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## ORIGINAL ARTICLE

# Comparison of Social Interactions between Student Athletes and Students Active in Electronic Games

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KEYWORDS

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Social interaction;
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ABSTRACT

The aim of this study was to compare social interactions between student athletes and students active in computer games. This research is applied in terms of purpose and descriptive-comparative in nature, conducted in the field using a questionnaire. The statistical population included all male high school students (second level) in the city of Bojnord. Since the exact size of the population was not known, the sample size was estimated at 210—70 individuals in each group—using G*Power software, and convenience sampling was employed. The tool used for data collection was the standardized Social Interaction Questionnaire by Lee and Robinson (1998). To analyze the statistical data, descriptive statistics and inferential statistics, including the Kolmogorov–Smirnov test, one-sample t-test, ANOVA, and Tukey's post hoc test, were conducted using SPSS version 26. The results of the one-sample t-test indicated that the social interaction status of adolescents active in traditional sports, electronic sports, and the control group was favorable. Moreover, the results of the ANOVA test showed that there is a significant difference in the variable of social interactions among the three groups: adolescents active in traditional sports, adolescents active in electronic sports, and the control group.

## Introduction

In today's world, sports are recognized as one of the most effective physical activities through which individuals can overcome psychological stress and improve their physical health. Research shows that people who engage in regular physical exercise are less at risk of heart attacks compared to others, benefit from better mental rest, experience a lower resting heart rate, endure less psychological pressure, possess higher self-confidence, demonstrate a more positive outlook on life, and are less likely to suffer from depression (Saeidinejad, 2009).

Nevertheless, engagement in sports is influenced by individuals' social and cultural lifestyles. At present, with the rise of apartment living and a decline in available spaces for sports and play, interest in virtual and computer-based sports has increased significantly. Statistics indicate that between 74% and 94% of adolescents and young adults in the United States, 64% to 94% of Finnish youth, and similar proportions in other countries spend time on these types of games (Nahavandi, 2021).

The 1990s marked a turning point in the development of electronic sports. The advancement of personal computers and the spread of the internet through local area network (LAN) technologies shifted the competition model from human versus machine to human versus human, laying the groundwork for the rapid growth of this industry. Today, electronic sports

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encompass many features of traditional sports, including professional players, teams, uniforms, coaches, leagues, tournaments, major events, betting, player transfers, university scholarships, and even challenges such as doping and gender discrimination (Jenny *et al*., 2017). However, there is still no consensus on whether electronic sports should be officially recognized as a sport (Hamari & Sjöblom, 2017). The primary disagreement revolves around the level of physical activity involved. While electronic sports share the elements of competition, institutional structure, and fan base with traditional sports, they differ significantly in terms of physical exertion (Jenny *et al*., 2017).

In recent years, with the advancement of digital technologies, electronic sports have evolved not only into a form of entertainment but also into a socio-cultural phenomenon that engages millions of people worldwide (Taylor, 2021). This rapid growth has raised important questions regarding the long-term effects of such activities on individuals' mental health and social relationships, particularly among the younger generation. Recent studies indicate that while electronic sports may offer opportunities for virtual socialization and the development of cognitive skills, they may also indirectly lead to reduced face-to-face interactions and physical activity (Curry & Kowalati, 2020).

As previously mentioned, physical activity and sports play a significant role in promoting physical and mental health, and one of the most important indicators of mental well-being is the quality of social interactions—a subject that has garnered attention from sociologists and psychologists in recent decades (Zarepour & Asoodeh, 2011). Social interaction refers to individuals' connection with social groups and their ability to communicate thoughts, emotions, and information through verbal and non-verbal interactions (Wu *et al*., 2021). Numerous studies have shown that sports positively impact social interactions (Raisanen *et al*., 2012). Team sports, in particular, due to their collective nature, have a greater effect on enhancing mental health and strengthening social relationships compared to individual sports (Plohore *et al*., 2019; Sheehan *et al*., 2018). Furthermore, the study by Suarez *et al*. (2022) suggests that designing sports programs—whether physical or digital—while considering social distancing can contribute to improved mental health and social interactions.

