

The Social Benefits of Intramural Sports

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One of the distinguishing features of collegiate student recreational sports complexes is the sense of community that is intentionally introduced in the programs and services that occur within these facilities. Intramural sports programs provide a powerful medium for student interaction (Belch, Gebel, & Mass, 2001). This study was designed to examine the social benefits of intramural sports participation for undergraduate students at a mid-sized postsecondary institution. Surveys were randomly distributed to students (N = 349) participating in a variety of intramural sports programs. There were a number of significant differences in the reported social benefits of intramural sports participation between on-campus and

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off-campus students, first- and fourth-year students, males and females, and differences in reported social benefits based on the number of intramural sports played. Recreational sports programs should be linking participation in intramural sports with broader institutional goals of retention by emphasizing their role in socially integrating students into the university through participation in various recreational sports offerings. Suggestions for future research are made in the context of the limitations of the study.

As more and more colleges place recreational sports under the auspices of Student Affairs, Student Services, Student Life, and so on, the need becomes apparent for linking programs with the beneficial outcomes of involvement in these programs. Recreational sports professionals must begin to relate programs to specific benefits, as well as to the administrative and physical education philosophies in which they have been steeped for so long. Recreational sports programs are beginning to substantiate their efforts on how programs not only develop students physically, but also how they develop them holistically (Mull, Bayless, & Jamieson, 1997).

For years the field of campus recreation has championed the benefits of participation in recreational sports activities, programs, and services. Until recently, “the evidence to support such claims is often anecdotal or rooted in the general experiences of practitioners in the field” (Barcelona, 2002, p.1). However, there is a growing body of literature that is beginning to substantiate these claims. The impact of involvement in out-of-class activities on a student’s collegiate experience has been well documented (Astin, 1984; Abrahamowicz, 1988; Kuh, 1993, 1995). Numerous benefits have also been found to be associated with recreational sports involvement including: stress reduction (Ragheb & McKinney, 1983; Kanters, 2000), self-esteem (Collins, Valerius, King, & Graham, 2001; Haines, 2001; Kanters & Forrester, 1997a, 1997b), enhanced GPA (Belch, Gebel, & Mass, 2001; Bryant & Bradley, 1993; Bryant, Bradley, & Milborne, 1994), student development (Geller, 1980; Nesbitt, 1993, 1998; Todaro, 1993), and ease of social integration (Bryant, Bradley, & Milbourne, 1994; Christie & Dinham, 1991).

Purpose

The purpose of this study is to examine the social benefits of intramural sports participation for undergraduate students at a mid-sized postsecondary institution. More specifically, the research questions are, "What social benefits are attained while participating in intramural sports?" and "Are there differences in the social benefits between: males & females; those who participate in the men's only, women's only, or coed intramural leagues; first-, second-, third-, and fourth-year students; and students who live in residence versus students who live off campus?"

Literature Review

According to Iso-Ahola (1989), "one mechanism for coping with the constant demands related to college life is through participation in recreational activities, which has been shown to play an important role in helping students balance and improve the quality of their lives" (p. 38). Even more beneficial are those "recreational engagements that offer the student an opportunity to develop and enhance his or her physical, mental, or emotional capacity" (Collins et al., 1998, p. 38). Since most traditional age students are now at a stage of development in their college years where autonomy and identity are of importance, this becomes crucial in contributing to a sense of belonging and being part of a social group (Kleiber, 1999). During this time personal interactions with an ever-widening sphere of social contacts in a variety of settings broadens an individual's development (Bandura, 1986).

Iso-Ahola (1980), one of the early pioneers in this line of inquiry, defined leisure socialization as "a process through which individuals acquire knowledge, attitudes, values, skills, and motives about leisure" (p. 115). Cocurricular involvement may lead to gains in social emotional development. Astin (1984) proposed that "the more involved students are in academic and extracurricular activities, the more development they will experience" (p. 6). According to this theory then, "extensive involvement in sport activities should lead to an enhanced social-emotional development" (Astin, p. 79). Chickering (1976) also felt that the "experience to which a student is exposed has the potential to have substantial impacts on that student's overall development" (p. 79). Chickering further added that "experiences for

many students is participating in the recreational sports program, therefore, such programs have the opportunity to influence the psychosocial development of students” (p. 80).

