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Personality Traits and Online Pornography Use Among Lebanese Adults

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ABSTRACT

Objective: To evaluate the association between personality traits and online pornography use among a sample of Lebanese adults.

Methods: This cross-sectional study was carried out between October and November 2020 and enrolled participants from all Lebanese districts through an online survey following a snowball technique. Participants (N=653) completed a self-administered questionnaire, which included questions from the Cyber-Pornography Use Inventory and the Big 5 Inventory.

Results: Higher extroversion (adjusted odds ratio [aOR]=1.06) and agreeableness (aOR=1.05), as well as having a secondary (aOR=1.82) or university (aOR=2.18) level of education compared to a primary/complementary level were significantly associated with more porn-addictive patterns. Females had lower porn-addictive patterns compared to males (aOR=0.67). Drinking alcohol (aOR=2.26), higher agreeableness (aOR=1.04), and having a secondary (aOR=1.58) or university (aOR=1.80) level of education compared to a primary/complementary level were significantly associated with more guilt regarding online porn use. Finally, alcohol drinking (aOR=2.28) was significantly associated with more online sexual behavior, whereas female gender (aOR=0.34) and more agreeableness (aOR=0.94) were significantly associated with less online sexual behavior.

Conclusions: The study highlights that some personality traits (agreeableness and extroversion) and other factors (alcohol consumption, gender, and education level) are associated factors with online pornography use. Further research is needed to assess different factors associated with pornography viewing.

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The concept of *pornography* has been associated with various definitions; however, the term itself originated from the Greek language wherein *pornae* means prostitute and *graphos* to describe. The definition of pornography focuses on describing the nature and content of pornographic materials, along with the intended or actual function (intended to arouse) of pornographic materials.¹ In other words, pornography is a media representation with sexual qualities, which generally requires the depiction of nudity at minimum. Pornography use is a common but stigmatized behavior, in which 1 or more people intentionally expose themselves to representations of nudity that may or may not include depictions of sexual behavior, seeking out, creating, modifying, exchanging, or storing such materials.¹ The extent and nature of such behaviors are regulated and shaped by a combination of personal and social hedonic motives, as well as other individual differences and environmental factors.¹ Pornography use can evoke immediate sexual and affective responses and may contribute to more lasting cognitive, affective, and behavioral changes.¹

Pornography dependence is often described as an inherent addictive form of media that predisposes to dysregulation and compulsivity. With internet development, *internet pornography* emerged as a new concept, defined as having gratifying sexual activities such as watching pornography, having sex chats, and finding an online sexual partner via the internet.² Engagement in pornography practice through the internet is associated with negative effects at the personal, financial, legal, and personal levels.^{3,4} Given the increase in internet use, internet pornography became more prevalent worldwide in the last few decades due to its easy access, anonymity, and affordability.⁵

Online pornography use might be a form of behavioral addiction that fits in the group of hypersexual behaviors.⁶ However, until now, the diagnosis of hypersexual behavior has not been considered a disease, given the lack of evidence for its pathological behaviors, but is planned to be included in the *International Classification of Diseases, Eleventh Revision*.³ Hence, a clear definition for pornography use or porn addiction is not yet established but usually involves functional problems such as excessive use, relationship problems, and impulsivity.⁷

Clinical Points

- Higher extroversion and agreeableness were significantly associated with more porn-addictive patterns.
- Alcohol consumption and higher agreeableness were significantly associated with more guilt regarding online porn use.
- More agreeableness was significantly associated with less online sexual behavior.

Given the impact of pornography worldwide, attention should be focused on factors predisposing to excessive pornography consumption. Personality traits are described as a factor predisposing to behavioral addiction, especially internet addiction.⁸ Personality traits are grouped into the big 5 personality traits model. They include openness to new experiences, conscientiousness, extraversion, agreeableness, and neuroticism.⁹ Openness to experience is “the ability to think outside the box.” People with this trait value independence and are curious and adventure seekers. Conscientiousness is a person’s ability to engage in goal-directed behaviors. Conscientious individuals are organized and detail oriented. Extroverts are sociable and fun loving and tend to get pleasure from sharing their experiences with and being around others. Agreeableness describes interaction with others; a person with a high level of agreeableness is described as helpful, aware of others’ needs, and soft hearted. Neuroticism is a reflection of a person’s emotional stability; highly neurotic individuals are worrisome, tend to have low self-esteem, and often feel insecure.¹⁰

