

Continuing Medical Education

Non-Substance Addiction in Childhood and Adolescence

The Internet, Computer Games and Social Media

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Summary

Background: Around 5.8% of adolescents and 2.8% of young adults have an Internet-related disorder. These figures underline the widespread concerns in our society regarding the potential dangers and risks associated with Internet and digital media use.

Methods: Selective literature search for records on Internet-related disorders in children and adolescents.

Results: Internet-related disorders are now viewed as belonging to the behavioral addiction. Research has revealed similarities to substance-related disorders. There are often associations with other mental illnesses such as depression, anxiety, attention deficit/hyperactivity disorder, and personality disorders, as well as disturbed sleep patterns, increased risk taking, nicotine abuse, an unbalanced diet, and lack of exercise. Female adolescents are statistically significantly more often affected than male adolescents (7.1% versus 4.5%). The German STICA study, the first randomized controlled trial worldwide, demonstrated that cognitive behavioral therapy was effective compared with a waiting group (odds ratio 10.10, 95% confidence interval [3.69; 27.65]).

Conclusion: Internet-related disorders have not yet been conclusively conceptualized and operationalized. Further work is urgently required to refine the concepts of both the illness and its treatment.

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The term “Internet-related disorders” is used to describe addictive abnormal use of the Internet, now classified among the so-called behavioral disorders. Those who are affected display dependence, usually on particular Internet applications (e.g., computer games, social networks, Internet pornography, and others), that increasingly fulfills the World Health Organization (WHO) criteria of addiction. These comprise craving, loss of control over beginning and ending consumption, withdrawal symptoms, development of tolerance, neglect of other interests and obligations, and continued consumption despite negative consequences. The severity and the course of

Internet-related disorders are extremely heterogeneous. The disorders may be associated with severe functional impairments and a distinct burden of suffering, although the latter may not become subjectively manifest until a late stage. The evidence regarding diagnosis and treatment of Internet-related disorders is limited, but early diagnosis and treatment probably has a crucial influence on the disease course.

Definition

No binding nomenclature for Internet-related disorders yet exists. The terms “Internet addiction,” Internet

Definition

The term “Internet-related disorders” is used to describe addictive abnormal use of the Internet, now classified among the so-called behavioral addictions.

Symptoms

Internet-related disorders are expressed in craving, loss of control over beginning and ending consumption, withdrawal symptoms, development of tolerance, neglect of other interests and obligations, and continued consumption despite negative consequences.

dependency,” “computer gaming disorder,” and “problematic (social) media/Internet use” are all frequently used. The English-language terms from the updated international classifications, “Internet gaming disorder” (DSM-5) and “gaming disorder” (ICD-11), are often used, generally untranslated, in the German-speaking countries. In Germany it is still not possible specifically to diagnose Internet-related disorders using the currently valid classification system, namely ICD-10. The soon to be adopted German version of ICD-11 will presumably feature a direct translation of the English definition of gaming disorder (1):

“[...] a pattern of gaming behavior („digital-gaming“ or „video-gaming“) characterized by impaired control over gaming, increasing priority given to gaming over other activities to the extent that gaming takes precedence over other interests and daily activities, and continuation or escalation of gaming despite the occurrence of negative consequences. For gaming disorder to be diagnosed, the behaviour pattern must be of sufficient severity to result in significant impairment in personal, family, social, educational, occupational or other important areas of functioning and would normally have been evident for at least 12 months.”

The executive committee of the German Society for Addiction Research and Addiction Therapy (DG-Sucht), the coordinating body for the German-speaking countries, has agreed on the generic term “*internetbezogene Störungen*” (Internet-related disorders). This term covers both a “full-blown form (...) as well as continued harmful and improper use or dangerous use in the sense of a precursor to a severe problem” (2).