Sport can serve as a “vehicle for the transmission of knowledge, values and norms. The specific values conveyed may be those of the dominant society or conversely those of a divergent sub-group” (Wankel & Berger, 1990, p. 174). From that standpoint then, intramural sports might contribute either to differentiation and stratification or to integration within the overall university. Socialization is a dynamic two-way process; that is, minority groups can be socialized into the dominant culture through sport, but they can also change the existing structure (Wankel & Berger). Despite the widespread belief in the socializing value of sports, there is little empirical evidence to indicate that sport involvement produces desirable personality or character development, moral development, or social values (McPherson, Curtis, & Loy, 1989). However, it seems likely that sharing intramural sport experiences and working together under conditions of competitive stress will draw teammates closer (Wankel & Berger). In fact, intramural sports participation requires students to work together in order to achieve common goals (Barcelona, 2002). This drive to achieve a common goal usually leads to easier social group bonding and smoother social integration. Involvement in recreational sports has the potential to yield positive gains in a student’s ability to function as a member of a team (Barcelona).

There is little doubt that there are a number of social benefits associated with recreation, leisure, or sport participation; however, there is considerably less empirical support documenting the social benefits of intramural sports participation. Student participation in intramural sports programs serves to enhance the social element of development, whether the participation is individual or in groups (Wilson, 1994). Furthermore, outside of structured freshmen programs, “recreation may be the single common bond between students” (Bryant, Banta, & Bradley, 1995, p. 158).

Although much has been written about the socialization effects of recreation, leisure, sport, and intramurals, and the impact of these activities on socialization, the research on which this literature is based has major limitations. The evidence is relatively outdated and anecdotal.

tal in nature. This study seeks to develop an instrument designed to measure the social benefits of intramural sports participation in the areas of university integration, reliable alliances, social group bonding, cultural awareness, and personal benefits; and to determine if there are any significant differences between various demographic groups in the social benefits attained from intramural sports involvement.

Methods

Instrument Development and Administration

The researchers developed an instrument composed of two sections: social benefits of intramural sports participation and demographics. The questions in the demographics section were designed to address the research questions posed for the study. The social benefits section measured social benefits in four areas including: university integration, personal social benefits, cultural social benefits, and social group bonding. The four categories were based on the review of literature and were specifically derived from a list of social benefits from Driver and Bruns (1999). The social benefits were measured on a five-point Likert scale ranging from one (1) 'Strongly Disagree' to five (5) 'Strongly Agree.'

University integration benefits were measured by questions dealing with improving students' sense of belonging and satisfaction with the university, increased sense of responsibility to the university, and students' commitment to the university. Personal social benefits were measured by questions pertaining to the development of individual leadership abilities, improvement of self-confidence, feelings of self-worth and overall happiness, and whether intramural sports participation allows students to better understand themselves. Cultural social benefits were measured by questions such as improving ability to work within a diverse group, increased understanding and tolerance of different cultures, and a willingness to learn about different cultures. Lastly, social group bonding benefits were defined by questions dealing with improving social relations, decreasing feelings of social alienation, improving ability to work within a team, adding to social bonding and support, bonding with teammates, and improving a student's ability to socially interact.

A short pilot study was conducted before the survey was administered to the subjects in this study in order to determine any ambiguities in the wording of the survey questions. The survey was piloted to approximately 25 students in a third-year quantitative analysis course who had received prior training on questionnaire construction and who also represented a variety of involvement levels in the intramural sports programs offered on the campus. While the pilot study did not discern any ambiguities in the wording of the questions themselves, feedback from the respondents suggested to the researchers to add a fifth dimension of social benefits—that of reliable alliance (Kanters, 2000). Reliable alliance involved the development of trustworthy, dependable relationships with others and was defined by questions such as increasing students' sense of trust and commitment in their peers.

Target Population and Sampling Methods

Participants were randomly selected on site from an intramural sports program at a medium-sized university. Surveys were distributed either prior to or after students participated in their intramural sport. The survey took approximately 15 minutes to complete. After completing the questionnaire, participants received a feedback letter thanking them for participating in the study.

Results

Participants

A total of 349 surveys were completed. The respondents for this study consisted of 177 (50.7%) males and 172 (49.3%) females. Forty-six (13.2%) of the respondents were 18 years of age, 19.2% (67) were aged 19 years, 17.8% (62) were aged 20 years, 12.9% (45) were aged 21 years, 19.8% (69) were aged 22 years, and 17.2% (60) were aged 23 years or older. One hundred and eighteen students (33.8%) were in their first year of study, 19.8% (69) were in their second year, 16% (56) were in their third year, and 30.4% (106) were in their fourth year or more of study. For a complete breakdown of the responses to the demographic questions, refer to Table 1.

