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Original Paper

The Positive Effect of Barrier-Free e-Sports on Rolefulness and Game-Mediated Communication

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Abstract

This study investigated the effect of barrier-free e-sports activities on rolefulness in 23 people involved in barrier-free e-sports in order to determine the relationship between Game Mediated Communication (GMC) and rolefulness. The results show that both the social and internal rolefulness scores were higher after the barrier-free e-sports experience. In addition, significant positive correlations between certain subscales of the GMC scale and the rolefulness scale were identified.

Keywords

game-mediated communication, barrier-free e-sports, rolefulness

1. Introduction

Barrier-free e-sports is a term coined by ePARA that refers to e-sports played in an environment where anyone can participate at any time and place regardless of age, gender, and disability. Ripetta and Silvestri's (2024) study of the embodied experience of disabilities in e-sports using First Person Shooter games has contributed to our knowledge of the challenges in e-sports that individuals with disabilities face. Similarly, Kuo, Yeomans, Ruiz, and Lin (2024) analyzed the possible risks and benefits of video games for individuals with disabilities. The psychological benefits include enhanced physical rehabilitation and psychological well-being and improved cognitive abilities and emotional regulation.

Wiklund's (2005) exploration of interpersonal relationships developed through digital gaming introduced the concept of "Game-Mediated Communication" (GMC). He noted that as multiplayer

games gain features and participants, in-game communication among players also grows (Wiklund, 2005), and suggested that as such in-game communication increases, digital games might become the primary medium overall for computer-based communication. Akin (2023) noted that video games afford players a platform to cultivate such essential social and emotional skills as anticipating others' actions, providing support, and building connections. Other research indicates that shared gaming experiences can inculcate deep bonds among players as they support each another in difficult situations. Online gaming also allows individuals to build strong and meaningful friendships without meeting in person.

A previous study (Kato, Kato, Futamura, & Tsuruta, 2024) examined the relationships between different types of digital games and rolefulness, where "rolefulness" refers to a sustained feeling of role satisfaction in an individual's everyday life (Kato & Suzuki, 2018). Of the groups studied, those who engaged in competitive gaming scored the highest in rolefulness, suggesting that playing games with others can foster a stronger sense of role and encourage interpersonal communication. Accordingly, this study investigated the effect of barrier-free e-sports activities on rolefulness.

Kato, Kato, Futamura, Tsuruta, and Futamura (2025) developed and evaluated a scale for assessing Game-Mediated Communication (GMC), finding that the model with the three factors of chance, connection, and empathy provided the best fit to the data. As these factors would then be expected to be strongly associated with the facilitation of rolefulness, this study further examined the relationships between the factors of GMC and rolefulness.

2. Methods

2.1 Participants

This study recruited 23 people (16 male and 7 female, M_{age} = 35.70) engaged in barrier-free e-sports as players and administrative staff members who have physical, developmental, and mental difficulties like muscular dystrophy, congenital limb defect, cerebral palsy, Isaacs syndrome, lymphangioleiomyomatosis, prune belly syndrome, Leigh syndrome, Charcot-Marie-Tooth disease, visual impairment, panic disorder, autism spectrum disorder, ADHD, and bipolar disorder.

2.3 Procedure

First, the participants' demographic information was collected: age, gender, role of barrier-free e-sports, and types of difficulties. The participants then completed the GMC scale and a rolefulness scale before and after they engaged in barrier-free e-sports activities.

3. Results

The demographic data showed that participants were players and supporters of the games Street Fighter 6, efootball, FC24, Fortnite, Apex, Valorant, Overwatch 2, League of Legends, Gran Turismo 7, and Splatoon.

Participants' rolefulness scores before and after the barrier-free e-sports experience were compared using a paired-samples *t*-test, which found that both their social (t (22) = 3.00, $p < 0.01$, $d = 0.79$) and internal rolefulness scores (t (22) = 3.54, $p < 0.01$, $d = 0.87$) were significantly higher after the barrier-free e-sports experience (Table 1). Furthermore, correlation analysis found significant positive correlations between the subscales of the GMC and rolefulness scales (Table 2).

