


The Treatment of Internet Gaming Disorder: a Brief Overview of the PIPATIC Program

Alexandra Torres-Rodríguez¹ · Mark D. Griffiths²  · Xavier Carbonell¹

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Abstract Over the last decade, there has been an increase in children and adolescents accessing psychology services regarding problematic use of online videogames. Consequently, providing effective treatment is essential. The present paper describes the design process of a manualized PIPATIC (Programa Individualizado Psicoterapéutico para la Adicción a las Tecnologías de la información y la comunicación) intervention program for 12- to 18-year-old adolescents with Internet Gaming Disorder. The design and application of the PIPATIC program integrates several areas of intervention structured into six modules: psychoeducational, treatment as usual, intra-personal, interpersonal, family intervention, and development of a new lifestyle. The program's goals are to reduce the addiction symptoms related to online videogames and to improve the well-being of adolescents. Preliminary findings suggest positive and encouraging effects.

Keywords Internet addiction · Gaming addiction · Online videogames · Cognitive behavioral therapy · Manualized treatment · Internet Gaming Disorder

Information and communication technologies (ICTs) have become fully integrated in people's day-to-day lives. The increasing engagement in social networking, online videogame playing, and using smartphone applications has brought about new interaction styles. One group that often uses such online applications in both positive and negative ways are adolescents (Kuss and Griffiths 2012; Kuss and Griffiths 2017). On the positive side, online applications have been beneficial in research, science, medical, scholar, social networking, etc. On the negative

✉ Alexandra Torres-Rodríguez
alexandrart@blanquerna.url.edu

¹ Universitat Ramon Llull, C. Císter 34, 08022 Barcelona, Spain

² International Gaming Research Unit, Psychology Department, Nottingham Trent University, 50 Shakespeare Street, Nottingham NG1 4FQ, UK

side, excessive use may lead to negative consequences such as addictive behaviors among a small minority of users (Kowert et al. 2014; Williams et al. 2008).

Online Videogames

The main objective of playing videogames is to entertain users via interactive systems that have now been developed across multiple platforms (e.g., personal computer, game consoles, mobile phones, and tablets). At present, most videogame applications have been developed with good online accessibility and accompanying social platforms (e.g., *Twitch*, *Steam*, and *Origin*). Consequently, there are hundreds of genres and sub-genres of online videogames. These genres include (i) massively multiplayer online role-playing games (MMORPGs), such as *World of Warcraft* (WoW); (ii) multiplayer online battle arena (MOBA) games, such as *League of Legends* (LoL); and (iii) first-person shooter (FPS) games such as action games like *Battlefield* (BT), *Counter Strike* (CS), and *Call of Duty* (CoD). There are also “social” videogames, such as *Angry Birds*, which are usually very simple and quick to play and have been developed to play via social networks and smartphones (Carbonell et al. 2016). At present, MOBA games are among the most popular. Its increasing popularity may be due to its structural characteristics such as the high level of competitiveness and free-to-play modes, and situational characteristics such as its high accessibility (Griffiths and Nuyens 2017). In spite of that, the MMORPGs are still popular with millions of players.

However, such classification may become less important due to the way new games are evolving. Newer games have begun to incorporate multiple genres and game modes simultaneously: action games (survival, shooter, platform, etc.), simulation games (vehicle, life, and construction simulation), role-playing games (MMORPGs), strategy games (MOBA, wargames, etc.), adventure games, sports games, cooperative games, and casual games. For example, *Day Z*, *Star Citizen*, and *Minecraft* are current online games with multiple genres and game modes. Furthermore, videogames are becoming more realistic and complete, offering users immersive playability.

There is also increasing convergence between online gaming and other online activities such as gambling, activities that are primarily based on positive and negative reinforcement. Other similar characteristics include the following: (i) high sociability, (ii) multiplayer features, (iii) potential for high immersion in virtual environments, (iv) creation of one’s own virtual identity and/or character development, and (v) possibility of infinite duration within a 24/7 environment (Griffiths and Nuyens 2017; King et al. 2010b; Wood et al. 2004). All five of these things can be found in online gambling.