Methods

With the aim of clarifying the current prevalence of Internet-related disorders, the potential mechanisms of onset, and questions of diagnosis, treatment, and prevention, a selective literature search of the PubMed database was carried out, using the search terms “internet gaming AND adolescents” (493 hits on PubMed), “internet addiction AND adolescents” (1484 hits on PubMed), “gaming disorder AND adolescents” (317 hits on PubMed), and “social media disorder AND adolescents” (815 hits on PubMed), with particular attention to data from Germany.

Learning goals

After finishing this article, the reader should:

- Be familiar with the mechanisms behind the development and maintenance of Internet-related disorders

Diagnosis

In Germany it is still not possible specifically to diagnose Internet-related disorders using the currently valid classification system, namely ICD-10.

TABLE

Possible factors in the development and maintenance of Internet-related disorders

Internal factors

Age

- Rising prevalence from childhood into adolescence
- Decreasing prevalence in adulthood

Emotion and stress regulation

- Elevated emotional dysregulation and vulnerability to stress
- Internet applications as coping strategies for regulation of emotions and reduction of stress

Self-worth and self-efficacy

- Reduced self-worth and self-efficacy
- The Internet offers the opportunity to generate success and experience approval (e7)
- There is an increasing flight from reality (e7)

Impulsiveness and self-control

- Elevated impulsiveness
- Reduced self-control

Sensation seeking

- Increased openness to risky decisions and behavior in adolescence, particularly through the combination of sensation seeking* and elevated impulsiveness
- The presence of exciting new discoveries in the game promotes the development of addiction (e8)

Cognitive factors

Specific thought distortions:

- Overvaluation of identities and rewards through gaming
- Dependence of self-worth and social acceptance on experiences during gaming

Personality traits

- Low conscientiousness (e9)

External factors

Familial factors

- Increased familial conflicts
- Low parental supervision and interest in adolescents' activities
- Reduced binding quality
- Increased parental anxiety

Social factors

- Negative interpersonal experiences, e.g., mobbing (e10)
- Social isolation
- The rewarding elements of addiction-inducing Internet applications include social communication and social bonds to other players (e11)

Factors related to game-playing

The three-factor reward model (e12) of computer gaming:

- Success
- Immersion in the game
- Social aspects

Negative life events (e13)

- Relationship break-ups
- Problems at school

Internal and external factors that seem to be associated with the development of Internet-related disorders (see 9, 10).

Additional findings are marked by reference citations in the table.

Definition in the German-speaking countries

The term is used to mean both a “full-blown form (...) as well as continued harmful and improper use or dangerous use in the sense of a precursor to a severe problem.”

- Be able to apply the currently valid diagnostic criteria for gaming disorder
- Understand the principles of treatment for Internet-related disorders

Epidemiology and conceptualization of Internet-related disorders

Over the past 30 years information technology, including the Internet, has made rapid advances. This is especially true for the private service and entertainment sector, where three areas of activity are particularly relevant with regard to Internet-related disorders: pornographic content, social networks, and, above all, gaming (e1, e2). Thirty years ago around 0.1% of households in Germany had an Internet connection, but now approximately 94% of the German population have access to the Internet, largely via smartphones (e3). Some 85% of 12- to 17-year-olds use social media every day, for an average of about 3 h (166 min). Girls are online longer than boys (182 min versus 151 min). Among the social media, WhatsApp is used most (66%), followed by Instagram (14%) and Snapchat (9%) (3).

