Chapter 9
Web-Based Interventions for Substance Abuse

Michael P. Schaub

Introduction

In recent times, the international literature has described treatment models targeting the general population and, besides supplying informative measures at the level of primary and secondary prevention, also offering Web-based self-help tools for problematic substance users in line with tertiary prevention (Blankers et al. 2011; Postel et al. 2010; Riper et al. 2008). So far, there is a good and constant evidence for Web-based self-help interventions for problematic drinking, but only a few studies have investigated the scientific effectiveness of such interventions for problematic stimulant drug use (Schaub et al. 2012). Some Web-based self-help studies exist for the reduction of cannabis use in problematic users so far divergent results.

The interventions' backgrounds are, however, more or less the same. They are based on classical therapy approaches from cognitive-behavioural therapy for substance abuse (e.g. Carroll 2005), motivational interviewing (McKee et al. 2007), principles of self-control (Sobell and Sobell 1993; Velicer et al. 1990) and the well-established relapse prevention model, that is often integrated in the corresponding cognitive-behavioural therapy. There are also numerous Web-based brief intervention studies that are mainly focusing on personalized individual feedback based on established addiction measurement instruments such as the Alcohol Use Disorders Identification Test (Babor et al. 2001). So far, there is also enough

M.P. Schaub (✉)
Swiss Research Institute for Public Health and Addiction ISGF,
Zurich University, Postfach, 8031 Zürich, Switzerland
e-mail: michael.schaub@isgf.uzh.ch

evidence for the effectiveness of these studies. The pooled effect sizes are smaller than in the more comprehensive Web-based therapy intervention mentioned before.

On the other hand, there is a growing number of Internet counselling services. Assuming many of them based on classical e-mail exchange, some on anonymous chat sessions and a few clinical case examples based on more intensive Internet exchange forms such as video sessions (e.g. with Skype or Google Hangouts). The overwhelming majority of these services and of these Internet communication modalities have not been scientifically tested for effectiveness in the field of substance abuse. In contrast, there are numerous studies on other mental health problems with the so-called guided Internet therapy interventions. There is increasing evidence that guided (e.g. by chat based or e-mail based) cognitive-behavioural therapy is boosting the effects previously found for Web-based self-help-only intervention for subclinical depression and anxiety disorders (Andersson and Cuijpers 2009; Spek et al. 2007). Moreover, there are investigations demonstrating that a sufficient therapeutic alliance can be reached by guided individual predominantly e-mail-based cognitive-behavioural treatment of depression, generalized anxiety and social anxiety disorders and PTSD (e.g. Andersson et al. 2012; Knaevelsrud and Maercker 2007; Preschl et al. 2011).

The present chapter aims at summarizing the current scientific evidence on the effectiveness of unguided and guided Web-based therapy interventions for substance use/abuse. Moreover, it aims at providing a theoretical background for these interventions, summarizing the therapeutic concepts applied, developing a suitable framework to arrange current scientific evidence and providing future research perspectives.

Theoretical Background

The perhaps strongest advantage of Internet addiction therapy is that it can be fully anonymous, place- and time-independent (e.g. Haug et al. 2011). Historically, Internet counselling and therapy emerged as an emergency solution in developed countries with partially very long distances to travel to reach, e.g. a family doctor or even further for an addiction specialist. These early developments started amongst others in Australia, Canada and the USA in the early 1990s. Some of them are known to the author more as non-professional self-help group or peer-to-peer exchange services in order to reach also isolated persons in need. In the last 10–15 years, these emergency solutions became more and more professional, more widespread and developed also into a special solution for persons with specific needs that are also very prominent in individual with substance abuse problems. These are help-seeking persons that explicitly do not wish to see a professional person or visit a service as of fear of stigmatization or a distinct need for anonymity (Kersting et al. 2009; Leuschner and Tossmann 2009). A third reason is that they do want to keep the personal distance to the counselling person or the therapist (Leuschner and Tossmann 2009). Addiction therapy and addiction counselling on
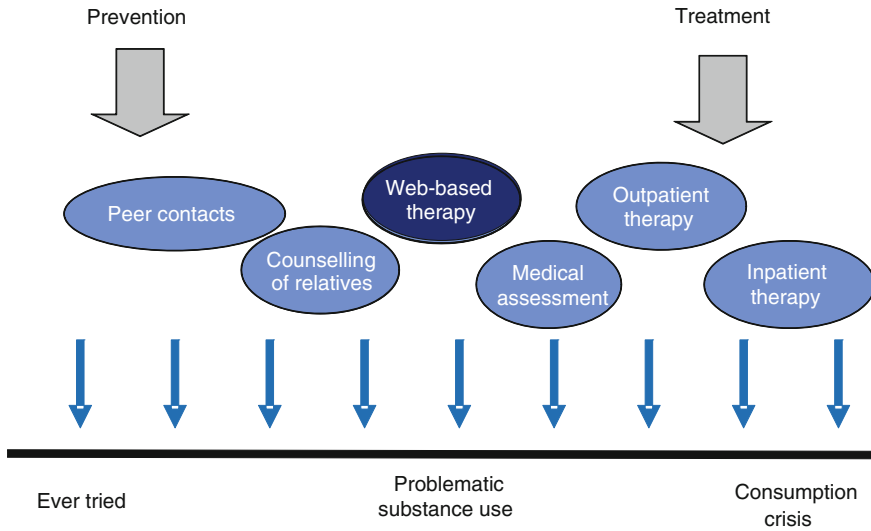
Fig. 9.1 Different forms of counselling and therapy between the two poles that addiction treatment and prevention services can cover