Previous studies^{6,11,12} assessed the interpersonal and intrapersonal factors such as feeling that one is engaging in pornography too often, religious boundaries, and moral incongruence, while a few addressed the relationship between the big 5 personality traits and online pornography viewing. It was previously reported that neuroticism can have a positive correlation with porn addiction, while agreeableness and conscientiousness showed a negative correlation.^{11,13} One study⁷ reported that neuroticism and extraversion were predictors of porn addiction in men and in some dimensions of excessive usage in women. Agreeableness and conscientiousness, contrary to previously published data, were not linked to pornography use.

In the Middle East and Arab countries, sexual discourse has been considered a taboo subject until recently.¹⁴ However, all Arab countries, especially Lebanon, have been widely transformed by Western technology such as smartphones and internet access.¹⁵ Studies^{14,15} have shown that pornography access in these countries is continuously increasing. However, the Arab world is a conservative one in which emotional and psychological readiness for exposure to pornography and sexual material might be low given that sexual disclosure and pornography lead to conflict with religious beliefs and are considered cultural taboos.^{14,16} Consequently, pornography is viewed clandestinely, and the impact it leaves (eg, addictive behaviors) can be disregarded

and underdiagnosed.¹⁷ Very few studies,^{14,18} to our knowledge, have addressed pornography addiction in the Middle East and none in Lebanon. Therefore, the objective of this study was to evaluate the association between personality traits and online pornography use among a sample of Lebanese adults.

METHODS

Study Design

This cross-sectional study was carried out between October and November 2020 and enrolled participants from all Lebanese districts (Beirut, Mount Lebanon, North, South, and Bekaa). The study was performed through an online survey following a snowball technique. To approach the largest possible group of participants, invitations to complete the questionnaire were sent through a variety of social media platforms. Anonymity of the study was assured to eliminate the effect of embarrassment that may be associated with pornography consumption.¹⁹ Inclusion criteria for the study were being Lebanese and aged ≥ 18 years.

Minimal Sample Size

Using G-power software, a minimal sample of 395 was deemed necessary, based on an effect size of $f^2 = 2\%$, an α error of 5%, a power of 80%, and taking into consideration 10 factors to be entered in the multivariable analysis.

Translation Procedure

The scales were forward and back translated. Forward translation (English to Arabic) was performed by 1 translator, whereas back translation from Arabic to English was performed by a second translator. Minor discrepancies were solved by consensus.

Questionnaire

The self-administered questionnaire was in Arabic, the native language of Lebanon, and required approximately 20 minutes to be completed. Participants were asked to fill out the questionnaire without the request of any help to avoid any potential influence when answering the questions. The first part of the questionnaire evaluated the participants’ sociodemographic information including age, gender, alcohol consumption, and illegal drug use. In addition, the Household Crowding Index was calculated by dividing the number of persons living in the house by the number of rooms, excluding the bathroom and the kitchen.²⁰ The second part of the questionnaire was composed of the following scales.

Cyber-Pornography Use Inventory. The Cyber-Pornography Use Inventory is divided into 3 subscales. (1) Pornography addictive patterns is a 14-item questionnaire that assesses pornography addiction in the last 12 months. Questions were evaluated through a Likert scale (not at all, rarely, sometimes, and often) (Cronbach $\alpha = 0.905$). (2) Guilt regarding online porn use was evaluated through 9 questions that addressed negative emotion, feelings, and

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being ashamed following the use of online pornography. It was addressed through a Likert scale with the following options: never, rarely, sometimes, frequently, and always (Cronbach $\alpha=0.863$). (3) Online sexual behavior was evaluated via a 6-item questionnaire (ie, method of online behavior, whether through messages, nicknames, chats, or sexual humor). Items were rated as follows: never, rarely, sometimes, frequently, and always²¹ (Cronbach $\alpha=0.878$).

