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# Internet addiction and other problematic online behaviors among teenagers

Georgios Filippidis, Democritus University of Thrace

## Διαδικτυακή εξάρτηση και άλλες προβληματικές συμπεριφορές εφήβων στο διαδίκτυο

Γεώργιος Φιλιππίδης, Δημοκρίτειο Πανεπιστήμιο Θράκης

### ABSTRACT

Internet use, in people's everyday lives, has rapidly increased in recent years globally. It is estimated that today 47% of the world population uses the Internet on a daily basis. The tremendous possibilities to communicate, conduct transactions and interact it offers, have rendered the Internet an indispensable part of everyday life in the modern world. Especially today's kids and teenagers, we could argue that from the day they are born they coexist with technology and the Internet. Various research efforts in recent years found that the time teenagers spend on the Internet and the range of their online activities are constantly increasing. This excessive use of the Internet by minors, however, despite offering a host of benefits can lead to a number of problems that in certain cases can turn into a pathological addiction to the Internet and new technologies. The present research aims to examine problematic Internet use during adolescence, a critical period in a person's life, and how excessive Internet use, combined with other social factors, can lead to dangerous situations for the vulnerable psyche of teenagers.

**KEY WORDS:** Internet, addiction, teenagers, prevention, treatment.

### ΠΕΡΙΛΗΨΗ

Η χρήση του διαδικτύου, στην καθημερινή ζωή των ανθρώπων, τα τελευταία χρόνια έχει παρουσιάσει μια ραγδαία αύξηση σε παγκόσμιο επίπεδο. Υπολογίζεται ότι το 47% του παγκόσμιου πληθυσμού έχει άμεση πρόσβαση καθημερινά στο Διαδίκτυο. Οι απίστευτες δυνατότητες επικοινωνίας, συναλλαγών και αλληλεπίδρασης που προσφέρει, το έχουν κάνει αναπόσπαστο κομμάτι της καθημερινότητας του σύγχρονου ανθρώπου. Ιδιαίτερα τα σημερινά παιδιά και οι έφηβοι γεννιούνται με δεδομένη την συνύπαρξή τους με την τεχνολογία και το Διαδίκτυο. Μέσα από πολλές έρευνες των τελευταίων ετών έχει προκύψει ότι οι ώρες που οι ανήλικοι περνούν συνδεδεμένοι στο διαδίκτυο και οι δραστηριότητες που κάνουν μέσα από αυτό αυξάνονται συνεχώς. Ωστόσο, αυτή η υπερβολική ενασχόληση των ανηλίκων, πέρα από πολλά θετικά σημεία εμφανίζει και πολλές προβληματικές καταστάσεις που σε ορισμένες περιπτώσεις μπορούν να γίνουν παθολογικές και να οδηγήσουν σε εξάρτηση. Σκοπός της παρούσας μελέτης είναι να αναδείξει την προβληματική χρήση του και πως η υπερβολική ενασχόληση, σε συνδυασμό και με άλλους κοινωνικούς παράγοντες, μπορεί να οδηγήσουν τελικά σε καταστάσεις που μπορούν να γίνουν επικίνδυνες για τον ευαίσθητο ψυχισμό των εφήβων.

**ΛΕΞΕΙΣ ΚΛΕΙΔΙΑ:** Διαδίκτυο, εξάρτηση, έφηβοι, πρόληψη, αντιμετώπιση.

## 1. Introduction

The modern world is characterized by the rapid evolution of technology. The Internet has become an indispensable tool in people's everyday lives. Computer communications networks have created a global web, where various groups of people gained access to information and "a channel for online socialization and communication" (Siomos, Sfakianakis, Floros, 2012). Furthermore, the evolution of communications technology has paved the way for innovations in the fields of education, work, health, social sciences, communications, trade and management. New technologies are a rather attractive environment for new ways of working, education, developing interpersonal relationships and utilizing free time, with all users recognizing the various benefits offered (Polo-Manou, 2016).

Additionally, the Internet offers various benefits in the field of education. Utilizing the Internet teaching becomes more attractive and interesting, providing additional incentives for learning as the audiovisual material and the immersive graphics make it easier to mobilize students, whose commitment to the learning process, with the use of the Internet, appears to grow. As students are familiar with new technologies they are exposed to different opinions and cultures, something that wouldn't be otherwise possible. Students are advised to use the Internet, as it is an easy, quick and free medium for finding and filtering information, allowing them to broaden their horizons and become critical thinkers (Weinstein-Lejoyeux, 2010).

