Differences between Porn Addicts and Non-Addicts in Fatigue Symptoms and Body Image Distortion among University Students

الفروق بين مدمني المواد الإباحية وغير المدمنين في أعراض التعب وتشويه صورة الجسم لدى طلاب الجامعة

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باحث نفسي في وزارة التربية، مدرس بقسم علم النفس، كلية التربية الأساسية، الهيئة العامة للتعليم التطبيقي والتدريب، دولة الكويت

الملخص: هدف هذا البحث إلى التعرف على الفروق بين مدمني الإباحية وغير المدمنين في أعراض التعب وتشويه صورة الجسم لدى طلبة الجامعة، ودراسة ارتباط استخدام المواد الإباحية بأعراض التعب وصورة الجسم، والتعرف على مدى تأثير بعض المتغيرات. والتي تشمل (العمر، الحالة الاجتماعية، الجنس، المستوى الاقتصادي) على مستوى استخدام المواد الإباحية. تم تصميم واستكمال مسح مقطعي على شبكة الإنترنت من قبل 604 طلاب وطالبات من جامعة الكويت، في الفترة ما بين 13 يناير و10 أبريل 2020. وأكمل المشاركون ثلاثة مقاييس تقرير ذاتي. وشملت المقاييس مقياس صورة الجسم(BIS) ، ومقياس التعب متعدد الأبعاد (MFS) واستبيان إدمان المواد الإباحية. أظهرت النتائج أن مدمني المواد الإباحية يعانون أكثر من الإرهاق العام والعاطفي والجسدي والسلوكي وصورة الجسم المشوهة مقارنة بغير المدمنين. كان تشويه صورة الجسم والتعب العام والتعب الجسدي أكثر ارتباطًا باستخدام المواد الإباحية بين المشاركين. تشير هذه النتائج أيضًا إلى أن العزاب والذكور والأشخاص ذوي الدخل المرتفع والمشاركين الذين تقل أعمارهم عن 25 عامًا لديهم مستوى أعلى من استخدام المواد الإباحية مقارنة بالمجموعات الأخرى.

الكلمات المفتاحية: إدمان المواد الإباحية، أعراض التعب، تشويه صورة الجسم، طلاب الجامعة.

Abstract: This research aimed to identify differences between porn addicts and non-addicts in fatigue symptoms and body image distortion among university students, and to study the association of pornography use with fatigue symptoms and body image, and to identify the extent of the impact of some variables that include (age, marital status, gender, economic level) on level of pornography use. A cross-sectional web-based survey was designed and completed by 604 male and female students from Kuwait University, between January 13 and April 10, 2020. participants completed three self-reported scales. The scales included Body Image Scale (BIS), Multidimensional Fatigue Scale (MFS) and Pornography Addiction Questionnaire. The results reveal that Porn addicts suffer more from general, emotional, physical and behavioral fatigue and distorted body image compared to non-addicts. Body image distortion, general fatigue and physical fatigue were more closely related to pornography use among participants. These results also indicate that singles, males, high-income people and participants who aged less than 25 years had a higher level of pornography use compared the other groups.

Keywords: Pornography Addiction, Fatigue Symptoms, Body Image Distortion, University Students.

Background

A paradigm shift occurred in the field of addiction that has significant implications for evaluation and treatment, as addiction was associated with excessive consumption of drugs or alcohol (White, 1998). However, neuroscientific research in this area has changed our understanding over the past few decades, as different behaviors that repeatedly reinforce reward, motivation, and the memory circuit are all part of the disease of addiction' (Pitchers, et al. 2013). Addiction includes the following psychotropic substances: alcohol, opiates and cocaine; and pathological behaviors such as gambling, Internet use, gaming, pornography, and sexual representation. The American Society of Addiction Medicine (ASAM) formally expanded its definition of addiction in 2011 to include both behaviors and substances. Addiction is a chronic underlying disease of the brain's reward, motivation, memory, and related circuits. Dysfunction in these circuits leads to distinct biological, psychological, social, and spiritual manifestations, as this is reflected in the individual's pathological pursuit of reward or relief through drug use and other behaviors (ASAM, 2015). The phenomenon of behavioral addictions has been recognized by the American Psychiatric Association (APA), the chapter "Substance Related Disorders" has been renamed to "Substance Use and Addictive Disorders," and a subchapter entitled "Substance Non-Related Disorders" has been created (APA, 2013). The World Health Organization (WHO) recently included the diagnosis of compulsive sexual behavior disorder (CSBD) as an impulse control disorder in the eleventh revision of the International Classification of Diseases (ICD-11; World Health Organization), under which compulsive use of pornography might be subsumed. The COVID-19 pandemic has had a far-reaching impact on the mental health and well-being of people around the world. The pandemic period has been particularly difficult for those with a pre-existing addiction who have a medium or high risk of pornography addiction (Hronis & Dixon, 2021).