Table 1
Descriptive Statistics for Selected
Sample Demographic Variables

Variable	<i>n</i>	%
Residence		
— On-campus	105	30.3
— Off-campus	242	69.7
Type of Intramural Sport		
— Male only	76	26.8
— Female only	72	25.4
— Coed	136	47.9
Level of Competition		
— Competitive	192	58.2
— Recreational	138	41.8
Number of Intramural Sports Played		
— One	143	41.6
— Two	120	34.9
— Three or more	81	23.5

Measurement of Social Benefits

The five social benefits were measured by four to six questions designed to assess that particular benefit and were measured on a five-point Likert scale ranging from one (1) 'Strongly Disagree' to five (5) 'Strongly Agree.' Within each of the five benefit domains, there were at least two questions that were negatively worded in order to address the social desirability response issue. Social desirability "refers to the fact that some respondents will answer items in a way they believe would be most socially appropriate, regardless of their true feelings" (Worthen, White, Fan, & Sudweeks, 1999, p. 172). These questions had to be reversed coded in order for the data to be in a consistent format with the positively worded questions. The mean (average) and standard deviation (the average distance each score is away from the mean) values for the social benefits questions are presented in Table 2. Respondents indicated that they benefited the most in the areas of personal social benefits ($M = 19.27$ out of a possible 25, $SD = 2.85$) and

social group bonding ($M = 24.93$ out of a possible 30, $SD = 3.23$), and the least in the area of cultural social benefits ($M = 13.38$ out of a possible 20, $SD = 2.79$).

Table 2
Mean and Standard Deviation Values
for the Social Benefits Statements

Social Benefit Variable	<i>M</i>	<i>SD</i>
Personal Social Benefits		
— Improves my leadership abilities	3.83	.823
— Allows me to better understand myself*	3.62	.996
— Improves my overall happiness	4.28	.760
— Improves my self-confidence*	4.01	.862
— Increases my feeling of self-worth	3.83	.800
Cultural Benefits		
— Improves my ability to work with a diverse group	3.79	.849
— Improves my understanding of different cultures	2.85	1.070
— Increases my willingness to learn about diverse cultures*	3.33	1.026
— Increases my tolerance of different cultures	3.43	1.004
University Integration Benefits		
— Improves my sense of belonging within the university*	3.92	.960
— Increases my satisfaction with my university experience*	4.16	.884
— Improves my sense of responsibility to my university	3.29	.938
— Increases my community involvement	3.57	.968
Social Group Bonding Benefits		
— Reduces social alienation	4.08	.868
— Improves my social relations	4.24	.738
— Improves my ability to work within a team*	4.13	.947
— Adds to social bonding and support*	4.03	.838
— Improves my ability to socially interact*	4.00	.906
— Allows me to bond with my teammates	4.40	.682
Reliable Alliance Benefits		
— Increases my trust in my peers*	3.69	.956
— Increases my commitment to my peers*	3.72	.959
— Increases my willingness to perform at my best potential	4.00	.806
— Helps to manage my time better	3.56	.915

Note: *SD* = standard deviation. *These questions were originally negatively worded, but they have been rephrased positively in order to be consistent with the mean values that reflected reverse coding of participants' responses.

Examination of the correlation matrix between the five areas of social benefits revealed that the five areas were all significantly moderately correlated with one another. As a result of this multicollinearity, there was an element of unidimensionality that prevented the successful factor analysis of the scale. Further analysis of the correlation matrix for all 23 questions measuring the five areas of social benefits revealed there was no relationship between some of the questions, a weak relationship between the majority of the questions, and a moderate relationship between only a few of the questions. Results of this correlation analysis suggest that the questions are unrelated to one another and therefore measure different social benefits. However, since the exploratory factor analysis failed to support the five areas of social benefits as defined by the researchers in this study, the questions were analyzed individually. While this increases the type I error rate, it allows the researchers to examine the social benefits individually. Type I error refers to the increased likelihood of finding significant differences due to conducting multiple univariate tests as opposed to conducting a single multivariate test.