The Internet is an important tool of education, counseling, information and entertainment, the inability, however, of certain people to control their relationship with the Internet can lead to multiple hazards. Internet misuse is causing unpleasant feelings and forces people who make problematic use of the Internet to postpone many of their daily activities and neglect their obligations. Furthermore, prolonged Internet use can lead people to isolate from friends and family. In particular, when Internet use exceeds reasonable qualitative and quantitative limits, then we can refer to Internet addiction (Tsitsika-Kormas, 2012).

Previous research examining Internet use concluded that excessive and compulsive use of the Internet can become pathological and addictive. Initially, the criteria used in previous research were based on the criteria for addiction to alcohol, substances and pathological gambling. Today, however, Internet addiction disorder has its own diagnostic criteria, with Kimberly Young's questionnaire, known as the Internet Addiction Test (IAT) (Young, 2004), the most prominent among them. Additional important questions from previous research pertain to whether Internet addiction is an autonomous mental disorder or there is a pattern of comorbidity with other mental disorders and, if so, which ones. Moreover, is Internet addiction an antecedent or the expression of these mental disorders?

To avoid pathological behaviors with regard to Internet use, a person must be aware of the dangers associated with excessive Internet use and use it with prudence and within clearly defined limits. It is crucial for everyone to realize that the Internet is a tool to make our lives easier and not a substitute of real life. For this reason, it shouldn't be used uncontrollably, at the expense of our quality of life and the obligations of each individual according to his role in various aspects of life.

## 2. Conceptual clarifications about the internet

Some scholars use the term Internet addiction (Young, 1996), while others prefer the term Internet Addiction Disorder (Goldberg, 1996). Davis (2001) uses the term Pathological Internet Use, while in Scherer's (1997) study the term Internet Dependency is used. In the present study both the term Internet addiction as well as the term addiction to the Internet are used, along with the term problematic use of the Internet and new technologies.

A review of the relevant literature on the Internet, its use and abuse, allows one to realize that a plethora of terminologies have been used at times by different researchers to describe the phenomenon.

The constant improvement of the Internet's capabilities along with the ever-increasing Internet use by people, led to different types of use depending on the time spent and the purpose. Hence, five distinct categories of Internet use are identified (Siomos, Sfakianakis & Floros, 2012):

a. Typical Internet use. It refers to a benign use of the Internet for professional, informational, educational and recreational purposes. This type of use does not have an adverse impact on the user's behavior.

b. Problematic Internet use. In this case, the user is spending excessive amounts of time accessing the Internet using a computer, a tablet, a mobile phone or any other internet-enabled device. The Internet is used to communicate with other users, recreation and playing online games, for the most part role-playing games or gambling (Polo & Manu, 2016). The meaningless use of the Internet in this case may not lead to abuse, but it indicates a tendency towards misuse that serves as a warning sign for potential abuse.

c. Internet abuse. Repeated internet use leads to a reduction in the user's functionality. That is, the user is unable to perform his work, school or family duties. He neglects his personal care with important implications for his physical and mental well-being. He faces problems in his personal and social life and engages in delinquent behavior online that may result in voluntary or involuntary wrongdoings. The user is euphoric while sitting in front of a computer, while, on the contrary, he feels discomfort, irritation, stress and is depressed when he can't go online.

d. Internet addiction. To diagnose a person with Internet addiction his behavior must be observed and he must have at least three of the following symptoms for at least 12 months (Siomos, Sfakianakis & Floros, 2012):

- i. When adverse impacts on the user's mental and physical health are observed, manifesting withdrawal symptoms. That is, he must feel discomfort and have psychosomatic annoyances.
- ii. Repeated failed attempts by the user to reduce or even control time spent online.
- iii. Time spent using the Internet keeps increasing. The user spends more time using the Internet than initially planned for.
- iv. Constantly seeking ways to improve his Internet access. The user is always looking for ways to improve his Internet connection.
- v. He neglects his social, school or professional activities in order to stay online. He may even neglect recreational activities, preferring to spend time on the Internet.
- vi. Even when he realizes Internet use is causing him physical and mental problems, the user can't stop using the Internet.

The controversy with respect to the concept of Internet addiction are also reflected by the fact that there is no relevant category in the diagnostics tools for psychiatric disorders, such as the DSM, which does not yet acknowledge Internet addiction as an autonomous mental disorder. Regardless of that, however, Internet addiction is an important issue for social scientists around the world. It is no coincidence that there are already various treatment interventions for users addicted to the Internet globally, along with self-help groups for rehabilitation from Internet dependence, including «Internet Addicts Anonymous» and other initiatives, such as Restart (<http://www.netaddictionrecovery.com/>).

