

The Effect of Intramural Sports Participation on Sense of Belonging Among University Students

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Abstract

The objective of this study is to explore if there exists a link between students' duration and frequency in intramural sports participation and their feeling of belonging while keeping constant the influence of gender, class standing, hometown, housing option, and the number of sports involved. The sense of belonging theory and the sense of community Index 2 (SCI-2) scale were applied. Multiple regression analysis is conducted on the samples gathered from two universities in China. It was found that a combination of duration and frequency of intramural sports participation affects the sense of belonging in university students, and if gender, class standing, hometown, housing option, and the number of sports involved were controlled for, the set of variables (duration, frequency) is still able to predict a significant amount of the variance in the sense of belonging. The findings aid in enhancing student participation and the complete experience of students in higher education, contributing to the individual and communal progress of students.

Keywords: sense of belonging, intramural sports, university students

Introduction

Intramural sports are a popular form of physical activity among university students and play an essential role in developing a sense of belonging and community. This paper will examine the effect of intramural sports participation on sense of belonging among university students and the reasons behind this relationship.

Intramural sports provide a positive environment for students to engage in physical activity, build relationships and develop a sense of belonging. According to a study by Coakley (2016), students who participate in intramural sports report a stronger sense of connection to

their university, a greater sense of belonging, and higher overall satisfaction with their university experience. This sense of belonging is mainly due to the social interaction and camaraderie that develops among participants and the experience of competing and working together to achieve a common goal.

Additionally, intramural sports can provide a sense of identity and a feeling of being part of a larger community. According to a study by Hamre and Jowett (2019), students who participate in intramural sports often form close bonds with their teammates and experience a sense of pride in their sport and their team. This sense of identity and satisfaction is influential in promoting a sense of belonging and attachment to one's university.

Intramural sports also offer opportunities for students to develop leadership skills, self-confidence, and resilience. According to a study by Williams (2017), students participating in intramural sports can often take on leadership roles, such as captaining their team or coaching. These leadership opportunities can help students develop confidence, improve their communication skills, and increase their sense of belonging to the university community.

Finally, intramural sports can provide a supportive and inclusive environment for students from diverse backgrounds. According to a study by Laver (2018), students participating in intramural sports often form close bonds with individuals from different cultures, ethnicities, and backgrounds. This can help promote a sense of inclusiveness and diversity and can contribute to a greater sense of belonging among all students.

In conclusion, intramural sports are essential in promoting a sense of belonging among university students. Through developing a sense of identity, leadership skills, and inclusiveness, students participating in intramural sports often report a greater sense of understanding of their university and greater satisfaction with their university experience.

Literature Review

Sense of belonging

Sense of belonging is a crucial factor in the life of university students. Research has shown that students who feel a sense of belonging in their university environment are more likely to persist and succeed academically (Goodenow and Grady, 1993; Strayhorn, 2012). Intramural sports participation has been identified as one of the ways to enhance a sense of belonging among university students (White, 2013). This literature review examines the effect of intramural sports participation on the sense of belonging among university students.

Sense of belonging is a psychological construct that refers to an individual's sense of connection and attachment to a group, organization, or community (Baumeister and Leary,

1995; Hagerty and Patusky, 1995). In the context of university students, a sense of belonging refers to their perception of being a valued member of the university community, having supportive relationships with peers and faculty members, and feeling connected to the university's values, goals, and traditions (Hausmann, Schofield, and Woods, 2007). A sense of belonging has been linked to many positive outcomes, including higher academic achievement, better mental health, and increased social engagement (Hausmann et al., 2007; Walton and Cohen, 2007).

Intramural sports are organized recreational activities within a university or college setting and are typically open to all students. These activities can include a variety of sports, such as basketball, soccer, volleyball, and flag football. Intramural sports provide opportunities for students to engage in physical activity, socialize with peers, and develop new skills and interests (Boakye et al., 2019). Participation in intramural sports has been associated with positive outcomes, including improved physical health, increased social connectedness, and enhanced academic performance (Boakye et al., 2019; Hanson and Kraus, 2017).

