



Technology-based support via telephone or web: A systematic review of the effects on smoking, alcohol use and gambling



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HIGHLIGHTS

- Technology-based support for dependency problems is a promising intervention.
- Telephone helplines can have an effect on tobacco smoking.
- There is no evidence of the effects of helplines for alcohol use or gambling.
- Internet-based support for alcohol use among college students seems effective.
- Internet-based support for smoking, alcohol and gambling needs further examination.

ARTICLE INFO

Available online 20 June 2014

Keywords:
Telephone
Internet
Alcohol
Tobacco
Gambling

ABSTRACT

A systematic review of the literature on telephone or internet-based support for smoking, alcohol use or gambling was performed. Studies were included if they met the following criteria: The design being a randomized control trial (RCT), focused on effects of telephone or web based interventions, focused on pure telephone or internet-based self-help, provided information on alcohol or tobacco consumption, or gambling behavior, as an outcome, had a follow-up period of at least 3 months, and included adults. Seventy-four relevant studies were found; 36 addressed the effect of internet interventions on alcohol consumption, 21 on smoking and 1 on gambling, 12 the effect of helplines on smoking, 2 on alcohol consumption, and 2 on gambling. Telephone helplines can have an effect on tobacco smoking, but there is no evidence of the effects for alcohol use or gambling. There are some positive findings regarding internet-based support for heavy alcohol use among U.S. college students. However, evidence on the effects of internet-based support for smoking, alcohol use or gambling are to a large extent inconsistent.

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Contents

1.	Introduction	1847
2.	Methods	1847
2.1.	Search strategy	1847
2.2.	Study selection	1847
2.3.	Data extraction	1848
3.	Results	1848
3.1.	Literature search	1848
3.2.	Study characteristics	1848
3.3.	Tobacco	1856
3.3.1.	Internet	1856
3.3.2.	Telephone	1856
3.4.	Alcohol	1856
3.4.1.	Internet	1856
3.4.2.	Telephone	1856

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3.5. Gambling	1856
3.5.1. Internet	1856
3.5.2. Telephone	1856
4. Discussion	1856
5. Conclusions	1866
Role of funding sources	1867
Contributors	1867
Conflict of interest	1867
References	1867

1. Introduction

Distance-based counseling, support and treatment for health related problems are based in part on the ideas of the individual's resources and capacity to define their own problems and to develop action strategies to solve them, often called self-help. Self-help has been defined as follows: 1. The help-seeking individual initiates self-care contacts and maintain current treatment strategies and 2. Handling strategies do not necessarily involve lasting relationships with health care providers, and/or professionals (Neighbors, Hove, Nicholas, & Nasrallah, 2011). Included methods and tools are self-help materials; medicine substitutes, self-help groups, mindfulness, and technology-based support, i.e. telephone helplines, and internet sites/interventions. The methods vary in cost, intensity, accessibility and effectiveness, depending on the current problem or condition (Neighbors, Hove, et al., 2011). In the following review, we focus on pure telephone or internet-based self-help, i.e. interventions which do not include a physical contact with a therapist, or other health care provider.

Research on technology-based support started in the 1990s. Since then, randomized controlled trials have been conducted in several countries, and studies have shown positive effects of internet treatment for headache, tinnitus, stress, depression, and social phobia (Andersson, Bergström, Carlbring, & Lindefors, 2005; Andersson et al., 2008). Since technology-based support can offer service over distance and have the potential to reach large at-risk-populations at any time, it has been seen as a very promising way to broaden the access to counseling and treatment (Bewick, Trusler, Mulhern, Barkham, & Hill, 2008; Bewick, Trustler, Barkham, & Hill, 2008). Accordingly, technology-based support has also been used to treat addiction problems, such as alcohol abuse, smoking addiction and pathological gambling. Helplines, sometimes called Quitlines, have been found to be effective in reducing smoking (Stead, Perera, & Lancaster, 2006), as has different internet interventions in reducing drinking, at least among college students in the U.S. (Carey, Scott-Sheldon, Elliot, Bolles, & Carey, 2009; Tait and Christensen, 2011). Internet-based interventions are typically well received by clients and may attract individuals who would otherwise not seek help, but prior research on their effectiveness is inconsistent (Bewick, Trusler, et al., 2008; Bewick, Trustler, et al., 2008; McKellar, Austin, & Moos, 2012). Web- or computer-based interventions for smoking cessation, or aiming at reducing alcohol consumption, can be effective, but due to methodological weaknesses the conclusions are still somewhat tentative (Khadjesari, Murray, Hewitt, Hartley, & Godfrey, 2010; Shahab & McEwen, 2009).

Prior reviews on technology-based support in relation to alcohol, smoking and gambling have identified many weaknesses in the included studies, thus making it hard to draw conclusions about possible effects (Newman, Szkodny, Llera, & Przeworski, 2011). For one thing, often studies in this area include small samples; have short follow-up periods, no "clean" control groups and large attrition rates (Gainsbury & Blaszczynski, 2011). Also, many previous studies have been based on support or treatment combining a technology-based support with face-to-face contact with a physician or other health care provider. Moreover, in earlier studies, very seldom the effect of possible

additional help and support has been statistically controlled for, which seriously threatens the validity of the studies in question (Vernon, 2010).

However, as this is a growing research area there is a need to explore whether recent studies have improved in quality. Online self-help programs for different health conditions are emerging in many countries as an approach to dealing with the dual challenges of improving services whilst reducing costs (Kalnina, 2010). Governmental funds are now being invested in technology-based support and there is a rapid development of new methods for the support for lifestyle change. It is thus important to update the evidence status on the effects of technology-based support for smoking, alcohol consumption, and gambling. The reviews reported above are based on published literature through 2009. Since telephone and, in particular, internet-based support is rapidly and constantly evolving, it is relevant to examine the current situation in terms of evidence of effectiveness. Some types of interventions for health care consumers targeting healthy behavior have not been covered by previous reviews (e.g. telephone support for alcohol use and gambling). A comprehensive review of these interventions is thus lacking and will provide a valuable overview of the existing evidence.

The aim of this study was to review research on the effects of telephone and/or internet-based support for tobacco smoking, alcohol use or gambling. To our knowledge, this is the first review that includes telephone as well as internet based support for both smoking, alcohol use and gambling.

2. Methods

2.1. Search strategy

We included articles published in English-speaking peer-reviewed journals. For logistic reasons, the search was performed in two steps. We first searched PubMed and PsychInfo (1 January 1966 to 30 May 2013), using the key words 'alcohol OR tobacco OR gambling AND (internet OR web OR helpline OR quitline)'. We then searched in Scopus, Web of Science, Cinahl and Cochrane Library, using different combinations of the key words, e.g. 'tobacco and quitline', 'alcohol and internet', 'gambling and helpline' etc. Also, review articles identified in the searches were examined for potential inclusion of additional studies.

2.2. Study selection

Studies were included if they met the following criteria: (I) The design being a randomized control trial (RCT), or at least having a control-group, (II) focused on effects of telephone or web based interventions, (III) focused on pure telephone or internet-based self-help, i.e. did not include physical contact with a therapist, or other health care provider, or a prior established relationship with a health care provider. We did, however, include two studies on helplines for alcohol use with an initial personal (research personnel) contact, (IV) provided information on alcohol or tobacco consumption, or gambling behavior, as an outcome, (V) had a follow-up period of at least 3 months, and (VI) included a

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