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## “I am gaming, you are gaming”: computer gaming habits and romantic relationship satisfaction

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### Abstract

**Background:** one of the developmental tasks that young adults should achieve is to create meaningful long-term romantic relationship. However, one of the most popular leisure activities among young people, computer gaming, has shown to be harmful to interpersonal relationships. Therefore our **aim** was to assess the potential associations between computer gaming habits and romantic relationship satisfaction among gaming and non-gaming couples.

**Materials and Methods:** the 18–39 years old adults, who have romantic partners, participated in this study. It was conducted in public places of Kaunas and Vilnius cities and counties. Paper questionnaires included Relationship Assessment Scale (RAS) by Hendricks and 7-item Gaming Addiction Scale (GAS-7) by Lemmens et al. Four gaming profiles were identified: 1) Only respondent is gaming; 2) Only partner is gaming; 3) Both are gaming; 4) None are gaming. Univariate and bivariate statistical analysis was made.

**Results:** romantic relationship satisfaction was high and did not differ among different gaming profiles. Respondents and their partners were gaming once a week, 2 days in a row, for 2 hours a day. Statistically non-significant associations were found between more expressed gaming habits and relationship satisfaction among both-gaming couples. Internet gaming disorder among young adults was expressed weakly. Respondents with more expressed internet gaming disorder were less satisfied with their relationship when partner was not gaming.

**Conclusion:** gaming habits and internet gaming disorder did not correlate with romantic relationship satisfaction except for respondents gaming alone – in this case, higher internet gaming disorder was associated with lower relationship satisfaction.

**Key words:** internet gaming disorder; computer-gaming; young adults; romantic relationship satisfaction.

## **1. Introduction**

### **1.1 Romantic relationship satisfaction**

Romantic relationships are defined as voluntary, ongoing interactions characterized by specific expressions of affection and intimacy between two partners [1, 2]. The American Psychological Association [3] portrays the phenomenon of romantic love similarly: it is a type of love in which intimacy and passion are prominent features. Such conceptual explanations underscore the importance of affection, emotional closeness, and desire in relationships that often begin in adolescence and solidify during young adulthood.

Romantic love and relationships are archaic phenomena. Its investigations from evolutionary perspective lead to better understanding of relationship importance to adaptation and species continuity [4]. Biological model of love reveals that a person experiencing love feels plenty of pleasant emotions because of reward system activation [5]. The capability of love and the need to feel good is present from early age. Nevertheless, while some types of love require emotional attachment and commitment, for romantic love the physical attraction might be as important [4–9], because it ensures the possibility of reproduction and completion of developmental tasks, such as creating a family.

Even though there are a lot of theories trying to explain love from psychological and sociological perspectives, the main components of love are met in almost everyone of them. For successful romantic relationships it is important to have intimacy and connection [7, 9], commitment [7], passion [7– 9], trust, and respect [9]. Romantic relationships not only bring positive emotions and activate reward mechanisms in brain structures, but also have impact on psychological well-being and health [10, 11].

Although young adults must address numerous developmental tasks, such as establishing a career, finding their place within a community, or building relationships, it is also crucial to consider leisure activities as they are associated with changes in health and well-being [12, 13]. Physical activity-related leisure pursuits correlate with improved overall and psychological well-being [13], whereas time spent on digital devices (e.g., internet or computer gaming) might be associated with lower psychological well-being [12]. This emphasizes the importance of research concerning computer game usage among young adults in various life aspects, including satisfaction in romantic relationships.

### **1.2 Computer gaming habits and addiction**

The Cambridge Dictionary [14] defines computer games as games played on a computer where on-screen visuals are controlled by pressing keyboard keys or manipulating a game-specific controller. It has been observed that the usage of such games has significantly increased over the past decade, and further growth is speculated. It is estimated [15] that from 2015 to 2024, the number of people playing computer games will rise from 27 to 41 %.