Big 5 Inventory. The big 5 personality domains and its facets were examined with the Big 5 Inventory.²² Permission to use this scale in the study was obtained by the authors from Christopher J. Soto, PhD. This questionnaire consists of 60 items relating to different personality constructs and domains: assertiveness and activity in the extraversion domain, altruism and compliance in the agreeableness domain, order and self-discipline in the conscientiousness domain, anxiety and depression in the negative emotionality domain, and aesthetics and ideas in the open-mindedness domain. Items are scored on a 5-point Likert scale ranging from strongly disagree (1 point) to strongly agree (5 points). Higher scores would indicate greater dysfunction in the specific personality trait domains. The Cronbach α values for each personality trait were as follows: extraversion (0.649), agreeableness (0.621), conscientiousness (0.698), negative emotionality (0.691), and open mindedness (0.625).

Statistical Analysis

Data analysis was performed with SPSS software version 25. Weighting to the general population was done for gender and education level. The 3 scores (pornography addictive patterns score, guilt regarding online porn use, and online sexual behavior) did not follow a normal distribution via a calculation of the skewness and kurtosis. Values for asymmetry and kurtosis were outside the acceptable range between -2 and $+2$ to prove normal univariate distribution.²³ Scores were dichotomized according to their respective median values. In the bivariate analysis, χ^2 test was used to compare 2 categorical variables, whereas Student t test was used to compare the means of 2 groups. Three logistic regressions were conducted, taking the pornography addictive patterns, guilt regarding online porn use, and online sexual behavior scores as dependent variables. To minimize residual confounding, independent variables entered in the final model were those that showed a $P < .2$ in the bivariate analysis.²⁴ $P < .05$ was considered significant.

RESULTS

Sociodemographic Characteristics

A total of 653 participants of 800 (81.62%) consented to participate in the study. The mean \pm SD age of the participants was 23.92 ± 5.30 years, with 70.1% female. Other descriptive details can be found in Table 1.

Bivariate Analysis

The results of the bivariate analysis are summarized in Table 2. Males and those with a university level of education

Table 1. Sociodemographic Characteristics of the Participants (N=653)

| Variable | Participants |
|--|------------------|
| Gender, n (%) | |
| Male | 195 (29.9) |
| Female | 458 (70.1) |
| District, n (%) | |
| Beirut | 104 (15.9) |
| Mount Lebanon | 220 (33.7) |
| North Lebanon | 93 (14.2) |
| South Lebanon | 156 (23.9) |
| Bekaa | 80 (12.3) |
| Education level, n (%) | |
| Primary/complementary | 33 (5.1) |
| Secondary | 82 (12.6) |
| University | 538 (82.4) |
| Marital status, n (%) | |
| Single/divorced/widowed | 553 (84.7) |
| Married | 100 (15.3) |
| Alcohol use, n (%) | |
| No | 541 (82.8) |
| Yes | 112 (17.2) |
| Illegal drug use, n (%) | |
| No | 636 (97.4) |
| Yes | 17 (2.6) |
| Age, mean \pm SD, y | 23.92 ± 5.30 |
| Household Crowding Index, mean \pm SD | 1.12 ± 0.60 |
| Pornography addictive patterns score, mean \pm SD | 8.06 ± 10.47 |
| Guilt regarding online porn use score, mean \pm SD | 5.10 ± 6.79 |
| Online sexual behavior score, mean \pm SD | 1.43 ± 3.00 |

had higher pornography addictive patterns. Males and single participants had more guilt regarding online porn use. Males had more online sexual behaviors. Finally, higher mean extroversion, agreeableness, conscientiousness, and open-mindedness scores were found in those who had more pornography addictive patterns. Higher mean agreeableness and open-mindedness scores were found in those who had more guilt regarding online porn use, whereas higher mean agreeableness and conscientiousness scores were found in those with more online sexual behaviors.

Multivariable Analyses

After adjusting for all variables that showed a $P < .2$ in the bivariate analysis, the results revealed that higher extroversion (adjusted odds ratio [aOR]=1.06) and agreeableness (aOR=1.05), as well as having a secondary (aOR=1.82) or university (aOR=2.18) level of education compared to a primary/complementary level, were significantly associated with more porn-addictive patterns (Table 3, Model 1). Females had lower porn-addictive patterns compared to males (aOR=0.67).