At the same time, recent years have seen an increase in the epidemiological significance of Internet-related disorders, particularly in adolescents. According to the latest update of the German Drug and Addiction Report (*Drogen- und Suchtbericht 2019*), the prevalence of gaming disorder and Internet dependency among 12- to 17-year-olds is estimated at 5.8%. Females in this age group are statistically significantly more often affected than males (7.1% versus 4.5%) (3). Boys show a trend towards addiction to online games, girls to dependency on social networks (4). Gaming disorder and Internet addiction are considerably less common among young adults aged 18 to 25 years (2.8% overall) than in adolescents (3). Lower age is therefore associated with a higher likelihood of Internet-related disorders, as statistically confirmed by another prevalence study conducted in Germany (5). A study published in 2016 determined the prevalence of Internet dependency in five European nations (Estonia, Germany, Italy, Romania, and Spain), found similar rates ranging from 4.0% to 6.9%, and demonstrated that in these countries too, the phenomenon had increased significantly in recent years (6). In contrast, a survey of 14- to 17-year-olds carried out in seven European countries found a 1.6% prevalence of full-blown gaming disorder (e4). In Asian countries the prevalence is much higher, at 9.9% (95% confidence interval [1.0%–21.5%]). Altogether, the estimated prevalence in that part of the world seems to be decreasing over the

years (12.1% in the 1990s, 5.7% in the 2000s, and 3.8% in the 2010s) (e5). Overall, it is important to note that prevalence rates may vary greatly in different studies owing to the lack of consistent definitions in publications to date.

Internet-related disorders are associated especially often with computer gaming, social networks, and, to a lesser extent, pornographic content (e2). Among children and adolescents, however, addiction to pornography tends to play a subordinate role (3). To date, particularly close attention has been paid to gaming disorder. The greatest risk of addiction in this regard comes from participation in Internet role-playing games, often played in groups. So far there are only a small number of groundbreaking studies on addiction to social networks. The use of applications such as Twitter, Facebook, and WhatsApp is now so widespread, however, that a further increase in dependency on social networks can be anticipated (e6). Currently, 2.6% of German adolescents fulfill the criteria of addiction according to the Social Media Disorder Scale, which is oriented on the DSM-5 criteria for Internet gaming disorder (3, 7). Girls are affected more often than boys (3.4% versus 1.9%), but the difference was not significant in the study concerned (3).

As early as 2008, the American Psychiatric Association began considering whether to include Internet-related disorders in the revised classification of mental disorders in the USA (DSM-5) (e2). The term proposed was “Internet use disorder” (e2). However, only “Internet gaming disorder” was adopted in 2013, incorporated into Section III of DSM-5 (8), a section devoted to disorders requiring further research. After careful consideration, the APA decided that the existing research data on other forms of Internet-related disorder, such as use of social networks or pornographic content, did not suffice to include them as independent categories (8). In 2018, the WHO decided to add “gaming disorder” to ICD-11 (valid from 2022 in Germany), discarding some of the criteria required for the diagnosis of Internet gaming disorder in DSM-5. Inclusion of gaming disorder in the new classification systems is an important basic step towards the creation of uniform criteria for research and the facilitation of both diagnosis and effective treatments. It remains unclear how, in future, the development of addictions to other Internet applications (e.g., social media) should be handled, as these have not yet been incorporated into any of the new classifications although studies have shown similarities in prevalence, symptoms, and adverse mental effects (e6).

Epidemiology

Some 85% of 12- to 17-year-olds use social media every day, for an average of about 3 h (166 min); girls are online longer than boys (182 min versus 151 min).

Common manifestations

Internet-related disorders are associated especially often with computer gaming, social networks, and, to a lesser extent, pornographic content.

Factors in the development and maintenance of Internet-related disorders

Various systematic reviews have identified factors that are probably associated with Internet gaming disorder (IGD) (9, 10). These can be roughly divided into “internal” and “external” factors (Table).

It is important to note, however, that many of these factors have been investigated in only one or very few studies, mostly only in cross-sectional manner. Furthermore, the comparisons are greatly hampered by the use of different definitions of Internet-related disorders.