Pornography addiction, or addiction to video sex, is the state in which a person's desire to watch sexually stimulating visuals, whether those visuals are pictures, movies, or websites, dominates. The addict is characterized by a strong desire to look at the genitals of his preferred sex or to watch the sexual process in a graphic form. The addict usually spends long hours on a daily or almost daily basis in watching. Some sources have differed as to whether this case is considered a real addiction or not, but some researchers have emphasized the danger of this type of behavior as being very dangerous to the human brain. There are many incidents that have proven that graphic pornography may change the behavior of the recipient and sometimes push him to sexual violence, homosexuality, rape or sometimes isolation. It is common for these people to be called victims of sexual thought, and there is no clear reason for this situation other than the easy access to these resources at the present time, especially through the Internet. Pitchers, et al. (2010) have suggested that persistent dopamine release in the reward system when an individual compulsively and chronically watches Internet pornography stimulates neuroplasticity changes that enhance the experience. And that these neural changes build brain maps of sexual arousal. The brain maps pre-selected for "normal" sex cannot be compared to the newly developed and continuously reinforced maps generated through compulsive, continuous monitoring of Internet pornography. The addicted individual thus progresses to a more explicit and graphic internet depiction of pornography in order to maintain a higher level of arousal.

The reviewed literature has shown that there are many psychological and physical problems that porn addicts suffer from. Setyawati, et al. (2020) showed that adolescents who are addicted to porn sites suffer from sleep disturbances due to imagining scenes of intercourse, find it difficult to form personal relationships, have poor relationships with others, and tend to withdraw from the social environment. Prawiroharjo, et al. (2019) showed that decreased verbal memory was found among porn addicts, and pornography addiction may be associated with impaired verbal memory among juvenile porn addicts, regardless of gender. Grubbs, et al. (2019) revealed in a nationally representative sample of US adults (n = 2,075) that most participants had viewed pornography during their lifetime. Approximately 11% of men reported and 3% of women report being addicted to pornography.

A review of previous studies showed that there are differences between porn addicts and non-addicts in many psychological and physical aspects Love, et al. (2015) reported that many behaviors that potentially influence the reward circuitry in human brains lead to loss of control and other symptoms of addiction in at least some individuals. Research in neuroscience supports the assumption that the underlying neural processes of pornography addiction are similar to substance abuse (16). The American Psychiatric Association (APA) has recognized one of these Internet-related behaviors: Internet gaming and Internet pornography use. Grubbs, et al. (2015) showed that demonstrated an association between perceived addiction to Internet pornography and psychological distress over time. Love, et al. (2015) showed that addiction to Internet pornography fits within the addiction framework. Similar underlying mechanisms are involved in substance addiction, Internet addiction, and Internet gaming disorder. There is strong evidence that addictive Internet behaviors are behavioral addictions that lead to many psychological problems.

This research aimed to identify differences between porn addicts and non-addicts in fatigue symptoms. Okasha (1998) defines fatigue as a pathological symptom as an unpleasant interplay of tiredness, difficulty concentrating, and generally incompetent

thinking. The National Cancer Institute of the United States of America defines fatigue in general as a reduced functional state of an individual associated with a lack of energy. The characteristic manifestations of fatigue are physical, mental and emotional manifestations. Temporary fatigue is normal and expected and characterized by alternating symptoms that are confined to one location of the body and a very rapid onset and lasts for a short period. Rest and sleep restore the individual's health to a normal level of vital processes, but this ability is weakened in the presence of cancerous tumors. Chronic fatigue is described as long-lasting, debilitating and persistent (Patrick, et al. 2002). Cancer-related fatigue is defined as a subjective state of severe and persistent fatigue with reduced ability for physical and mental work that is not relieved by rest and sleep (Andrykowski, 2005). This study also examined differences between porn addicts and non-addicts in body image. There is no single agreed upon definition of the concept of body image. But in general, body image is a person's thoughts, feelings, and perceptions of his or her body. It also means an individual's memories, experiences, assumptions, and comparisons about his body in terms of shape, weight, and attractiveness, which are shaped by prevailing social and cultural ideals (Grogan, 2016). Many factors contribute to a person's body image, including family dynamics, mental illness, biological predispositions and environmental causes of obesity or malnutrition, and cultural expectations (eg, media and politics) (Derenne & Beresin, 2006).