Alcohol consumption (aOR=2.26), higher agreeableness (aOR=1.04), and having a secondary (aOR=1.58) or university (aOR=1.80) level of education compared to a primary/complementary level were significantly associated with more guilt regarding online porn use (Table 3, Model 2).

Finally, alcohol consumption (aOR=2.28) was significantly associated with more online sexual behavior, whereas female gender (aOR=0.34) and more agreeableness (aOR=0.94) were significantly associated with less online sexual behavior (Table 3, Model 3).

Table 2. Bivariate Analysis of Variables Associated With the 3 Pornography Scores^a

| Variable | Pornography Addictive Patterns Score | | Guilt Regarding Online Porn Use Score | | Online Sexual Behavior Score | |
|---|--------------------------------------|------------------|---------------------------------------|------------------|------------------------------|------------------|
| | No | Yes | No | Yes | No | Yes |
| Gender, n (%) | | | | | | |
| Male | 68 (24.5) | 127 (33.9) | 71 (21.9) | 124 (37.7) | 101 (21.8) | 94 (49.7) |
| Female | 210 (75.5) | 248 (66.1) | 253 (78.1) | 205 (62.3) | 363 (78.2) | 95 (50.3) |
| P value | | .009 | | <.001 | | <.001 |
| Marital status, n (%) | | | | | | |
| Single/divorced/widowed | 229 (82.4) | 324 (86.4) | 265 (81.8) | 288 (87.5) | 391 (84.3) | 162 (85.7) |
| Married | 49 (17.6) | 51 (13.6) | 59 (18.2) | 41 (12.5) | 73 (15.7) | 27 (14.3) |
| P value | | .158 | | .041 | | .641 |
| Education level, n (%) | | | | | | |
| Primary/complementary | 20 (7.2) | 13 (3.5) | 21 (6.5) | 12 (3.6) | 22 (4.7) | 11 (5.8) |
| Secondary | 42 (15.1) | 40 (10.7) | 44 (13.6) | 38 (11.6) | 64 (13.8) | 18 (9.5) |
| University | 216 (77.7) | 322 (85.9) | 259 (79.9) | 279 (84.8) | 378 (81.5) | 160 (84.7) |
| P value | | .017 | | .165 | | .298 |
| Alcohol use, n (%) | | | | | | |
| No | 291 (54.9) | 239 (45.1) | 311 (58.7) | 219 (41.3) | 416 (78.6) | 113 (21.4) |
| Yes | 45 (37.2) | 76 (62.8) | 46 (38.0) | 75 (62.0) | 74 (61.2) | 47 (38.8) |
| P value | | <.001 | | <.001 | | <.001 |
| Illegal drug use, n (%) | | | | | | |
| No | 326 (51.7) | 304 (48.3) | 348 (55.2) | 283 (44.8) | 481 (76.2) | 150 (23.8) |
| Yes | 9 (45.0) | 11 (55.0) | 10 (47.6) | 11 (52.4) | 10 (47.6) | 11 (52.4) |
| P value | | .552 | | .495 | | .003 |
| Age, mean \pm SD | 24.39 \pm 8.44 | 23.58 \pm 6.32 | 24.36 \pm 8.20 | 23.50 \pm 6.29 | 24.00 \pm 7.75 | 23.74 \pm 6.08 |
| P value | | .163 | | .134 | | .655 |
| Household Crowding Index, mean \pm SD | 1.12 \pm 0.61 | 1.11 \pm 0.59 | 1.10 \pm 0.57 | 1.13 \pm 0.63 | 1.12 \pm 0.57 | 1.12 \pm 0.67 |
| P value | | .789 | | .515 | | .871 |
| Extroversion, mean \pm SD | 36.32 \pm 3.90 | 38.36 \pm 5.52 | 37.02 \pm 4.19 | 37.65 \pm 5.56 | 37.45 \pm 5.05 | 36.85 \pm 4.23 |
| P value | | <.001 | | .109 | | .139 |
| Agreeableness, mean \pm SD | 38.35 \pm 5.09 | 41.09 \pm 6.72 | 39.11 \pm 5.58 | 40.36 \pm 6.59 | 40.22 \pm 6.20 | 38.00 \pm 5.39 |
| P value | | <.001 | | .01 | | <.001 |
| Conscientiousness, mean \pm SD | 38.07 \pm 5.19 | 41.28 \pm 7.30 | 39.43 \pm 6.24 | 36.87 \pm 6.80 | 40.03 \pm 6.78 | 38.38 \pm 5.38 |
| P value | | <.001 | | .397 | | .002 |
| Negative emotionality, mean \pm SD | 35.65 \pm 3.77 | 35.36 \pm 4.78 | 35.63 \pm 4.13 | 35.36 \pm 4.46 | 35.42 \pm 4.33 | 35.78 \pm 4.13 |
| P value | | .385 | | .425 | | .352 |
| Open mindedness, mean \pm SD | 37.91 \pm 3.53 | 39.33 \pm 5.35 | 38.20 \pm 3.99 | 39.08 \pm 5.12 | 38.67 \pm 4.38 | 38.39 \pm 5.05 |
| P value | | <.001 | | .017 | | .503 |