### **3. The Cognitive-Behavioral Approach of Social Work in preventing and treating internet addiction**

**T**he methods and techniques of the cognitive-behavioral model of Social Work can be applied both for the prevention and the treatment of Internet addiction. Firstly, with respect to prevention, the cognitive-behavioral model is important in learning and developing cognitive skills. Using this term, we refer to the skills a teenager must develop in order to establish healthy behavioral patterns in his everyday life, along with defense mechanisms against addictive and delinquent behaviors. Such cognitive skills include self-awareness, understanding the opinion of others, adopting a positive stance towards life, using problem-solving techniques that proceed in stages, internal dialogue, self-confidence and self-esteem. Self-esteem is an important factor in preventing personal dysfunctions, thus improving the teenager's self-esteem is one of the main aims of most cognitive-behavioral prevention interventions. Self-esteem is directly associated with human behavior, since it is a crucial factor for a healthy relationship with one's self and with others. Self-esteem refers to how we perceive certain aspects of our self and how others around us perceive us. Developing self-esteem, a person becomes aware of "good" and tries to develop his personality with behaviors consistent with the concept of "good" and healthy social role models. Finally, self-esteem includes an element of assessment (Makri – Mpotsari, 2010).

Beyond developing cognitive skills, during a prevention and treatment intervention based on the cognitive-behavioral approach, it is necessary to develop the social skills of teenagers. Using the term social skills, we refer to the awareness, expression and handling of emotions, developing empathy, cooperation and improving communication skills (Goleman, 1998). Social workers work with groups of teenagers, using methods and techniques such as simulations, role playing, experiencing exercises, brainstorming and dialogue, positive reframing etc. to help them develop their social skills. The aim is to identify all these negative thoughts and feelings that may lead a teenager to addictive and delinquent behaviors on the Internet, so that through learning social skills he can develop strong prevention mechanisms of these behaviors (Goleman, 1998).

The cognitive-behavioral approach is based, as we have seen, on the relationship between three main dimensions: a) Thoughts, what we are thinking, b) Feelings, what we feel, c) Behaviors, how we act (Stallard, 2002).

The cognitive-behavioral approach is focused on modifying dysfunctional beliefs, through experience and knowledge acquisition by the person itself. The dysfunctional beliefs are identified in order to revise the knowledge and the thoughts that weigh negatively on the person's behavior, trapping the individual in a negative view of his own actions (Stalikas, 2011).

According to all of the above, cognitive-behavioral methods involve interventions focused on changing the pattern of thoughts and feelings in order to modify problematic behaviors. Through the cognitive-behavioral approach individuals are trained to identify the dysfunctional thoughts that lead to addictive behaviors and replace them with thoughts that allow them to develop functional behaviors. The basic component of the cognitive-behavioral approach is the theory of social learning that focuses on the ways we learn in social situations, observing how others act successfully in similar situations (Filippidis, 2017).

For the prevention and treatment of Internet addiction, the cognitive-behavioral approach focuses mainly on cognitive interventions about wrong perceptions, training in problem solving methods and developing cognitive and social skills. Treatment interventions take place in special centers with specialized scientists (Child psychiatrists, Psychologists, Social workers). In mild cases a series of cognitive-behavioral sessions in regular intervals is advised, while in severe cases cognitive-behavioral treatment in special centers is necessary, combined with medication in certain particularly severe cases with comorbidities. In this particular approach, patients examine the emotional motives that constitute the background of their addiction and seek alternative ways to address these needs (Papadimitriou & Sementeriadis, 2014).

## 4. Research methodology

**F**or the present research a quantitative method using structured questionnaires was used. Data were collected from 14 public child protection facilities of Social Care Centers around the country, hosting teenagers of various age groups. The research population was 252 teenagers, aged between 11 and 18 years old, living permanently in these public facilities. A population census was conducted, as the entire population of the aforementioned teenagers was included, and employing a sampling method wasn't required. To conduct the research, prior specific written authorization was granted from the Deputy Minister for social care issues of the Ministry of Labor, Social Security and Social Solidarity, following a positive recommendation from the Directorate of Child Protection of the General Directorate of Social Care. Prior authorization was also obtained from the Boards of Directors of the Social Care Centers operating in every prefecture of Greece and are responsible for the public child protection facilities referred to as Child Protection Branches.