Current models suggest that some structural characteristics of online video games have the capacity to contribute to the development of a problematic use and/or addictive behaviors leading to a deterioration in the self-control of behavior and quality of life (Carbonell et al. 2012; Fuster et al. 2016; Nuyens et al. 2016). To understand this relationship, it is important consider the problem from an eclectic and multidisciplinary perspective, including those working from a clinical mental health perspective.

Clinical Psychology Perspective on Problematic Gaming

A good clinician will always try to understand the many aspects that may influence the acquisition, development, and maintenance of problematic online videogame use. Many

researchers advocate a biopsychosocial model in explaining the interaction between different risk factors (e.g., Kelly 2004; Kuss and Griffiths 2012; Mazurek and Engelhardt 2013; Rehbein et al. 2010; Wittek et al. 2015; Yee 2006). Table 1 lists many of the main risk factors in the development of problematic online gaming.

Online gaming addiction has been associated with (and may initiate) other comorbid mood disorders such as depression, stress, and anxiety disorders (Ferguson et al. 2011; King and Delfabbro 2014; Pontes et al. 2014). Consequently, videogame addiction in the form of Internet Gaming Disorder (IGD) was included in Section 3 of the latest (fifth) revision of the Diagnostic and Statistical Manual of Mental Disorders (DSM-5; American Psychiatric Association 2013). The clinical diagnosis of IGD comprises persistent and recurrent use of the Internet to engage in games, leading to clinically significant impairment or distress over a period of 12 months as indicated by five (or more) of the following criteria: (i) pre-occupation with Internet games; (ii) withdrawal symptoms when Internet gaming is taken away; (iii) tolerance or, in other words, the need to increase the time devoted to videogames; (iv) unsuccessful attempts to control participation in Internet games; (v) loss of interests in previous hobbies and entertainment as a result of, and with the exception of, Internet games; (vi) continued excessive use of Internet games despite knowledge of psychosocial problems; (vii) deceiving family members, therapists, or others regarding the amount of Internet gaming; (viii) use of Internet games to escape or relieve negative moods; and (ix) jeopardizing or losing a significant relationship, job, or education or career opportunity because of participation in Internet games. The criteria proposed by the APA (2013) appear to have adequate validity and diagnostic precision (Ko et al. 2014). Its prevalence, according to the American Psychiatric Association (2013), is between 1 and 7%. Part of this variation is due to the fact that different instruments are used in different cultural contexts and for different ages (Feng et al. 2017; Ferguson et al. 2011; Müller et al. 2015; van Rooij et al. 2014).

According to Griffiths, King, and Demetrovics (Griffiths et al. 2014), the inclusion of IGD in the DSM-5 provided the opportunity for consensus and unification in the field. However, there is still no consensus on many issues related to the DSM-5 diagnostic criteria for IGD, and its psychological, social, and health consequences still require further study (Griffiths et al. 2016b; Király et al. 2015; Kuss et al. 2016). The lack of consensus concerning diagnostic criteria makes the work of clinical psychologists and other therapists difficult. Consequently, there is a need to clearly define IGD, clarify its most controversial aspects, and expand the study of specialized IGD treatments.

Table 1 Selective important risk factors in addiction to online videogames

1) Biological factors	3) Environmental factors
• Vulnerability to addictions	• Family environment: conflictive, poor communication and affection, lack of supervision and family cohesion, etc.
• Deficits in neurotransmitters	• School environment with low performance, demotivation, etc.
• Psychiatric comorbidity: depression, anxiety, ADHD, ASD, etc.	• Poor social environment
2) Personality and psychological vulnerability factors	4) Stress factors
• Immaturity	• Grief
• Emotional instability	• Major crises
• Unconsolidated identity	• Drastic life changes
• Low self-esteem and indecision	5) Structural factors
• Lack of self-control	
• Frustration	
• Low resilience	
• High sensation search	
• Deficit of social skills, inhibition and extreme shyness	

Psychological Treatment for Internet Gaming Disorder

Although the study of IGD has grown markedly in recent years (Griffiths et al. 2016a; Kuss and Griffiths 2012), evaluations of psychological treatments are still scarce. The most used treatment for online addictions appears to be cognitive behavioral therapy (CBT) based on the peer-reviewed literature (Greenfield 1999a, 1999b; Griffiths and Meredith 2009; Kaptsis et al. 2016; King et al. 2010b, 2011; Young 2007, 2013). Other treatments used include pharmacotherapy (methylphenidate and bupropion) and counseling (King et al. 2011). Most of the therapeutic recommendations are based on substance abuse treatment (Huang et al. 2010; King et al. 2011) including motivational interviewing techniques, stimulus control, learning appropriate coping responses, self-monitoring strategies, cognitive restructuring, problem-solving related to addiction, and withdrawal regulation techniques with exposure (Griffiths and Meredith 2009; King et al. 2010a; Young 2007). Furthermore, there has been little evaluation concerning the efficacy of different psychological interventions with children and adolescents (King et al. 2013; King and Delfabbro 2016).