Moreover, a large number of studies have now demonstrated very clearly the role played by comorbidities in Internet-related disorders. According to a recent meta-analysis of a total of 53 889 cases, in childhood, adolescence, and adulthood there are significant correlations with symptoms of depression (in 89% of the studies), symptoms of anxiety (in 92% of the studies), and attention deficit/hyperactivity disorder (ADHD; in 75% of the studies) (11). Seeking predisposing factors for Internet-related disorders, Zadra et al. showed that personality disorders occur significantly more often in patients with gaming disorder and Internet dependency than in those without IGD (29.6% versus 9.3%; $p < 0.001$) (12). Internet-related disorders were also evident in combination with other risk behaviors in adolescence. In 2016, Durkee et al. demonstrated that sleep disturbance (odds ratio [OR] 1.45 to 2.17) and elevated risk taking (OR 1.55 to 1.73) were associated most frequently with gaming disorder in adolescents, followed directly by smoking (OR 1.41), an imbalanced diet (OR 1.41), and lack of exercise (OR 1.39) (13).

Neurobiological research findings to date

Taken together, genetic studies of gaming disorder reveal participation of genes involved in dopaminergic transmission (e14) and in the serotonergic (e15) and cholinergic axes (e16); overall, the findings are heterogeneous (e17). Although the data are broadly inconclusive to date, it is becoming increasingly clear that the results resemble the findings for other psychiatric disorders, particularly those for substance addictions and pathological gaming (15).

Overall, the findings of imaging in gaming disorder also resemble those in substance addiction disorders (e18, 16), with similarly marked heterogeneity. In a review published in 2017, Weinstein stated that magnetic resonance imaging of persons with gaming disorder identified structural and functional alterations in reward-associated areas (insula, nucleus

accumbens, dorsolateral prefrontal cortex, and orbitofrontal cortex) and also in connection with craving (16). Furthermore, there were disturbances of executive functions, which could be linked with the frequent presence of depression and ADHD as comorbidities, together with alterations of the hypothalamic–pituitary–adrenal axis (17, e19).

Psychological models of Internet-related disorders

The Interaction of Person Affect Cognition Execution (I-PACE) model (18) was presented by Brand et al. in 2016 (e20, e21). This model describes an early phase in the development of addiction in which the predominant contribution is made by gratification processes together with cognitive and affective changes. These processes are then also important in later developmental stages of the behavioral addiction (19). In the late phase, the actual “dependency,” the central position in the model is occupied by “cue reactivity” (a strong motivational desire triggered by specific factors) and “craving” (subjective and physiological compulsion to perform the behavior). In this manner, the conscious decision to perform the behavior occurs far less often; instead, a strongly habituated dependent behavior arises.

Diagnosis

Currently, as laid down in DSM-5, Internet gaming disorder is diagnosed when five or more of the criteria listed in *Box 1* are fulfilled within the past 12 months.

Internet-related disorders are not listed in the current version of ICD-10. Patients presenting computer gaming and Internet addiction can be assigned the diagnosis “Other habit and impulse disorders” When ICD-11 comes into use in 2022, however, it will contain a code for “gaming disorder” (*Box 2*). The entity of gaming disorder will be included among the “disorders due to addictive behaviors”. The past few years have seen the introduction of various screening questionnaires and structured interviews on gaming disorder, as summarized in a recent review (20). The commonly used German-language instruments can be downloaded free of charge from www.fv-medienabhaengigkeit.de.

Course and prognosis of Internet-related disorders

Little research has yet been carried out on the course of Internet-related disorders. In a 2-year longitudinal study of school students in grades 3, 4, 7, and 8, Gentile et al. documented video gaming behavior along with psychiatric symptoms and day-to-day functioning.

Addiction involving other Internet applications

It remains unclear how, in future, the development of addictions to other Internet applications (e.g., social media) should be handled, as these have not yet been incorporated into any of the new classifications.

Neurobiological research results

Taken together, genetic studies of gaming disorder reveal participation of genes involved in dopaminergic transmission and in the serotonergic and cholinergic axes; overall, the findings are heterogeneous.

