

Joanna Matuszczak-Świgoń^{1,2}, Weronika Bednarowska³

COGNITIVE BEHAVIOURAL THERAPY OF INTERNET ADDICTION

¹ Medical Centre in Pleszew, Poland

² Adam Mickiewicz University in Poznan, Institute of Psychology,

³ Mental Health Outpatient Clinic in Poznan, Poland

Internet addiction

cognitive behavioural therapy

Summary

Internet addiction is expected to become one of the plagues of the 21st century and network-holism will soon be recognised as a disease. The Internet is taking more and more time for addicted people, the computer is becoming the centre of their world, while relationships, school, work, other entertainment, and pleasures are no longer important. Internet addiction is often associated with difficulties in establishing interpersonal contacts, with social anxiety, disrupted self-esteem, and the use of ineffective strategies for coping with stress. The virtual world is attractive for users, it gives them: anonymity, escape from reality, the ability to defuse tensions, long-term and free access to entertainment, and the chance for social acceptance. The first research on Internet addiction appeared in 1996. Initially, it was focused on the definition of Internet addiction and patterns of behaviour that differentiate compulsive and functional use of the Internet. Currently, etiological factors leading to addiction and methods of its treatment are being studied. Treatment concepts and basics of behavioural addiction therapy programmes are based on cognitive behavioural therapy methods, motivational interview, and crisis intervention. This article presents the symptoms and consequences of Internet addiction and discusses the Cognitive-Behavioural Therapy for Internet Addiction (CBT-IA) developed by Kimberly Young. The efficacy of this therapy has been proven through research.

Introduction

The development of the Internet has led to considerable changes in contemporary life and has become its integral part for it has made it easier and brought many benefits. Nevertheless, excessive use of the Internet bears the risk of addiction and results in disorders in social, educational, financial, psychological, and professional fields. Therapies which are focused on remaining abstinence are not applicable in the treatment of people addicted to the Internet since computers have become an inseparable part of everyday life and are indispensable

at work or school. This article is going to present Cognitive-Behavioural Therapy for Internet Addiction, CBT-IA by Kimberly Young [1]. It combines principles of cognitive-behavioural and harm-reduction therapies. Young recognised that moderate and controlled access to the Internet should be the aim of the therapy. At the same time, it is frequently necessary to apply total abstinence from certain specific web applications triggering addiction, such as erotic websites, interactive online games, or chatrooms. Therefore, it is crucial to identify particular web applications evoking addiction while the therapy [2].

Definition of Internet Addiction

Behavioural addictions induce compulsion to do certain activities which have a destructive influence on the functioning of the addicts and their environment. Among behavioural addictions, one can distinguish: pathological gambling, addiction to the computer and the Internet, addiction to sex, or shopaholism [3]. Internet addiction is regarded as an increasing threat to health in many parts of the world. It is estimated that in Europe it is spread among 1-2.1% of young adults, in the countries of south-eastern Asia – 6.7% and in the United States – 0.6% [3]. According to the Poprawa research, 23% of young adults fulfil the criteria for the risk of Internet addiction and about 1% are already addicted to the web [4]. Clinical trials have demonstrated that Internet addiction is accompanied by a loss of interests, disturbances in psychosocial functioning, social withdrawal, and increased anxiety in social situations [1]. Specific treatment programmes are, therefore, needed.

In spite of the fact that the first reviews of the clinical aspects appeared over 20 years ago [5], the classification of Internet addiction is still a controversial subject; therefore, several terms are used interchangeably in scientific literature, namely, compulsive Internet use, problematic Internet use [6], and pathological Internet use [7].

Two types of Internet addictions can be distinguished: general and specific, which may consider cybersex, online relations, Internet compulsions, such as gambling or shopping, information searching, and playing online games [5]. General Internet addiction is defined as multidimensional abuse of the Internet, which is often connected with wasting time and untargeted Internet use. Dysfunctional thoughts of oneself and the world play a key role in both types of Internet addiction [6, 8].

