African Journal of Biological Sciences
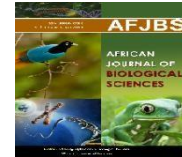
Internet Addiction Effects on Health-related Quality of Life in addition to Sleep Quality on medical students

Nora Rashad Ahmed Kamal[1], Abdellatif A. Elmor[2], Shahira Ramsis Dimetry[3], Nesma A. Mahmoud [4]

1 Demonstrator of Public Health and Community Medicine, Faculty of Medicine, Zagazig University
2 Professor of Public Health and Community Medicine, Faculty of Medicine, Zagazig University.
3 Professor of Public Health and Community Medicine, Faculty of Medicine, Zagazig University.
4 Lecturer of Public Health and Community Medicine, Faculty of Medicine, Zagazig University.
*Corresponding Author : Nora Rashad Ahmed Kamal

nora.rashad.9697@gmail.com

Abstract: In recent times, the Internet has grown to become one of the most important resources that adults and teenagers can utilize for both educational and recreational needs. It provides users with an easy and quick way to get information and connect with people worldwide. Due to the widespread use of social networking sites as a primary means of daily social interaction, Internet usage has dramatically increased. A lack of control over internet use can negatively affect quality of life, family relationships, and emotional stability

Keywords: *internet, adults, teenagers, quality of life*

Introduction

Definition of internet addiction

Internet addiction is characterized by compulsive internet use or uncontrollably recurrent thoughts, feelings, or actions that are connected to using a computer and the internet that result in harm or damage. It had an adverse effect on people's lives, families, productivity, academic achievement, and infrequently leading to illegal activities like drug or alcohol addiction or compulsive gambling **(1-4)**.

Specific subtypes of internet addiction:

Five distinct kinds of internet addiction might be categorized into: **(5)**

- Cyber-relationship addiction: over-involvement in online relationships
- Cyber sexual addiction: compulsive use of adult websites for cybersex and pornography
- Compulsive online gaming: (e.g. Doom, Myst or Solitaire).
- Information overload: compulsive web browsing or database searches

▪ Net compulsions: obsessive online gambling, shopping, or auction activities

Prevalence of internet use and internet addiction

The average global prevalence of IA has estimated at around 6% **(6)** whereby prevalence of IA among adolescents ranges between 5% and 15.2% in Europe and between 2.5% and 26.8% in Asian countries **(7)**. A systematic review included 498 articles with 507 studies, and the meta-analysis included 495 articles with 504 studies covering 2,123,762 individuals from 64 countries. Global pooled prevalence estimates were 26.99% for smartphone addiction, 17.42% for social media addiction, 14.22% for Internet addiction, 8.23% for cybersex addiction, and 6.04% for game addiction. Higher prevalence of digital addiction was found in Eastern Mediterranean region and low/lower-middle income countries. Males had higher risk for Internet and game addiction. An increasing trend of digital addiction during the past two decades was found, which dramatically worsened during COVID-19 pandemic **(8)**.

Symptoms of internet addiction

According to Kimberly Young **(9)** internet addiction is when a person develops five or more of eight distinct symptoms

1. The individual is preoccupied in online activities.
2. To be satisfied, one must use the internet for an increasing amount of time.
3. Makes unsuccessful attempts to limit, stop, or regulate internet usage.
4. Irritability, depression, or mood swings when Internet use is limited.
5. Stays on the internet longer than planned.
6. jeopardizes one's career, studies, work, and personal relationships.
7. Hides the truth about their addiction from their family and medical professionals.
8. Utilizes the internet to get away from the issue. **(10)**