BOX 1

Diagnostic criteria for Internet gaming disorder in DSM-5

At least five of the following symptoms should have occurred within the past 12 months:

1. Preoccupation with gaming
2. Withdrawal symptoms
3. Development of tolerance
4. Unsuccessful attempts to reduce or quit gaming
5. Loss of interest in earlier activities
6. Continuing to game despite problems
7. Deceiving family members or others about the amount of time spent on gaming
8. The use of gaming to relieve negative emotions
9. Risk, having jeopardized or lost a job or relationship due to gaming

BOX 2

Definition of gaming disorder in ICD-11

Gaming disorder is characterized by a pattern of persisting or recurring gaming behavior with the following features:

- Impaired control over gaming
- Increasing priority given to gaming to the extent that gaming takes precedence over other life interests and daily activities
- Continuation or escalation of gaming despite the occurrence of negative consequences
- The pattern of gaming behavior results in marked distress or significant impairment in personal, family, social, educational, occupational, or other important areas of functioning

The pattern of gaming behaviour may be continuous or episodic and recurrent. The gaming behavior and other features are normally evident over a period of at least 12 months in order for a diagnosis to be assigned, although the required duration may be shortened if all diagnostic requirements are met and symptoms are severe.

Around 10% of the sample met the criteria for pathological gaming, and 80% of these young people still fulfilled the criteria 2 years later (21). Studies of adolescents in Germany showed less pronounced stability for Internet gaming disorder (22). However, one should never assume that an Internet-related disorder is a transient phenomenon with a high likelihood of spontaneous remission. Overall, such disorders seem to be more stable in adolescents than in adults (23).

With regard to the known connection between Internet-related disorders and other mental illnesses, it remains unclear whether the latter are the cause or a consequence of the former. The data from the above-cited longitudinal studies show that poor social competence, low self-worth, elevated impulsiveness, and symptoms of ADHD function as risk factors for the development of dependency on video games, while symptoms of depression/anxiety and deterioration of school performance develop during the course of video gaming disorders (21, 22). As for excessive use of social media, two recently published longitudinal studies were the first to show that such behavior is a clear prospective risk factor for the development of mental problems and disorders (24, 25). Of particular interest is the fact that three specific factors were responsible for this association: victimization through cybermobbing, lack of sleep, and insufficient exercise (25).

Treatment of Internet-related disorders

The past few years have witnessed a number of developments in the treatment options for Internet-related disorders. One example is a manualized short-term treatment of Internet and computer game addiction (STICA), based on elements of cognitive behavioral therapy (26). A course of STICA takes 3 months, and the treatment takes place in group and individual settings. The efficacy of this manual and the stability of the treatment effects were investigated in a multi-center randomized clinical trial with a 6-month follow-up. The response rate was 69.4% in the treatment group, 23.9% in the waiting-list group. The adjusted OR for the likelihood of remission in the treatment group versus the control group was 10.10 (95% confidence interval [3.69; 27.65]; $p < 0.001$). This study thus yields promising early findings in favor of the efficacy of cognitive behavioral therapy in the treatment of gaming disorder and Internet dependency (27).

STICA comprises the following cognitive behavioral elements: promotion of motivation, analysis of

Characteristics

Gaming disorder is characterized by a pattern of persisting or recurring gaming behavior. The behavior pattern may be continuous or occur episodically and recurrently.

Diagnostic investigations

The past few years have seen the introduction of various screening questionnaires and structured interviews on gaming disorder, as summarized in a recent review.