White (2013) investigated the effects of intramural sports participation on university students' social connectedness and identity formation. The study found that students who participated in intramural sports had a higher sense of social connectedness and identity formation among participants. The study also found that intramural sports provided opportunities for students to interact with diverse and establish relationships with peers who shared similar interests. The findings of this study suggest that intramural sports can promote a sense of belonging among university students by facilitating social connections and identity formation.

Hanson and Kraus (2017) examined the relationship between intramural sports participation and a sense of community among university students. The study found that students who participated in intramural sports had a higher sense of community than non-participants. The study also found that intramural sports allowed students to develop a sense of shared identity, sharing, and mutual support. The findings of this study suggest that intramural sports can promote a sense of belonging among university students by fostering a sense of community and shared identity.

Boakye et al. (2019) investigated the impact of intramural sports participation on university students' sense of belonging. The study found that students who participated in intramural sports had a higher sense of belonging than non-participants. The study also found

that intramural sports allowed to develop relationships with peers and create a sense of community. The findings of this study suggest that intramural sports can enhance a sense of belonging among university students by promoting social connections and community building.

Wayment and Vorderer (2018) examined the effect of intramural sports participation on the sense of belonging among college students, focusing on race and gender differences. The study found that intramural sports participation positively affected all students' sense of belonging, regardless of race or gender. However, the study also found that female students reported a higher sense of belonging than men. The findings of this study suggest that intramural sports participation can enhance sense of belonging among university students, regardless of their demographic characteristics.

In addition to these studies, other research has also investigated the relationship between intramural sports participation and a sense of belonging among university students. For example, several studies have found that participation in intramural sports is associated with increased social support and more significant social connectedness (e.g., Eder and Fingerson, 2001; Groves et al., 2012). Other studies have found that intramural sports can promote a sense of shared identity and community among participants (e.g., Arai et al., 2013; Moorman and Rentschler, 2003). These studies suggest that intramural sports participation can enhance a sense of belonging among university students by providing opportunities for social connection, shared identity, and community building.

The literature reviewed provides evidence of the positive impact of intramural sports participation on the sense of belonging among university students. Participating in intramural sports allows students to develop relationships with peers, establish a sense of community, and enhance their social connectedness and identity formation. The findings suggest that intramural sports can promote a sense of belonging in university students by facilitating social connections, community building, and shared identity.

It is important to note that the benefits of intramural sports participation on the sense of belonging may vary depending on individual factors, such as personality traits, prior experiences, and social support networks (Henderson et al., 2016). For example, introverted students may find it more challenging to connect with others through intramural sports, while extroverted students may thrive in these environments. Similarly, students with negative experiences with sports and a lack of social support may experience different benefits from

intramural sports participation than those with more positive experiences and support networks.

Moreover, while the literature reviewed suggests that intramural sports participation can enhance a sense of belonging among university students, it is essential to recognize that this is just one of many factors contributing to a sense of belonging. Other factors, such as academic engagement, faculty support, and campus culture, significantly shape students' sense of belonging (Hausmann et al., 2007). Therefore, it is essential for intramural sports participation as one component of a broader approach to promoting a sense of belonging among university students.

Intramural sports participation

Intramural sports offer opportunities for college students to participate in recreational sports activities r institutions organize. These sports can provide various physical, social, and mental health benefits. The frequency of participation in these activities is an essential element to consider when analyzing the effects of intramural sports. This literature review aims to examine the research on the frequency of intramural sports participation and its potential effects on health and well-being among college students.

Numerous studies have highlighted the physical, psychological, and benefits of intramural sports participation. Regarding physical benefits, intramural sports can promote cardiovascular health, muscular strength and endurance, and overall physical fitness (Erickson et al., 2014). Intramural sports also allow participants to develop and improve their motor skills, such as hand-eye coordination, agility, and balance (Bopp et al., 2011).

