

## **Internet addiction and posttraumatic stress disorder in Palestinian Adolescents**

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**Abstract**

This study aimed to investigate the relationship between Internet addiction and posttraumatic stress disorder (PTSD) in a sample of school students in the West Bank of Palestine (N = 524). The severity of impairment caused by excessive Internet use was evaluated using Young's (2012) Internet Addiction Test, while Mahamid's PTSD scale (2013) was applied to examine the degree of PTSD among the study sample. The findings of this study showed a statistically significant positive correlation between PTSD symptoms and Internet addiction, which can have a significant impact on adolescents' personal growth. Children and adolescents with PTSD symptoms require intensive follow-up and special care to prevent the development of Internet addiction.

**Keywords:** Internet addiction, Posttraumatic stress disorders, Palestinian adolescents

**إدمان الإنترنت وعلاقته بضغط ما بعد الصدمة لدى المراهقين الفلسطينيين****الملخص**

هدفت الدراسة إلى فحص العلاقة بين إدمان الإنترنت واضطراب ضغوط ما بعد الصدمة (PTSD) لدى المراهقين الفلسطينيين، حيث تكونت عينة الدراسة من (524) طالب وطالبة من مستخدمي الإنترنت في مدارس نابلس. طُبّق عليهم مقياس يونج (Young, 2012)، لفحص مستوى إدمان الإنترنت، ومقياس محاميد (Mahamid, 2013)، لتقييم شدة أعراض اضطراب ضغوط ما بعد الصدمة. وقد أظهرت نتائج الدراسة وجود علاقة إيجابية ذات دلالة إحصائية بين أعراض اضطراب ضغوط ما بعد الصدمة وإدمان الإنترنت، والذي يمكن أن ينعكس بصورة سلبية على النمو والتطور الشخصي للمراهقين، لذا توصي الدراسة بضرورة رعاية وتأهيل الأطفال والمراهقين الذين يعانون من ضغوط ما بعد الصدمة لتفادي تطويرهم لبعض الإضطرابات النفسية والسلوكية، كإدمان الإنترنت.

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## Introduction

This study investigates the relationship between Internet addiction and PTSD in Palestinian adolescents. People in Palestine encounter severe challenges from being under an ongoing political unrest and occupation (Marie et al., 2016). Combat exposure in a war zone not only qualifies as trauma, but typically involves multiple traumatic experiences (Rossignol & Chandler, 2010). In contrast to peacetime disasters, stressors during war are generally simultaneous, diverse, chronic, and recurrent, such as the exposure to bombardment, witnessing the killing of close relatives and friends, and displacement (Thabet et al., 2008). PTSD symptoms manifest in a form of unusual and delayed responses to stressful and life-threatening events or situations, such as living in war zones (Lavoie et al., 2011). Witnessing a traumatic event can be sufficient for the development of PTSD symptoms in children and adolescents (Otto et al., 2007). Earlier research on Palestinian children showed that they reported high levels of PTSD, alongside other psychological problems (Dyregrov et al., 2015). The prevalence of PTSD in children and adolescents was found to be between 23%–70% in Palestine (Dimitry, 2012).

Risk for trauma exposure varies according to the child's age, their families, and their social environments (McLaughlin et al., 2007). While most people will experience some PTSD symptoms following a traumatic event, only those with lasting and persistent symptoms that interfere with daily life may be diagnosed with PTSD (Attanayake et al., 2009). Symptoms of trauma can manifest in forms of nightmares, flashbacks, or intrusive thoughts about the trauma. It also can be associated with the avoidance of people, places, or activities connected to the traumatic event, disturbed sleep, disturbed play in young children, and somatic symptoms (Fasfous et al., 2013). Previous studies have shown that individuals with PTSD may be more vulnerable to developing Internet addiction (Koenen, 2006; Schroevers et al., 2007). To reduce the effect of trauma, traumatized children may use the Internet to escape from the real world into the virtual world (Xie et al., 2010; Yan et al., 2013).