Nevertheless, despite the rapid expansion of the electronic sports industry, mental health support for athletes in this field remains largely overlooked. A study by Kim *et al*. (2006) found that 63% of electronic sports players experienced psychological issues such as stress, depression, anxiety, insomnia, and communication disorders prior to entering this domain. Additionally, due to the sedentary lifestyle associated with electronic sports, musculoskeletal injuries in the neck, back, and upper limbs are common among players. Prolonged computer use can also lead to metabolic disorders, gaming addiction, and socio-behavioral problems (Zwybel *et al*., 2019).

Considering the growing prevalence of electronic sports in Iran and the lack of comprehensive research on their impact on social interactions, this study aims to compare the social interactions of student athletes with those of students active in computer games in the city of Bojnord. This research may contribute to a better understanding of the psychosocial consequences of both electronic and traditional sports and offer strategies for improving social engagement.

## Materials and Methods

This study, aimed at comparing the social interactions of student athletes and students active in electronic sports, is applied in purpose and descriptive-comparative in nature. It was conducted in the field using a questionnaire-based approach. The statistical population included all male high school students (second level) in the city of Bojnord. For the purposes of the study, the population was divided into three groups: the first group consisted of student athletes, the second group included students active in electronic sports, and the third group comprised

inactive adolescents. Since the exact size of the population was not known, the sample size was estimated at 210 (70 individuals per group) using G*Power software. Ultimately, data were collected from a total of 195 participants, consisting of 63 electronic sports players, 68 traditional athletes, and 64 individuals in the control group. A convenience sampling method was employed. The data collection tool used in this study was a standardized questionnaire, comprising two sections: a demographic characteristics questionnaire and the 20-item Social Interaction Questionnaire by Lee and Robinson (1998). For statistical analysis, both descriptive and inferential statistical tests were utilized. These included the Kolmogorov–Smirnov test, one-sample t-test, ANOVA, and Tukey's post hoc test, all conducted using SPSS software, version 26.

## Results

The statistical sample of this study consisted of 195 adolescents from the city of Bojnord, divided into three groups: active athletes (68 individuals), electronic sports players (63 individuals), and a control group (64 individuals). The results related to the demographic characteristics of the statistical sample are presented in Table 1.

**Table 1.** The results related to the demographic characteristics of the statistical sample.

| Variable | | Frequency | Percentage (%) |
|---|---|---|---|
| **Age** | 15 | 67 | 34.3 |
| | 16 | 44 | 22.6 |
| | 17 | 41 | 21 |
| | 18 | 43 | 22.1 |
| **Parents' education** | diploma or lower | 43 | 22.1 |
| | Associate degree | 22 | 11.2 |
| | Bachelor's degree | 79 | 40.5 |
| | Master's degree | 43 | 22.1 |
| | Doctorate | 8 | 4.1 |
| **Household income** | Less than 10 million toman | 36 | 18.5 |
| | 10–20 million toman | 48 | 24.6 |
| | 21–30 million toman | 72 | 36.9 |
| | More than 31 million toman | 39 | 20 |

According to the results shown in Table 1, the majority of participants (67 individuals) were 15 years old. Regarding parental education level, most parents (79 individuals) held a bachelor's degree. In terms of household income, the majority of families (72 individuals) had a monthly income between 21 and 30 million toman. The descriptive statistics related to the research variables are presented in Table 2.

**Table 2.** Descriptive Statistics Related to Social Interaction.

| | Electronic Sports | | Active Sports | | Inactive | |
|---|---|---|---|---|---|---|
| | **Mean** | **SD** | **Mean** | **SD** | **Mean** | **SD** |
| **Social interaction** | **3.68** | **0.73** | **4.05** | **0.57** | **3.98** | **0.64** |

The descriptive results related to the variable of social interaction show that the mean for this variable was 4.05 ± 0.57 in the active sports group, 3.68 ± 0.73 in the electronic sports group, and 3.92 ± 0.64 in the control group.

To assess the status of social interactions among

active adolescents, those engaged in electronic sports, and inactive adolescents, a one-sample t-test was conducted. The results are presented in Table 3.