The increasing prevalence of computer game usage raises concerns due to observed excessive engagement and symptoms of addiction. Both the Diagnostic and Statistical Manual of Mental Disorders (DSM-5), and the International Classification of Diseases (ICD-11) include conditions, describing symptoms of computer game addiction. This indicates growing apprehension of the negative consequences related to computer gaming. A study by Andre et al. [16] revealed that 4.5 % of players were overly engaged, 5.3 % were problematic players exhibiting several symptoms of addiction, and 1.2 % fully met the criteria for

computer game addiction. Problematic gaming was associated with younger age, male gender, time spent on online chat platforms, and experiencing loneliness [16]. It can be hypothesized that for young individuals feeling isolated, computer games offer an outlet and an opportunity to connect with other like-minded players. This might lead to increasingly harmful gaming habits, potentially negatively influencing existing relationships with family and the close ones.

Previous studies showed that internet gaming disorder (*IGD*), emerging from harmful gaming habits, intensity, and engagement, might be associated with worse psychological well-being, emotional state, negative changes of cognitive functions and social skills. Young adults who are at risk of *IGD* often have more intense depression [17–19] and anxiety [17] symptoms, lower self-esteem [20], sleep and intellectual function disruptions [17], difficulties in interpersonal relationships in real life [21].

Computer games are a popular leisure activity among young adults. Nevertheless, it raises a question if young adult's gaming time does not overstep their quality time with romantic partner. It is also possible for the opposite to be true – computer gaming might strengthen the bond among partners. Although, it is known that addictions negatively impact interpersonal relationships, and computer game addiction exhibits symptoms analogous to other addictions. Therefore, it's crucial to further analyse the associations between young adults' computer gaming habits and their satisfaction in romantic relationships. Thus, this study aims to assess the potential associations between computer gaming habits and romantic relationship satisfaction among gaming and non-gaming couples.

## **2. Methods**

### **2.1 Design and procedure**

The study design was approved by the Bioethics Centre of the Lithuanian University of Health Sciences, No. BEC-SP(B)-32. The study took place in Vilnius and Kaunas cities as well as their counties. It was conducted from December 2022 to February 2023 in public spaces such as libraries, city centre, parks, supermarkets, trains, etc. Researchers presented the study and asked passers-by how old they were and if they had a romantic partner. If they met selection criteria, they were invited to participate in the study by filling in a paper questionnaire. All information about the study was written in the preamble and verbal consent to participate has been given by all participants.

### **2.2 Participants**

In this study participants were young adults aged 18–39 years involved in romantic relationships. Survey was conducted in public spaces by asking people to fill out paper forms if they matched the selection criteria (age and involvement in romantic relationships). Gender and other sociodemographic variables, including playing computer games, did not have impact on selection for participation. Out of 350 surveyed people, 200 matched the selection criteria and agreed to participate in this study. In total, 84% of participants were from big cities and 16% were from smaller towns and villages. General sociodemographic and other characteristics relevant to this study are shown in Table 1.

**Table 1** General characteristics of study participants

| Characteristics                  | Value                                     | n   | %    |
|----------------------------------|---|-----|------|
| <b>Gender</b>                    | Man                                       | 80  | 40.0 |
|                                  | Woman                                     | 120 | 60.0 |
| <b>Age</b>                       | Mean 26.1 (SD 6.7), Median 25 (IQR 20–31) |     |      |
| <b>Education</b>                 | Incomplete secondary                      | 11  | 5.5  |
|                                  | Secondary                                 | 68  | 34.0 |
|                                  | Vocational                                | 22  | 11.0 |
|                                  | Non-university higher                     | 22  | 11.0 |
|                                  | Higher                                    | 77  | 38.5 |
| <b>Employment status</b>         | Employed                                  | 104 | 52.5 |
|                                  | Studying                                  | 53  | 26.8 |
|                                  | Unemployed                                | 10  | 5.1  |
|                                  | Employed and studying                     | 31  | 15.7 |
| <b>Marital status</b>            | Married                                   | 50  | 25.0 |
|                                  | Not married                               | 150 | 75.0 |
| <b>Living with their partner</b> | Yes                                       | 102 | 51.0 |
|                                  | No  | 98  | 49.0 |
| <b>Playing computer games</b>    | Yes                                       | 81  | 40.5 |
|                                  | No  | 119 | 59.5 |
| <b>Gaming profile</b>            | Only respondent is playing                | 43  | 21.5 |
|                                  | Only partner is playing                   | 32  | 16.0 |
|                                  | Both are playing                          | 38  | 19.0 |
|                                  | None are playing                          | 87  | 43.5 |

