Deady et al., 2016, pp. 7-8).

Overall, the application of the DEAL Project resulted in more rapid improvements in depression and alcohol outcomes compared with a control group. Despite differences disappearing at long-term follow-up, the **DEAL Project was “associated with significant improvements in both depressive symptoms and alcohol use among young people with these co-occurring conditions relative to control at posttreatment,”** indicating potentially large public health implications such as a reduction in the risk of harm to the individual and decreased societal costs of heavy alcohol use (Deady et al., 2016, p. 12).

Article 3: The Effects of a Web-Based Alcohol Prevention Program on Social Norms, Expectancies, and Intentions to Prevent Harm among College Student-Athletes

Summary

Despite evidence that participation in sports may be a protective factor for the use of certain drugs, college athletes are at risk for heavy alcohol use, with student-athletes more likely to binge drink than their non athlete peers. The present study investigated three targeted mediators that produce behavioral change to examine the impact of the myPlaybook online alcohol prevention program on student-athletes' social norms, negative alcohol expectancies, and intentions to use alcohol-related harm prevention strategies (Fearnow-Kenney et al., 2016, pp. 1-2).

Seeking to explain alcohol use behaviors among student-athletes, **researchers developed a theoretical model proposing that “social norms about peer substance use and positive and negative expectancies about the effects and consequences of substance use** are factors that influence behavioral intentions to resist use of alcohol.” Behavioral intentions are in turn predictive of engaging in or avoiding substance use. Overall outcomes in the study generally support that an intervention like myPlaybook, “can influence important pathways to behavior change identified in the theoretical framework underlying this program” (Fearnow-Kenney et al., 2016, p. 3).

Student-athletes who utilized the myPlaybook program reported a decrease in perceived social norms for the prevalence of alcohol use among their peers, indicating that the program led to more conservative beliefs about the level of peer alcohol use. However, the intervention program did not appear to significantly increase student-athletes' expectations of the undesirable outcomes of alcohol misuse. Compared to the study's control group—which had lower intentions to use harm prevention strategies from pre to posttest—intentions held steady among study participants using the program, suggesting a buffering effect of the program on intentions to prevent harm (Fearnow-Kenney et al., 2016, pp. 7-10).

Researchers conclude that, “The results presented in this report demonstrate that an online alcohol prevention program can effectively target and change previously identified mediators of alcohol use among collegiate student-athletes.” Though study outcomes found that the effect on negative alcohol expectancies was nonsignificant after completing myPlaybook, **the program yielded significant effects on social norms and intentions to use harm prevention strategies. Overall study findings, “are encouraging and highlight the utility of incorporating**

theory-based alcohol prevention strategies with college student-athletes” (Fearnow-Kenney et al., 2016, p. 12).

Article 4: Online and Mobile Interventions for Problem Gambling, Alcohol, and Drugs: A Systematic Review

Summary

Seeking to overcome obstacles inherent to psychological interventions for alcohol, drug, and gambling-related problems, and to reduce costs associated with addictions and non-consultation, mobile and online application interventions are developing at a rapid pace. In this systematic review, researchers aimed to describe the efficacy and characteristics of such interventions, and better understand their users—a step toward better informing public decision-makers and stakeholders looking into new technologies to enhance accessibility and adherence to treatments (Giroux et al., 2017, pp. 1-3).

The majority of online interventions are based on cognitive-behavioral or motivational approaches, which are recognized as efficient for addiction treatment via structures and techniques easily adaptable to an online format. However, for many interventions, the full potential of a web platform was not exploited, and the tools used were largely replicas of what is already offered offline—**though mobile application interventions tended to exploit the originality of new technologies to a greater degree**. The review additionally showed that the suggested utilization of online interventions is variable, without giving priority to a clear therapeutic framework, and are often provided without any defined indicators. These flexible and less demanding structures may counterbalance obstacles to entering treatment but are also susceptible to varying commitment and usage levels (Giroux et al., 2017, pp. 3-6)

In overall profile, online intervention users were mostly educated and employed adults between 30 and 46 years old, with the majority identified as problematic users. Less than a quarter reported previous consultation for drug or alcohol problems, suggesting that online interventions are attractive for first time consultations, and “may demystify treatment and act as a stepping stone toward other more intensive intervention modalities” (Giroux et al., 2017, p. 12). **The high proportion of employed users may also indicate that online interventions’ flexibility meets the needs of a busy schedule** (Giroux et al., 2017, p. 7-9).