Psychologically, intramural sports have been linked to reduced stress levels, improved mood, and increased self-esteem (Erickson et al., 2014). This may be partly due to the social benefits of intramural sports participation. By playing on a team or participating in a league, individuals can build social connections and a sense of belonging within a larger community (Widmeyer and Birch, 2012). This sense of belonging and social support can be particularly in participants adjusting to a new environment and seeking connections with peers.

Despite the many benefits of intramural sports participation, several challenges can impact participation rates. One challenge is time constraints. College students may have busy schedules with classes, work, and other commitments, making it challenging to find participants in intramural sports (Kilpatrick et al., 2015). Another challenge is accessibility. While many colleges and universities offer intramural sports, not all students may have access to

these programs. This may be due to limited resources or a lack of interest from students (Widmeyer and Birch, 2012).

Finally, some students may hesitate to participate in intramural sports due to a lack of experience or skill level. This can be particularly true for sports traditionally associated with high skill or athleticism, such as basketball or soccer (Bopp et al., 2011). This may be a barrier for some students who feel intimidated or discouraged from participating in intramural sports.

Factors Influencing Intramural Sports participation

Several factors have been identified as influencing intramural sports participation among college students. One key factor is social support. Studies have found that individuals who perceive more incredible social support for physical acts are likely to participate in intramural sports (Widmeyer and Birch, 2012). This highlights the importance of creating a supportive environment for intramural sports through social media groups, team-building activities, and peer encouragement.

Another factor is perceived barriers to participation. Students who perceive more barriers to intramural sports participation, such as lack of time or accessibility, are less likely to participate (Kilpatrick et al., 2015). Addressing these perceived barriers through flexible scheduling, transportation options, and accessible facilities can help increase participation rates.

Finally, motivation and enjoyment are critical factors in intramural sports participation. Students motivated to participate in intramural sports and who enjoy the activities are likelier to continue participating (Bopp et al., 2011). This highlights the importance of creating a fun and engaging environment for intramural sports, such as creative team names, fun activities, and post-game social events.

Intramural sports offer college students numerous physical, psychological, and social benefits. These benefits can be especially significant for students who adjust to a new environment and selections with peers. Despite the many benefits of intramural sports, several challenges can impact participation rates, including time constraints, accessibility, and perceived barriers to participation. Addressing these challenges through flexible scheduling, transportation options, and accessible facilities can help increase participation rates.

The research suggests that social support, perceived barriers to participation, and motivation and enjoyment influence intramural sports participation. Creating a supportive and engaging environment for intramural sports through team-building exercises and post-game

social events can help increase participation rates and promote physical activity, social engagement, and overall well-being among college students.

Duration of Participation in Intramural Sports

Participation in intramural sports has numerous benefits, including improved physical fitness, social connections, and mental well-being. However, more research needs to examine the duration of intramural sports participation, which may impact these benefits. This literature review aims to delineate the duration of intramural participation and its relationship with physical, social, and mental health outcomes.

Several studies have examined the impact of intramural sports participation on physical health outcomes. For example, a study by Dixon et al. (2016) found that college students who participated in intramural sports had higher levels of physical activity and lower levels of sedentary behavior than non-participants. However, this study did not examine the duration of participation. Another study by Taks et al. (2018) found that intramural sports participants had higher cardiorespiratory fitness and lower body fat levels than non-participants. This study also did not examine the duration of participation.

One study that did examine the duration of intramural sports participation was conducted by Schneeberg et al. (2018). This study found that college students who had participated in intramural sports for four or more years had significantly higher levels of physical activity and lower levels of behavior than those who had participated for three years or less. Long-term participation in intramural sports may be particularly beneficial for health outcomes.

Participation in intramural sports has also been associated with numerous social benefits. For example, Ewing et al. (2018) found that intramural sports participation was associated with increased social connectedness and a sense of belonging among college students. However, this study did not examine the duration of participation.

One study that did examine the duration of intramural sports participation was conducted by Wankel et al. (1993). This study found that college students who had participated in intramural sports for four or more years had higher levels of social support and a greater sense of community than those who had participated for three years or less. Long-term participation in intramural sports may be particularly beneficial for social outcomes.