Kimberly Young distinguished five forms of behaviour which are symptoms of Internet addiction, namely: (1) cybersexual addiction – compulsive use of Internet pornography; (2) cyber-relationship addiction – addiction to online social contacts; virtual friends become more

important than the real family and friends;(3) net compulsion – compulsion to use the web constantly; (4) information overload – compulsion to experience scrambles of information; (5) computer addiction including game playing – one does not need to be logged in to the net, however, they feel the urge to spend time at the computer.

Symptoms of Internet Addiction

The American Psychiatric Association decided to include Internet Gaming Disorder in the fifth edition of the Diagnostic and Statistical Manual of Mental Disorders, DSM-5 [9], section ‘conditions that require additional research’. The group of specialists working on the DSM-5 review determined not to include Internet addiction due to the excessive range of activities which are part of the diagnosis as well as inconsistency in the definition of the concept.

Internet addicts report symptoms similar to those of addiction to a psychoactive substance, as well as other behavioural disorders (for instance, gambling disorders.) Symptoms of Internet addiction include:(1) the urge or compulsion to use the Internet; (2) subjective conviction that possibilities to control behaviours connected with the Internet are reduced (i.e. weakening of the control over refraining from using the Internet and the amount of time spent in the network);(3) the occurrence of anxiety, irritation, or lower levels of wellbeing when trying to stop or limit using the Internet and clearing of the symptoms upon the return to the network; (4) spending more and more time online in order to obtain the same level of satisfaction and well-being which previously has been attained in significantly less time (tolerance of online time);(5) progressive neglect of alternative sources of pleasure or interests in favour of the Internet; (6) using the Internet despite harmful physical, psychological, and social effects which are related to spending time online [11].

Consequences of Internet Addiction

Addiction to the Internet impairs the functioning of an individual in the psychological, physical, and social areas. The consequences of Internet addiction are presented in Tables 1, 2 and 3.

Table 1. **Psychological consequences of Internet addiction**

Psychological consequences
emotional disorders
hyperactivity
problems with concentration
mood lowering
restricting interests
giving up other pleasures and pastimes
impulse control disorder
disorders at the cognitive level (confusion in the vastness of information, difficulties in selecting and processing information)
sleep disorders

Own elaboration on the basis of P. Chocholska, M. Osipczuk [11];

Table 2. **Physiological consequences of Internet addiction**

Physiological consequences
headaches, neck pain
faulty posture
carpal tunnel syndrome – arises from overloading of muscles of wrist and fingers flexors and, as a result, the addict feels pain, finger numbness, and suffers from sensory deficits
atrophy of back and iliac furrow muscles
diminished eyesight and deterioration of sight due to increased work of ocular muscles and computer screen radiation
skin irritation
excessive tiredness and fatigue
weakening of the immune system
digestive problems
chronic pain of the neck, back, shoulders, forearms, joints, and hands as a result of constant overload

Own elaboration on the basis of P. Chocholska, M. Osipczuk [11];

Table 3. **Social consequences of Internet addiction**

Social consequences
isolation, loneliness, alienation
conflicts with the environment
neglecting basic duties
problems at the place of work, school
aggressive behaviours
decline in communication skills (verbal and non-verbal)

Own elaboration on the basis of P. Chocholska, M. Osipczuk [11];

Assumptions of Cognitive Behavioural Therapy

In cognitive-behavioural psychotherapy, it is assumed that the emotions and behaviour of an individual depend on their thought processes. The aim of the therapy is to teach addicts to monitor their thoughts, identify those evoking emotions and actions connected with addiction, recognise incentives stimulating dysfunctional thoughts, provide them with tools allowing them to improve control over their behaviour and teach them new ways of dealing with problems and prevention relapse methods [3]. In Internet addiction, it is recommended that the early phase of therapy should be behavioural therapy focusing on specific behaviours and situations where pulse control is most difficult. As the therapy progresses, emphasis is placed on cognitive content and processes and their impact on behaviour [13].

