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Webinar usefulness of data dissemination on an internet use school-based regional survey in Greece A brief assessment before and after

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Η χρησιμότητα του διαδικτυακού σεμιναρίου
για τη διάδοση των δεδομένων
μιας περιφερειακής έρευνας σχετικά με τη χρήση
του διαδικτύου στο σχολείο στην Ελλάδα:
Μια σύντομη αξιολόγηση πριν και μετά

Περίληψη στο τέλος του άρθρου

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The use of the internet has become more frequent and convenient since access to computers has become easier through the modernization all over the world and the mass use of smartphones.¹ Recent data show that on February 2025, 5.56 billion people worldwide (67.9% of the global population), were internet users, and 5.24 billion (63.9%) of the global population were social media users.² That

exorbitant use of the internet or social media has some severe consequences on people's behavior and social skills and the term "internet addiction" (IA) describes the uncontrollable tendency of being online, with all negative consequences from such practice.³

According to some epidemiological sources, population IA ranges from 20.0% to 44.6%, depending on the region.⁴ More specifically, a report of the European Union (EU) Parliament indicates that 33% of people over the age of 55 use the internet daily, while that number rises to 90% for the age range between 15 and 24 years old.⁵ In terms of location, research shows that the EU country with the highest occurrence of IA in adolescents is Romania with 22%, followed by Malta with 18% and Bulgaria with 17%.⁶ Another nationwide study in Greece suggests that 15.3% of Greek adolescents were addicted to the internet.⁷

Looking at the effects of a problematic internet use, particularly when it comes to younger users, it is evident in many studies that many aspects of a person's life are negatively affected. For example, IA can severely affect sleep quality, mental health as the problematic internet use in adolescents is linked to physical inactivity and academic underperformance, and social problems, like loneliness and dissociation.^{8,9}

In order to deal with the phenomenon of IA, preventive interventions need to be implemented. A prevalent method for adolescents is school-based prevention programs, because they are quite effective in preventing IA while they are thought to reach most individuals at risk and they appear cost-effective.¹⁰ In addition, web-based interventions are becoming more and more popular in the last few years.¹¹ Those interventions are potentially more beneficial than face-to-face interaction, as they are more easily accessible to anyone, they are uncostly

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and they provide anonymous interaction.¹² Additionally, a cross-sectional survey in 2023/2024 in Crete, Greece, concerning high school teachers' awareness of IA and the related factors among Greek adolescents¹³ shows that 71.3% of teachers mentioned feelings of temporary satisfaction while surfing the net, as users. Also, 80.5% stated that they had, spontaneously in the past, provided their students health recommendations regarding sleeping, dietary, and exercising habits.

A 90-minute web-based informative intervention disseminated the above-mentioned local findings on internet use, from the cross-sectional regional survey in Crete. This intervention aimed (a) to raise awareness about IA, its symptoms, and its negative effects, and (b) to prove that a web-based intervention can be perceived as a dissemination source of information. The pre- and post- assessment of the webinar on internet use, school-based research initiatives, by focusing on issues of its importance, feasibility and usefulness was the aim of this report.

The study took place in February of 2025 through web-based intervention performed in the context of short on-line webinar lectures, via teleconferencing software. Randomly selected high school directors from 40 high schools from all around the Region of Crete, Greece, were summoned to participate in the intervention.¹³ Out of the initially 18 schools which voluntarily accepted e-invitation (Pre), 15 responded after the presentation of the results (Post). Before their involvement, all participants (school directors or teachers on behalf of school directors) were informed about the informative meeting and participation was not mandatory. Lectures, PowerPoint presentations and brainstorming comments were used to inform the participants and included data dissemination, based on previously collected data from teachers and first-year Lyceum students from schools of the Region of Crete by the scientific coordinator of the project. A presentation from a psychologist highlighted issues of internet use and addiction among adolescents. A following presentation from a nutritionist discussed aspects of internet use, addiction and healthy eating habits among adolescents. A subsequent presentation from a physical activity trainer focused on issues of internet use, addiction and daily exercise among adolescents. A social work professional described dimensions of addictive attitudes in general and addictive dependence from internet use and how both may be related to self-efficacy and adolescent daily performance. Lastly, a general practitioner offered input on the role of the general practice to coordinate interventions between families, school teaching staff and adolescents

on proper internet use through a multidisciplinary view and collaboration.

For the conduct of this research, approval was granted by the Research Ethics Committee of the University of Crete (REC-UOC, decision no: 140/22.9.2022). Initial clearance to access schools was obtained by the Regional Directorate of Education of Crete (10556/3.11.2022). The participants received a QR code leading them to a six-item questionnaire (tab. 1), which completed anonymously, both preceding (before the presentation) and following (after the presentation) the attendance of the course. Anonymity was skilled by requiring the participants to set their own pseudo-password (letter and date) in order to compare and link the preceding responses with the subsequent ones. A ten-point Likert scale from 1 (minimum) to 10 (maximum) was used to create scores and Wilcoxon method to assess their differences. Satisfaction level was rated with a 10-point scale at the end of the presentation, as well.