### 2.3 Instruments

The questionnaire included Relationship Assessment Scale (RAS), used to examine romantic relationship satisfaction, 7-item Gaming Addiction Scale (GAS-7) for IGD assessment, questions about computer gaming habits (time, frequency, intensity), and sociodemographic items. Computer games were defined as games, played on the computer only (smartphone apps, video games played on consoles, etc., were not included in this definition). In this study

respondents were asked to answer gaming-related questions not only about themselves, but also about their partners if they were playing computer games. That enabled study authors to analyse gaming habits and relationship satisfaction associations between different couple profiles.

The **Relationship Assessment Scale** [22, 23] consists of 7 statements which help examine romantic relationship satisfaction. Each item is measured by 5-point Likert scale from 1 (statement almost does not

apply for respondent) to 5 (statement applies perfectly). The 4<sup>th</sup> and 7<sup>th</sup> items were reversed. Higher total score indicates higher satisfaction with romantic relationship.

The **7-item Gaming Addiction Scale** [24] is a short version of original GAS instrument for IGD prediction. It includes 7 questions that summarize main signs of IGD (salience, tolerance, mood modification, relapse, withdrawal, conflict, and problems). Items are measured in 5-point Likert scale from 1 (“never”) to 5 (“very often”). Here, at least half of the participant’s questions had to be marked 3

points (sometimes) or more, for a participant to be indicated as being at IGD risk. Total GAS-7 scores were also calculated with higher scores meaning higher risk of IGD.

Questions about **gaming habits** were composed by authors of this study to assess how much time during the day respondents and partners were playing (*time*), how many days per week they were playing (*frequency*) and how many days in a row they were playing computer games (*intensity*).

General information about study tools is detailed in Table 2.

**Table 2** Characteristics of study tools.

| Construct                                 | Instruments |                 |                   |                      |
|---|-------------|-----------------|-------------------|----------------------|
|   | Name        | Number of items | Cronbach $\alpha$ | Authors, year        |
| <b>Romantic relationship satisfaction</b> | RSS         | 7               | 0.90              | Hendrick, 1988       |
| <b>Respondents’ gaming habits</b>         | GAS-7       | 7               | 0.78              | Lemmens et al., 2009 |
|   | -           | 3               | -                 | This study’s authors |
| <b>Partners’ gaming habits</b>            | GAS-7       | 7               | 0.85              | Lemmens et al., 2009 |
|   | -           | 3               | -                 | This study’s authors |
| <b>Sociodemographic indicators</b>        | -           | 6               | -                 | This study’s authors |

#### 2.4 Data management and analysis

Data management and analysis was done using MS “Excel” 2016 for Windows, Microsoft Corp., Redmond, Washington, USA and IBM “SPSS Statistics 27” for Windows, Chicago, Illinois, USA software.

For descriptive analysis, means with standard deviations ( $\pm$ SD) as well as medians with interquartile range and percentages were calculated. For normality of continuous variables, Kolmogorov-Smirnov and

Shapiro-Wilk tests were used and normality was rejected when  $p < 0.05$ .

To compare computer gaming habits and internet gaming disorder between respondents and partners in both-playing profile, Student’s t-test for paired samples and Wilcoxon test’s for paired samples z-value were used. Mean ranks between groups were compared using Kruskal-Wallis H test. Associations between romantic relationship satisfaction and gaming habits were examined using Spearman’s correlation.

The correlations and differences were considered statistically significant when  $p < 0.05$ .