Cognitive-behavioural therapy is based on the conceptualisation of the case which helps to answer the following questions: 1) Why has the patient started using the Internet excessively? 2) How has the use of the Internet become the patient's permanent behaviour pattern? 3) Why has the patient been unable to limit Internet use despite negative consequences? 4) How have their core beliefs developed? 5) How had the patient functioned before he or she got addicted to the Internet? 6) What situations (beliefs or occurrences) trigger the patient to use the Internet?

Distal factors (important events from childhood or core and conditional beliefs) indicate the origin of addiction, whereas proximal factors (nonspecific and specific copying strategies, automatic thoughts, emotions, behaviours, risk situations causing Internet use) explain how an entrenched behaviour pattern is triggered in the current situation [3]. The integration of those two sources of information occurs in the process of diagnosis and therapy.

Young proposes to distinguish two levels of Internet addiction therapy. The first one focuses on dealing with an imminent crisis, while the second – on long-term recovery. It is an individual therapy which consists of 12 sessions taking place once a week. Cognitive-behavioural therapy for Internet addiction is a comprehensive approach consisting of three stages, which will be discussed below.

Stage 1: Behaviour modification

Behaviour modification is applied to control compulsive Internet use. The initial aim of CBT-IA is to teach the patient both online and offline time management. It is important for the patient to answer the following questions: 1) On which days of the week do you usually log in? 2) What time do you usually start using the Internet? 3) How long does an Internet session last? 4) Where do you usually use the computer? The implementation of an efficient plan to modify behaviour requires the assessment of the current Internet use, in the first place. Therefore, the therapist asks the patient to fill in a register of Internet use, which allows to detect various

stimuli causing compulsive behaviours. Keeping a detailed register is the basis to assess the use of the Internet by a patient, and, what is more, allows to identify high-risk situations and helps to set the aims of the therapy. (Table 4. presents a sample of the register.) Less time in front of the computer and refraining from using the problematic applications may be objective indicators of recovery. It is crucial to prepare a clear and structured therapeutic programme due to the constant availability of the Internet [1].

The first step to regaining control over using the Internet is removing all evidence of compulsive behaviour by, for example, formatting the disc and reorganising the way the Internet is used. At this stage, patients should delete their bookmarks and files connected with addiction. After having diagnosed harmful conduct, Young proposes to introduce new habits which would be opposite to the current ones; for instance, instead of checking e-mails immediately after waking up, the patient is supposed to take a shower and eat breakfast. If the patient uses the Internet all afternoon after work, he or she is to wait and turn on the computer not until after the evening news. The aim of this exercise is to disrupt the present routine and break the habit of being constantly online. The point is that patients should develop new and more adaptive patterns of using the Internet.

Since Internet addiction is associated with neglecting relations and failing to fulfil professional and home duties, the training of online and offline time management is an important CBT-IA aim. The addicts fail to meet important deadlines at work, withdraw from the family and social life, or spend little time with their family and, as a result, cannot cope with their life. For that reason, the therapist agrees with the patient on clear time management aims, helps him or her to introduce regular breaks while using the Internet (*e.g.* every half an hour), set precise online time limits, and change his or her activities. In order to prevent discontinuation of the therapy and relapses, it is necessary to plan sessions carefully and set realistic aims. For example, it may be done by limiting time in front of the computer from the current 40 hours to 20 hours per week and next, the therapist and the patient should distribute the 20 hours in defined time intervals and write them down in their weekly schedule. It is crucial for the online sessions to be short but frequent. Introducing a definite schedule of using the Internet allows the patient to feel that it is they who are in control over themselves and not the computer. It may sometimes occur to be helpful to install filtering software, which would block selected websites and create so-called post-it or sticky notes, for example, five negative consequences of excessive Internet use and five benefits of reducing the time in front of the computer or resigning from certain Internet applications. Moreover, the patient with his or her

therapist ought to make a priority list of using the Internet in each session for him or her to know what they turn on the computer for.

An illustrative list may be as follows: 1. Check for new e-mails at gmail.com, 2. Send an attachment to a co-worker, using gmail.com, 3. Check the train schedule at rozklad-pkp.pl, 4. Order a new sweater at zalando.pl, 5. Order a gift for the nephew's birthday at allegro.pl.