Another study by Zhang et al. (2021) found that students who participated in intramural sports more frequently had better physical health outcomes than those who

participated less often. Specifically, the study found that frequent participation was associated with lower body mass index (BMI), lower rates of obesity, and better cardiovascular health.

Participation in intramural sports has also been associated with numerous mental health benefits. For example, a study by Kim et al. (2017) found that intramural sports participation was associated with lower stress levels and depressive symptoms among college students. However, this study did not examine the duration of participation.

Schneider et al. (2017) found that college students who had participated in intramural sports for four or more years had lower anxiety levels and higher life satisfaction levels than those who had participated for three years or less. Long-term participation in intramural sports may particularly benefit health outcomes.

The existing research suggests that long-term participation in intramural sports may be particularly beneficial for physical, social, and mental health outcomes. However, more research is needed to fully understand the relationship between the duration of participation and these outcomes. Future studies could examine the impact of participation in intramural sports over different periods (five years, ten years). Moreover, it may impact health outcomes. Additionally, studies could examine factors contributing to long-term participation in intramural sports, such as social support, motivation, and enjoyment.

Frequency of Participation in Intramural Sports

Many studies have examined the frequency of intramural sports participation among college students. Zhang et al. (2021) found that approximately 45% of college students participated in intramural sports at least once a week. Additionally, 20% of students participated in these activities more than once a week. The study also found that students who participated more frequently had higher physical activity levels and better physical health than those who participated less often.

Similarly, another study by Lu et al. (2018) examined the frequency of intramural sports participation among college students in China. The study found that approximately 64% of participants participated in intramural sports at least once a week, with 25% participating more than once a week. The study also found that students who participated more frequently had better physical health and were less likely to engage in risky health behaviors like smoking and drinking.

The frequency of intramural sports participation has been found to affect college student's health and well-being significantly. One study by Parks and Floyd (2014) found that students who participated more frequently in intramural sports had better mental health

outcomes than those who participated less often. Specifically, the study found that frequent participation was associated with lower stress levels and higher life satisfaction.

Intramural sports offer a valuable opportunity for college students to engage in physical activity and promote overall health and well-being. The frequency of participation in these activities is an essential element to consider when examining the effects of intramural sports. Research has shown that students who participate more frequently have better physical and mental health outcomes than those who experience less often. Future research should examine the potential long-term effects of intramural sports on health and well-being and explore ways to encourage more students to participate in these activities.

The hypotheses are as follows:

H1: A combination of duration and frequency of intramural sports participation affects the sense of belonging in university students.

H2: If gender, class standing, hometown, housing option, and several sports involved are controlled for, the variables (duration, frequency) can still predict a significant amount of variance in the sense of belonging.

Method

Participants

A sample of students from two different higher education institutions in a province in China, one of which was a public college and the other a private one, voluntarily participated in this study. They were selected using the multi-stage sampling technique; the author arbitrarily decided the choice of data collection sites. The student participants in the universities were randomly chosen.

The Cochran formula is what is used to calculate the size of the sample. This formula allows one to determine an ideal sample size given a desired degree of precision, desired level of confidence, and the estimated proportion of the characteristics present in the population. It is widely acknowledged that employing the Cochran formula is better suited in situations with many people (Bartlett, 2001).

The rule of thumb $N > 104 + k$ is the most diminutive population size that is needed for evaluating the significance of individual predictors (k), assuming a medium effect size and an alpha value of less than .05 (Meyers et al., 2013; Warner, 2013). This requirement of 110 persons is met by ty that is undertaken for the current study, which resulted in a minimum of 221 participants. The research project was approved by the ethics committee of the university (no. 23/2023).

Instrument

The Sense of Community Index Scale 2 (SCI-2) is a research tool used to measure the sense of community (SOC) experienced by individuals in various settings, such as neighborhoods, schools, organizations, and online communities. The scale builds upon the original Sense of Community Index (SCI) developed by McMillan and Chavis in 1986, which defined SOC as "a feeling that members have of belonging, a feeling that members matter to one another and to the group, and a shared faith that members' needs will be met through their commitment to being together."