The internal consistency of the scale was addressed in order to determine the extent to which all the items within the benefits scale yield similar results. Cronbach's alpha coefficient is a model of internal consistency, based on the average inter-item correlation for the scale, and was 0.887. Based on the topic of measurement (social benefits of intramural sports participation) and that this was a somewhat exploratory study, the reliability of the social benefits scale is relatively high (Schumacher & McMillan, 1993). Cronbach's alpha for the personal, cultural, university integration, social group bonding, and reliable alliance social benefits were 0.676, 0.667, 0.542, 0.726, and 0.598 respectively. Results of the reliability analyses suggest that the overall scale is reliable; however, the reliability of the five subscales or social benefits is tenuous at best, further supporting the researchers' decision to examine questions individually.

Analysis

An independent samples *t* test was used in order to determine whether there were significant differences between males and females, those students who live in residence versus those who live off campus, and students participating in competitive versus recreational leagues. The

results of the first *t* test revealed that there were significant differences between males and females on the following questions: increases my commitment to my peers, increases my willingness to learn about different cultures, increases my community involvement, improves my ability to work within a team, adds to social bonding and support, improved my ability to socially interact, and allows me to bond with my teammates. In each case, females reported significantly higher benefits (refer to Table 3).

The second *t* test indicated that there was a significant difference between on-campus and off-campus students in the areas of: improves my sense of belonging within the university, increases my commitment to my peers, improves my ability to work within a team, increases my tolerance of different cultures, helps me to manage my time better, and improves my ability to socially interact. In each case students that lived on campus reported significantly higher benefits. Lastly, the only significant difference between competitive and recreational league participants was for “increases my community involvement,” in which those students participating in recreational leagues benefited significantly higher (refer to Table 3).

One-way analyses of variance (ANOVA) were conducted in order to determine whether there were significant differences in the social benefits and respondents' year of study, type of intramural sport they participated in (men's, women's, or coed), and the number of different intramural sports played (one, two, three or more). The first one-way ANOVA indicated that there were significant differences for year in school for: improves my sense of belonging within the university, improves my sense of responsibility to my university, and increases my tolerance of different cultures. Each of the Tukey's post hoc analyses revealed that first-year students reported significantly higher social benefits in these areas than fourth-year students and there were no other significant differences (refer to Table 4).

The second one-way ANOVA revealed that there were significant differences based on the type of intramural sport respondents participated in and the following questions: increases my commitment to my peers, increases my community involvement, adds to social bonding and support, and allows me to bond with my teammates. Tukey's post hoc analyses indicated that those respondents participating in female-

Table 3
Group Differences in Social Benefits based on Gender, Residence, and
Competitive versus Recreational Intramural Leagues

	<i>df</i>	<i>t</i>	<i>M</i>	
Gender			Males	Females
— Increases my commitment to my peers	345	-2.828**	3.58	3.86
— Improves my ability to work within a team	346	-2.96**	3.98	4.28
— Increases my willingness to learn about different cultures	346	-2.905**	3.18	3.49
— Increases my community involvement	346	-3.28***	3.41	3.74
— Adds to social bonding and support	346	-2.99**	3.90	4.17
— Improves my ability to socially interact	345	-3.99**	3.81	4.19
— Allows me to bond with my teammates	346	-3.63***	4.27	4.53
Residence			On	Off
— Improves my sense of belonging within the university	343	3.44***	4.19	3.80
— Increases my commitment to my peers	343	2.90**	3.94	3.62
— Improves my ability to work within a team	342	1.43*	4.30	4.06
— Increases my tolerance of different cultures	343	2.31*	3.62	3.34
— Helps me to manage my time better	343	2.04*	3.72	3.50
— Improves my ability to socially interact	343	2.08*	4.15	3.93
Competitive vs. Recreational			Comp.	Rec.
— Increases my community involvement	327	-3.23**	3.43	3.77

Note: * $p < .05$, ** $p < .01$, *** $p < .001$

only and coed leagues reported significantly higher benefits than those participating in male-only leagues. Lastly, there were significant differences between the number of intramural sports played (one, two, three or more) and improves my ability to work with a diverse group. Those students playing three or more intramural sports reported benefiting significantly higher in this area when compared to those students playing only one intramural sport (refer to Table 4).