Methods

Study design and population:

An online survey was conducted on 604 male and female students from Kuwait University, between January 13 and April 10, 2020.

Sample size and technique:

The minimum sample size required was 377 (set as 604) according to the Raosoft sample size calculator (http:// www.raosoft.com/samplesize.html), based on a standard deviation set at 1.96 for a 95% confidence interval, a 5% margin of error, an anticipated response of 50%, and a total population size of 36704 (according to a 2020 estimate, Statistics of the Kuwait University). Data was collected using Google online self-administered questionnaire disseminated in Arabic language. The questionnaire link was distributed using social networks through either personal communication or male and female students from Kuwait University gathering groups. Data was collected from 13th January till 10th April 2020.

The mean age of study participants was 21.9 (± 4.07), from 18 to 48 years. The study sample was divided into two groups according to their scores in the Pornography Addiction Questionnaire. The first group of porn addicts consisted of 224 university students,

including 212 male and 12 female students, their mean age was 22.8 years [SD = 5.2 years]. Range = 18-48 years]. 65.2% were Singles, 59.8% had middle-income people. the vast majority (97.3%) were less than 25 years old. The second group of non-porn addicts consisted of 380 university students, including 268 male and 112 female students, had a mean age of 21.3 years [standard deviation (SD) = 2.7 years; Range = 19-44 years]. 60.5% were Singles, 76.4% had middle-income people. the vast majority (93.9%) were less than 25 years old (Table 1).

Table 1 *Socio-demographic characteristics of participants*

Variable	Porn addicts n = 224 (%)	Non-Porn addicts n = 380 (%)	Total n = 604 (%)
Age			
Less than 25	218 (97.3)	357 (93.9)	575 (95.2)
25–40	5 (2.2)	15 (3.9)	20 (3.5)
> 40	1 (0.4)	8 (2.1)	9 (1.5)
Gender			
Males	212 (94.6)	268 (70.5)	480 (79.4)
Females	12 (5.4)	112 (29.5)	124 (20.6)
Marital status			
Single	146 (65.2)	230 (60.5)	376 (62.2)
Married	58 (25.8)	110 (28.9)	168 (27.8)
Widow/divorced	20 (9)	40 (10.6)	60 (10)
economic level			
low income	10 (4.5)	70 (18.4)	80 (13.2)
Middle-income	134 (59.8)	290 (76.4)	424 (70.1)
high income	80 (35.7)	20 (5.2)	100 (16.7)

Measurement

The self-administered questionnaire link consisted of four parts:

1. Demographics characteristics: age, gender, marital status and economic level.

2. Body Image Scale (BIS): The BIS is a unidimensional assessment. It was prepared by Saber (2008) to measure body image and consists of 27items. A score above 67 indicates a positive body image and an individual's true and clear perception of satisfaction with body image. A score of less than 67 indicates negative body image, an individual's misunderstanding and dissatisfaction with his or her body image. Thus, the value of the scores on the scale range from (27) as a minimum to (81) as a maximum for the body image score. The reliability of this scale was measured, and the following are reported: the split-half coefficient (0.83), Cronbach's alpha (0.86). The internal consistency of this scale was measured by finding correlations between the score of each item and the

total score of the scale. The correlation coefficients ranged from 0.73 to 0.84, and the results were significant (p<0.001) (24). The consistency and reliability of this scale were measured again in this study, and the following are reported: split-half coefficient (0.79); Cronbach's alpha (0.842). The internal consistency of this scale was measured by finding correlations between the score of each item and the total score of the scale. The correlation coefficients for the scale items ranged from 0.60 to 0.75, and the results were significant (p<0.001).