Table 1. Rolefulness Scores before and after the Barrier-free e-sports Experience

	Before		After			
	Mean	*SD*	Mean	*SD*	*t*	*d*
Social rolefulness	2.86	1.26	3.83	1.18	3.00**	0.79
Internal rolefulness	2.80	1.21	3.87	1.24	3.54**	0.87
						** $p < .01$

Table 2. Correlations between the GMC and Rolefulness Subscales

	Chance	Connection	Empathy
Social rolefulness	.694**	.841**	.744**
Internal rolefulness	.628**	.785**	.730**
			** $p < .01$

4. Discussion

As expected, the rolefulness scores were higher after the barrier-free e-sports experience. Both the social (*Mean* = 2.86) and internal rolefulness scores (*Mean* = 2.80) before the barrier-free e-sports experience were very low. For comparison, Nakakita, Kato, and Kemp (2025) found mean scores of 3.10 for social rolefulness and 3.54 for internal rolefulness in Japanese university students, suggesting that the baseline scores in the present study were quite low.

Social rolefulness was measured with such questions as "I have a role in the group I belong to" and "I can apply my strong point for society". As their physical and mental difficulties might have caused participants difficulties with social adaptation, making it hard for them to find a place of their own, peers with whom they might enjoy themselves, and ways of applying their strong points in social settings, the barrier-free e-sports experience afforded them opportunities to communicate and share their experiences with team members and employ their strengths naturally through game activities. In addition, social rolefulness has an aspect of "My role is necessary for other people". As there are many roles in barrier-free e-sports, such as player, supporter, creator, and writer, the game activities allowed participants to find roles appropriate to their talents and personalities, thereby facilitating social rolefulness.

Internal rolefulness concerns confidence, satisfaction, and identity. Kartal (2023) showed that e-sports, along with advances in software and hardware technologies that enhance accessibility for people with physical disabilities, can profoundly improve the socialization, career development, cognitive and intellectual growth, and overall quality of life of disabled individuals, indicating that barrier-free e-sports have the potential to enhance their quality of life through improved socialization. This might have increased the participants' confidence, satisfaction, and identity in this study, enhancing their internal rolefulness.

Further, the correlation analysis showed that all three GMC subfactors of chance, connection, and empathy were significantly positively correlated with both social and internal rolefulness. The "chance" factor encompasses items like "We can talk about common topics", "It's a good conversation starter", and "It's an opportunity to find similarities with others". Playing the same game fosters a sense of familiarity among team members, offering them the chance to engage in enjoyable conversations. The shared topic of a game thus plays a key role in facilitating communication and interaction.

The "connection" factor includes items like "I gain a sense of trust with others", "I gain a sense of unity with others", and "It strengthens the bonds with friends" that highlight the trust and unity developed through shared gaming experiences. Kato et al. (2024) emphasized that competitive games in particular significantly enhance rolefulness. The competitive aspect of barrier-free e-sports might thus serve to cultivate a sense of trust and unity with others.

The "empathy" factor includes items like "I can think from the other person's point of view", "I can understand the feelings of others", and "It enriches my sensitivity". Papoutsi (2023) highlighted that playing games positively influences the development of empathy, a vital aspect of GMC. The enhancement of a player's imagination of the feelings and thoughts of their teammates and opponents is important in both physical sports and e-sports, facilitating empathy.

Overall, this study demonstrated that barrier-free e-sports increased rolefulness, suggesting that by enhancing the factors of chance, connection, and empathy in GMC, these sports significantly facilitate rolefulness. This study thus reveals the possibilities that barrier-free e-sports offer people with disabilities. We hope that future research will extend the results to a wider range of areas, cultures, and generations.

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