Internet addiction is often defined as the inability to control one's use of the Internet, which may lead to negative consequences in daily life (American

Psychiatric Association [APA], 2010). Internet addiction can be explained by the need to escape the hardships of life, which may account for the excessive use of Internet (Kwon, Chung, & Lee, 2011). Research on Internet addiction has demonstrated over-use of the Internet being associated with some social and psychological variables, such as a decline in the size of one's social circle, depression, and loneliness (Kraut et al., 1998; Kuss & Billieux, 2017; Tolegenova & Oskenbay, 2015). Few studies have researched the association between traumatic life events and Internet addiction among adolescents (Aboujade, 2010; Xie et al., 2010). The present study examined this premise by investigating the relationship between Internet addiction and PTSD in Palestinian adolescents.

## Theoretical background

### *Posttraumatic stress disorder (PTSD)*

PTSD is the most common mental health condition associated with exposure to war, conflicts, and environmental violence (Slone & Mann, 2016). The United Nations International Children's Emergency Fund (UNICEF) estimated that one in ten children may develop PTSD if they live in a society affected by war or conflict-exposed to daily violence in their communities (UNICEF, 2016). Adolescents are extremely vulnerable to experiencing such life-threatening events, which may result in triggering symptoms of PTSD (Karsberg & Elklit, 2012; Vernberg et al., 1996). Adolescents who experience multiple traumatic events are more susceptible to developing PTSD than those who experience a singular trauma (Pina et al., 2008). Epidemiologic studies have indicated that approximately 8 to 10 % of youth exposed to a traumatic event developed PTSD symptoms (Breslau et al., 2004; Lewis et al., 2019).

PTSD is a set of symptoms that can occur/persist in individuals after experiencing and/or witnessing a traumatic event, which has most recently been defined broadly to include any experience threatening death, injury, or violence (i.e., accident/injury, violence, abuse, medical diagnosis, natural disasters, war) (APA, 2013). PTSD is defined by four symptom clusters: intrusion, avoidance, negative alterations in cognition and mood, and hyperarousal (Nolen-Hoeksema, 2015). Symptom expression could vary

substantially; for example, avoidant symptoms in adolescents may be associated with restricted exploratory behaviors, reduced participation in new activities, or reluctance to pursue opportunities (APA, 2013). Greater dissociation is associated with a higher risk for PTSD (Ehlers et al., 2003). Addictive behaviors such as Internet addiction serve as an attempt to avoid, rather than cope with posttraumatic stress (Hsieh et al., 2016).

### ***Internet addiction***

Internet addiction is generally defined as a compulsive desire for excessive use of the Internet, and devaluation of time spent without connecting to the Internet (Chou, & Hsiao, 2000). Symptoms of Internet addiction include excessive Internet use, often associated with a loss of the sense of time or a neglect of basic drives, withdrawal, including feelings of anger, tension, and/or depression when the Internet is inaccessible, and negative repercussions, including arguments, lying, poor achievement, social isolation, and fatigue block.

The situation experienced by adolescents in the occupied Palestinian territories is met with stressors, entertainment options are limited due to the restriction of movement between communities, leaving fewer alternative avenues for socialization. As a result, Palestinian children may use the Internet excessively, which may lead to Internet addiction (Mahamid & Berte, 2020). In a recent study, Mahamid & Berte (2019) examined Internet addiction among Palestinian university students, results revealed that more than 47% of students had patterns of addictive Internet use. Technological developments in the world are growing rapidly, especially in regards to the Internet (Ahmadi & Hermawan, 2013). Healthy Internet use allows for the development of many cognitive and social skills; including information gathering, decision making, reading, writing, communicating, and idea sharing (Caplan, 2002). Despite its benefits, the Internet can also become addictive, and adolescents can experience problematic usage (Kuss & Billieux, 2017). The negative effects of problematic Internet use can affect several aspects of life; including academic, social, financial, occupational, or physical elements (Young, 1999). The growth in Internet use has also manifested into a dependency for many, which may appear as a form of Internet addiction (Ko et al., 2012). A study by Gholamian et al. (2017) revealed that 35.6% of

Iranian adolescents had an Internet addiction, and males were significantly more addicted to the Internet than females. Pioneering studies have stated that excessive Internet use may negatively affect psychological arousal levels, sleep patterns, nutritional habits, and physical activity (Park, 2012; Young, 1998). The majority of these studies have been performed on teenagers (15-17) and those in late adolescence (18-21). A tendency toward excessive Internet use can be observed in adolescents who lack psychological maturity and suffer from traumatic experiences (Cao & Su, 2007; Leary et al., 1995).