With regard to clinical practice, therapies for IGD based on substance abuse treatment have a number of limitations. One of the most important is the high rate of comorbid disorders with IGD that could influence the effect of the treatment. Some of the most common disorders associated with IGD include anxiety disorders, mood disorders, behavioral disorders, autism spectrum disorder (ASD), attention deficit hyperactivity disorder (ADHD), and personality disorders (Ferguson et al. 2011; Gentile et al. 2011; Han et al. 2014; Kelleci and Inal 2010; Ko et al. 2006; Shapira et al. 2000). Most published IGD treatment studies have not taken into account these comorbidities; therefore, more integrated and comprehensive treatments taking these comorbid disorders into account would improve treatment outcomes for such individuals (Therien et al. 2014).

Consequently, there is both an empirical and clinical need to generate specialized, integrated, and comprehensive treatment protocols taking into account the specific characteristics of IGD along with its associated comorbid disorders. Furthermore, it is clinically important to develop treatments for adolescents. In recent years, psychiatric wards have reported an increase of consultations regarding adolescents with problematic use of cyber-technologies (Beranuy et al. 2012). On the other hand, the adolescent population regularly uses online video games and they also present with multiple psychological vulnerabilities that are intrinsic to this life stage.

As a result, the aim of the present paper describes a specialized and integrative treatment program based on the scientific and clinical need to design treatments specifically for the adolescent population with IGD. The treatment program provides essential and common factors concerning IGD and was developed for health professionals to utilize in the treatment of IGD in adolescence.

Stage I: Designing and Developing the Treatment Program

To develop bespoke psychotherapy (in this case, for IGD), manuals in clinical practice must be followed to define guidelines and strategies from basic outlines in order to promote empirically supported treatments (Carroll and Nuro 2002). In the development and design of the PIPATIC program, there are common and essential aspects that should be included in any program evaluation report (Moscosoa et al. 2013; Schulz et al. 2010). The word “PIPATIC” is an acronym for “Programa Individualizado Psicoterapéutico para la Adicción a las Tecnologías de la información y la comunicación”. The English translation for this Spanish program is “Individualized psychotherapy program for addiction to information and communication technologies.”

The guidelines proposed by Carroll and Nuro (2002) were used for the IGD treatment presented in the present paper due to their rigor and scientific underpinnings. Carroll and Nuro divide the development of treatment manuals into three stages: (i) the development of the treatment and a pilot application, (ii) the design of the methodology with a controlled clinical trial to evaluate the efficacy of the treatment, and (iii) the evaluation of the application of treatment in different contexts and the relationship between their effectiveness and costs.

The goal of the newly developed PIPATIC program (Torres-Rodriguez and Carbonell 2017) is to offer specialized psychotherapy for adolescents with symptoms of IGD and comorbid disorders. This program comprises six therapeutic work modules, in turn comprising further specific sub-objectives. Following previous studies in order to ensure therapeutic change in patients, the duration of the program is six-months (22 weekly sessions each lasting 45 min) (Hansen and Lambert 2003; Kadera et al. 1996; Lambert et al. 1994; Seligman 1995). The composition of the modules and sessions is briefly outlined in Tables 2, 3, 4, 5, 6, 7, and 8. Additionally, the PIPATIC program includes two floating sessions that can be incorporated into the module of the therapist's choosing, according to the needs of the patient. In this way, the set program offers some flexibility (Carroll and Nuro 2002; Therien et al. 2014).