Effects and consequences of Internet Addiction

Although the Internet and its technologies have given human societies beneficial opportunities in the scientific, communicative, and economic fields, their inappropriate and extreme application often for recreational purposes poses a serious risk to the health-related quality of life and welfare of the general population, particularly young people. Studies show a correlation between rising Internet usage and significant physical, social, psychological issues, poor sleep, poor academic performance, as well as a decline in interpersonal relationships and communication **(11) (12)**. Studies show a correlation between rising Internet technology demand and serious social, psychological, and health issues as well as with overwhelming mental health, connections, and communications. Researchers also think that excessive Internet and social media use might be a sign of stress, anxiety, and depression; in fact, using these networks excessively is a technique to suppress negative feelings **(11).**

Effect of internet addiction on quality of life

The World Health Organization (WHO) defines quality of life (QOL) as "An individual's perception of their position in the life in the context of the culture in which they live and in relation to their goals, expectations, standards, and concerns. The phrase "how well a person functions in their life and his or her perceived well-being in physical, mental, and social domains of health" was later used to introduce the idea of health-related quality of life (HR-QoL) **(13) (14)**. Internet use improves one's quality of life, but overusing it can have negative effects on a person's growth and welfare. To encourage people's healthy growth and welfare **(15)**.

Fig.: Common symptoms and consequences of internet addiction *(16)*

1) *Physical health:*

Internet addiction negatively affects several aspects of adolescent life and is linked to lower well-being because it can harm one's physical health, including physical inactivity, irregular eating patterns, weight gain, shoulder and back pain, eye strain, symptoms of carpal tunnel syndrome, short sleep duration, and increased use of alcohol and tobacco. In the most extreme cases, it has even been linked to cardiopulmonary mortality **(1) (17)**.

2) *Psychological and mental health:*

Using the Internet and playing video games as a way to ignore real-life issues can result in avoidance coping, which can intensify stress and negative emotions and have unfavorable effects like addiction and depression **(18) (19)**. In addition to the symptoms of sadness and anxiety, patients with IA are more likely to exhibit introversion, neurotic personality traits, hyperactivity, obsessive-compulsive disorder, and impulsivity **(20)**. Playing violent video games excessively may stimulate further aggression in their minds. The more they use electronics, the more obsessed they become with them, which can keep them from studying **(21)**.

3) *Social health:*

Students who participate in digital activities have high technical skills, but they develop weak real-world practical skills. It removes them from reality and allows them to live in their fantasy world. They spend less time with friends and family participating in outside activities because of the amount of time they spend on their smartphones **(21)**. In contrast to other students, those who fit into the group of Internet addicts are more likely to have problematic connections with their professors. When college students show a poor attitude toward their instructors, they also exhibit that same attitude toward their classmates. Students' motivation and involvement in class-related activities may decline as a result, which could encourage them to spend more time online and feed their addiction to it **(22)**.

4) *Environmental health:*

IA has also been found to be related to lower life satisfaction with family, friends, school, and living environment, suggesting that IA could have adverse effects on the social and environmental aspects of health **(23)**. Higher compulsive Internet users also reported worse environmental HRQOL, according to college

students with higher compulsivity might spend more money on internet-related activities like cybersex chats and online gaming. As a result, they can experience a feature of environment HRQOL related to financial inadequacy, which could be associated with a worse HRQOL overall**(24)**.

5) *Academic performance:*

For college students, one of the most significant effects of excessive social media use is decreased academic performance. According to the findings of a study on medical students, those who used the internet for longer than usual had poor academic performance and had trouble focusing **(25)**.

Effect of internet addiction on sleep quality

Sleep patterns were disrupted due to long Internet sessions where addicts often took caffeine pills to facilitate longer Internet sessions and suffered from fatigue, poor diet, poor exercise, and work and/or school performance due to loss of sleep**(26)**. The disturbed sleep-wake balance is one of the most significant issues brought on by Internet addiction **(27).** With smartphones' rising popularity and electronic gadgets that have been lighter and more portable over the past few years, which has led to more people using them in bed or right before bed **(28)**. The presence of an electronic device in your bedroom is unsuitable for a healthy and sufficient night's rest **(29, 30)**. The mechanisms associated with using electronic devices while in bed disrupt sleep by stimulating cognitive, emotional, or physiological functions. As the brain is stimulated by *(short wavelengths)* emitted by electronic devices, which inhibits the generation of melatonin and lengthens the time between awakenings and cause phase delays that postpone the start of sleep and linked to higher daily fatigue, a later bedtime, and shorter sleep duration which demonstrating the negative impact of Internet addiction on various parameters relating to sleep quality, impaired sleep quality includes short sleep duration, sleep disturbances, taking medicine to obtain a long time to sleep, and daytime dysfunction **(28) (31) (32) (33)**.