Discussion

This study was designed to examine the social benefits of intramural sports participation for undergraduate students at a midsized postsecondary institution. More specifically, the research questions this study

Table 4
One-Way ANOVA Examining Differences in Social Benefits for Year of Study, Type of Intramural Sport, and Number of Intramural Sports Played

	<i>df</i>	<i>F ratio</i>	<i>M</i>		
Year of Study			1st	4th or more	
— Improves my sense of belonging within the university	3,343	4.64**	4.16	3.70	
— Improves my sense of responsibility to my university	3,342	3.74*	3.47	3.09	
— Increases my tolerance of different cultures	3,343	3.71*	3.62	3.25	
Type of Intramural Sport			Male	Female	Coed
— Increases my commitment to my peers	2,279	4.92**	3.46	3.93	3.79
— Increases my community involvement	2,280	4.33*	3.33	3.77	3.64
— Adds to social bonding and support	2,280	3.07*	3.83	4.15	4.07
— Allows me to bond with my teammates	2,280	11.44**	4.12	4.59	4.49
Number of Intramural Sports			One	Two	Three or more
— Improves my ability to work with a diverse group	2,237	3.89*	3.65	3.87	3.94

Note: * $p < .05$, ** $p < .01$, *** $p < .001$

attempted to answer were: “What social benefits are attained while participating in intramural sports?” and “Are there differences in the social benefits between: males & females; those who participate in the men’s only, women’s only, or coed intramural leagues; first-, second-, third-, and fourth-year students; and students who live in residence versus those who live off campus?”

On-campus students reported benefiting significantly higher than off-campus students in a number of areas. The results here are somewhat confounding. On one hand you would expect that students who live off campus would benefit more from participating in intramural sports in these areas as they do not have as many other ways to become integrated within the university. However, results of a *t* test comparing stu-

dents living on and off campus resulted in no significant differences in the number of intramural sports they participated in. Also, you do not know whether respondents to this survey that live on campus were able to discern whether they benefited in those areas from playing intramural sports or if it was because they were naturally benefiting in those areas as a result of living in residence.

The only difference between the number of intramural sports played and the social benefit statements was that participation in intramural sports improves students' abilities to work with a diverse group. This supports Astin's (1984) theory of involvement, which suggests that the more involved students are, or the more intramural sports they participate in, the more they stand to benefit. However, there were 22 social benefits statements in which there were no significant differences, which contradicts Astin's theory. This could be potentially encouraging for recreational sports directors in that students are benefiting in these other social areas while only having played one or two intramural sports and that students do not need to be participating in a high number of intramural sports in order to achieve these benefits.

There were also a number of differences in the reported social benefits based on the student's year of study. More specifically, first-year students reported significantly higher social benefits in a number of areas when compared to fourth-year students. While fourth-year students have had a number of years and a multitude of cocurricular opportunities to benefit socially, outside of structured freshmen programs for first-year students, "recreation may be the single common bond between students" (Bryant, Banta, & Bradley, 1995, p.158). The major causes of attrition in first-year students are emotional rather than academic factors (Szulecka, Springnett, & de Pauw, 1987). Students who are emotionally and socially healthy have a greater chance to succeed in college (Leafgran, 1989) and those "students who become adequately integrated into the social and academic systems of their university through participation in extracurricular activities, interactions with other students, and interactions with faculty develop or maintain strong commitments to attaining a college degree" (Christie & Dinham, 1991, pp. 412-413).

Implications

Recreational sports programs should be linking participation in intramural sports with broader institutional goals of retention by emphasizing their role in socially integrating students into the university through participation in various recreational sports offerings. Students who use recreational sports facilities, programs, and services persist at a higher rate than those who do not (Belch, Gebel, & Mass, 2001), which helps increase institutional goals of persistence and ultimately retaining students. Freshmen have also reported that their involvement in recreation programs and facilities greatly impacted their decision around whether to continue at the university (Bradley, Bryant, & Milbourne, 1994).

Recreational sports facilities, and involvement in intramural sports programs, promote social interaction among students who do not achieve this in and of themselves (Chen, 2002). Intramural sports programs provide a powerful medium for student interaction (Belch, Gebel, & Mass, 2001). Creating “opportunities for interaction, collaboration, and unification are essential if campuses are to develop a sense of community” (Dalgarn, 2001, p. 66). The relationships students develop with other students through intramural sports participation are important in terms of student satisfaction (Astin, 1993). The goal of recreational sports programs should be to provide increased opportunities for such interaction (Dalgarn, 2001) in order to foster student learning, personal, and social development.