Table 2 Module 1: psychoeducation and motivations (three sessions)

Sub-modules	Content	Psychological strategies	Intervention techniques and strategies
Motivational aspects	Motivational interviewing	Active listening of the problem Express empathy Framing the personal situation Working on patient resistance	Self-motivation reinforces Explore ethical and personal values Decisional balance
Goal setting	Definition of goals in order to address their problems, to generate the beginning of change, promoting organization and responsibility daily habits	Be an active role in the negotiations Confronting non-therapeutic goals Make initial requests to increase their responsibility and autonomy	Make a negotiated goal list with patient, family and psychologist Elaboration of goals and habits reminder cards Schedule with therapeutic habits
Psychoeducation with the adolescent	ICTs and videogames: maladaptive and adaptive use, benefits and disadvantages Perception of their reality	Guide and give self-observation instructions to explore the use and knowledge of the ICTs Generate awareness of the problem Use motivational techniques	Rhetorical-pragmatic techniques Self-registers through self-observation Negotiation techniques Individual Psychoeducation Motivational techniques
Family psychoeducation	ICTs and videogames: maladaptive and adaptive use, benefits and disadvantages	Solve doubts Contain and regulate anxieties	Hetero-observation by the family Family Psychoeducation First guidelines for rational use of ICTs

Table 3 Module 2: addictions treatment as usual adapted to IGD (five sessions)

Sub-modules	Content	Psychological strategies	Intervention techniques and strategies
Addiction stimulus control	Craving control Self-control capacity Irrational beliefs of self-control	Exemplify real situations of loss of control Contain the difficulties of self-observation Detection of inappropriate uses To find relations between emotions, cognition and conduct	Stimulus control: establishing a connection time Self-registers Stopping thinking Positive reinforcement Self-reinforcement Tolerance to the frustration techniques
Coping responses	Inadequate coping responses related to the addiction and low self-control	Guide the reflection about the relationship with the addictive behavior Behaviors and thoughts interpretation To promote new adaptive responses in discomfort situations	Training in alternative coping responses Self-instruction training
Cognitive restructuration	Cognitive distortions and irrational beliefs that interfere with behavior control	Detect and restructure cognitive distortions and irrational beliefs Therapeutic work based on rational-emotive behavior therapy (Ellis 1990) and cognitive therapy (Beck 1979) Exemplify and use metaphors	ABC (A-Activating Event; B-Belief; C-Consequence) model explanation ABC self-registration exercises Socratic debates Exercises related to the imagination of situations and behavioral testing
Problem solving related to addiction	Identify, define, and solve addiction-related problem situations	To guide insights about discomfort able situations and the consequences To teach adequately to deal with these situations without resorting to addictive behaviors such as avoidance, flight, or stimulation	Identification of problem situations, involved emotions and thoughts Role-playings of the conflictive real situations with its alternative responses List of coping thoughts
Exposition	Disappearance of craving led to inappropriate behavior	To guide an exposition process to transform the compulsive behavior into adaptively and controlled activity To guide the co-therapist in to exposure process	Imaginative exposure Co-therapist exposure Stopping thinking Remembering coping thoughts and responses, encourage self-observation, reinforcement and self-reinforcement techniques

One of the main psychological treatments used in the PIPATIC program is CBT given its empirically supported efficacy (Hofmann et al. 2012; Nathan 2015). CBT therapies are commonly used and are effective in the treatment of addictive disorders (Du et al. 2010; King et al. 2012; Li and Wang 2013; Wölfling et al. 2014; Young 2007, 2013). However, the use of multiple psychotherapeutic strategies is considered more effective than one unique perspective (Dong and Potenza 2014; Orzack et al. 2006; Shek et al. 2009; Therien et al. 2014). Consequently, other eclectic and integrative treatment perspectives additional to CBT were included within the PIPATIC program such as motivational interviewing and psychoeducation techniques (see Table 2), strategies derived from person-centered therapy, self-regulation and maturation strategies for adolescents (see Table 4), family therapy (see Table 6), and solution-focused therapy (see Tables 4 and 7).