The quantitative method using structured questionnaires was applied, as already mentioned, to study the 252 teenagers living in public child protection facilities. The quantitative method was selected because, on one hand, the population under study was large enough to use any quantitative method, while, on the other hand, the quantitative method allows the generalization of the results and a more objective assessment of the phenomenon under study. Moreover, the main aims of quantitative studies are to examine the causes of various social phenomena and uncover the relationships between the main factors that contribute to the emergence of phenomena of social pathogenesis. Structured protocols are used for data collection in a quantitative research and subsequently objective measurements are obtained and numerical analysis using modern statistical methods and mathematical models is performed.

Each teenager completed a questionnaire and handed it over to a researcher. To complete the questionnaire each teenager required around 15 to 20 minutes. As already mentioned, the total number of teenagers that participated in our research was 252 teenagers that comprised the total population of teenagers aged 11 – 18 years old living in public child protection facilities

at the time the research was conducted. In particular, questionnaires were collected during the period between February and November 2015. (Filippidis, 2017)

## 5. Research findings

Our research findings indicate increased rates of Internet addiction among the teenagers of our study population, compared to the general teenage population examined in previous research in recent years. Namely, 8.9% of teenagers were addicted to the Internet, 23.3% had moderate levels of addiction, 27.5% had low levels of addiction and 40.3% of teenagers had “healthy” Internet use patterns (Table 1). In teenage boys pathological Internet use reached 10.5%, while in teenage girls it was 6%. The addiction rate of the teenagers under study is higher compared to the average European rate of 4.4% and the average rate among the general population of Greek teenagers, that was estimated at 5.4% according to previous research in recent years. However, we shall not forget that our study population was teenagers living in orphanages and the reasons for the increased rates of Internet addiction and other findings will be analyzed in the study’s conclusions.

**Table 1. Addictive behavior among teenagers**

Addictive Behavior Score among Teenagers		Frequency	Percent (%)	Valid Percent (%)	Cumulative Percent (%)
Valid	0-30	95	37,7	40,3	40,3
	31-49	65	25,8	27,5	67,8
	50-79	55	21,8	23,3	91,1
	80-100	21	8,3	8,9	100,0
	Total	236	93,7	100,0	
Missing values	16	6,3			
<b>Total</b>	<b>252</b>	<b>100,0</b>			

Additionally, according to descriptive statistics, 31.8% of teenagers are online all the time, 28.4% browse the Internet 3 - 4 times a day, 14.4% at least two times a day, 16.1% once a day and 9.3% not every day (Table 2). According to the above findings, 90.7% of teenagers that use the Internet, do so on a daily basis and with fairly great frequency.

**Table 2. Frequency of Internet use**

Responses	Frequency	Percent (%)	Valid Percent (%)	Cumulative Percent (%)
I'm constantly online	75	29,8	31,8	31,8
3 - 4 times a day	67	26,6	28,4	60,2
At least twice a day	34	13,5	14,4	74,6
Once a day	38	15,1	16,1	90,7
Not every day	22	8,7	9,3	100,0
Total	236	93,7	100,0	
Missing values	16	6,3		
<b>Total</b>	<b>252</b>	<b>100,0</b>		

With respect to the duration of Internet use, 34.3% of teenagers use the Internet for over 4 hours daily, 15.7% for 3 – 4 hours, 17.8% for 2 – 3 hours and 32.2% for 1 – 2 hours a day (Table 3). It is worth noting that between teenage boys and girls there were no significant statistical differences in the frequency and duration of Internet use. Both sexes use the Internet daily for the same duration, with teenage girls using the Internet for a bit longer as they are more active on social media. Social media use, according to a large volume of the extant research is, at the moment, the main reason that teenagers spend many hours in front of a computer monitor, followed by online games. Around a decade ago, the relative time spent performing each of these online activities was reversed. However, the rapid growth of social media and especially Facebook, in the previous decade, turned social media into the most popular online activity for teenagers.

**Table 3. Duration of Internet use**

Hours	Frequency	Percent (%)	Valid Percent (%)	Cumulative Percent (%)
1-2	76	30,2	32,2	32,2
2-3	42	16,7	17,8	50,0
3-4	37	14,7	15,7	65,7
More than 4	81	32,1	34,3	100,0
Total	236	93,7	100,0	
Missing values	16	6,3		
<b>Total</b>	<b>252</b>	<b>100,0</b>		

Furthermore, for 86.4% of the teenagers in our study population Facebook is one of the main reasons they use the Internet, followed by downloading music and video for 72.9% of them, without being aware, however, that it is illegal and violating copyright law. Playing online games is the reason they use the Internet 69.5% of the teenagers in our study, while 52.5% use it for chatting. To watch movies and listen to music use the Internet 41.1% of teenagers, to seek



online friends 35.6% and 35.2% as a study aid and for their school assignments. Finally, 27.5% of teenagers use the Internet for online shopping, 23.7% to seek sexual partners, 18.6% to catch up with the news, 14.8% for online gambling and just 13.1% to send and read e-mails, as most people in these age groups interact with each other using social media (Table 4).