Recreational sports professionals need to promote greater institutional understanding and appreciation of the social significance of intramural sports. While intramural sports are one of the most popular cocurricular activities for many students on college campuses, and one of the most beneficial social outlets for students, it is not publicly recognized as such. A likely reason for this is that recreational sports practitioners have not successfully, or effectively, articulated the social importance of intramural sports. A better understanding of the important social contributions that intramural sports programs make on college campuses is necessary. This can help shift the too frequent perception that campus recreation or intramural sports is a residual, to recognition of the real contributions these programs make in the social integration of students into the university community. Widespread

understanding of the social benefits of intramural sports will increase institutional support for intramural sports programs, and such support is necessary for recreational sports departments that are highly dependent on institutional funding.

Limitations

In interpreting these findings, it is important to note the limitations associated with the study. While the overall reliability of the benefits scale was quite high, the internal consistency of the five benefits areas was relatively low. In addition, the factor analysis of the scale failed, and the scale itself had little construct validity. Overall the scale was measuring reliably, but just not accurately, especially in the five social benefit domains. Furthermore, multiple univariate tests increased the likelihood of making a type I error. As a result, some of the significant findings may be a function of the number of tests conducted. Although the sample size was relatively robust in this study, caution is advised when attempting to generalize the results beyond the sample in this study as subjects were drawn from recreational sports programs and at only one institution. Future research should randomly sample the entire student population, or draw samples from multiple institutions with comparable recreational sports programs in order to increase the generalizability of these results. It is also important to note that while the power was relatively high, the effect sizes were quite weak. This suggests that a benefits perspective should be incorporated into the planning and implementation of intramural sports programs in order to produce desired social benefits.

Conclusion

The field of recreational sports can use the findings from this study to guide recreational sports research, policy development, and management (Driver & Bruns, 1999). Recreational sports programs need to position, or reposition, themselves in order to focus on the impacts of their programs and services. They also need to articulate to key stakeholders within the institution as well as the students, faculty, and staff using their programs how the services they provide add great value to the lives of students and to the institution (Crompton, 1993). In order to add empirical support to strengthen this argument, future research should examine if the gains, or lack thereof, in the social benefit areas

differ for students who participate in intramural sports compared to those who do not. Increasingly, recreational sports programs are being given social mandates to promote particular benefits (e.g., increased physical fitness; or the many benefits associated with use of campus recreation programs to help prevent a specific student problem, such as reduction in alcohol abuse through programs such as night basketball). As a result, there is a need for future research to develop psychometrically sound instruments to measure the social, and other, benefits of recreational sports involvement.

References

Abrahamowicz, D. (1988). College involvement, perception and satisfaction: A study of membership in student organizations. *Journal of College Student Development*, 29, 233–238

Astin, A. W. (1984). Student involvement: A development theory for higher education. *Journal of College Student Personnel*, 25 (4), 297–308.

Astin, A. W. (1993). *What matters in college? Four critical years revisited*. San Francisco, CA: Jossey-Bass.

Bandura, A. (1986). *Social foundations of thought and action: A social cognitive theory*. Englewood Cliffs, NJ: Prentice Hall.

Barcelona, B. (2002). Student involvement in campus recreational sports activities and gains in team-functioning. *LARnet; The Cyber Journal of Applied Leisure and Recreation Research*, 1–13.

Belch, H. A., Gebel, M., & Mass, G. M. (2001). Relationship between student recreation complex use, academic performance, and persistence of first-time freshmen. *NASPA Journal*, 38 (2), 254–268.

Bryant, J. A., & Bradley, J. L. (1993). Enhancing academic productivity, student development and employment potential. *NIRSA Journal*, 42–44.

Bryant, J. A., Banta, T. W., & Bradley, J. L. (1995). Assessment provides insight into the impact and effectiveness of campus recreation programs. *NASPA Journal*, 32 (2), 153–160.

Bryant, J., Bradley, J., & Milborne, C. (1994). Comparing student participation in campus recreation to other aspects of campus life. *NIRSA Annual Conference Review*, 45, 144–168.

Chen, C. C. (2002). *The impact of recreation sports facilities on university student's social interaction and campus culture*. Unpublished doctoral dissertation, University of the Incarnate Word.