Table 4 Module 3: intrapersonal (five sessions)

Sub-modules	Content	Psychological strategies	Intervention techniques and strategies
Identity	Different levels of identity: self-ideal, ideal of the self and self Self-knowledge through introspection Stable identity and identity regarding addiction	To facilitate and contain the expression of emotions To generate connections and global visions To ask reflective questions about identity To reinforce the process of personal maturation (solid personality and autonomy)	Activities related to de self-knowledge of own identity Reinforcement Timeline techniques
Self-esteem	The three concepts of the self (Rogers 1959): self-image, self-esteem and ideal-self	To give information about self-esteem To guide the change related himself description Stimulate positive and proactive thoughts	Self-affirmation and self-reinforcement Establishment and modification of psychic and physical self-image through different activities: incomplete phrases, self-assessment, analysis of situations related to the success
Emotional intelligence	To produce self-control Strategies of self-management and emotional regulation	Positive reinforce the patient's progress To connect the lack of self-control and anxiety with the corresponding emotions To develop the insight and self-knowledge To highlight abilities and positive aspects of the person	Emotional intelligence techniques Breathing and relaxing techniques Emotional regulation techniques and activities Techniques related to tolerance discomfort <i>Mindfulness</i>
Emotional coping skills	Strategies to generate adaptive behaviors Self-management of anxiety and negative emotions	To guide in the correct emotional management To use real examples discussed throughout therapy	Training in emotional alternative responses Strategies for self-regulation and self-instruction
Problem solving	Skills and strategies for solving intrapersonal problems Self-management of conflict situations	To encourage the expression of anxieties and fears regarding conflicting vital situations of the adolescent To guide the development of adaptive responses related to everyday life	Deep understanding of the several conflicts Practice the new skills in front new everyday situations

The intervention, based on a cognitive behavioral approach, employs cross-cutting techniques and resources common in psychotherapy (Hofmann and Barlow 2014; Kleinke 1994; Laska et al. 2014) including empathy, active and reflexive listening, acceptance, trust, intermediate degree of directivity, paraphrasing, clarification, synthesis, confrontation, interpretation, feedback, promoting abilities, promoting responsibility, encouraging a feeling of self-efficacy, raising insight, and promoting a therapeutic alliance.

At the same time, adolescence is considered to be a vulnerable stage of life, defined by characteristics that generate a high risk of addictive behavior and/or other psychological disorders (Masten and Garmezy 1985; Steinhausen and Metzke 2001). For that reason, the strategies and techniques incorporated into the PIPATIC program have been adapted for adolescents. Consequently, the PIPATIC program is an integrative psychotherapy treatment intervention that focuses on multiple critical areas of the individual.

Table 5 Module 4: interpersonal (two sessions)

Sub-modules	Content	Psychological strategies	Intervention techniques and strategies
Communication	Interpersonal communication Communication styles	To detect if there is any negative communication style To generate a successful communication with other people	Psychoeducation about verbal and nonverbal communication Role-playings Activities related to communication skills
Assertiveness	Assertiveness Basic human rights	To work on building an assertive belief system To increase the insight, the empathy, and introspection abilities	Activities related to assertiveness
Answering styles	Answering styles Emotional, behavioral and communicational repetitive patterns related to answering styles Answering styles and consequences	To detect of the pattern of response style according to verbal and nonverbal communication To encourage the reflect about consequences of different styles To promote connections between answering styles and certain situations	Express and communicate Role-playing To comfort problems in an assertive way: to express, to point out the moment, to characterize, to adapt the feelings, to emphasize he cooperation, to limit, to postpone a conversation, to empathize, to defend one's feelings, a scratched disc, etc.

Stage II: Designing Application Methodologies

The second phase of program development focuses on the delimitation of methodologies for the application and effectiveness of the PIPATIC program. The CONSORT (Consolidated Standards of Reporting Trials) international guide (Schulz et al. 2010) was used to design the program. The CONSORT methodologies guarantee quality experimental or quasi-experimental studies: (i) design (clinical trial with randomization to avoid bias), (ii) dependent and independent variables and assessment instruments, (iii) inclusion and exclusion criteria, (iv) aims and hypothesis, (v) method, and (vi) ethics.

PIPATIC Program

Target Population

The target population of the PIPATIC program is the adolescents aged 12 to 18 years old.

Clinical Objectives

The main aim of the program is to provide specialized psychological assistance for adolescents with IGD. The clinical objectives are as follows: (i) to gain adaptive (rather than maladaptive) use of videogames and ICTs; (ii) to enable therapeutic change to different patient profiles; and (iii) to treat adolescents multidimensionally, attending to intrapersonal needs (including the comorbid disorders), interpersonal needs, family needs, and educational/occupational needs.