the Internet can be arranged in the middle field between the two poles "ever tried once a substance" and "inpatient treatment" (see Fig. 9.1).

In general, addiction therapy or addiction counselling is independent in their form of Internet communication. Doering (2003) stated in his media-economic framework model for the social psychology of the Internet that the choice of a communication medium is a conscious decision. This means for example that a person with a substance use problem will choose rather a user forum, a self-help intervention or a guided chat session depending on his/her need. Therefore, it is also obvious that a person will use different communication mediums depending on his/ her therapy process phase. A first contact could for instance be rather in a guided user forum while guided chat contacts are more considered in later therapy phases. Initial e-mail contacts can thus quite often end also in later face-to-face therapies. More frequently occur on the contrary single questions to distinct and limited questions to specific addiction-related problems..

The proximity and distance in a face-to-face therapy can be theorized as located on a continuum as it might be the case for single Internet communication medium. One issue that merits a specific note is the fact that there is in contrast a clear discrepancy between the proximity and distance for time-simultaneous and time-divergent communication mediums (see Fig. 9.2). While there is a gap of several hours and days between a question of a help-seeking person and the answer of his/her therapist in an e-mail-based addiction therapy, there is just a short break or even almost no break in a chat-based or a video-chat-based Internet therapy (e.g. with Skype and Google Hangouts). Self-help therapy approaches build the largest personal distance between the initial developer of the therapy interventions and the
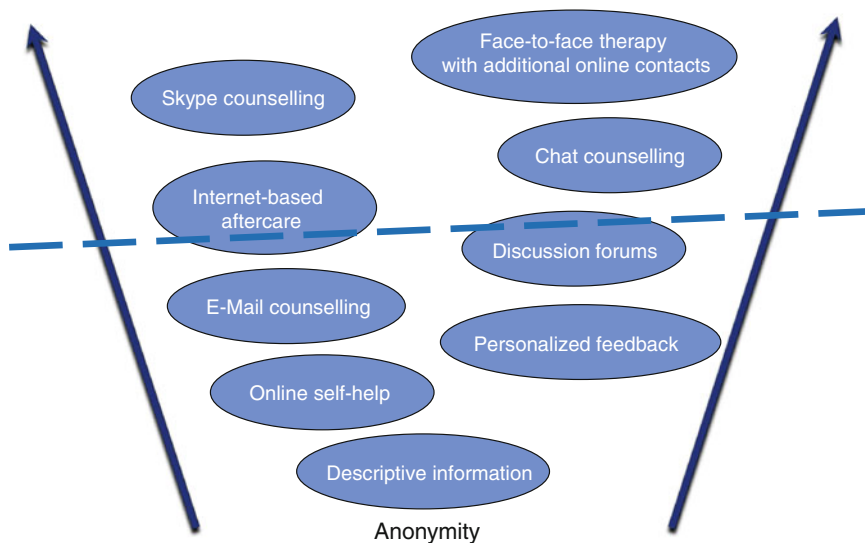
Fig. 9.2 Technical options for Web-based addiction counselling and therapy

help-seeking person. Completely anonymous is finally descriptive non-interactive information presented for example on an addiction information website.