3. Multidimensional Fatigue Scale (MFS): The MFS was prepared by author to measure fatigue. It consists of 30 items and the following five subscales: general fatigue; emotional fatigue; physical fatigue; behavioral fatigue and Cognitive fatigue. To validate the content, author presented the scale to a group of 7 professors specializing in Psychology, psychiatry, neurology and industrial medicine. Their opinions have been used to rephrase and slightly modify some items, and the proportion of the agreement ranged from 90 to 100% for all items. The consistency and reliability of this scale were measured, and the following are reported: split-half coefficient (0.93); Cronbach's alpha (0.90). The internal consistency of this scale was measured by finding correlations between the score of each item and the total score of the scale. The correlation coefficients for the scale items ranged from 0.73 to 0.85, and the results were significant (p<0.001) (Abdelmotaleb, 2003).

4. Pornography Addiction Questionnaire (PAQ): The PAQ is a unidimensional assessment. It was prepared by author to measure pornography addiction and consists of 12 items. Respondents were asked to indicate how much they agreed with each item using the following response options: "No", "Yes". Higher scores indicate cravings for viewing pornography. To validate the content, author presented the scale to a group of 5 professors specializing in Psychology. Their opinions were used to rephrase and slightly modify some items, and the proportion of the agreement ranged from 90 to 100% for all items. The consistency and reliability of this questionnaire were measured, and the following are reported: split-half coefficient (0.83); Cronbach's alpha (0.86). The internal consistency of this scale was measured by finding correlations between the score of each item and the total score of the scale. The correlation coefficients for the questionnaire items ranged from 0.63 to 0.75, and the results were significant (p<0.001).

Statistical analysis

We conducted the statistical analysis using SPSS version 25.0 (IBM SPSS, Armonk, NY: IBM Corp., USA). For descriptive statistics, the mean (± SD) was used for quantitative variables. Independent-sample t-tests and the Pearson correlation coefficient was used. The statistical methods were verified, assuming a significance level of p < 0.05.

Results

Figure 1 and table 2 using the independent sample t-tests showed that there were differences between porn addicts and non-addicts in the total score on the multidimensional fatigue scale (t score=3, p=0.05), with a higher score occurring among porn addicts. There were differences between the two groups in in the following dimensions of fatigue: general fatigue, emotional fatigue, physical fatigue, cognitive fatigue and behavioral fatigue, with a higher score occurring among porn addicts. There were differences between porn addicts and non-addicts in the total score on the body image scale (t score=5.6, p=0.01), with a higher score occurring among porn addicts. The mean score for porn addicts on the Body Image Scale is 55.4, which is less than 67, which indicates a negative body image of porn addicts. A score of less than 67 indicates negative body image.

Table 2 *Results of the independent sample t-tests for differences between Porn addicts and non-addicts in fatigue symptoms and body image.*

Variable	Pornography Use	M	SD	df	T test
general fatigue	Porn addicts	14.1	5.4	63	3.3 **
	Non- addicts	12.5	4.9		
emotional fatigue	Porn addicts	13.1	5.6	63	3.2518 **
	Non- addicts	11.7	4.8		
physical fatigue	Porn addicts	12.9	5	63	3.2062 **
	Non- addicts	11.6	4.7		
behavioral fatigue	Porn addicts	11.2	4.8	63	2.3470 *
	Non- addicts	10.3	4.4		
Cognitive fatigue	Porn addicts	11.7	5	63	2.2774 **
	Non- addicts	10.8	4.5		
total	Porn addicts	63.2	21.8	63	3.6111 **
	Non- addicts	57	19.5		
Body image	Porn addicts	55.4	4.6	63	31.29**
	Non- addicts	68.2	5		

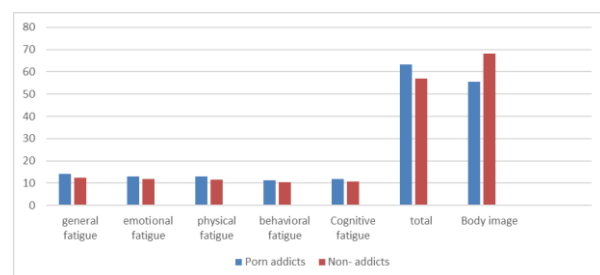**Significant at P<0.01, *Significant at P<0.05

Figure 1 *The mean scores of porn addicts and non-addicts in total score of Multidimensional Fatigue Scale (MFS)*

Table 3 showed the correlation coefficients between pornography use and fatigue symptoms, age. All correlations were significant and positive, which was significant at P<0.01 and P<0.05. While there was a negative correlation between pornography use and

body images, which was significant at P<0.01. Body image distortion, general fatigue and physical fatigue were more closely related to pornography use among participants.