It is important that the list includes specific tasks with the web addresses of sites at which they can be completed. Owing to priority lists it becomes easier for the patient to meet the set time limits and the risk of causal surfing the net diminishes. Moreover, they learn to control time and be responsible when it comes to using the Internet.

In the first stage of cognitive-behavioural therapy for Internet addiction, behavioural therapy is applied in order to analyse behaviours both connected and not-connected with using a computer. The aim of this stage is to gradually limit the amount of online time and restrain oneself from the problematic applications while maintaining control over using a computer for legitimate purposes at the same time. The strategies oriented on behaviours not related to computer use focus on helping patients introduce positive changes without the Internet in their lives [1]. Internet addicts replace activities which they used to like with surfing the net, hence, it is essential to support them in the process of recalling how they used to like spending time and returning to them. To achieve that, a patient may be asked to list all activities that he or she limited or quit because of compulsive Internet use and then rate their importance before addiction on a scale from 1 to 3 (1 - 'very important', 2 - 'important', 3 - 'not important'). This exercise helps patients become more aware of their choices concerning the way they spend time and facilitates finding alternative activities to being online.

Table 4. **Register of Internet use**

Date and time, situation	Emotions — their intensity (0–100)	Automatic thoughts which have appeared while switching the computer on	Type of online activity (<i>e.g.</i> checking e-mail, chat, visiting pornographic websites, monitoring stock-exchange quotations, Allegro, random web-browsing)	Time spent online (Internet session)	Result, emotions, thoughts What activities have been interrupted/neglected because of being online?
--------------------------	------------------------------------	--	--	--------------------------------------	--

Source: Own elaboration on the basis of Young, 2011 [1], Popiel, Pragłowska [13]

Many people use their smartphones to surf on the Internet. Addiction to the smartphone is not the same construct as addiction to the Internet, therefore, during the therapy, for example at the stage of behaviour modification, it is worthwhile to plan precisely how the smartphone will be used for the Internet. It would be vital to settling with the patient that: 1) Internet

notifications must be turned off, 2) During the day, time without the phone is to be set, 3) The Internet in the phone must be used only for designated purposes [3, 14].

Stage 2: Cognitive restructuring

Cognitive restructuring is applied to identify, question, and modify the contents and cognitive processes leading to addiction. The second stage of CBT-IA therapy is based on the application of cognitive techniques in order to work on denial and rationalisation, justifying the excessive use of the Internet so that patients would take responsibility for their addiction and get involved in the therapy. Internet addicts are characterised by two types of beliefs: 1) Beliefs about expected positive results of harmful behaviour, 2) Beliefs concerning releasing from negative emotions, such as fear, guilt, anger, or sadness. During therapy, these beliefs are identified, questioned, and modified.

In the beginning, the therapy is oriented to dysfunctional contents and cognitive processes, which trigger excessive use of the Internet (functional analysis). There are certain characteristic cognitive distortions in the case of Internet addiction (for example, generalisation, catastrophisation, selective attention, exaggeration, personalisation), as well as negative core beliefs [6]. Internet addicts often feel anxiety when they are offline and worry about adverse events which are occurring now or may occur in the future. This sort of catastrophic thinking might contribute to compulsive Internet use in order to reduce anxiety and stress. Internet addicts have frequently distorted thoughts about themselves including ruminations, such as constant worrying about using the Internet and creating favouring self-images on the Internet, (*e.g.* “I’m worthless in the real world, but in the virtual world I am somebody” or “I only have true friends online”.) Internet addiction is also accompanied by distorted thoughts, for instance, “Nobody loves me” or “The virtual world is the only place where I’m respected”. Those exaggerated thoughts, having the notion “all or nothing”, may intensify and fix the addiction to the Internet. The process of cognitive restructuring allows them to examine and discover the pattern behind them to modify it. Furthermore, it allows patients to assess rationality and validity of their interpretations of the reality; thereby, cognitive-behavioural therapy for Internet addiction can help patients to understand that they use the Internet to satisfy their certain needs and avoid some situations and emotions.