^aBolding indicates significant P values.

DISCUSSION

Personality Traits and Online Pornography Use

In our study, higher extroversion was associated with more pornography use, consistent with findings in another study.²⁵ According to Schmitt et al,²⁵ individuals who are highly extroverted have sexual activity at an early age, many sexual partners, a variety of sexual activity, and dangerous and careless sexual activity compared to introverted individuals. In addition, extroverted individuals exhibit tendencies to seek stimulation in the company of others and the enhancement of personal attractiveness.²⁶ Furthermore, the social nature of extroverted individuals increases the potential of more sexual opportunities (eg, socializing at parties, events).

Our results also revealed that higher agreeableness was associated with more porn-addictive patterns, contrary to results reported by previous studies,^{11,25} which found that agreeableness was negatively associated with sex addiction. We hypothesize that the emotional or mental state experienced by participants while viewing pornography probably made them more agreeable. Further research is recommended to study this association in depth.

However, our study highlighted that higher agreeableness was associated with lower online sexual behavior and more

guilt regarding online porn use, which may be because individuals exhibiting agreeableness have better self-control and the ability to resist temptations, place others' interests before their own, and are sensitive and good-natured.²⁷

Alcohol Consumption and Online Pornography Use

Alcohol usage was associated with more guilt regarding online porn use and more online sexual behavior. This association was not well established previously given that porn addiction was only recently classified as a behavioral addiction. Furthermore, alcohol users and internet addicts were found to share some personality traits, making alcohol and internet addiction related.²⁸ Furthermore, the disinhibition effect of alcohol consumption may be a predisposing factor for higher rates of pornography usage.²⁹

Gender and Online Pornography Use

Gender has been described as an important predictor for online sexual behaviors.³⁰ We found that female gender was significantly associated with less online sexual behavior and lower porn-addictive patterns compared to males, similar to previous studies.^{30–32} This difference can be attributed to women engaging in online pornography at their partner's request and consequently finding it to be enjoyable if shared