Table 6 Module 5: family (three sessions)

Sub-modules	Content	Psychological strategies	Intervention techniques and strategies
Family communication	Family communication Communication styles at home Adaptive family communication	To contain negative emotions and anxieties related to family conflicts To detect communicational mistakes in the family To promote new communication skills in the family	Active listening Activities related to adaptive communication styles in the family Application of the contents daily Other specific activities
Limits establishment	Family limits Establishment of new family limits Family behaviors	To guide the identification of family behaviors and boundaries To establish decisions and new limits through negotiation strategies	Specific activates related to this sub-module, e.g., negotiation techniques, remembering rules without criticizing the others, the use of consequences instead of punishments
Bonds establishment	Affective bounds: insecure or ambivalent, avoidant, disorganized and secure	To detect the type of family bond To establish a new adaptive bond To improve family bonds To moderate the joint effort decisions To contain negative aspects of the therapy family	Psychoeducation related to affective bonds Role-playing techniques with the family Specific homework to improve new family skills and keep learnings Specific activities related to showing affection

Table 7 Module 6: creation of new lifestyle (two sessions)

Sub-modules	Content	Psychological strategies	Intervention techniques and strategies
Observations related to the improvements	Achieved goals Achieved new skills	To highlight the positive changes and new adaptive abilities To give new strategies to keep the changes during the time	Comparatives self-registrations Observations related to personal changes and new skills Balance between the previous and the current situation
Alternative activities	To generate new alternative activities to previous ones	To promote the reflection of the adolescent about activities to develop next To promote useful, positive and social activities	Developing a list about possible new activities that generate well-being and happiness
Relapse prevention	Relapse prevention	To explore current emotions To point out risk situations To provide specific ideas and resources to avoid the relapses	Anticipation strategies to prevent risk situations and relapses Activities and relapse prevention material

Table 8 Treatment conclusion and three-months follow-up

	Content	Psychological strategies	Intervention techniques and strategies
Conclusion of the treatment	Farewell	Conclusion setting To contain anxieties	Brief review of prevention relapse techniques Encourage the patient about its own recourses and the new life stage
Post-evaluation	Application of instrument battery	To guide the process	Correction and evaluation of instruments used
Follow-up	Strengthening processes and learning related to the treatment	Assessing patient's improvement Begin a process of detachment with the therapist	Supportive strategies Reinforcement of the self-efficacy
	Follow-up visit	To promote self-efficacy in the patient Address possible relapse risks	Learnings generalizations

Summary of the PIPATIC Manual

The PIPATIC program was designed as a clinical manual comprising six modules with specific sub-modules. Each module includes several psychological techniques in addition to cross-psychotherapeutic strategies. The program is six month duration comprising twenty-two 45-minute weekly sessions each for both individuals and families. The PIPATIC intervention is an individual [person-to-person] therapy carried out by a qualified clinical psychologist. Before the commencement of treatment, several sessions are carried out with the following objectives: (i) to assess the inclusion and exclusion criteria, (ii) to talk to the patient and family and address any concerns they may have about the program, and (iii) to complete the first pre-treatment evaluation.

Tables 2, 3, 4, 5, 6, 7, and 8 summarize all the modules belonging to the PIPATIC program. The tables outline the main content, the psychological strategies used within the module, and the intervention techniques and strategies of every module. In addition, all the modules include therapeutic homework to strengthen the establishment related to the therapeutic changes required to help change everyday behavior. In the PIPATIC program, the direct collaboration of family in the treatment program is essential to make progress. It is uncommon for adolescents to ask for therapeutic help on their own (Griffiths 2015), and it is usually the adolescent's family who ask for therapeutic care or psychological treatment (King et al. 2010b).