Last but not least, it has to be mentioned that amongst the several advantages a Web-based guided or unguided addiction therapy intervention can have, there is certainly one disadvantage. The access to a computer with Internet connection is a requirement and—although to a lesser extent—sufficient computer and Internet literacy (Neale and Stevenson 2014; Redpath et al. 2006). Moreover, in the written communication modalities, the non-verbal communication (facial expression, gesture) is very difficult to be realized, and thus, the phenomenon of a substance use problem can hardly be captured in its whole complexity (e.g. Kersting et al. 2009). Preliminary findings however demonstrated that the quality of the therapeutic relationship can be—in the comprehension of Carl R. Rogers (empathy, congruence and appreciation)—at least in the longer term as good than in a face-to-face therapy (David et al. 2005). Thus, it can be assumed that it is rather a matter of intensity (number and frequency of contacts) until a good addiction therapist can reach sufficient therapeutic alliance for an as successful therapy as in a face-to-face condition. On the other hand, intimate topics such as unprotected sexual contacts or other behaviours that might result in unwanted sexual transmitted disease infections are often easier and earlier broached as an issue in an online compared to a face-to-face therapy.

Current Evidence for Web-Based Interventions Aimed at the Reduction or Cessation of Alcohol Use

So far, the best-investigated substance use field in terms of Web-based therapy interventions is the alcohol use field. Meta-analyses demonstrated effectiveness for Web-based personalized feedback interventions for the reduction of alcohol use post-intervention (Riper et al. 2009) with low-to-moderate effect sizes [$d = 0.22$ (95 % CI = 0.16, 0.29)] and for the reduction of grams of ethanol consumed in the longer term (Riper et al. 2011). A further meta-analyses that also included more thorough interventions yielded similar effect sizes for the reduction of alcohol use ($d = 0.22$ (95 % CI = 0.14, 0.29) and in comparison for the cessation of tobacco use ($d = 0.14$ (95 % CI = 0.06, 0.23); Rooke et al. 2010). One of the earlier studies found a higher effect for a comprehensive guided chat therapy in addition to self-help in comparison with self-help alone for the reduction of alcohol use 6 months post-intervention start (Blankers et al. 2011). Interestingly, this effect even increased in the long-term 12 months after intervention start. The question whether more comprehensive guided addiction counselling for the reduction of alcohol use in problematic alcohol users is more effective than (brief) self-help interventions is still unclear. A very recent meta-analysis did not find evidence to support such an obvious assumption (Riper et al. 2014). However, as the authors of this recent meta-analysis point out correctly, the number of guided studies for the reduction of alcohol consumption is currently low and most of these included subjects sought help for the first time. Studies with more severe cases with more pronounced alcohol consumption are rare. Not surprisingly, studies that aimed at the reduction of substance use in general yielded higher effect sizes that those aiming at abstinence (Rooke et al. 2010).

In the recent years, there is also a newer trend developing that combines Web-based self-help interventions or brief face-to-face interventions for the reduction of alcohol use with mobile phone technologies such as SMS. This has been shown to be especially promising in keeping youth and young adults in interventions aiming at the reduction of risky alcohol consumption (Haug et al. 2013) or as a kind of additional aftercare support in young adults after emergency department visits (Suffoletto et al. 2014) or in adults after outpatient treatment (Haug et al. 2015). On the other hand, it is somewhat surprising that there are no studies conducted so far, that combined face-to-face alcohol treatment with Web-based interventions and compared them with Web-based interventions alone. Finally, no study investigated the effectiveness of video-chat-based interventions.

Current Evidence for Web-Based Interventions Aimed at the Reduction of Stimulant Use

While there are over two dozens of Web-based studies that aimed at the reduction of alcohol use, there are only four studies so far, that focus on the reduction of stimulants. One is ongoing (Champion et al. 2013), two are published (Schaub et al. 2011, 2012; Tait et al. 2012, 2014), and a fourth just started.

The results of the first snow control study demonstrated the feasibility and initial effectiveness of an anonymous, fully automated, Web-based self-help intervention. Participants in this intervention group received interactive cognitive-behavioural modules and a consumption diary to reduce cocaine use, whereas participants in the control group received online psycho-educative information modules. The Web-based intervention attracted older and more educated participants than existing outpatient treatment programmes for which cocaine is the primary substance of abuse. Participants in the intervention group showed greater treatment retention compared with the control group. However, the response rates at the follow-up assessments were very low and restricted the explanatory power of the analyses. At the follow-up assessments, the severity of cocaine dependence did not differ between the intervention and control groups. Furthermore, there were no differences in cocaine craving, depression, or alcohol and other substance use. Using the consumption diaries, the average number of cocaine-free days per week did not change significantly, whereas the weekly quantity of cocaine used decreased equally in both groups. The snow control intervention is currently under revision, and a new three-arm randomized controlled trial will be conducted in order to test the effectiveness of this revised version with additional chat-counselling versus self-help alone versus a classical waiting list.