On the whole, **online interventions appeared effective for decreasing certain drug and alcohol use behaviors on a short-term basis**, and some demonstrated a medium-term maintenance of gains, with more than three quarters of studies showing a short-term decrease in use that was sustained 6 months later. While online interventions for drug and alcohol use do not reinvent the theoretical approach or content of self-administered interventions, their format “represents an alternative way to offer these interventions, which could increase accessibility and attract a clientele who would not consult otherwise” (Giroux et al., 2017, pp. 10-12).

Article 5: Online Alcohol Interventions: A Systematic Review

Summary

Young people are distinctly and significantly impacted by the negative effects of alcohol use, with 18 to 35-year-olds at the greatest risk of short-term harm and the highest peak consumption. However, **given high rates of internet use by young people, and the substantial increase in the availability and benefits of online programs for alcohol problems, the internet can be an effective medium to engage young people and reduce harmful drinking**. To assess the efficacy of online alcohol intervention programs, researchers conducted a systematic review of evidence underpinning their methods and outcomes (White et al., 2010, pp. 1-3).

Current internet-based intervention programs range from interactive software applications, to web-based instant messaging technologies and discussion boards, to user-generated content applications such as blogs. **Many of these programs include motivational interviewing techniques presented in a self-help workbook style, and brief intervention strategies and educational content based on harm-reduction philosophy**. Commonly cited reasons for using online intervention programs are their anonymity and privacy, 24-hour accessibility unrestricted by geographic locale, ease of access, and not having to attend face-to-face meetings. Current research indicates that at-risk alcohol users can benefit from such online interventions, and **they may be a particularly useful first step and preventative measure for women and young people who are less likely to access more traditional alcohol-related health services** (White et al., 2010, pp. 3-6).

Overall, **online alcohol interventions studied demonstrated small but meaningful reductions in blood alcohol concentrations**, 10-gram alcohol units consumed, and a range of other alcohol-related measures—showing particularly more effectiveness than general alcohol education or assessment alone.

Though researchers recommend caution in generalizing from these findings given varying intervention uptake and completion rates, the large proportion of student-based studies, and the heterogeneity of outcomes, **“there is sufficient evidence to suggest that standard health services and community campaigns evaluate and deploy online alcohol interventions to address alcohol-related problems”** (White et al., 2010, pp. 7-8).

Conclusion

In the United States, alcohol and other drug use present a continuing challenge for providers to support the substance abuse and mental health concerns of adolescents and young adults. The devastating global pandemic as a result of the coronavirus, coupled with advances in internet and communications technology, has reiterated the need for online interventions that address these pressing alcohol and other drug prevention initiatives and interventions. The authors in this review tested the efficacy of online prevention efforts. Byrnes et al (2019) investigated the Smart Choices 4 Teens, finding that its hybrid design, coupling online curricula with skill-based programming, could support family and teen alcohol prevention by delaying the onset of youth drinking. Next, Deady et al (2016) explored how a skill-based program could support young adults with depressive symptoms and problematic drinking behavior. The authors found that drink monitoring, mindfulness, and problem-solving strategies resulted in improvements in depressive symptoms and decreased alcohol use. Fearnow-Kenney and colleagues (2016) studied how an online social norms program for college athletes could support improved behavioral intentions (i.e., decreased use of alcohol). Giroux (2017) investigated how online programming can provide an accessible entryway into treatment, especially for first-time users between 30-46 years old, many of whom identified as problematic users, and was effective for short-term gains. White and colleagues (2010) found that there is a wide range of online interventions aimed at those at greatest risk for alcohol abuse and misuse, those aged 18-35 years, with a number of crucial benefits to be found, including round-the-clock access to interventions, anonymity, and the opportunity to reflect on one’s use and goals in a guided manner.

Overall, this review of literature found that online prevention initiatives and interventions have a valuable place in the public health ecology of prevention, intervention, and treatment efforts.

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