### ***Internet addiction and PTSD***

One of the most difficult challenges that adolescents may face while living in a digital world, is that computers and their relevant devices are everywhere. The accessibility of the Internet, now more than ever, makes it difficult for adolescents to avoid it in their everyday lives (Louge, 2006). When children and adolescents encounter difficult situations, it may be easier for them to “substitute” those situations with a convenient, virtual experience that offers the prospect of solving problematic situations. (Tolegenova & Oskenbay, 2015).

Psychological trauma, among other factors, is a commonly tested factor hypothesized to increase the vulnerability towards the development of addictive disorders (Butt et al., 2011). Findings showed that individuals who experienced trauma have a higher risk of developing specific addictive disorders, compared to the general population (Lawson et al., 2013). Moreover, Tang et al. (2014) indicated that stressors from challenges within interpersonal relationships at school, as well as symptoms of anxiety, were positively associated with Internet addiction. Furthermore, Lee et al. (2017) found associations between problematic Internet use (PIU) and symptoms of PTSD in children and adolescents in South Korea; logistic regression analyses revealed that PIU was significantly and independently associated with a high level of PTSD symptoms.

In testing the associations among child abuse, PTSD, and Internet addiction among Taiwanese students, Hsieh et al. (2016) revealed that psychological and physical neglect, domestic abuse from parent to parent and sexual violence were associated with an

increased risk for children to develop PTSD and Internet addiction .

### Research questions

Upon review of the previous literature, the current study was conducted to answer the following questions:

1. What are the levels of Internet addiction and symptoms of PTSD among Palestinian adolescents?
2. Is there a significant correlation between Internet addiction and symptoms of PTSD among Palestinian adolescents?
3. To what extent does PTSD predict Internet addiction among Palestinian adolescents?

### Methodology

#### Participants

Participants in this study were 524 students (318 males and 206 females) aged 14-17 years, recruited by a convenience sample from 7 public schools in Nablus, Palestine. 24.4% of the participants were 8th graders (14 years), 27.9% were 9th graders (15 years), 24.4% were 10th graders (16 years), and the remainder were 11th graders (17 years). After explaining the topic and aims of research to the participants and their parents, informed consent was granted by all parents whose adolescents participated in the study. Participants were required to be: 1) Palestinian 2) native Arabic speakers and 3) registered in public schools in Nablus, Palestine. The Institutional Review Board (IRB) of An -Najah University approved the study before it being administrated.

#### Data Collection

The Internet Addiction Test (IAT), developed by Kimberly Young (2012) was used to measure levels of Internet addiction among adolescents. The scale consists of 20 items assessing the presence and severity of Internet addiction; all items are scaled using a five -point Likert scale format ranging from 1 to 5. The scale categorizes Internet addictive behaviors into four categories: lack of addictive behaviors, mild indicators of Internet addiction, moderate indicators of Internet addiction, and severe Internet addiction. The scale was found to be valid

when translated to Arabic within a Palestinian context (Mahamid & Berte, 2018).

The Post-traumatic Stress Disorder (PTSD) scale, developed by Mahamid (2013), was used to measure levels of PTSD symptoms. It consists of 47 items, measuring a student's posttraumatic stress levels; all items were scaled using a five-point Likert scale as following: 1= never, 2=rarely, 3=sometimes, 4=mostly, 5=always. Possible scores range between 47-235; a score of 235 indicates high levels of PTSD, while a score of 47 indicates low levels of PTSD. The scale indicated high level of validity within a Palestinian context.

### Findings

Means and standard deviations were calculated as shown in Table 1.

**Table 1**

*Means and standard deviations for research variables (N=524)*

Variable	Mean	SD	Min	Max
PTSD	126.83	14.82	78	186
Internet addiction	63.58	7.57	45	92

As Table 1 indicates, students scored in the range of 'occasional to frequent problem use' for Internet addiction, with moderate scores for PTSD.

The relationship between Internet addiction and PTSD was calculated using Pearson's correlation coefficient.