Prevention of internet addiction

Preventive programs should focus mainly on children and adolescents because they are the most likely to become addicted to the internet and are still developing their values and standards **(34)**. College students should be the second target group for preventative interventions due to the high prevalence rates and easy accessibility **(35)**. Attention should also be given to the near formative environments of children, adolescents, and college students, particularly the family, the school environment, and extracurricular activities **(36).** Specific factors that increase a person's susceptibility to internet addiction, such as psychopathological factors and like ADHD, depressive and anxiety disorders, phobias, substance abuse, and obsessive-compulsive disorders, and also personality characteristics such as hyperactivity and impulsivity, low emotional stability, or a low degree of self-control, are the focus of selective and indicated prevention **(1) (37)**.

I) Interventions directed at strengthening particular skills:

Scholars advise educators and counselors to not only concentrate on the development of specific abilities in persons who are at risk of Internet addiction, but also some other individuals especially parents, teachers, and peers. In terms of those who are susceptible to Internet addiction, there are four main categories of specific skills that can be used to prevent internet addiction:

a) Internet use-related skills, such as lowering the expectation of a positive outcome from using the Internet, exercising self-control or self-efficacy, or avoid addictive online applications **(38)**.

b) Stress and emotion management skills, specifically the creation of personal coping mechanisms, enhancement of the capacity to manage and process emotions, reduction of animosity, promotion of positive personality traits, and enhancement of self-esteem **(39)**.

c) Interpersonal situational skills: lowering interpersonal sensitivity, increasing emotional intelligence, and consequently having the capacity to interact with people face-to-face, participate in group activities, and spend free time with peers **(40)**.

d) Daily routine and leisure time skills, as adhering to a sleep schedule, engaging in group and solo activities, and promoting engagement in exciting, creative, and healthful activities **(37)**.

II) Interventions focusing on parenting styles:

These emphasize the need to work with vulnerable persons as well as their loved ones, particularly their parents, peers, and teachers. **(41)** When interacting with the families of those who are vulnerable, professionals advise concentrating on two fundamental abilities:

a) <u>Skills that promote stronger relationships</u>, such as enhanced parent-student communication, spending more time with their kids, being aware of their needs **(36)**.

b) <u>Skills related to monitoring students' Internet usage</u>, include knowing what information students require to utilize the internet, being aware of their online activities, and monitoring their usage **(42)**.

This can be achieved by establishing rules that govern the content of online activities, criticizing excessive use of the internet without setting strict time limits, and implementing restrictive internet use strategies. **(43)**

These abilities are all referred to as life skills; they are a set of psychosocial competencies and interpersonal skills that support individuals in making well-informed decisions, problem-solving, creative thinking, effective communication, forming positive relationships, and coping with and managing their lives positively that results in healthy lifestyles and the avoidance of risky behaviors or other issues with mental and physical health **(44)**. The most popular approach to preventing Internet addiction is to educate people on the basics of the phenomenon, emphasizing the real facts about its harmful effects. Teachers typically invite specialists to speak to their students about Internet addiction and offer guidance on responsible Internet usage **(45)**.

Conclusion

Internet addiction is becoming a bigger issue for people of all ages, but it's particularly problematic for adolescents and college students. It's linked to several problems, including psychosocial issues, poor academic performance, poor sleep, physical and mental health disorders and withdrawal from daily life. These results demonstrate that IA needs to be included in programs for health education and intervention and should be recognized as a serious health concern.

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