Chickering, A. (1976). Development change as a major outcome. In Morris T. Keaton and Associates, *Experiential Learning*, 62–107.

Christie, N. G., & Dinham, S. M. (1991). Institutional and external influences on social integration in the freshman year. *Journal of Higher Education*, 62 (4), 412–428.

Collins, J. R., Valerius, L., King, T., & Graham, A. (2001). The relationship between college students' self-esteem and the frequency and importance of their participation in recreational activities. *NIRSA Journal*, 25 (2), 38–47.

Crompton, J. (1993). Repositioning recreation and park services: An overview. *Trends*, 30 (4), 2–5.

Dalgarn, M. K. (2001). The role of the campus recreation center in creating a community. *Recreational Sports Journal*, 25 (1), 66–72.

Driver, B. L., & Bruns, D. H. (1999). Concepts and uses of the benefits approach to leisure. In E. L. Jackson & T. L. Burton (Eds.), *Leisure studies: Prospects for the twenty first century* (pp. 349–369). State College, PA: Venture Publishing.

Geller, W. (1980). Selected bibliography of the influence of intramural sports on individual development. *NIRSA Journal*, 5 (1), 24–28.

Haines, D. J. (2001). Undergraduate student benefits from university recreation. *NIRSA Journal*, 25 (1), 25–33.

Iso-Ahola, S. (1980). *The social psychology of leisure and recreation*. Dubuque, IA: William C. Brown Publishers.

Iso-Ahola, S. (1989). Perceived competence as a mediator of the relationship between high risk sports participation and self-esteem. *Journal of Leisure Research*, 21, 32–39.

Kanters, M. A. (2000). Recreational sport participation as a moderator of college stress. *Recreational Sports Journal*, 24 (2), 11–24.

Kanters, M., & Forrester, S. (1997a). Leisure motivation and self-concept: A comparison of campus recreation participants and non-participants. *NIRSA Journal*, 22 (1), 29–33.

Kanters, M., & Forrester, S. (1997b). The motivations and self-esteem of intramural sports participants. *NIRSA Journal*, 21 (3), 3–7.

Kleiber, D. (1999). *Leisure experience and human development: a dialectical interpretation*. New York: Basic Books.

Kuh, G. (1993). In their own words: What students learn outside the classroom. *American Educational Research Journal*, 30 (2), 277–304.

Kuh, G. (1995). The other curriculum: Out of class experiences associated with student learning and personal development. *Journal of Higher Education*, 66 (2), 123–155.

Leafgran, F. A. (1989). Health and wellness programs. In M. L. Upcraft & J. N. Gardner (Eds.), *The freshmen year experience* (pp. 156–167). San Francisco, CA: Jossey-Bass.

McPherson, B. D., Curtis, J., & Loy, J. (1989). *The social significance of sport*. Champaign, IL: Human Kinetics.

Mull, R., Bayless, K., & Jamieson, L. (1997). *Recreational sport management* (3rd ed.). Champaign, IL: Human Kinetics.

Nesbitt, G. M. (1993). What effect do our programs have on our participants? *NIRSA Journal*, 17 (3), 16–18.

Nesbitt, G. M. (1998). Social-emotional development and extracurricular involvement of sport club participants. *NIRSA Journal*, 6–9.

Ragheb, M., & McKinney, J. (1993). Campus recreation and perceived academic stress. *Journal of College Student Development*, 34, 5–10.

Schumacher, S., & McMillan, J. H. (1993). *Research in education: a conceptual introduction* (3rd ed.). New York: HarperCollins College Publishers.

Szulecka, T. K., Springnett, N. R., & de Pauw, K. W. (1987). General health, psychiatric vulnerability and withdrawal from university in first-year undergraduates. *British Journal of Guidance & Counselling Special Issue: Counselling and Health*, 15, 82–91.

Todaro, E. (1993). The impact of recreational sports on student development: A theoretical model. *NIRSA Journal*, 17 (3), 23–26.

Wankel, L. M., & Berger, B. G. (1990). The psychological and social benefits of sport and physical activity. *Journal of Leisure Research*, 22, 167–182.

Wilson, D. W. (1994). Leisure benefits and student development. *NIRSA Journal*, 19 (1), 38–42.

Worthen, B. R., White, K. R., Fan, X., & Sudweeks, R. R. (1999). *Measurement and assessment in schools* (2nd ed.). New York: Addison Wesley Longman.