Another study called breaking the ice is evaluated in a randomized controlled trial the effect of an Internet intervention for amphetamine-type stimulant problems in 160 adult Australians compared with a wait list control group (Tait et al. 2012, 2014). Breaking the ice consists of three modules requiring an estimated total completion time of 90 min. The content of the modules was adapted from face-to-face clinical techniques based on cognitive-behavioural therapy and motivation enhancement. The result of the study was generally mixed. At 3 months, 43 % of intervention and 57 % of control participants provided follow-up data. In the intervention group, 63 % completed at least one module. The only significant group by time interaction was for days out of role. The pre-/post-change effect sizes showed small changes (range $d = 0.14$–0.40) favoring the intervention group for poly-drug use, distress, actual help seeking and days out of role. In contrast, the control group was favored by reductions in ATS use, improvements in quality of life and increases in help-seeking intentions (range $d = 0.09$–0.16).

Another ongoing study in Australia investigates within an already positively evaluated Internet school prevention programme for the prevention of alcohol and cannabis use the effectiveness of a programme to prevent from ecstasy use of 10- to 12-year-old students in a cluster randomized controlled trial (Champion et al. 2013).

No studies currently combine face-to-face stimulant treatment with Web-based interventions or investigate the effectiveness of video-chat-based interventions for stimulant users.

Current Evidence for Web-Based Interventions Aimed at the Reduction of Cannabis and Other Drug Use

Currently, there are only two specific Web-based programmes published that aimed at the reduction of cannabis use that have been investigated in randomized controlled trials, and these programmes employ different intervention approaches (Rooke et al. 2013; Tossmann et al. 2011). The German "Quit the Shit" programme (Tossmann et al. 2011) is based on principles of self-regulation and self-control and is a solution-focused approach. This programme is structured into weekly personalized feedback sessions based on participants' consumption diary entries, intake and termination chats, and the total allowed programme time is 50 days. Attrition in the German study of Tossmann et al. (2011) was high and higher in the intervention (11.6 %) condition than in the waiting list control condition (24.7 %). Nevertheless, these authors found significant effects on cannabis use reduction in their per-protocol and last-observation-carried-forward analyses. The Australian programme "Reduce Your Use: How to Break the Cannabis Habit" (Rooke et al. 2013) is a fully automated self-help intervention consisting of 6 modules for the amelioration of cannabis use disorders based on cognitive-behavioural therapy (CBT) approaches (Goldstein et al. 1989; Marlatt 1985), motivational interviewing (Miller and Rollnick 1991) and behavioural self-management (Copeland et al. 2001). This programme was tested for effectiveness in a randomized controlled trial and compared to a psycho-educative control condition also consisting of 6 modules. Study retention was higher in the intervention and the control condition after 6 weeks (66 vs. 64 %) and at a 3-month follow-up (54 vs. 52 %) than in the aforementioned German study (Tossmann et al. 2011). The frequency of cannabis use and the quantity of cannabis consumed were both more reduced in the intervention group than in the control group at 6 weeks and at the 3-month follow-up.

An ongoing Swiss study investigates the effectiveness of the combination of a fully automated self-help intervention for the reduction of cannabis use with additional individual chat sessions (Schaub et al. 2013). No studies conducted so far if face-to-face cannabis use disorder treatment combined with Web-based interventions is more effective than Web-based interventions alone. No study investigated the effectiveness of video-chat-based interventions for the reduction of cannabis use.

There is also a positively evaluated school prevention programme from Australia that involved 10-year-old students. The so-called Climate School Alcohol and Cannabis course successfully increased cannabis and alcohol-related knowledge, and decreased the average consumption of alcohol use and the frequency of

cannabis use and binge drinking amongst young people (Newton et al. 2009, 2010). There is a first meta-analysis published that found a positive pooled effect size of $g = 0.16$ (95 % CI = 0.09, 0.22) for a total of 10 computer- and/or Internet-based interventions that aimed at the reduction of cannabis use frequency (Tait et al. 2013). However, this very preliminary meta-analysis mixed these two types of interventions and consequently yielded no effects on subgroup analyses.

Three new studies from the USA investigated Internet-based intervention in opioid substitution therapy. The first one investigated the effectiveness of a Web-based behavioural intervention that partially substituted for standard counselling in a community-based methadone substitution programme (Marsch et al. 2014). Replacing a portion of standard treatment with this intervention resulted in greater rates of objectively measured opioid abstinence. In a second study, participants of a buprenorphine substitution treatment programme received an Internet-based community reinforcement approach intervention plus contingency management (money for negative urine screenings) or contingency management alone (Christensen et al. 2014). Compared to those receiving contingency management alone, recipients of the combined intervention exhibited more of abstinence and had a reduced hazard of dropping out of treatment. The third study is the only one in the entire Internet-based substance use treatment field that tested the feasibility and acceptability of a video-chat-based intervention (King et al. 2014). Study participants in the video-chat condition showed lower study retention than those receiving classical face-to-face counselling. However, they had similar rates of counselling attendance and drug-positive urinalysis results, and reported similar and strong ratings of treatment satisfaction and therapeutic alliance.