### 3. Results

Based on study results, 4 different computer gaming profiles were identified: gaming respondent and non-gaming partner (R+P-); non-gaming respondent and gaming partner (R-P+); gaming respondent and gaming partner (R+P+); non-gaming respondent and

non-gaming partner (P-R-). The prevalence of couples' profiles is displayed in Table 3.

The largest group was that in which neither partner was gaming while the smallest group was that in which only the partner was gaming. The gaming profiles were significantly associated with the age of respondents: non-gaming couples were significantly older than those in which at least one of partners was gaming ( $p < 0.001$ ; Table 3).

**Table 3.** Gaming profiles of study participants and their romantic partners.

|   | R+P-           | R-P+            | R+P+           | R-P-             |
|---|----------------|-----------------|----------------|------------------|
| <b>Percentage</b>                         | 21.5% (n = 43) | 16.0% (n = 32)  | 19.0% (n = 38) | 43.5% (n = 87)   |
| <b>Age (median (IQR))</b>                 | 23 (19–28)     | 23 (20–29)      | 23 (20–28.25)  | 28 (21.75–35.25) |
| <b>H</b>                                  | 18.377         |                 |                |                  |
| <b>p</b>                                  | <0.001         |                 |                |                  |
| <b>Romantic relationship satisfaction</b> | 30 (23–34)     | 29.5 (27.25–33) | 31 (27.75–34)  | 29 (24–33)       |
| <b>H</b>                                  | 6.08           |                 |                |                  |
| <b>p</b>                                  | 0.108          |                 |                |                  |

R+P- only respondent is gaming; R-P+ only partner is gaming; R+P+ both are gaming; R-P- neither are gaming.

#### 3.1 Romantic relationship satisfaction

Romantic relationship satisfaction was compared among the couples by computer gaming profile. Romantic relationship satisfaction was highest among R+P+ couples and lowest among R-P- couples. However, the differences between the groups were non-significant ( $p = 0.108$ ; Table 3).

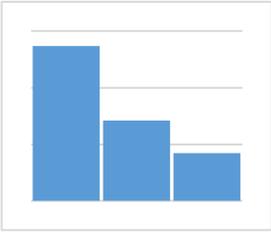
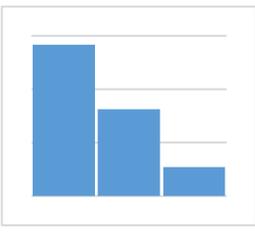
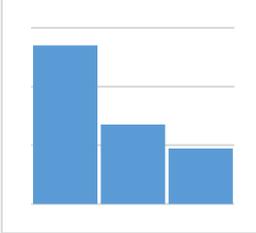
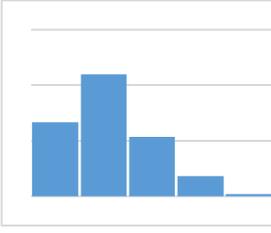
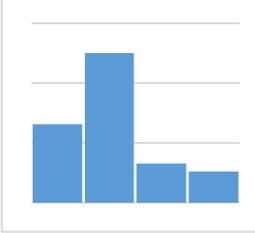
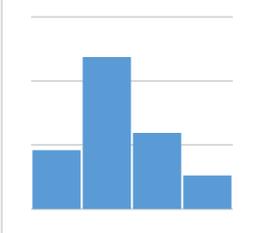
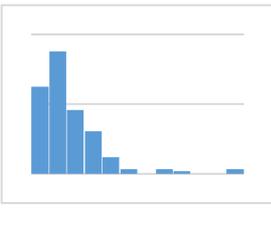
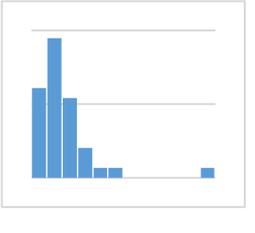
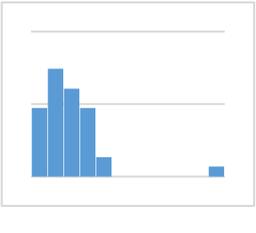
To further analyse the romantic relationship satisfaction differences among gaming and non-gaming couples, scores in each of the scale questions were compared. Results showed that respondents in both-gaming couples were most satisfied with how partners met their needs, how good their relationship was compared to others, and how much they loved

their partner. Respondents in non-gaming couples were satisfied with these aspects the least ( $p < 0.05$ ).