goals, analysis of behavior, psychoeducation, involvement of social contacts, and exposure training (e22). Details can be found in the *eTable*. Phase 1, for example, focuses on psychoeducation and the promotion of motivation. The subsequent treatment concentrates on patients' ambivalence towards gaming and on building up their willingness to change their behavior, e.g., through cost–benefit analyses (e23). Clearly defined treatment goals should be set as early in the process as possible; if appropriate, these can be divided into partial goals to promote the patients' self-efficacy. Weekly protocols then uncover subconscious behavior patterns initiated by the dependency, thus identifying addiction-triggering thoughts and feelings. In the next phase, cognitive restructuring transforms the patients' dysfunctional thoughts and expectations into functional assumptions with regard to gaming. The elements of the cognitive behavioral analysis are based on the SORCK model of Kanfer and Phillips (1970) (e24). This model comprises five elements that support the diagnosis, explanation and alteration of (problematic) behavior: S stands for the stimulus, O for the organism, R for the response, C for the consequences, and K for the contingencies. Psychoeducation through the communication of disorder-specific knowledge helps the patients to achieve a better understanding of the illness and its mechanisms of action and sharpens their awareness of the problem (28).

Especially with children and adolescents it is particularly important to involve the family in the treatment program (29). A survey of 500 children aged 8 to 14 years and their parents showed that the parents' own patterns of media consumption had a decisive effect on their children's media use. Empathetic parent–child communication and a positive relationship style help to counter problematic smartphone use (e25). Psychoeducation of the parents can improve their pedagogic proficiency with regard to media consumption (30). Dysfunctional patterns within the family should be brought to light and solution strategies developed (31). Systemic treatment approaches are likely to be particularly apt for children and adolescents (32). Exposure therapy may also be effective in the treatment of gaming disorder: the patients are confronted step by step with situations that trigger the desire to play (33, 34). The first step should be exposure in sensu (imagination exercises), followed by exposure in vivo (e.g., gaming) (e22).

In a meta-analysis of 16 studies published in 2013, Winkler and colleagues (35) explored the short-term

and long-term efficacy of psychotherapy and pharmaceutical treatment for Internet addiction. They found that both methods showed robust effects, although the generalizability of the findings was limited by marked deficiencies of methodology. In another systematic review the best results were achieved by behavioral therapy in direct comparison against medication with psychotherapy (36). Therefore, based on the current state of knowledge, only behavioral therapy can be recommended for the treatment of Internet-related disorders.

Treatment avoidance presents a particular problem in young people with gaming disorder and Internet dependency. A study on school-based screening for early detection of mental disorders requiring treatment in adolescents showed that excessive media and Internet use was the strongest negative predictor of help-seeking behavior (37). In future, therefore, low-threshold access to diagnosis and treatment should be explored, including via the Internet (see, for example, www.open-iu.com) (*eTable*).

Prevention

Science-based options for prevention of gaming disorder are currently a rare commodity. The PROTECT study showed that a 4-week cognitive behavioral therapy-oriented early intervention program in schools could be effective in reducing the symptoms over a 4-month period. The effect size was low ($d = 0.35$) for reduction of symptom severity and moderate ($d = 0.77$) for parental rating. This study is therefore one of the few prevention trials worldwide to demonstrate reduction in the symptoms of gaming disorder and Internet addiction in adolescents over a period of 4 months (38, 39).

Preventive measures similar to those used in substance addiction, e.g., restriction of access and resource-oriented primary prevention, have proved effective against gaming disorder (40). The younger those affected, the more the emphasis should be on avoiding the causes (40). Preventive measures should be introduced at an early point. However, programs to promote media competence, which can be offered in schools, may also help to establish early options for preventive intervention (40).

Conclusion

Internet-related disorders represent a continuum of various problematic patterns of behavior—not yet definitively conceptualized and researched—in the use of digital media. Best explored to date, and particularly

Risk factors for the development of mental problems in excessive use of social media:

- Victimization through cybermobbing
- Lack of sleep
- Insufficient exercise

Parent–child communication

Empathetic parent–child communication and a positive relationship style help to counter problematic smartphone use.

relevant for the 12–17 years age group, is gaming disorder, followed by the less intensively researched addiction to social networks. Pediatricians and primary care physicians confronted with such problems should establish which of the DSM-5 or ICD-11 criteria are fulfilled and, if required, refer the patient to a child and adolescent psychiatrist and seek to initiate (cognitive) behavioral therapy, which has recently been shown to be effective.