Table 3 *Association between pornography use and fatigue symptoms and body image*

Variables	Pornography Use
general fatigue	.622**
emotional fatigue	.532**
physical fatigue	.541**
behavioral fatigue	.435**
Cognitive fatigue	.254
total	.581**
Body image	.756-**

**Significant at P<0.01, *Significant at P<0.05

Figures 2- 4 and table 4 using ordinal regression analysis Model (Chi-Square = 55.231, df = 6, p = 0.01) show that there are four variables that lead to an increase in level of pornography use among participants in Kuwait, namely; age, marital status, gender and economic level. These results indicate that those who are singles (M = 9.3) have a higher level of pornography use compared to those who are separated (M =8.6) and marrieds (M =4.6). males (M = 9.7) have a higher level of pornography use compared to females (M =4.2). Those who are high -income people (M = 9.5) have a higher level of pornography use compared to those who are middle-income people (M =8.4) and low-income people (M =7.2). participants who aged less than 25 years (M = 9.8) have a higher level of pornography use compared to other age groups.

Table 4 *Results of ordinal regression analysis for the impact of some variables that include (age, marital status, gender, economic level) on pornography use*

Dependent variable	Independent variables	Estimate	(S.E)	Wald	df	Sig
pornography use	age	1.021	.274	11.62	6	.000
	marital status	-1.425	.241	16.341	6	.000
	gender	2.321	.532	23.621	6	.000
	economic level	-1.342	.258	26.341	6	.000
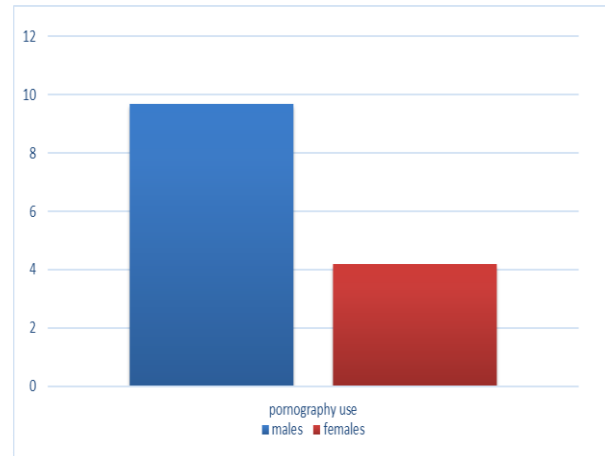
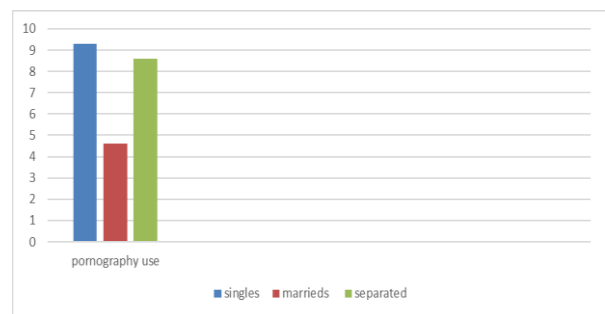*pornography Addiction Questionnaire (PAQ)*

Figure 3 *The mean scores of singles, marrieds and separated on pornography Addiction Questionnaire (PAQ)*
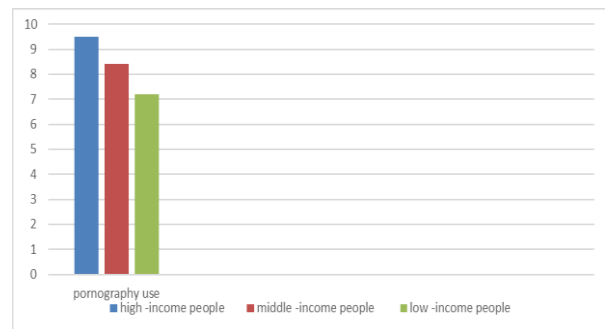

Figure 4 *The mean scores of high -income people, middle -income people and low -income people on pornography Addiction Questionnaire (PAQ)*