The efficacy of the treatment program shows excellent promise based on data collected on the 17 individuals that have undergone the program to date (Torres-Rodríguez and Carbonell, 2015, 2017; Torres-Rodríguez, Griffiths and Carbonell, 2017). These preliminary results of the PIPATIC program pilot application demonstrate a reduction of time spent playing videogames, a reduction in IGD-related symptoms and comorbid symptoms, and improvement in multiple important areas in day-to-day functioning (e.g., interpersonal and intrapersonal functioning, family functioning, and educational/occupational functioning). Furthermore, compared to other treatments for IGD and Internet addiction published in the peer-reviewed literature, the PIPATIC program is arguably one of the most comprehensive treatment

Table 9 Comparison between PIPATIC program and other relevant treatment programs

Psychological interventions related to technologies addictions	N = sample	Motivational interviewing	Setting aims	Psychoeducation	Self-observation and time organization	Stimulus control	Coping strategies	Cognitive restructuring	Withdrawal and exposure
PIPATIC	17	●	●	●	●	●	●	●	●
Díaz et al. 2008	-	●	●	○	○	●	●	●	●
Dong and Potenza 2014	-	●	●	○	○	●	●	●	●
King et al. 2010a	-	○	●	○	○	●	●	●	●
Young 2013 (CBT-IA)	128	●	●	○	○	●	●	●	●
Li and Wang 2013 ^a	14	○	●	●	○	○	○	○	○
Kim 2008 ^a	25	○	●	○	○	○	○	○	○
Su et al. 2011	65	●	●	○	○	○	○	○	○
Shek et al. 2009 ^b	59	●	●	○	○	○	○	○	○
Marco and Chóliz 2014	1	●	●	○	○	○	○	○	○

Psychological interventions related to technologies addictions	Identity and self-esteem	Emotional intelligence	Social skills	Family therapy	Lifestyle management	Comorbid disorders treatment	Relapse prevention	Follow-up
PIPATIC	●	●	●	●	●	●	●	●
Díaz et al. 2008	●	○	○	○	○	○	○	○
Dong and Potenza 2014	○	○	○	○	○	○	○	○
King et al. 2010a	○	○	○	○	○	○	○	○
Young 2013 (CBT-IA)	○	○	○	○	○	○	○	○
Li and Wang 2013 ^a	○	○	○	○	○	○	○	○
Kim 2008 ^a	○	○	○	○	○	○	○	○
Su et al. 2011	○	○	○	○	○	○	○	○
Shek et al. 2009 ^b	○	○	○	○	○	○	○	○
Marco and Chóliz 2014	○	○	○	○	○	○	○	○

● present, ○ present with some limitations, ○ not present

^a Group therapy

^b Individual and group therapy (mixed)

intervention for Internet and online videogame addiction (see Table 9 for an in-depth comparison between studies published in the empirical clinical literature).

Conclusions

The present paper described the development of the PIPATIC program, a contemporary and integrative treatment based on CBT for the specialized treatment of adolescents with IDG. Its design is based on a theoretical robust empirical base, on previous treatment studies, and on a combination of perspectives and psychotherapeutic strategies that have proven to be effective on adolescents across different disorders (Du et al. 2010; Fang-ru and Wei 2005; Han et al. 2015; King et al. 2012; Nathan 2015; Winkler et al. 2013; Young 2009, 2013).

At present, the efficacy of the program appears very promising but due to the time-intensive nature of the intervention, only 17 clients have completed treatment to date. As with any other treatment or manualized program, there are a number of limitations. The program was designed focusing on a very specific population (i.e., adolescents with IGD). The intervention has a specific rigidity because it must follow or adhere to specific methodological standards for its application and evaluation. Occasionally, such rigidity is difficult to adapt to the client's particular needs. Due to this, and to solve the "stiffness" of the treatment, the modules could be applied independently and in different order to adapt to the most urgent need that the client has. Despite these limitations, the preliminary results suggest the program is efficacious.

Future plans include (i) studying the effectiveness of PIPATIC treatment comparing the participants of this treatment with other participants receiving treatment as usual for addictions; (ii) comparing the data already collected in relation to pre-treatment, middle-treatment, post-treatment, and three-months follow-up; and (iii) analyzing various cases of different ages, clinical profiles, game genre, and context to confirm the efficacy of findings in other populations and environments. It is expected that the PIPATIC program will continue to be an effective and pioneering integrative treatment for problematic use and addictive behaviors related to online videogames as well as concomitant pathologies. The present paper attempts to provide an orientation and update for health professionals in this field who want to treat adolescents for IGD.

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Compliance with Ethical Standards

Informed Consent The study was approved by the ethics committee of Universitat Ramon Llull. Consent is not applicable because no data were collected for the present paper.

Conflict of Interest The authors' report no financial or any other conflicting relationship relevant to the topic of this paper. All authors' take responsibility for the integrity of the paper's content.

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