#### 3.2 Computer gaming habits and association with romantic relationship satisfaction

In total, around 38 % of young adults (respondents and their partners) were gaming. On average, respondents and their partners were gaming once a week, 2 days in a row, for 2 hours a day. Frequency and intensity between partners and respondents in R+P+ couples did not differ, however, partners' gaming duration (median 2.3, IQR 1.5–3.45) was statistically significantly longer than respondents' (median 2, IQR 1.25–3) ( $p < 0.001$ ; Table 4).

**Table 4.** Gaming frequency, intensity and duration between respondents and partners in both-gaming couples.

|  | All gamers   | R+P+   |   | Paired t test |         |
|--|--|--|---|---------------|---------|
|  |  | Respondent   | Partner   | r             | p       |
|  |  |  |   |               |         |
| <b>Frequency</b><br>(from 1 day per week to 5 days and more) |   |   |   | 0.15          | 0.362   |
| <b>Intensity</b><br>(from 1 day in a row to 6 days and more) |   |   |   | 0.34          | 0.037   |
| <b>Duration</b><br>(from 1 to 12 hours per day)              |  |  |  | 0.67          | < 0.001 |

R+P+ - both are gaming.

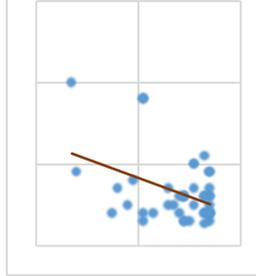
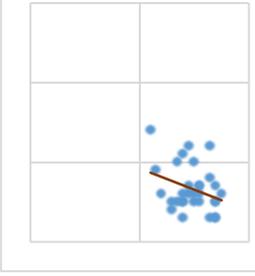
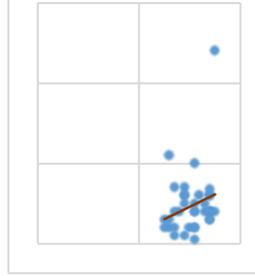
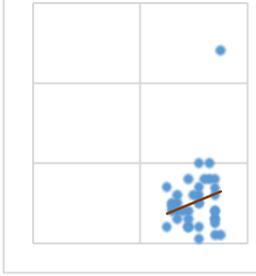
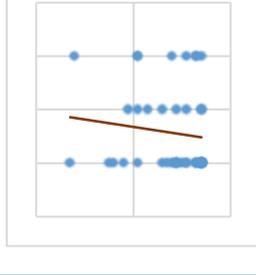
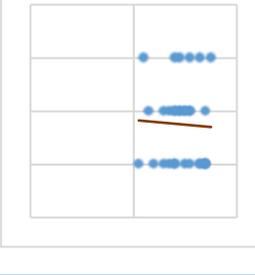
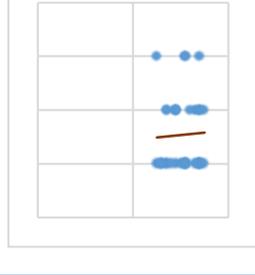
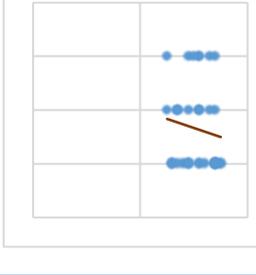
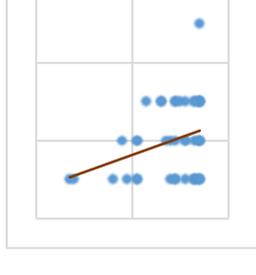
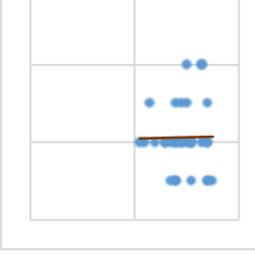
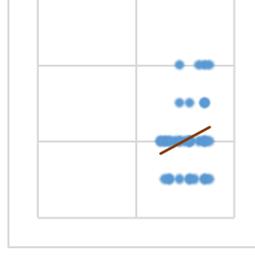
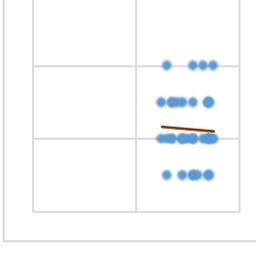
Next, associations between romantic relationship satisfaction and gaming habits were analysed in couples' gaming profiles. For R+P- and R-P+ couples in which only one of the partners was gaming, weak negative links were found between more expressed gaming habits and relationship satisfaction, except for respondent's gaming intensity which correlated positively with relationship satisfaction ( $\rho = 0.25$ ) For both-gaming couples, the associations between gaming habits and relationship satisfaction tended to be positive, except for partner's gaming frequency in both-gaming couples – more frequent partner's gaming was associated with lower respondent's romantic relationship satisfaction ( $\rho = -0.18$ ).