**Table 4. Why teenagers use the Internet**

Reasons for using the Internet	Frequency	Percent (%) (N 252)	Valid Percent (%) (N 236)
Studying/school assignments	83	7,2	35,2
Online games	164	14,2	69,5
Facebook	204	17,6	86,4
Seeking new friends	84	7,2	35,6
Chatting	124	10,7	52,5
Seeking sexual partners	56	4,8	23,7
Gambling	35	3,0	14,8
News	44	3,8	18,6
E-mails	31	2,7	13,1
Online shopping	65	5,6	27,5
Downloading music/videos	172	14,8	72,9
Watching movies/listening to music/gaming	97	8,4	41,1
<b>Total</b>	<b>1159</b>	<b>100</b>	<b>491,1</b>

The next question in our research examined whether teenagers in our population study played online games with real money. According to our findings, 18.2% of teenagers play online games with real money (Table 5), 37 of them teenage boys (24.2%) and 6 teenage girls (7.2%) (Table 6). Out of the 43 teens playing online games, 12 of them are severely addicted and an additional 18 are moderately addicted to the Internet (Table 7). We observe, therefore, a high degree of correlation between pathological Internet use and playing online games with real money, as, out of the 43 teenagers that play online games with real money, 30 of them are severely or moderately addicted to the Internet. Moreover, we observe that teenage boys (37) that play online games with real money vastly outnumber teenage girls (6). Once again it is confirmed that teenage boys gamble far more than teenage girls do.

**Table 5. Do teenagers play online games with real money?**

Do you play online games with real money?	Frequency	Percent (%)	Valid Percent (%)
Yes	43	17,1	18,2
No	193	76,6	81,8
Total	236	93,7	100,0
Missing values	16	6,3	
<b>Total</b>	<b>252</b>	<b>100,0</b>	

**Table 6. Do teenagers play online games with real money? Breakdown by gender**

Gender	Frequency	Percent (%)	Valid Percent (%)
<b>Boys</b>			
Yes	37	22,7	24,2
No	116	71,2	75,8
Total	153	93,9	100,0
Missing values	10	6,1	
<b>Total</b>	<b>163</b>	<b>100.0</b>	
<b>Girls</b>			
Yes	6	6,7	7,2
No	77	86,5	92,8
Total	83	93,3	100,0
Missing values	6	6,7	
<b>Total</b>	<b>89</b>	<b>100,0</b>	

**Table 7. Degree of addictive behavior playing among teenagers by playing online games with real money**

Degree of addictive behavior	Frequency	Total number of addicted teenagers	Percent (%)
Moderate Addictive Behavior	18	55	32,73
Severe Addictive Behavior	12	21	57,14

Next, we examined which online games teenagers play with real money, either to buy various in-game characters or become more competitive and win more money. In this question teenagers were able to mention more than one game and there were no predetermined answers. As shown in Table 8, 29.6% of the 43 teenagers that play online games with real money play League of Legends (LOL), 18.4% play OPAP's Pame Stoixima Live, 17.3% play Counter Strike Global Offensive (Cs Go), 13.3% play Heroes of Newerth (HoN), 12.2% play World of Warcraft (WOW) and 9.2% play games in online casinos (poker, roulette, slot machines, etc.).

**Table 8. Online games teenagers play spending real money**

If you play online games with real money name which ones:		Frequency	Percent (%)	Valid Percent (%)	Cumulative Percent (%)
Valid	League of Legends (LOL)	29	11,5	29,6	29,6
	Counter Strike Global Offensive (Cs Go)	17	6,7	17,3	46,9
	Heroes of Newerth (HoN)	13	5,2	13,3	60,2
	World of Warcraft (WOW)	12	4,8	12,2	72,4
	Pame Stoixima Live	18	7,1	18,4	90,8
	Casino Live	9	3,6	9,2	100,0
	Total	98	38,9	100,0	
Missing values		154	61,1		
<b>Total</b>		<b>252</b>	<b>100,0</b>		

Adolescents' communication with strangers online is another significant finding of our survey. More specifically, 46,4% of the teenagers questioned, conceded that they talk with people they do not know, on the Internet, whereas, 53,6%, do not. It seems then, that, almost 1 in 2 adolescents who participated in the survey, communicates with strangers online (Table 9). 82 boys responded positively, that is 53,9% and 27 girls, which is 32,5%. Boys apparently, tend to contact strangers more often, than the girls who took part (Table 10).