**Table 3.** Analysis of Social Interaction Status Among Active, Electronic Sports, and Inactive Adolescents.

| Variable | Group | Mean | SD | t | df | sig |
|---|---|---|---|---|---|---|
| | | | | (Test value = 3) | | |
| **Social interaction** | Active athletes | 4.05 | 0.57 | 14.23 | 67 | 0.001 |
| | Electronic sports | 3.68 | 0.73 | 9.42 | 62 | 0.001 |
| | Inactive | 3.92 | 0.64 | 12.08 | 63 | 0.001 |

As indicated in Table 3, based on the one-sample t-test results using 3 as the theoretical mean, the obtained t values show a statistically significant difference between the theoretical and the observed means ($p < 0.05$). Given that the observed means for all three groups are higher than the theoretical average, it can be concluded that, from the perspective of the study participants, the level of social interaction in all groups is above average. Therefore, it can be stated that the social interaction status of adolescents engaged in traditional sports, electronic sports, and those in the control group in Bojnord is favorable.

To examine the differences in the mean scores of social interaction among the groups in this study, a one-way Analysis of Variance (ANOVA) was conducted. The results are presented in Table 4.

**Table 4.** ANOVA results for social interaction among the study groups.

| Source | Sum of squares | df | Mean square | F | p-value |
|---|---|---|---|---|---|
| **Between groups** | 149.68 | 2 | 74.84 | | |
| **Within groups** | 1943.27 | 191 | 9.38 | 7.97 | 0.034 |
| **Total** | 2092.95 | 193 | | | |

As shown in Table 4, there is a statistically significant difference ($p < 0.05$) in social interaction among the three groups—adolescents engaged in traditional sports, electronic sports, and the control group. To identify which groups differed significantly, Tukey's post hoc test was performed, and the results are summarized in Table 5.

**Table 5.** Tukey post hoc test results for social interaction.

| Variable | Group I | Group J | Mean difference (I–J) | p-value |
|---|---|---|---|---|
| **Social interaction** | Traditional sports | Electronic sports | 2.03* | 0.001 |
| | | Control group | 0.71 | 0.35 |
| | Electronic sports | Control group | 0.76 | 0.38 |

Following the identification of a significant overall difference among the groups in terms of social interaction, Tukey's post hoc test revealed that the difference was significant between the traditional sports group and the electronic sports group ($p < 0.05$).

## Discussion and Conclusion

The results of the one-sample t-test indicated that the social interaction status of adolescents engaged in traditional sports, electronic sports, and the control group was favorable. Furthermore, a comparison of means among the three groups revealed that students active in electronic sports demonstrated better social interaction than the other two groups. In explaining this finding, and in line with the view of Yousefi Ardabili (2015), it can be argued that computer games represent a quasi-social world with their own specific rules of interaction. Entering this virtual social world requires adherence to the norms and regulations of interaction with others. This is the key aspect of games—they are not merely a form of entertainment but also function as complex social environments where culture is formed through repeated and intricate

interactions. This perspective highlights that games are more than mere media for cultural transmission; rather, they constitute dynamic social systems. These findings are consistent with those of MohammadFar (2018), Yousefi Ardabili (2015), Khaled (2019), and Baweh *et al*. (2017).

The results of the ANOVA test showed that there is a statistically significant difference in the variable of social interaction among the three groups: adolescents active in traditional sports, electronic sports, and the control group. Additionally, Tukey's post hoc test revealed a significant difference in social interaction between the traditional sports group and the electronic sports group. Although limited studies have explored the relationship between social interaction and participation in traditional and electronic sports, the current findings are to some extent consistent with previous research by Khakzad *et al*. (2020), Jafari *et al*. (2019), Masoudnia and Pourrahimian (2016), Yousefi Ardabili (2015), and Ferguson (2007). For instance, Khakzad *et al*. (2020) reported a significant relationship between computer games, physical activity, and social skills among female high school students in Kerman. Masoudnia and Pourrahimian (2016) highlighted computer games as an influential factor in behavioral disorders among students. Ferguson (2007), in his study, concluded that when properly managed, computer games—despite being an inevitable part of adolescents' and children's lives—can reduce negative impacts and even improve certain cognitive abilities. This supports the idea that, under appropriate conditions, electronic games can be considered among activities that enhance mental capabilities.

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