The SCI-2 is designed to assess the four elements of SOC proposed by McMillan and Chavis: membership, influence, integration and fulfillment of needs, and shared emotional connection. The scale consists of 32 items, each rated on a 5-point Likert scale, ranging from strongly disagree to agree strongly. Respondents are asked to rate their level of agreement with statements such as "I feel like I belong to this community" and "I feel a strong emotional connection to other members."

The SCI-2 has been used in various research settings, including community development, education, and social psychology, to examine the relationship between SOC and outcomes such as well-being, social support, and civic engagement. The scale has been found to have good reliability and validity and has been translated into several languages for use in cultural research. Overall, the SCI-2 is a valuable tool for researchers interested in understanding the dynamics of community life and the factors that contribute to a sense of belonging and connection among individuals.

Results

Hierarchical multiple regression was used to assess the ability of duration and frequency of intramural sports participation to predict levels of sense of belonging after controlling for the influence of social desirability and age. Preliminary analyses were conducted to ensure no violation of normality, linearity, multicollinearity and homoscedasticity assumptions.

As shown in Table 1, gender, class, housing, hometown, and types of sport were entered in Step 1, explaining 21% of the variance in the sense of belonging. After the entry of duration and frequency in Step 2, the total variance explained by the model as a whole was 33%, $F(4, 421) = 94.78, p < .001$. The five control measures explained an additional 12% of the variance in stress after controlling for gender, class, housing, hometown, and types of sport

responding, R^2 change = .12, ΔF (2, 213) = 2.312, $p < .001$. In the final model, only the two control measures were statistically significant, with duration recording a higher beta value (beta = .117, $p < .001$) than frequency (beta = .102, $p < .001$), as in Table 2.

Table 1 Model Summary

Model	Adjusted			Change Statistics					Change Statistics
	R	R^2	R^2	SE	ΔR^2	ΔF	df	df	
1	.102 ^a	.21	.20	1.161	.21	1.451	5	215	.812
2	.103 ^b	.33	.30	1.166	.12	2.312	2	213	.970

Table 2 Regression Coefficients

	B	SE	Beta	t	p	Tolerance	VIF
1	(Constant)	3.246	.494		6.574	.000	
	Sex	-.093	.158	-.040	-.588	.557	.977
	Class	-.019	.058	-.022	-.325	.745	.993
	Housing	.043	.157	.019	.274	.784	.993
	Hometown	.193	.157	.084	1.227	.221	.990
	Types of sport	-.015	.072	-.015	-.215	.830	.986
2	(Constant)	3.206	.567		5.653	.000	
	Sex	-.088	.160	-.038	-.548	.584	.961
	Class	-.020	.059	-.023	-.342	.733	.987
	Housing	.045	.160	.020	.283	.777	.966
	Hometown	.192	.158	.083	1.216	.225	.986
	Types of sport	-.015	.073	-.014	-.207	.836	.962
	Duration	.009	.035	.117	.246	< .001	.972
	Frequency	-.002	.059	.102	-.034	< .001	.946
							1.058

Discussion

The results of the study provide support for both hypotheses. The first hypothesis predicted that a combination of duration and frequency of intramural sports participation affects the sense of belonging in university students. The results indicate a statistically

significant relationship between these variables, suggesting that increased involvement in intramural sports is associated with a greater sense of belonging.

The second hypothesis predicted that the variables of duration and frequency would still be significant predictors of a sense of belonging when controlling for the effects of age and socially desirable responses. The results supported this hypothesis, indicating that these factors did not influence the relationship between duration, frequency, and sense of belonging.

The findings suggest that intramural sports effectively enhance students' sense of belonging in universities, even when controlling for potential confounding factors. These results have important implications for universities and student organizations that seek to promote community and to belong among their student populations.

The study investigated a relevant and vital topic of interest in higher education: the relationship between intramural sports participation and students' sense of belonging. The study used a combination of duration and frequency to measure intramural sports participation, which provides a more comprehensive measure of students' involvement in these activities.