**Table 9. Exploring adolescents' communication with strangers on the Internet**

Do you talk to strangers online?	Frequency	Percent (%)	Valid Percent (%)
Yes	109	43,3	46,4
No	126	50,0	53,6
Total	235	93,3	100,0
Missing System	17	6,7	
<b>Total</b>	<b>252</b>	<b>100,0</b>	

**Table 10. Exploring adolescents' communication with strangers on the Internet based on gender**

Gender	Frequency	Percent (%)	Valid Percent (%)
<b>Boys</b>			
Yes	82	50,3	53,9
No	70	42,9	46,1
Total	152	93,3	100,0
Missing System	11	6,7	
<b>Total</b>	<b>163</b>	<b>100,0</b>	

<b>Girls</b>			
Yes	27	30,3	32,5
No	56	62,9	67,5
Missing System	6	6,7	100,0
<b>Total</b>	<b>89</b>	<b>100,0</b>	

Apart from talking to people they do not know, 36,2% of the adolescents in question, admitted that they have already got together in the real world with strangers they had met online, whereas 63,8% claimed they have never met in person. (Table 11). Amongst those who responded positively, there are 65 boys (39,3%) and 21 girls (25,3%). It can be drawn from this as well, then, that boys outweigh girls in meeting in person with strangers they have met online, however, girl numbers cannot be overlooked (Table 12).

**Table 11. Meeting in person with online strangers.**

Have you ever met in person with strangers you met online?	Frequency	Percent (%)	Valid Percent (%)
Yes	85	33,7	36,2
No	150	59,5	63,8
Total	235	93,3	100,0
Missing System	17	6,7	
<b>Total</b>	<b>252</b>	<b>100,0</b>	

**Table 12. Meeting in person with online strangers, based on gender**

Gender	Frequency	Percent (%)	Valid Percent (%)
<b>Boys</b>			
Yes	65	39,3	39,3
No	88	54,0	57,9
Total	152	93,3	100,0
Missing System	11	6,7	
<b>Total</b>	<b>163</b>	<b>100,0</b>	
<b>Girls</b>			
Yes	21	23,6	25,3
No	62	69,7	74,7
Total	83	93,3	100,0
Missing System	6	6,7	
<b>Total</b>	<b>89</b>	<b>100,0</b>	

The main reasons why, the adolescents who took part in our survey, met in person with strangers they had only met online, were further studied.

34,5% met for simply making another acquaintance, 17,2% for company/friendship, 26,4% met with strangers for sexual reasons, 17,2% to have an affair and 4,6% for the purchase of a certain object.

The most common reason for boys going out with a stranger they met online is, to get an acquaintance (36,4%), for sexual reasons (28,8%) and to have an affair (15,2%). Last but not least, boys meet with strangers for company/friendship (13,6%) and in order to buy something from them (6,1%)

On the other hand, girls meet with strangers equally looking for an acquaintance (28,6%) and for company/friendship (28,6%). Having an affair follows as the main reason why, they would meet a stranger in person (23,8%) and finally, sexual reasons (19%). None of the girls claimed they meet in person with strangers they meet online, in order to buy a certain object.

In our survey, 21 adolescents have been attributed seriously addictive behavior. According to the following (Table 13) 18 out of the 21 adolescents who have met in person with strangers from the Internet, have, also, got seriously addictive behavior concerning the use of Internet, that is, 85,7%.

On the other hand, 55 adolescents in our survey have been found to exhibit moderate addictive behavior concerning the use of Internet and 33 of them have met in person with strangers from the Internet; that is, 60% (Table 13). Thus, there seems to be a significant correlation between the Internet- addicted adolescents and the risky behavior of meeting in person with strangers they've met online.

**Table 13. Addictive behavior and meeting with strangers.**

Have you ever met in person with strangers you met online?	Frequency	N	Percent (%)	Valid Percent (%)
Seriously addictive behavior				
Yes	18	21	85,7	85,7
Moderate addictive behavior				
Yes	33	55	60,0	60,0

Another important point examined in our study is whether the teenagers that participated in our research have watched informative talks about safe Internet use and which teenagers believe are the necessary conditions to stay safe while browsing the Internet. According to our findings, shown in table 14, 43.2% of teenagers have watched informative talks or discussions about safe Internet use, while 56.8% haven't. Namely, 59 teenage boys (36.2% of all boys) and 43 teenage girls (48.3% of all girls) have watched informative talks or discussions about safe Internet use (Table 15).