Conflict of interest statement

PD Geisel has received consultancy payments from Shire/Takeda. Anneke Lipinski and Prof. Kaess declare that no conflict of interest exists.

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Treatment recommendation

Based on the current state of knowledge, only cognitive behavioral therapy can be recommended for the treatment of Internet-related disorders.

Prevention models

Preventive measures similar to those used in substance addiction, e.g., restriction of access and resource-oriented primary prevention, have proved effective against gaming disorder.

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► Supplementary material

For eReferences please refer to:

www.aerzteblatt-international.de/ref0121

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Only one answer per question is possible. Please select the answer that is most appropriate.

Question 1

Which of the following types of Internet-related disorder has been studied most closely to date?

- a) Pornography
- b) Computer gaming
- c) Sexting
- d) Searching for information
- e) Online poker

Question 2

What category of Internet-related disorder has been incorporated into the American Psychiatric Association's classification of psychiatric disorders (DSM-5)?

- a) Social media disorder
- b) Internet gambling
- c) Internet gaming disorder
- d) Internet sex disorder
- e) Internet pornography

Question 3

To which section of ICD-11 has gaming disorder been added?

- a) Disorders due to addictive behaviors
- b) Impulse control disorders
- c) Pathological gaming
- d) Abnormal behaviors
- e) Pathological behavior patterns

Question 4

Which of the following forms of treatment for gaming disorder has the strongest evidence of efficacy?

- a) Psychodynamic psychotherapy
- b) Psychoanalysis
- c) Hypnosis
- d) Cognitive behavioral therapy
- e) Humanistic psychotherapy

Question 5

Which of the following elements of therapy is classically used in the treatment of gaming disorder?

- a) Projective identification
- b) Transference
- c) Projection
- d) Exposure
- e) Rationalization

Question 6

For which of the following periods of time must DSM-5 criteria be fulfilled for Internet gaming disorder to be diagnosed?

- a) 14 days
- b) 3 months
- c) 12 months
- d) 24 months
- e) 6 months

Question 7

How many of the DSM-5 criteria must be fulfilled for Internet gaming disorder to be diagnosed?

- a) > 3
- b) > 4
- c) > 5
- d) > 6
- e) > 7

Question 8

What is the focus of the first phase of the outpatient, cognitive behavioral short-term group therapy program for the treatment of computer game and Internet addiction according to Wöfling et al., 2013?

- a) Imagination
- b) Exposure
- c) Psychoeducation and motivation
- d) Transfer
- e) Stabilization

Question 9

Which of the following diseases is particularly often associated with Internet-related disorders?

- a) Schizophrenia
- b) ADHD
- c) Autism
- d) Bipolar disorder
- e) Cyclothymia

Question 10

Which of the following is one of the criteria for diagnosing gaming disorder in ICD-11?

- a) Aggression
- b) Development of tolerance
- c) Withdrawal symptoms
- d) Headache
- e) Preoccupation

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Supplementary material to:

Non-Substance Addiction in Childhood and Adolescence

The Internet, Computer Games and Social Media

by Olga Geisel, Anneke Lipinski, and Michael Kaess

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eTABLE

Overview of an outpatient, cognitive behavioral short-term group therapy program for the treatment of computer game and Internet addiction (e22)

Phase 1: Psychoeducation and motivation	Phase 2: Intervention	Phase 3: Transfer and stabilization
<ul style="list-style-type: none"> – Disorder-specific psychoeducation – Communication of a biopsychosocial explanation model – Motivation for abstinence – Treatment goals 	<ul style="list-style-type: none"> – Problem/behavior analysis (weekly protocol) – Communication of functional coping strategies (alternative leisure and life activities, coping with feelings/stress...) – Promotion of self-worth – Link with biography – Exposure to individual screenshots 	<ul style="list-style-type: none"> – Relapse prevention – Emergency plan – Reflection on treatment success and change resulting from abstinence