However, all these associations were not significant ( $p > 0.05$ ; Table 5).

### 3.3 Internet gaming disorder and associations with romantic relationship satisfaction

Internet gaming disorder among young adults was weak, approximately 11 points, on a scale of 7 to 35. Partners' IGD was higher (median 11, IQR 9–14) than respondent's (median 10, IQR 8.8–13) in both-gaming couples. However, this difference was not significant ( $p = 0.172$ ; Table 6). None of the IGD symptoms (salience, tolerance, mood modification, withdrawal, relapse, conflict, problems) differed among respondents and partners in both-gaming couples ( $p > 0.05$ ).

**Table 5.** Associations between computer gaming habits and romantic relationship satisfaction by gaming profile.

|                  | R+P-  | R-P+  | R+P+   |   |
|------------------|---|---|--|---|
|                  |   |   | Respondent's   | Partner's   |
| <b>Duration</b>  |    |    |    |    |
| <b>rho (p)</b>   | -0.17 (0.276)   | -0.19 (0.302)   | 0.25 (0.135)   | 0.07 (0.678)  |
| <b>Frequency</b> |   |   |   |   |
| <b>rho (p)</b>   | -0.14 (0.382)   | -0.05 (0.793)   | 0.06 (0.736)   | -0.18 (0.278)   |
| <b>Intensity</b> |  |  |  |  |
| <b>rho (p)</b>   | 0.25 (0.106)  | -0.04 (0.827)   | 0.20 (0.242)   | -0.05 (0.754)   |

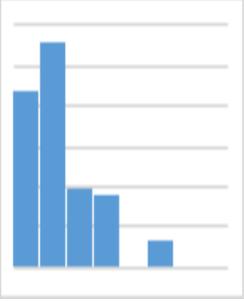
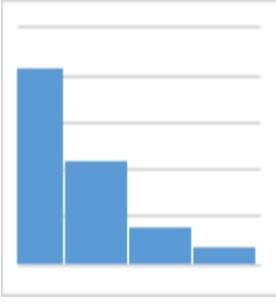
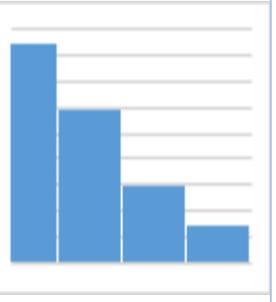
R+P- - only respondent is gaming; R-P+ - only partner is gaming; R+P+ - both are gaming.

Next, associations between IGD and relationship satisfaction were analysed among different gaming profiles.