**Table 14. Have teenagers watched informative talks or discussions about safe Internet use?**

Have you watched informative talks or discussions about safe Internet use?		Frequency	Percent (%)	Valid Percent (%)
Valid	Yes	102	40,5	43,2
	No	134	53,2	56,8
	Total	236	93,7	100,0
Missing values		16	6,3	
<b>Total</b>		<b>252</b>	<b>100,0</b>	

**Table 15. Have teenagers watched informative talks or discussions about safe Internet use? Breakdown by gender**

Gender			Frequency	Percent (%)	Valid Percent (%)
Boys	Valid	Yes	59	36,2	38,6
		No	94	57,7	61,4
		Total	153	93,9	100,0
	Missing values	10	6,1		
	<b>Total</b>	<b>163</b>	<b>100,0</b>		
Girls	Valid	Yes	43	48,3	51,8
		No	40	44,9	48,2
		Total	83	93,3	100,0
	Missing values	6	6,7		
	<b>Total</b>	<b>89</b>	<b>100,0</b>		

Finally, table 16 presents the necessary conditions to stay safe online according to teenagers. For this question teenagers were able to select more than 1 option. According to the analysis that followed, 73.7% of the teenagers that participated in our research believe that they should avoid chatting with strangers online, 58.5% that they shouldn't visit websites with illegal content, 80.1% that they shouldn't share their personal details on the Internet and 64.8% that they should inform an adult they trust when they feel they are in danger while online. Furthermore, 44.5% of the teenagers asked answered that not browsing websites with adult content is another condition for safe Internet use. According to our research findings, 61.4% believe that they shouldn't gamble online or conduct financial transactions over the Internet and, finally, 69.9% believe that they shouldn't join dangerous online groups, such as violent or racist groups, groups for seeking sexual partners etc.

**Table 16. The necessary conditions to stay safe online according to teenagers.**

What are the necessary conditions to stay safe online in your opinion?	Responses		Valid Percent (%)
	N	Percent (%)	
Not chatting with strangers	174	16,3	73,7
Not browsing websites with illegal content	138	12,9	58,5
Not sharing my personal details on the Internet	189	17,7	80,1
Informing an adult i trust when i feel in danger	153	14,3	64,8
Not visiting websites for adults only	105	9,8	44,5
Not gambling or conducting financial transactions online	145	13,6	61,4
Not joining dangerous online groups (such as violent or racist groups, groups for seeking sexual partners etc.)	165	15,4	69,9
<b>Total</b>	<b>1069</b>	<b>100,0%</b>	<b>453,0%</b>

## 5. Conclusions – Discussion

**I**nternet addiction is a modern social phenomenon, that tends to become more common as use of new technologies becomes more widespread. Teenage Internet addiction can be attributed to multiple factors and is interwoven with the global social, cultural and humanitarian crisis that via certain dysfunctional social institutions is reflected on deficient personalities and especially on the vulnerable teenage psyche. Especially the teenagers in the study population, having to overcome various social adversities, carrying multiple childhood emotional wounds, heavily stigmatized and lacking socialization, are particularly vulnerable to Internet addiction.

All the aforementioned deviant behaviors of teenagers on the Internet that we examined in our research, that lead, as we have seen, to soaring Internet addiction rates, can be attributed to various special factors affecting our research population that is comprised of teenagers living in child protection facilities in Greece. These special factors can, under certain conditions, be specified and generalized, to draw insightful conclusions about behaviors of the general population of teenagers in Greece. First of all, the absence of a family environment and parental guidance and control is responsible to a large extent for the misuse of the Internet and the development of delinquent and antisocial behaviors. Growing up without a family environment or in an abusive and inappropriate family environment up to a certain age, for the minors we studied, appears to have a significant impact on the difficulty to control the behaviors of this particular group of teenagers. At the same time, there are serious and major shortages in scientific and social care staff in the institutionalized facilities these teenagers grow up in, resulting in limited or, in certain cases, non-existent supervision and guidance on the proper use of the Internet. Expert on issues of delinquent behaviors, psychiatrist Matsa (2009) notes the significance of the lack of a family or any other type of supervisory framework on harmful and illegal activity using the Internet, arguing that “individuals that usually develop addiction to the Internet and are involved in delinquent behaviors online are persons with deficient identity, that grew up without firm parental role models, with their parents barely or not present in their lives, or with parental substitutes”.