Current Evidence for Cost-Effectiveness for Web-Based Interventions Aimed at the Reduction of Substance Use

The question of cost-effectiveness of Web-based interventions aimed at the reduction of substance use and especially its impact on a population level has been rarely addressed in scientific studies. Many practitioners take it already as a fact that the introduction and implementation of Web-based interventions can save money in the addiction care system. However, it is not that easy as those few available studies currently published show. There is only one study in the alcohol field from the Netherlands that compared the cost-effectiveness of Internet therapy with up to 10 chat sessions versus Internet self-help (Blankers et al. 2012). The effort of Internet therapy for the reduction of alcohol use in problematic alcohol user yielded a median incremental cost-effectiveness ratio of €3683 per additional treatment responder and €14,710 per quality-adjusted life-year (QALY) gained. At a willingness to pay €20,000 for one additional quality-adjusted life-year, Internet therapy for the reduction of alcohol use had a 60 % likelihood of being more cost-effective than Internet self-help.

Another study from the Netherlands—a country where health insurance companies nota bene partially pay Internet-based therapy—simulated costs and gains of quality-adjusted life-years on population level in case that half of the alcohol treatment services ranging from counselling for problematic drinking until inpatient alcohol treatment will be replaced by Internet-based addiction services. This study estimated that in the current health care system for alcohol addiction problems, every invested Euro results in a health gain of Euro 1.08. Under the new system, where 50 % would be replaced, every invested Euro will result in a health gain of Euro 1.64. The current system costs 233 Million Euro. However, the estimated costs to reach the new system are estimated 86 Million Euro. Therefore, in the Netherlands, much more persons with alcohol problems could be helped and this help would be much more successful. However, this would need an initial strong investment.

Another important message merits attention concerning cost-effectiveness. Classical face-to-face addiction treatments must at least partially be replaced by Internet-based addiction services to gain cost-effectiveness. To add simply new Internet-based service to existing face-to-face services per se ends up with higher costs, increases working loads of present therapists, and potentially could displease some of them.

Discussion

The present chapter provides a good update brief overview of the current evidence on Web-based interventions for problematic substance use and substance abuse. This field is currently very active, and it can be expected that there will be numerous studies in the coming years. For the reduction of alcohol use, there is already considerable evidence for effectiveness from meta-analyses for Web-based interventions that aim at reducing problematic alcohol use. Compared to Web-based interventions aiming at the reduction of other mental health problems than substance abuse problems, those aiming at the reduction or cessation of substance use have to deal with comparatively strong attrition problems. This is especially the case for interventions aiming at the reduction of stimulant use, less for interventions aiming at the reduction of cannabis or opioid use and the least for those for the reduction of alcohol use. New ways have to be found in the future in order to reduce these problems. Some of these problems could be solved in trying to tailor these Web-based interventions better for substance use specific subgroups and potentially also for their subpopulations, e.g. Web-based intervention for the reduction of cannabis use in male users aged 16–25, etc. Another approach might be the integration of modules aiming at the reduction of frequently observed comorbidity factors into the Web-based substance use interventions. There are initial findings that, e.g., those individuals with higher depression symptoms do stay longer in Web-based interventions for the reduction of cocaine use (Schaub et al. 2012). So why do we not offer also core modules from Web-based interventions aiming at the

treatment of depression symptoms for those who might benefit from these? However, the evidence for Web-based interventions other than those aiming at the reduction of alcohol use has to be increased, and thus, more studies are needed in general.

Interestingly, studies on the effectiveness of the combination of face-to-face therapy with Web-based intervention have been rarely addressed. To my personal experience, there are sometimes concerns from addiction therapist that Web-based interventions aim at the reduction of treatment costs and of their work in the end. However, as long as between 10 and 20 % of those with addiction-related problems do not receive any treatment, these concerns appear to be unethical indeed. We must increase addiction treatment access and treatment provision by using Web-based interventions according to the principal of concurrent cover (i.e. non-invasive, low-cost interventions in which therapeutic intensity can be enhanced according to need). However, the introduction of Web-based services first needs additional investments before treatment access can be increased. This investment might be a rewarding investment for almost all countries worldwide as Internet access is even increasing in some Third-World countries now. However, Web-based interventions should, in order to keep investments and workloads low, not be in addition to already implemented face-to-face treatments; they should complete or partially replace them.