Statistically significant correlation between respondent's internet gaming disorder and relationship satisfaction in R+P- profile was found. More

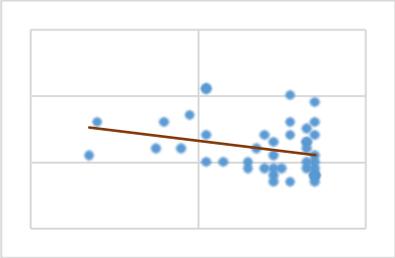
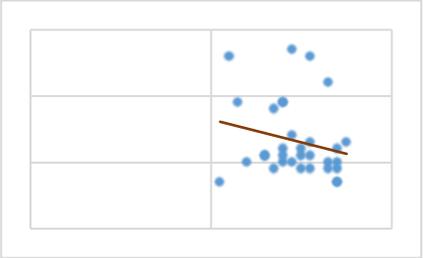
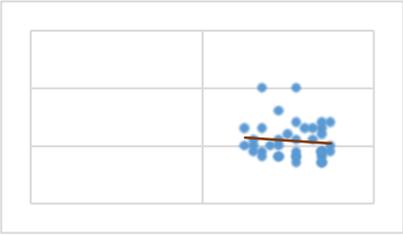
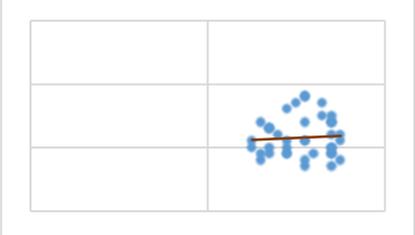
expressed IGD was associated with lower relationship satisfaction ( $\rho = -0.31, p = 0.047$ ). Similar tendency, although not statistically significant, was found in R-P+ profile. In both gaming couples IGD and romantic relationship satisfaction did not correlate ( $p > 0.05$ ; Table 7).

**Table 6.** Internet Gaming Disorder in both-gaming couples.

|                              | All gamers  | R+P+  |  |               |       |
|------------------------------|---|---|--|---------------|-------|
|                              |   | Respondent  | Partner  | Paired z-test |       |
|                              |   |   |  | Z             | p     |
| IGD<br>(scores from 7 to 35) |  |  |  | -1.37         | 0.172 |

R+P+ - both are gaming.

**Table 7.** Associations between IGD and relationship satisfaction among gaming profiles.

|            | R+P-   | R-P+  |
|------------|--|---|
| IGD scores | <br>$\rho = -0.31, p = 0.047$ | <br>$\rho = -0.21, p = 0.243$ |
|            | R+P+   |   |
|            | Respondent's   | Partner's   |
|            | <br>$\rho = -0.08, p = 0.620$ | <br>$\rho = 0.03, p = 0.862$  |

R+P- - only respondent is gaming; R-P+ - only partner is gaming; R+P+ - both are gaming.

#### 4. Discussion

The aim of this study was to assess the potential associations between computer gaming habits and romantic relationship satisfaction among gaming and non-gaming couples. It was found that 38 % of young adults were gaming (40 % respondents and 35 % partners). This figure is higher than the world average in 2020 according to Statista [25], which reported that 31 % of young adults were gaming. The study took place 2–3 years later than analysed statistics and the global prevalence of gaming is increasing each year. This could explain this difference.

In this study, four types of couple profiles were identified (only respondent is gaming; only partner is gaming; both are gaming; both are non-gaming). Even though the age was similar across the profiles, older couples tended to be both non-gamers. This could be explained by the tendency of gaming being more popular among younger people [26].

Gamers reported approximately 2 hours of gaming per day and were gaming 1–2 days per week, consecutively. Although research on gaming habits is scarce, other studies revealed different results – according to a study from 2013 [27], young adults in Germany spent an average of 52 minutes per day gaming, while a study from 2019 [20] revealed an average of 4.15 hours of gaming per day for young adults in Germany. The increase from 2013 can best be explained by increasing popularity of gaming as leisure activity. However, gaming time per day was twice as long in the von der Heiden study [20]. The discrepancy could be explained by the samples, since in the von der Heiden et. al. study anyone who had access to internet could participate, whereas in our study people were questioned in person in public spaces. It can be assumed that people who are interviewed in person have a wider range of leisure

activities than online participants. Those who spend more time online are more likely to notice and participate in online studies as well as have longer gaming durations.