**Table 2**

*Correlations among study variables (N=524)*

Measures	(1)	(2)
(1) PTSD	-	.31**
(2) Internet addiction		-

\*\*p < 0.01

As shown in Table 2, Internet addiction was positively correlated to PTSD ( $r = .31, p < .01$ ).

Regression analysis for predicting Internet addiction was calculated as shown in Table 3.

**Table 3**

*Regression to predict Internet addiction (N=524)*

Variable	B	SE	$\beta$	t	p	95% CL
PTSD	.85	.12	.31	-7.24	0.000**	[.64 - 1.12]
Gender	.22	.43	.03	.52	.60	[-.6 - 1.087]
Class	.20	.44	.02	.46	.64	[-.66 - 1.09]

\*\*p < 0.01

Results of Table 3 demonstrate that PTSD has a statistically significant contribution towards explaining variance in Internet addiction ( $B = .85$ ,  $SE = .12$ ,  $\beta = .31$ ).

### Discussion

This study aimed to investigate the relationship between Internet addiction and PTSD among Palestinian teens. Results revealed a significant, positive correlation between Internet addiction and PTSD, supporting the first hypothesis. These findings align with the results of previous studies, confirming that traumatic events are common and increase the possibility to develop addictive disorders (Evren et al., 2019; Hsieh et al., 2016; Lee et al., 2017; Mahamid & Berte, 2018a ; Oskenbay et al., 2016; Schimmenti et al., 2014; Schimmenti et al., 2017; Tang et al. 2014).

To reduce the effects of trauma, traumatized children may use the Internet to escape from the real world (Xie et al., 2010; Yan et al., 2013). This could explain the current findings; where individuals with severe symptoms of PTSD may engage in Internet use as a method of managing their own psychological experiences. Thus, excessive use of the Internet is considered to be a coping mechanism for symptoms of PTSD.

Findings from this study are consistent with those of similar studies. For example, Oskenbay et al. (2016) examined psychological trauma as a rationale behind computer game addiction among adolescents. They revealed that 66% of participants showed high levels

of computer game addiction. Results also showed a positive correlation between psychological trauma and computer game addiction. Schimmenti et al. (2017) tested the correlation between traumatic experiences and symptoms of Internet addiction among older adolescents; their results showed that traumatic memories may increase the risk of problematic Internet use. Evren et al. (2019) calculated the relationship between symptoms of Internet addiction, PTSD and impulsivity among Turkish university students. Results indicated that PTSD was a major predictor of Internet addiction symptom severity.

The present results revealed no significant differences in Internet addiction based on demographic variables (gender and school grade), which supports the second hypothesis and is consistent with previous studies (Schimmenti et al., 2017; Tang et al., 2014). This could be explained by the nature of Internet technology presently available. Adolescents are attached to the digital world-surrounded by computers, Internet, video games, and mobile phones (Louge, 2006). Technology is developing rapidly globally, especially the Internet (Ahmadi & Hermawan, 2013). Furthermore, the increased use of the Internet and advanced technology within academic institutions may eliminate all potential differences in levels of Internet addiction based on demographics, such as gender and school grade (Tang et al., 2014).

### Limitations

The main limitations of this research were the following: First, the study has limited generalizability-the sample was collected from one region only. A more representative sample from different Palestinian regions should be selected in future studies. Second, the results are limited due to the psychometric characteristics of the study instruments. Young's (2012) Internet Addiction Test reflects mainly the DSM-IV's criteria of addiction, and results may differ should other criteria be used (e.g., the International Statistical Classification of Diseases).

### Conclusion

Overall, the findings from this study support previous literature which show a significant and positive correlation between Internet addiction and PTSD.

This can have a significant impact on adolescents' personal development, suggesting that children and adolescents with PTSD require a follow-up and special care to prevent the development of Internet addiction.

## Compliance with Ethical Standards

### Conflict of Interest

The authors declare that they have no conflict of interest.

### Funding

No funding was received for this study.

### Ethical Approval

All procedures performed in this study involving human participants were in accordance with the ethical standards of University's Research Ethics Board, the American Psychological Association (APA, 2010) and with the 2013 Helsinki Declaration.

### Informed Consent

Informed consent was obtained from all participants.

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