Whether Web-based interventions do reach the same effectiveness as face-to-face addiction treatments in 1 day—as it is currently the case for Web-based intervention that reduces depression symptoms when compared to depression treatment as usual—is a difficult question. Currently, we are not at this stage. However, the interventions are improving quickly, and we are approximating more and more this stage.

References

Andersson, G., & Cuijpers, P. (2009). Internet-based and other computerized psychological treatments for adult depression: A meta-analysis. *Cognitive Behaviour Therapy, 38*(4), 196–205. doi:10.1080/16506070903318960

Andersson, G., Paxling, B., Wiwe, M., Vernmark, K., Felix, C. B., Lundborg, L., et al. (2012). Therapeutic alliance in guided internet-delivered cognitive behavioural treatment of depression, generalized anxiety disorder and social anxiety disorder. *Behaviour Research and Therapy, 50*(9), 544–550. doi:10.1016/j.brat.2012.05.003

Babor, T. F., Higgins-Biddle, J. C., Saunders, J. B., & Monteiro, M. G. (2001). *AUDIT: The Alcohol Use Disorders Identification Test: Guidelines for use in primary care* (2nd Ed.). World Health Organization: Department of Mental Health and Substance Dependence.

Blankers, M., Koeter, M. W., & Schippers, G. M. (2011). Internet therapy versus internet self-help versus no treatment for problematic alcohol use: A randomized controlled trial. *Journal of Consulting and Clinical Psychology, 79*(3), 330–341. doi:10.1037/a0023498

Blankers, M., Nabitz, U., Smit, F., Koeter, M. W., & Schippers, G. M. (2012). Economic evaluation of internet-based interventions for harmful alcohol use alongside a pragmatic randomized controlled trial. *Journal of Medical Internet Research, 14*(5), 71–83. doi:10.2196/jmir.2052

Carroll, K. M. (2005). Recent advances in the psychotherapy of addictive disorders. *Current Psychiatry Reports, 7*(5), 329–336.

Champion, K. E., Teesson, M., & Newton, N. C. (2013). A cluster randomised controlled trial of the Climate Schools: Ecstasy and emerging drugs module in Australian secondary schools: Study protocol. *BMC Public Health, 13*, 1168. doi:10.1186/1471-2458-13-1168

Christensen, D. R., Landes, R. D., Jackson, L., Marsch, L. A., Mancino, M. J., Chopra, M. P., et al. (2014). Adding an internet-delivered treatment to an efficacious treatment package for opioid dependence. *Journal of Consulting and Clinical Psychology, 82*, 1–9. doi:10.1037/a0037496

Copeland, J., Swift, W., Roffman, R., & Stephens, R. (2001). A randomized controlled trial of brief cognitive-behavioral interventions for cannabis use disorder. *Journal of Substance Abuse Treatment, 21*(2), 55–64. doi:10.1016/S0740-5472(01)00179-9

David, N., Peter, D., Prudlo, U. (2005). *Zur therapeutischen Beziehung im virtuellen Raum (Internet)—Eine explorative Online-Studie*. Verfügbar unter: http://www.fob.uni-tuebingen.de/fachpublikum/forschung/feldstudie.php.

Doering, N. (2003). *Sozialpsychologie des Internets. Die Bedeutung des Internets für Kommunikationsprozesse, Identitäten, soziale Beziehungen und Gruppen*. Göttingen: Hogrefe. doi:10.1024//0044-3514.31.3.166

Goldstein, M. G., Niaura, R., Follick, M. J., & Abrams, D. B. (1989). Effects of behavioral skills training and schedule of nicotine gum administration on smoking cessation. *The American Journal of Psychiatry, 146*(1), 56–60.

Haug, S., Dymalski, A., & Schaub, M. P. (2011). *Webbasierte Tabakprävention: Evaluation vorhandener Angebote, allgemeiner Wirksamkeitsnachweis und Nutzeneinschätzung von Zielgruppen in der Schweiz. Synthesebericht*. Zürich: ISGF.

Haug, S., Lucht, M. J., John, U., Meyer, C., & Schaub, M. P. (2015). A pilot study on the feasibility and effectiveness of text message-based aftercare among alcohol outpatients. *Alcohol and Alcoholism, 50*(2), 188–194.