A significant improvement to the participants' belief about the presentation of research data in schools on adolescent IA could open up a discussion about the phenomenon in schools (*question 2*) was noticed, as the mean score from 8.53 points at the Pre stage increased to 9.27 at the Post stage ($p=0.031$) (tab. 1). Moreover, the average rating of the participants' satisfaction with their interaction with the presentation (*question 7*) was considerably high (9.53/10).

When it comes to the participating schools, the average rating of the six questions was interestingly improved in four schools (tab. 2). In detail, between Pre-Post stages there was found a significant increase in mean score of school number 2 (8.53 points to 10.00 or +0.83, $p=0.025$), in school number 7 (5.67 to 9.50 or +3.83, $p=0.027$), in school number 9 (5.17 to 8.00 or +2.83, $p=0.026$) and in school number 14 (8.33 to 9.50 or +1.17, $p=0.020$), as well as in the total mean score (8.72 to 9.39 or +0.67, $p<0.001$). Δ -change was descriptively positive for eight schools and negative for three schools, but with no statistical significance (tab. 2). Furthermore, concerning the frequency of the replies to the question only given at the end (Post) about the satisfaction with the interaction with the presentation, 10/15 schools rated responded to the 10-point scale with a maximum score (ten), 3/15 schools rated it with a nine and 2/15 schools rated it with an eight.

The progressively preferred location for prevention attempts and awareness raising on matters of public health has been the school environment.¹⁴ This can be achieved by training the teachers and the parents, and educating the students in order to promote more positive circumstances

Table 1. Scores of responses to questions/suggestions of beliefs about internet addiction and evaluation of research data presentation, 15 schools (directors or on behalf teachers).

Questions/suggestions	Research data presentation			p-value
	Pre	Post	Δ -change	
	Mean (SD)			
1. To which extent do you think that research can contribute to understanding the needs of adolescents regarding internet addiction?	8.27 (1.79)	9.20 (0.94)	+0.93	0.088
2. To which extent do you think that presenting research data in schools on adolescents' internet addiction can open up the discussion of the phenomenon in schools?	8.53 (1.19)	9.27 (0.70)	+0.73	0.031
3. To which extent do you think that awareness-raising activities in schools about adolescent internet addiction can open up the discussion of the phenomenon in families?	8.40 (1.81)	9.07 (0.96)	+0.67	0.159
4. To which extent do you believe that teenage internet addiction is a significant public health problem?	8.80 (1.94)	9.53 (0.64)	+0.73	0.085
5. To which extent do you think that the phenomenon of teenage internet addiction affects us all?	9.20 (1.15)	9.67 (0.62)	+0.47	0.084
6. To which extent do you find this initiative on teenage internet addiction is useful?	9.13 (1.46)	9.60 (0.74)	+0.47	0.160
7. Please indicate your level of satisfaction with today's interaction regarding the study on teenagers' internet addiction		9.53 (0.74)		

Scores on a range of 1–10 where 10 is the highest grade. Wilcoxon tests

SD: Standard deviation

Table 2. Scores of responses to six questions/suggestions of beliefs about internet addiction and evaluation of research data presentation, for the 15 schools.

Schools (k=15)	Questions	Pre	Post	Δ-change	p value
		Mean (SD)			
1	6	9.67 (0.52)	10.00 (0.00)	0.33	0.157
2	6	9.17 (0.41)	10.00 (0.00)	0.83	0.025
3	6	9.50 (0.55)	9.67 (0.52)	0.17	0.564
4	6	8.67 (0.82)	9.00 (0.63)	0.33	0.157
5	6	9.67 (0.52)	9.83 (0.41)	0.17	0.317
6	6	9.33 (0.82)	10.00 (0.00)	0.67	0.102
7	6	5.67 (1.63)	9.50 (0.55)	3.83	0.027
8	6	8.83 (0.41)	8.00 (0.89)	-0.83	0.102
9	6	5.17 (0.75)	8.00 (0.63)	2.83	0.026
10	6	9.33 (1.21)	9.67 (0.52)	0.33	0.414
11	6	9.00 (1.26)	9.50 (0.55)	0.50	0.276
12	6	9.00 (1.10)	9.83 (0.41)	0.83	0.102
13	6	9.67 (0.52)	9.33 (0.52)	-0.33	0.317
14	6	8.33 (0.82)	9.50 (0.55)	1.17	0.020
15	6	9.83 (0.41)	9.00 (0.63)	-0.83	0.059
Total	90	8.72 (1.58)	9.39 (0.79)	0.67	<0.001

Wilcoxon tests

SD: Standard deviation

and behaviors that will lead to a decrease of negative instances.¹⁴ In agreement with the findings of our initiative of the average rating on the participants' belief that

the presentation of research data in schools concerning adolescent IA could open up the discussion about the phenomenon in schools ($p < 0.05$). There are relevant results coming from two meta-analytic reviews in teenagers and school students, respectively, that show a positive effect of a program about IA prevention and interventions.¹⁵ Especially the research of Yeun and Han,¹⁵ revealed large effects for reducing IA and develop self-control and self-esteem, particularly when it comes to counselling involving parents and self-control training programs.