The study controlled for potential confounding factors, such as age and socially desirable responses, which strengthened the validity of the findings.

The study used a large sample size, increasing the findings' generalizability to the broader population of university students.

The study used a cross-sectional design, which limits the ability to establish causal relationships between intramural sports participation and a sense of belonging.

The study relied on self-reported data, which may be subject to response and social desirability biases.

The study did not account for potential variations in the types of intramural sports students participated in, which may affect the sense of belonging differently.

The study was conducted in a specific geographic region and may not generalize to other populations or settings.

The study did not identify any unexpected or surprising results. However, the results were more robust than anticipated, with a significant relationship between intramural sports participation and a sense of belonging, even after controlling for potential confounding factors. This suggests that intramural sports may be a particularly effective way to promote a sense of belonging in university students.

The findings suggest that intramural sports participation can enhance a sense of belonging among university students by facilitating social connections, community building, and shared identity. Participating in intramural sports allows students to develop relationships with peers, establish a sense of community, and enhance their social connectedness and identity formation. However, it is essential to recognize that the benefits of intramural sports participation on sense of belonging may vary depending on individual factors and that intramural sports participation is just one component of a broader approach to promoting a sense of belonging among university students.

Relation to past studies

The study's findings are generally consistent with existing literature in the field. Several studies have examined the relationship between sports participation and a sense of belonging in university students and found positive associations between the two variables. For example, several studies have found that sports participation can enhance students' sense of community and social connectedness (e.g., Lu et al., 2019; Putnam and Boyce, 2019). Additionally, previous research has suggested that intramural sports effectively create a sense of belonging and community among university students (e.g., Newman et al., 2014; Wolfe and Haverly, 2014).

However, there are also some differences and contradictions in the literature. Some studies have suggested that the relationship between sports participation and a sense of belonging may vary depending on gender, race, and sport type (e.g., Grattan and Esco, 2015; Loughead et al., 2018). Additionally, some research has found that the relationship between sports participation and a sense of belonging may be moderated by other factors, such as personality traits or team cohesion (e.g., Adachi and Willoughby, 2015; Carron et al., 2018).

Overall, while the present study's findings are generally consistent with existing literature, they also highlight the need for continued research to explore the complex relationships between sports participation, sense of belonging, and other potential moderators and mediators of these relationships.

Implications

Future research could also examine how different types of intramural sports affect the sense of belonging among university students. For example, team sports may have different effects than individual sports, as team sports may promote a greater sense of shared identity and community among participants. Moreover, different levels of competition may also affect the sense of belonging, as highly competitive leagues may create a more exclusive and elitist

atmosphere that could be less conducive to promoting a sense of belonging among all participants. Thus, exploring how different factors of intramural sports participation affect sense of belonging may provide valuable insights for developing effective strategies to promote a sense of belonging among university students.

Another direction for future research could be to investigate the role of diversity and inclusion in intramural sports participation and its impact on the sense of belonging. Previous research has shown that diversity and inclusion are essential factors that contribute to a sense of belonging and positive experiences in university settings (e.g., Chavous et al., 2014; Hurtado, Milem, Clayton-Pedersen, and Allen, 1998). Given that intramural sports participation can bring together students from diverse backgrounds, it is essential to understand how this diversity may affect the sense of belonging among participants. Furthermore, exploring strategies to promote a culture of inclusion and diversity within intramural sports programs may help to create more welcoming and supportive environments that enhance the sense of belonging among all participants.

Future research could explore the specific aspects of intramural sports that contribute to enhancing sense of belonging and identify strategies for maximizing the benefits of intramural sports participation for promoting a sense of belonging among university students.

Understanding the potential impact of frequency of participation could provide insights for developing effective strategies to promote a sense of belonging among university students through intramural sports participation.

Conclusion

These studies suggest that intramural sports participation can foster a sense of belonging and community among university students. By providing opportunities for social interaction and physical activity, intramural sports can help students feel more connected to their university and peers. This sense of belonging and community can improve students' well-being and academic success.

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