Afterwards, patients are taught to question these thoughts outside therapeutic sessions, in order to reduce rationalising and justifying the excessive use of the computer and break the vicious circle of confusing the Internet with a better quality of life. Through restructuring maladaptive cognitive schemas, patients become aware of how to satisfy their needs in real life without recourse to compulsive Internet use.

Due to cognitive distortions, they often feel overwhelmed, exaggerate their difficulties and do not appreciate the possibility of taking corrective actions. To help them to achieve their therapeutic goals, the therapist aids them in identifying main problems or consequences of their addiction. At the same time, the clinician encourages patients to list the main benefits of limiting Internet use. This type of clear assessment of the disadvantages of maintaining Internet addiction and advantages of overcoming it is a valuable skill which prevents relapses in the future [3].

Stage 3: Relapse prevention

The third stage of CBT-IA is focused on long-term recovery. The principles of Harm Reduction Therapy (HRT), which are oriented towards co-existing disorders or difficulties to prevent relapses, are applied [15]. Due to the fact that Internet addiction is often underlain by other disorders or difficulties, such as depression, other addictions, social phobia, relationship conflicts, or occupational burnout, during therapy, these issues should be resolved to avoid the threat of the Internet being an escape from them. Harm Reduction Therapy may be applied to identify and treat these disorders since it is focused on coexisting factors, of the personal, professional, psychiatric, social, or situational nature, which contribute to the development of Internet addiction. At this stage, techniques deriving from various schools, like reality or interpersonal therapy, are integrated. Furthermore, an addict is advised to attend a support group based on the 12-step program to improve interpersonal skills and reality testing. In the case of cybersex, addicts who are in relationships are recommended to participate in couples therapy aimed at the improvement of communication. What is more, it is necessary to introduce pharmacotherapy when a mental disorder is diagnosed.

Harm Reduction Therapy is used for identifying and treating mental disorders accompanying compulsive Internet use, as well as helping patients to cope with the social problems underlying their addiction. Compulsive behaviour constitutes a means to reduce accumulated tension and serves as a reward. Internet addicts frequently look for relief in moments of tension or excitement in front of a computer screen. They treat the Internet as an escape from their problems.

It is crucial for a patient to know that refraining from the behaviour is not sufficient to state: "I am healthy." Full recovery is something more than refraining from compulsive behaviour; it requires addressing the problems underlying addiction and solving them in an adaptive manner, otherwise, a relapse might occur.

Efficacy of Cognitive-Behavioural Therapy for Internet Addiction

A meta-analysis by Winkler and others, covering 16 clinical trials of various therapeutic approaches has indicated high effectiveness of cognitive-behavioural therapy in treating Internet addiction (effect size $d = 0.84-2.13$) [16]. Research on the CBT-IA effectiveness has shown that at the end of the twelfth week since completing the therapy, over 95% of patients were coping with the symptoms of addiction; moreover, 78% of them maintained recovery six months after the treatment [12]. Young conducted research on a group of 114 patients during the third, eighth, and tenth session and six months after completing therapy in order to assess: 1) the motivation to reduce the abuse of the Internet, 2) the ability to control Internet use, 3) the involvement with offline activities, 4) the improvement of interpersonal relations, 5) the improvement of offline sexual life (in case of cybersex addicts). Results show that online time management was the most difficult as reported by patients (96%), followed by relationship problems due to the amount of time spent at the computer (85%), and sexual problems because of online sex preference (75%). CBT proved to be effective in treating patients when it concerns Internet addiction-related symptom reduction six months after completing the treatment [10]; additionally, other research conducted in 2013 confirmed the results. Patients were still able to manage their online time [17].

Studies by Brand, Laier, and Young provide further evidence that cognitive-behavioural psychotherapy may be effective in treating Internet addiction [18]. Furthermore, they show that a specific way of thinking (coping strategies and expectations about using the Internet) is a mediator between psychopathological symptoms (depression, anxiety), personality traits, and social factors (loneliness, social support) and development and maintenance of generalised Internet addiction. Therefore, it is important to identify cognitive distortions and recognise expectations of patients as to Internet use in order to understand their needs and the way they believe that the Internet may satisfy their needs.