Furthermore, only participants who have romantic partners were included. Although the relationship status in studies about gaming habits is usually not reported, it could be assumed that, on average, people in relationships spend less time gaming. Furthermore, a study in 2019 conducted in the Philippines found that student gamers were usually gaming daily rather than 1–2 days per week. The discrepancy could be explained by a different sample in our study (in relationships, not necessarily students) due to the same reasons mentioned above.

The prevalence of IGD symptoms in this study was low. On the contrary, other studies usually find 17–20 % prevalence of addiction among gamers [20, 17, 18]. Low prevalence of IGD symptoms for respondents in our study could be explained by the fact that the surveys were conducted in person, probably discriminating against people who are prone to gaming addiction as they usually spend much more time online and less in public spaces. Furthermore, the inclusion criteria of being in a relationship could be another variable that may have removed people prone to IGD from the sample as the IGD is associated with interpersonal relationship problems in the real world and, by extension, with difficulties finding a romantic partner [20].

Relationship satisfaction was highest in both-gaming profile and lowest in both non-gaming profile. It is important to take sociodemographic variables into consideration. In this study, non-gaming profile respondents were older, more often married, had a university degree, and were working. This may mean that they have families and households to take care of

and their romantic relationship satisfaction is not impacted by honeymoon phase, which is common in young and new couples. However, a joint leisure activity in both-gaming profiles could also explain higher relationship satisfaction.

In this study in one-gaming profiles more expressed gaming habits and IGD symptoms were associated with lower relationship satisfaction while in both-gaming profile more expressed gaming habits correlated with higher romantic relationship satisfaction. These results might be explained by quality time spent together. When both couple members are playing, especially if they are doing it together, they might see gaming as a common interest that they share and that strengthens their relationship. Meanwhile, when only one of the partners is gaming, the other one has to find his or her own hobby or activity. While it is important to have autonomy in relationships [28], if it is interfering with couple's quality time together, relationship satisfaction may suffer [29, 30]. On the other hand, McDaniel et al. [31] found that technology use can be associated with lower romantic relationship satisfaction, and it does not differ between one partner using technologies and both partner technology use. It raises a question why gaming shows different results from daily technology use.

Our results showed that respondents with intense IGD symptoms were significantly less satisfied with their romantic relationships when partner was not gaming. This association might be explained two ways. The American Psychiatric Association [32, 33] distinguishes giving up other activities to play computer games as one of IGD symptoms. This means that a person who is at risk of IGD may lose interest in spending time with his or her partner. On the other hand, if a gamer is unsatisfied with romantic

relationship, this may intensify his or her gaming as one of IGD symptoms is the use of gaming to relieve negative moods [32].

This study is one of a few which analysed associations between romantic relationship satisfaction and variety of gaming habits. Usually in such studies gaming habits only include time and IGD risk. In this study intensity and frequency of gaming was analysed as well. Moreover, this study found a new perspective on the topic as it investigated associations among different couple profiles and found important differences which helped to deepen knowledge about gamers and non-gamers' romantic relationship satisfaction with their (non)gaming partner. Also, the sample of this study was a general population, so it reflected typical gaming habits of young adults involved in romantic relationship.

However, this study had a few limitations, which should be acknowledged. In this study only one of partners filled in the questionnaire about themselves and their partners. This may have had an impact on data validity, because partners' data were subjectively reported by another person rather than themselves. In future studies it may be more informative to survey both romantic partners. Relationship duration and state might be important factors in relationship satisfaction and should be included as well. Also, the answers may not reflect true feelings for partner if relationships are new or deteriorating. In future studies, including qualitative questions might help determine relationship satisfaction more precisely.

## 5. Conclusions

1. Romantic relationship satisfaction among gaming and non-gaming couples did not differ.
2. More expressed gaming habits in one-gaming couples were associated with lower relationship

satisfaction, while in both-gaming couples – with higher relationship satisfaction. However, these correlations were not significant.

3. IGD in both-gaming couples did not correlate with relationship satisfaction. When only respondent was gaming, higher IGD was associated with lower relationship satisfaction.

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