Table 3. Multivariable Analysis

| Variable | P Value | aOR | 95% CI | |
|--|---------|------|--------|------|
| Model 1: porn-addictive patterns score as the dependent variable | | | | |
| Gender (females vs males*) | .027 | 0.67 | 0.46 | 0.95 |
| Education level | .007 | | | |
| Secondary vs primary/complementary* | .006 | 1.82 | 1.19 | 2.78 |
| University vs primary/complementary* | .004 | 2.18 | 1.28 | 3.72 |
| Extroversion | .006 | 1.06 | 1.02 | 1.10 |
| Agreeableness | .02 | 1.05 | 1.01 | 1.09 |
| Conscientiousness | .09 | 1.03 | 0.99 | 1.08 |
| Variables entered in the 3 models: gender, education level, marital status, alcohol use, extroversion, agreeableness, conscientiousness, open mindedness | | | | |
| Model 2: guilt regarding online porn use score as the dependent variable | | | | |
| Gender (females vs males*) | .084 | 0.73 | 0.51 | 1.04 |
| Alcohol use (yes vs no*) | <.001 | 2.26 | 1.48 | 3.46 |
| Education level | .08 | | | |
| Secondary vs primary/complementary* | .049 | 1.58 | 1.002 | 2.48 |
| University vs primary/complementary* | .035 | 1.80 | 1.04 | 3.11 |
| Age | .054 | 0.98 | 0.97 | 1.00 |
| Agreeableness | .01 | 1.04 | 1.01 | 1.06 |
| Variables entered in the 3 models: gender, age, education level, marital status, alcohol use, extroversion, agreeableness, open mindedness | | | | |
| Model 3: online sexual behavior score as the dependent variable | | | | |
| Gender (females vs males*) | <.001 | 0.34 | 0.23 | 0.49 |
| Alcohol use (yes vs no*) | <.001 | 2.28 | 1.46 | 3.54 |
| Agreeableness | <.001 | 0.94 | 0.91 | 0.97 |
| Variables entered in the 3 models: gender, alcohol use, religion, illegal drug use, extroversion, agreeableness, conscientiousness | | | | |

^aBolding indicates significant *P* values.

*Reference group.

Abbreviation: aOR = adjusted odds ratio.

with their partner.³⁰ Hence, women do not engage in as much online pornography because they consider it to be a form of betrayal if viewed without their sexual partner.³⁰ On the other hand, men found more pleasure in pornography if viewed alone.³⁰ For this reason, most men use pornography in secret to avoid partner jealousy, which explains the finding that guilt secondary to online pornography can be more prevalent in men than in women. Furthermore, craving for pornography was higher in males compared to females. This difference can be explained by the notion that women prefer more romantic fantasies and look for intimacy, which is missing in pornography. However, men prefer short-term visual triggers provided by pornography.³³ A study³⁴ that compared brain MRIs of men and women related this difference to the hypothalamus and amygdala being more stimulated in men compared to women when viewing the same visual sexual stimulus.^{30, 35} Consequently, visual sexual images may provide more pleasure for men than women.

Level of Education and Online Pornography Use

This study highlights that secondary and university levels of education were significantly associated with more porn-addictive patterns, which is consistent with findings from another study.³⁶ An explanation for this finding may be that university students are highly sociable, and a significant aspect of the academic experience involves participating in social activities, which may include the consumption of online pornography.³⁶ In addition, digital technologies have infiltrated every aspect of the university experience, increasing availability and access to various websites that may encourage the consumption of pornography among young adults, especially in school, college, and universities.³⁷

Our results also revealed that participants with secondary and university levels of education showed more guilt for online porn use. We hypothesize that this association might be explained by the increased level of awareness about the detrimental consequences of online porn use and the intellectual ability to weigh the benefits and risks of online porn use.

Limitations

The study had several limitations. It was a cross-sectional study, and the findings cannot establish a causal relationship. As self-report measures were used, some participants may have lied due to the topic's sensitive nature³⁸ despite assurance of anonymity. We used some scales that are not validated in Lebanon, which may raise the question about the accuracy of generated results. Furthermore, our study may be subject to both selection and information bias that confound our results, although potential confounding factors were accounted for in the statistical analysis. Another limitation is the uncertainty about whether the actual pornography use or the participant's suspicion of addictive usage caused their psychological distress. Residual confounding bias may be possible, as not all factors related to pornography use were considered. Specifically, the effect of mental health as a confounder was not assessed.

CONCLUSION

This study adds interesting data about pornography use in Lebanon to the literature and highlights the associated factors. The results indicate that some personality traits (agreeableness and extroversion) and other factors (alcohol consumption,

gender, and education level) were associated with online pornography use. The findings also reveal the importance of screening for personality traits among the general population to minimize the development of pornography consumption in high-risk individuals. In addition, being aware of the factors associated with pornography misuse can aid in the implementation of strategies such as awareness campaigns

to explain the detrimental consequences of excessive pornography viewing and protect individuals from early and unbeneficial exposure. Further research is needed to assess different factors associated with pornography use to gain a better understanding of online sexual behaviors, which will lead to a clearer definition of pornography misuse as a part of behavioral addictions.

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