Haug, S., Schaub, M. P., Venzin, V., Meyer, C., John, U., & Gmel, G. (2013). A pre-post study on the appropriateness and effectiveness of a web- and text messaging-based intervention to reduce problem drinking in emerging adults. *Journal of Medical Internet Research, 15*(9), 126–137. doi:10.2196/jmir.2755

Kersting, A., Schlicht, S., & Kroker, K. (2009). Internet therapy. Opportunities and boundaries. *Nervenarzt, 80*(7), 797–804. doi:10.1007/s00115-009-2721-5

King, V. L., Brooner, R. K., Peirce, J. M., Kolodner, K., & Kidorf, M. S. (2014). A randomized trial of web-based videoconferencing for substance abuse counseling. *Journal of Substance Abuse Treatment, 46*(1), 36–42. doi:10.1016/j.jsat.2013.08.009

Knaevelsrud, C., & Maercker, A. (2007). Internet-based treatment for PTSD reduces distress and facilitates the development of a strong therapeutic alliance: A randomized controlled clinical trial. *BMC Psychiatry, 7*, 13. doi:10.1186/1471-244X-7-13

Leuschner, F., & Tossmann, P. (2009). Internet-based drug treatment interventions. Insights, Issue 10 edited by EMCDDA, 07/2009; *European Monitoring Centre for Drugs and Drug Addiction (EMCDDA)*, Lisbon. ISBN: 978-92-9168-348-2

Marlatt, G. A. (1985). *Relapse prevention: Maintenance strategies in treatment of addictive behaviors*. New York: Guildford Press.

Marsch, L. A., Guarino, H., Acosta, M., Aponte-Melendez, Y., Cleland, C., Grabinski, M., et al. (2014). Web-based behavioral treatment for substance use disorders as a partial replacement of standard methadone maintenance treatment. *Journal of Substance Abuse Treatment, 46*(1), 43–51. doi:10.1016/j.jsat.2013.08.012

McKee, S. A., Carroll, K. M., Sinha, R., Robinson, J. E., Nich, C., Cavallo, D., et al. (2007). Enhancing brief cognitive-behavioral therapy with motivational enhancement techniques in cocaine users. *Drug and Alcohol Dependence, 91*(1), 97–101.

Miller, W. R., & Rollnick, S. (1991). *Motivational interviewing: Preparing people for change*. New York: Guilford Press.

Neale, J., & Stevenson, C. (2014). Homeless drug users and information technology: A qualitative study with potential implications for recovery from drug dependence. *Substance Use and Misuse, 49*(11), 1456–1472. doi:10.3109/10826084.2014.912231

Newton, N. C., Andrews, G., Teesson, M., & Vogl, L. E. (2009). Delivering prevention for alcohol and cannabis using the internet: A cluster randomised controlled trial. *Preventive Medicine: An International Journal Devoted to Practice and Theory, 48*(6), 579–584. doi:10.1016/j.ypmed.2009.04.009

Newton, N. C., Teesson, M., Vogl, L. E., & Andrews, G. (2010). Internet-based prevention for alcohol and cannabis use: Final results of the Climate Schools course. *Addiction, 105*(4), 749–759. doi:10.1111/j.1360-0443.2009.02853.x

Postel, M. G., de Haan, H. A., ter Huurne, E. D., Becker, E. S., & de Jong, C. A. J. (2010). Effectiveness of a web-based intervention for problem drinkers and reasons for dropout: Randomized controlled trial. *Journal of Medical Internet Research, 12*(4), 11–22. doi:10.2196/jmir.1642

Preschl, B., Maercker, A., & Wagner, B. (2011). The working alliance in a randomized controlled trial comparing online with face-to-face cognitive-behavioral therapy for depression. *BMC Psychiatry, 11*, 189. doi:10.1186/1471-244X-11-189

Redpath, D. P., Reynolds, G. L., Jaffe, A., Fisher, D. G., Edwards, J. W., & Deaugustine, N. (2006). Internet access and use among homeless and indigent drug users in Long Beach, California. *CyberPsychology & Behavior, 9*(5), 548–551. doi:10.1089/cpb.2006.9.548

Riper, H., Blankers, M., Hadiwijaya, H., Cunningham, J., Clarke, S., Wiers, R., et al. (2014). Effectiveness of guided and unguided low-intensity internet interventions for adult alcohol misuse: A meta-analysis. *PLoS ONE, 9*(6), e99912. doi:10.1371/journal.pone.0099912

Riper, H., Kramer, J., Smit, F., Conijn, B., Schippers, G., & Cuijpers, P. (2008). Web-based self-help for problem drinkers: A pragmatic randomized trial. *Addiction, 103*(2), 218–227. doi:10.1111/j.1360-0443.2007.02063.x