Discussion

The results reveal that Porn addicts suffer more from general, emotional, physical and behavioral fatigue and distorted body image compared to non-addicts. Body image distortion, general fatigue and physical fatigue were more closely related to pornography use among participants. These results also indicate that singles, males, high -income people and participants who aged less than 25 years had a higher level of pornography use compared the other groups. Many previous studies have shown that there are many psychological and physiological damages to porn site addiction. Brand et al. (2016) showed that there was presence of many

harmful physiological effects of pornography addiction, including a decrease in the brain substance responsible for reward. Which may lead to many psychological damages, including depression and low self-esteem. Several studies have shown that behavioral addiction is comparable to addiction to narcotics such as cocaine, methamphetamine and tobacco use (Ko, et al. 2009). Behavioral addiction has similarities to substance addiction, including the following: Tasty chemicals are released in the brain in excess compared to natural stimuli. The brain begins to rely on these abnormal amounts of neuron firing to receive the same sensation (Kühn & Gallinat, 2014). It has been shown that many parts of the brain are significantly deficient in tissue in the PFC when exposed to pornography addiction. This is also shown in drug abuse (Laier & Brand, 2014).

The presence of a high level of symptoms of fatigue among porn addicts is due to Many reasons. where Ashutosh et al. (2017) showed that various neuroimaging studies conducted on heavy Internet users, including porn addicts, revealed extensive changes in gray and white matter and other regulatory changes in the brain. Extensive use of the Internet leads to fatigue and fatigue resulting from sleep disturbances, headaches, decreased work efficiency, psychological disturbances, and neurological problems including, but not limited to: irritability, anxiety, obsessive-compulsive disorder, hesitation, impulsivity, loss of working memory, and neurocognitive diseases. Extensive use of the Internet may be reflected in changing dietary preferences in the form of meeting immediate energy needs, increased intake of stimulant beverages, and smoking or use of addictive substances to relieve mental stress. Spending too much time watching pornography may lead to depression, social isolation, job loss, decreased productivity, or financial consequences as a result of their excessive exposure to Internet pornography that hampers their social lives (Taylor & Gavey, 2020). Watching pornography is associated with many negative outcomes on the individual, including poor academic and occupational performance, subjective distress, and sexual compulsion (Manning, 2006). Studies have found that pornography use by an individual leads to problems with sexuality health and sexual dissatisfaction (Bridges, 2008).

The results of this study regarding negative body image in porn addicts are consistent with several studies. where Paslakis et al. (2022) showed that frequent exposure to pornography is associated with negative body image and sexual body image. Tylka (2015) reported that frequent pornography use by men is positively associated with dissatisfaction with muscle and body fat, and negative body image. Research indicates that the more an individual sees ideals of beauty in the media, the more one compares one to those ideals, which in turn leads to dissatisfaction with oneself because ideals are nearly impossible to achieve. Therefore, excessive consumption of watching porn sites, especially among

women and also among men can lead to body dissatisfaction, negative and distorted sexual body image, frustration and depression because the individual compares himself to these ideals of beauty that do not exist in reality (Engeln-Maddox, 2006).

Conclusion

A higher level of symptoms of fatigue and distorted body image were found in porn addicts compared to non-addicts. The results of the study also showed that there are groups more exposed to pornography addiction, namely adolescents, singles and high-income people. Based on the results of this study, the practice of sports and the development of the cultural, artistic and sports aspects of youth play a major role by activating the role of sports and cultural festivals and various youth centers to occupy young people's time away from harmful practices and behaviors. Awareness of young people and university students about the dangers of addiction to pornographic sites and its damage to the mental and physical health of the individual through seminars, lectures, media and various social media. Parents monitor the behavior of their sons and daughters and prevent them from accessing porn sites by blocking these sites. Religious education should be provided to university students through religious seminars, lectures and sermons. Highlight important studies and research related to psychological problems associated with pornography addiction. The need to treat symptoms of fatigue and distorted body image resulting from pornography addiction.

Ethics approval and consent to participate

Implied consent from the participants was obtained after being informed about the purpose of the study as we used online survey. It is clearly stated that their participation is voluntary; the responses are strictly confidential and anonymous for each participant.

Declarations

Conflict of interest: The authors have no relevant financial or non-financial interests to disclose. The authors declare no conflict of interest.

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