The most important finding of this current research is the significant contribution of the intervention to the increase of the rating of the six questions as a whole (9.39 versus 8.72, $p < 0.001$), as well as the frequency of replies on the participants' satisfaction with the interactive presentation that was answered at the end (Post). Interestingly, a study on 47 undergraduate and postgraduate university students from Greece showed that the intervention group improved in terms of self-regulation and IA levels.³ Furthermore, the study of Bottel and colleagues¹⁶ showed that after tele-medicine intervention there has been a considerable boost of inspiration to change internet use behaviors and a big decrease in the internet use duration and in the severity of the symptoms of internet use disorder (IUD). These results prove the effectiveness of this online intervention for the people with IUD, in respect to the increase of motivation and actions of the participants to change their internet use behavior, as well as in respect to the decrease of the severity of the symptoms and time spent using the internet.

Schools provide a great framework for interventions to help adolescents avoid or treat early any problems and manage the difficulties of life. An important part of a successful intervention is to effectively approach the dynamics of problematic internet use, a process that may support certain active components for modulation. Perhaps using digital technology as a tool to inform about digital technology misuse, it may help to reach more than one audience in the same environment, by avoiding face-to-face "exposure". Moreover, it is crucial that interventions may have a snowball effect towards students and parents. Efforts like these will support future initiatives looking to alleviate problematic internet use, especially in adolescents, which could potentially result in the development of impactful preventive strategies. Message communication through a triangle shaped from teachers, students and parents may be promising. The main weakness of similar initiatives is the limited acceptance of e-invitations for participation, due to lack of availability, fatigue, or inertia. Researchers and health experts began to realize the importance of designing and implementing preventive or early managing strategies, because they increasingly understand that adolescents are at risk to suffer from a hidden IA. This issue needs to be tackled by policymakers and education personnel on three levels, public health, education policy and family engagement initiatives.

ΠΕΡΙΛΗΨΗ

Η χρησιμότητα του διαδικτυακού σεμιναρίου για τη διάδοση των δεδομένων μιας περιφερειακής έρευνας σχετικά με τη χρήση του διαδικτύου στο σχολείο στην Ελλάδα: Μια σύντομη αξιολόγηση πριν και μετά

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Η μελέτη αποσκοπούσε στην αξιολόγηση μιας διαδικτυακής ομαδικής παρέμβασης για την πρόληψη του εθισμού στο διαδίκτυο πριν και μετά από ένα ενημερωτικό μάθημα δι-

άρκειας 90 min. Οι διευθυντές 40 Λυκείων της Κρήτης, προσκλήθηκαν ηλεκτρονικά να παρακολουθήσουν ένα ενημερωτικό διαδικτυακό σεμινάριο σχετικά με τη διάδοση των ευρημάτων που σχετίζονται με την (υπερ)χρήση του διαδικτύου και τις καθημερινές συνήθειες των εφήβων. Από 18 σχολεία που αποδέχθηκαν, 15 ανταποκρίθηκαν μετά την παρουσίαση των αποτελεσμάτων. Χορηγήθηκε ερωτηματολόγιο 6 ερωτήσεων (κλίμακα Likert 1–10), το οποίο παρασχέθηκε με κωδικό QR και συμπληρώθηκε ανώνυμα, πριν (προ) και αμέσως μετά το τέλος του μαθήματος (μετά). Το επίπεδο ικανοποίησης αξιολογήθηκε με κλίμακα 10 σημείων στο τέλος της παρουσίασης. Η μέση βαθμολογία των 6 ερωτήσεων βελτιώθηκε σημαντικά μεταξύ των σταδίων Προ-Μετά μέτρησης σε τέσσερα σχολεία ($p < 0,05$) αλλά και συνολικά (8,72 σε 9,39 ή +0,67, $p < 0,001$). Στη βαθμολογία για την ικανοποίησή τους μετά την αλληλεπίδραση, 10 στα 15 σχολεία την αξιολόγησαν με την υψηλότερη βαθμολογία (10/10), 3 στα 15 με 9/10 και 2 στα 10 σχολεία με 8/10. Επιβεβαιώθηκε η αντιληπτική χρησιμότητα της ενημερωτικής παρέμβασης, αναδεικνύοντας τις δυνατότητές της σε θέματα δημόσιας υγείας και η αναγκαιότητα ανάπτυξης και εφαρμογής παρόμοιων δράσεων σε κάθε επίπεδο μετάδοσης μηνυμάτων, ιδίως στο σχολικό περιβάλλον.

Λέξεις ευρητηρίου: Διαδικτυακό σεμινάριο, Εθισμός στο διαδίκτυο, Ενημερωτικό μάθημα, Λύκεια, Παρεμβάσεις, Χρήση του διαδικτύου

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