Riper, H., Spek, V., Boon, B., Conijn, B., Kramer, J., Martin-Abello, K., et al. (2011). Effectiveness of E-self-help interventions for curbing adult problem drinking: A meta-analysis. *Journal of Medical Internet Research, 13*(2), 44–56. doi:10.2196/jmir.1691

Riper, H., van Straten, A., Keuken, M., Smit, F., Schippers, G., & Cuijpers, P. (2009). Curbing problem drinking with personalized-feedback interventions: A meta-analysis. *American Journal of Preventive Medicine, 36*(3), 247–255. doi:10.1016/j.amepre.2008.10.016

Rooke, S., Copeland, J., Norberg, M., Hine, D., & McCambridge, J. (2013). Effectiveness of a self-guided web-based cannabis treatment program: Randomized controlled trial. *Journal of Medical Internet Research, 15*(2), 48–61. doi:10.2196/jmir.2256

Rooke, S., Thorsteinsson, E., Karpin, A., Copeland, J., & Allsop, D. (2010). Computer-delivered interventions for alcohol and tobacco use: A meta-analysis. *Addiction, 105*(8), 1381–1390. doi:10.1111/j.1360-0443.2010.02975.x

Schaub, M. P., Haug, S., Wenger, A., Berg, O., Sullivan, R., Beck, T., et al. (2013). Can reduce—The effects of chat-counseling and web-based self-help, web-based self-help alone and a waiting list control program on cannabis use in problematic cannabis users: A randomized controlled trial. *BMC Psychiatry, 13*, 305. doi:10.1186/1471-244X-13-305

Schaub, M., Sullivan, R., Haug, S., & Stark, L. (2012). Web-based cognitive behavioral self-help intervention to reduce cocaine consumption in problematic cocaine users: Randomized controlled trial. *Journal of Medical Internet Research, 14*(6), 47–60. doi:10.2196/jmir.2244

Schaub, M., Sullivan, R., & Stark, L. (2011). Snow control—An RCT protocol for a web-based self-help therapy to reduce cocaine consumption in problematic cocaine users. *BMC Psychiatry, 11*, 153. doi:10.1186/1471-244X-11-153

Sobell, M. B., & Sobell, L. C. (1993). Treatment for problem drinkers: A public health priority. In J. S. Baer, G. A. Marlatt, & R. J. McMahon (Eds.), *Addictive behaviors across the life span: Prevention, treatment, and policy issues* (pp. 138–157). Thousand Oaks, CA: Sage.

Spek, V., Cuijpers, P., Nyklíček, I., Riper, H., Keyzer, J., & Pop, V. (2007). Internet-based cognitive behaviour therapy for symptoms of depression and anxiety: A meta-analysis. *Psychological Medicine, 37*(3), 319–328. doi:10.1017/S0033291706008944

Suffoletto, B., Kristan, J., Callaway, C., Kim, K. H., Chung, T., Monti, P. M., et al. (2014). A text message alcohol intervention for young adult emergency department patients: A randomized clinical trial. *Annals of Emergency Medicine, 64*(6), 664.e4–674.e4. doi:10.1016/j.annemergmed.2014.06.010

Tait, R. J., McKetin, R., Kay-Lambkin, F., Bennett, K., Tam, A., Bennett, A., et al. (2012). Breakingtheice: A protocol for a randomised controlled trial of an internet-based intervention addressing amphetamine-type stimulant use. *BMC Psychiatry, 12*, 67. doi:10.1186/1471-244X-12-67

Tait, R. J., McKetin, R., Kay-Lambkin, F., Carron-Arthur, B., Bennett, A., Bennett, K., et al. (2014). A web-based intervention for users of amphetamine-type stimulants: 3-Month outcomes of a randomized controlled trial. *JMIR Mental Health, 1*, e1. doi:10.2196/mental.3278

Tait, R. J., Spijkerman, R., & Riper, H. (2013). Internet and computer based interventions for cannabis use: A meta-analysis. *Drug and Alcohol Dependence, 133*(2), 295–304. doi:10.1016/j.drugalcdep.2013.05.012

Tossmann, H. P., Jonas, B., Tensil, M. D., Lang, P., & Strüber, E. (2011). A controlled trial of an internet-based intervention program for cannabis users. *Cyberpsychology, Behavior, and Social Networking, 14*(11), 673–679. doi:10.1089/cyber.2010.0506

Velicer, W. F., DiClemente, C. C., Rossi, J. S., & Prochaska, J. O. (1990). Relapse situations and self-efficacy: An integrative model. *Addictive Behaviors, 15*(3), 271–283. doi:10.1016/0306-4603(90)90070-E