Another important reason for the increased rates of Internet addiction and problematic Internet use among the teenagers in our study, is a tendency to imitate negative behaviors that appear in institutionalized facilities, because of the influence of older teenagers on younger ones, but also between peers. According to the theory of social learning many adolescent behaviors are the outcome of a learning process and imitating the behavior of important others around them. In particular, classic reflective or classic dependent learning interprets every behavior, positive or negative, as the response to stimuli from the teenagers' immediate environment. Furthermore, the child protection institutions in Greece are desperately understaffed, lacking scientific and social care personnel, while the limited staff has high rates of work exhaustion (Filippidis, 2015) and is thus unable to provide the minors hosted there with the proper edification and psychosocial support. Hence, usually in these institutions the younger teenagers tend to imitate the negative behavioral patterns of the older ones, that are especially prone to problematic and unsafe Internet use. As the younger teenagers observe the older ones using the Internet for many hours a day, threatening others via e-mail, but also being threatened themselves, they become accustomed to these behaviors and thus a vicious learning cycle of negative behaviors is established in child protection facilities.

Additionally, another important element contributing to the high rates of problematic Internet use among teenagers living in child protection facilities, is the fact that this particular group of teenagers comes from various biological, social and cultural environments. Most of the time they enter these facilities with already developed personalities and preexisting delinquent and addictive behaviors. It is widely known that childhood and especially the first few years in a child's life, are particularly crucial for the development of their personality and their psychosocial resilience. Minors that had to be transferred to a child protection facility lived in abusive and dysfunctional family environments, exposing them to unhinged behaviors and negative role models. These behaviors of teenagers and their childhood traumas cannot be easily controlled and treated in the public child protection facilities, suffering by all the aforementioned problems, and as a result these uncontrolled behaviors result in problematic Internet use. Furthermore, highly deficient personalities not accustomed to clear rules and limits to their behavior, minors with major socialization issues, individuals unable to come to terms with their frustrations and individuals who can't express their feelings and suffer from low self-esteem and limited social functionality are especially prone to Internet addiction.

Finally, another important factor that we believe leads to increased rates of Internet addiction among teenagers living in child protection facilities is the stigma and the social prejudice against them. According to "labelling theory", society is to a large extent responsible for deviant behavior and not the person deviating from the rules (Matza, 1969). Deviant behavior is the result of social reactions and social representations that influence a person's behavior. As we have seen, minors who live in orphanages are stigmatized, both by their peers as well as the rest of society. Social perceptions that teenagers living in orphanages are usually violent, aggressive, out of control, delinquent etc. stigmatize and marginalize these teenagers forcing them to interact only with each other. Thus, according to labelling theory, as long as persons are subject to prejudice and stigma, they will resort to delinquent behaviors as a defense or attack mechanism (Kourakis, 2004). Moreover, according to the theory of self-fulfilling prophecy, this process mutates the teenager's self-image and eventually he conforms to the image of the stigma attached to him from those around him.



Today, it remains as relevant as ever, the chronic demand in Greece for the establishment of social services. If not in every school, in groups of schools staffed with social workers and psychologists. These scientists could develop various programs and projects in the school community to promote diversity acceptance and the treatment of phenomena of social pathogenesis, such as Internet addiction. These programs would aim to change negative behaviors and thoughts and promote behaviors and skills that would boost students' self-esteem and self-confidence and create groups based on cooperation and acceptance of diversity. Social workers and psychologists in schools are able through cognitive-behavioral approaches to design and implement innovative projects to create a supportive environment and a complete set of interventions focused on the prevention and treatment of addictive and delinquent behaviors.

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## Biographical Note

**Georgios Filippidis** currently works as a social worker at the Special Education High School in Northern Greece and an academic supervisor for Social Work students' practicum at the department of Social Work at the Democritus University of Thrace. He holds a degree in Social Work from the same department (previously named Social Administration and Political Science), and two M.A.'s in Pedagogy and in Administration of Health Institutions from Aristotle University of Thessaloniki. He holds a PhD on Internet addiction and electronic juvenile delinquency in Greece awarded by the Dept of Social Administration and Political Science at the Democritus University of Thrace. In the recent past he was the General Administrator of the General Public Hospital of Komotini-Northern Greece and Vice President of the Child Welfare Centre of the Prefecture of Eastern Macedonia and Thrace. His main research interests involve issues in social work and clinical social work, addictions, electronic violence, child protection, special and general education.