Conclusions

Cognitive-behavioural therapy for Internet addiction may be successfully applied to reduce addiction symptoms, improve impulse control, undermine cognitive distortions, and develop problem-solving skills, both personal and situational, which are clearly connected with compulsive Internet use. This therapy is focused on helping patients to work out healthier methods of coping with problems than turning to the Internet, searching for causes of addictions, and finally, addressing them to prevent relapses in the future.

References

1. Young KS. CBT-IA: The first treatment model to address Internet addiction. *J. Cogn. Ther.* 2011; 25: 304–312.
2. Young KS. Clinical assessment of Internet-addicted clients. W: Young KS, de Abreu NC, eds. *Internet addiction: a handbook and guide to evaluation and treatment*. New York: John Wiley & Sons; 2010, p. 19–34.
3. Grzegorzewska I, Cierpiątkowska L. *Uzależnienia behawioralne*. Warszawa: Wydawnictwo Naukowe PWN; 2018.
4. Poprawa R. W poszukiwaniu psychologicznych mechanizmów problematycznego używania internetu. W: Sokołowski M, red. *Oblicza Internetu: Internet w przestrzeni komunikacyjnej XXI wieku*. Elbląg: Wydawnictwo PWSZ; 2006.
5. Young KS, Pistner M, O'Mara J, Buchanan J. Cyber disorders: the mental health concern for the new millennium. *Cyberpsychol. Behav.* 1999; 2: 475–479.
6. Caplan SE. Problematic Internet use and psychosocial well-being: development of a theory-based cognitive-behavioral measurement instrument. *Comput. Hum. Behav.* 2002; 18: 553–575.
7. Davis RA. A cognitive-behavioral model of pathological Internet use. *Comput. Hum. Behav.* 2001; 17: 187–195.
8. Caplan S E. A social skill account of problematic Internet use. *J. Commun.* 2005; 55: 721–736.
9. Gałęcki P, Pilecki M, Rymaszewska J, Szulc A, Sidorowicz S, Wciórka J (Eds.). *Kryteria diagnostyczne zaburzeń psychicznych DSM-5*. 2017; Wrocław: Edra Urban & Partner.
10. Woronowicz B. *Bez tajemnic o uzależnieniach i ich leczeniu*. Warszawa: Instytut Psychiatrii i Neurologii; 2001.
11. Chocholska P, Osipczuk M. *Uzależnienie od komputera i Internetu u dzieci i młodzieży*. Warszawa: Wydawnictwo Hachette; 2009.
12. Young KS. Cognitive behavior therapy with Internet addicts: treatment outcomes and implications. *Cogn. Behav. Ther. Internet Addicts. Treat Outcomes. Implic.* 2007; 10: 671–679.
13. Popiel A, Pragłowska E. *Psychoterapia poznawczo-behawioralna. Teoria i praktyka*. Warszawa: Paradygmat; 2008.
14. Young KS. The evolution of Internet addiction disorder. In: Montag Ch, Reuter M, eds. *Internet addiction. Neuroscientific approaches and therapeutical implications including smartphone addiction*. Cham: Springer; 2017.
15. Marlatt GA, Blume AW, Parks GA. Integrating harm reduction therapy and traditional substance abuse treatment. *J. Psychoact. Drugs* 2001; 33: 13–21.
16. Winkler A, Dörsing B, Rief W, Shen Y, Glombiewski JA. Treatment of Internet addiction: a meta-analysis. *Clin. Psychol. Rev.* 2013; 33: 317–329.
17. Young KS. Treatment outcomes using CBT-IA with Internet-addicted patients. *J. Behav. Addict.* 2013; 2(4): 209–215.
18. Brand M, Laier Ch, Young KS. Internet addiction: coping styles, expectancies, and treatment implications. *Front Psychol.* 2014; 5: 1-14.

E-mail address: joannamatuszczak@gmail.com