

CONSTRAINTS TO PARTICIPATION IN ORGANISED SPORT: CASE OF SENIOR UNDERGRADUATE STUDENTS AT A NEW GENERATION UNIVERSITY

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ABSTRACT

Tertiary institutions are vital settings for helping young adults gain the physiological, psychological and social benefits of participating in organised sport. This study aimed at determining the constraints that prevent students from continuing participation in organised sport at a South African university. It used a quantitative research design in which a structured questionnaire was administered to 283 senior undergraduate students based at three campuses of a university located in the Eastern Cape Province of South Africa. Exploratory factor analysis was employed in identifying six constraints, namely 'time and scheduling', 'accessibility', 'lack of partners', 'personal/psychological factors', 'socialising activities' and 'facilities'. The t-tests showed significant differences between males and females for 'lack of partners'. An Analysis of Variance confirmed significant differences for 'accessibility', 'socialising activities' and 'facilities' relative to the amount of money available for leisure.

Key words: Organised sport; Leisure constraints; Sport participation; University students.

INTRODUCTION

Worldwide there seems to be a decline in sport participation despite the considerable benefits derived from an active lifestyle. In addition to the physical, psychological and social benefits, participation in organised sport holds the benefits of regular practice and competition in an organised environment, teamwork, cooperation and loyalty. Regular physical exercise leads to healthy bones and muscles (Le Menestrel & Perkins, 2007), increases bone density and thus helps to prevent osteoporosis and improves the body's oxygen transport system and endocrine function (Sothorn *et al.*, 1999). In addition to the physical health benefits, is the idea that "a healthy body leads to a healthy mind" (Bailey, 2006:399). Athletes often attain higher marks and strive for more advanced academic goals than their fellow students who do not participate in sport (Nthangeni *et al.*, 2009), perhaps because it is believed that sport participation can improve academic performance by increasing the flow of blood to the brain and enhancing mental alertness (Bailey, 2006).

Participation in formally organised sport also allows and encourages participants to compete on a regular basis in a well-organised and controlled environment. Furthermore, competitive sport contributes to community identity and a sense of belonging and pride (Tonts, 2005), teaches participants the value of teamwork and cooperation, encourages integration and socialisation of groups from different cultural and ethnic backgrounds, creates opportunities to negotiate and find solutions to moral clashes, and helps develop self-control, loyalty and courage (Nthangeni *et al.*, 2009).

Perhaps even more important is the likelihood of continuing to enjoy the benefits into adult life, particularly if a physically active lifestyle is developed during adolescence. Unfortunately, the negative consequences of a physically inactive lifestyle in the early adult years often also continue into later life. Overweight youths often mature into obese adults and run the risk of suffering from heart disease, Type 2 diabetes and related health problems (Nam *et al.*, 2009). Obesity tends to result in a vicious cycle that further discourages sport participation (Lewis & Van Puymbroeck, 2008). Because of the stigma attached to obesity, sufferers become self-conscious, have low levels of sport-participation confidence and decline any physical participation opportunities (Lewis & Van Puymbroeck, 2008).

Despite its benefits, sport participation has decreased considerably among the general population since the turn of the century, even reaching stagnation point in some countries (Lera-López & Rapún-Gárate, 2011). For example, in England sport participation fell from 48% in 1990 to 46% in 1996 and then dropped to 43% in 2002 (Lera-López & Rapún-Gárate, 2011). In Canada, only 28% of people 15 years and older participated in sport in 2005 compared with 34% in 1998 (Ifedi, 2005).

These trends are reflected also in low levels of physical activity among tertiary students. For example, in North Western Europe and the United States, 23% of students are physically inactive during their leisure time, while in developing countries (Columbia, South Africa and Venezuela), this figure has reached 44% (Haase *et al.*, 2004). Both Australian and American youth show a marked decline in sport participation when moving from school to university (Leslie *et al.*, 2001). Bloemhoff and Coetzee (2007) found that continued sport participation among South African students transitioning from school up to third year university level decreased from 71.3% to only 31.5%.

Tertiary institutions provide excellent opportunities to influence young people's participation in sport. Such attempts are important, since students constitute a significant group of young adults whose behaviour and attitudes, as future opinion leaders and policy makers, can shape societal principles and norms (Leslie *et al.*, 2001). Furthermore, it is argued that the behaviour adopted by university students may shape future health habits (Adedoyin *et al.*, 2014). This age group was thus, the focus of the current research.

PURPOSE OF STUDY

The aim of the research was to determine what prevents students who have participated in organised sport at school from continuing to do so at university. A few South African studies (Bloemhoff & Coetzee, 2007; Nthangeni *et al.*, 2009), investigated the barriers to student

participation in sport, but none focused on participation in *formally organised* sport. The current research aimed to help fill this void.

LITERATURE REVIEW AND CONCEPTUAL CONTEXT

Most research in leisure constraints and barriers to sport participation appear to be based on the research of Crawford *et al.* (1991). These authors identified three primary sources of leisure constraints, namely intrapersonal, interpersonal and structural.

Intrapersonal constraints

Intrapersonal barriers involve individual psychological states and attributes, such as stress and depression (Crawford *et al.*, 1991), feeling too tired, or lacking the confidence to participate in activities (Park, 2004), personality factors and attitudes (Godbey *et al.*, 2010), lack of interest or enjoyment, or even lack of information about where to participate or who to contact to learn the skills in order to participate (Godbey *et al.*, 2010). This appears to imply that constraints inherent to the individual could serve as the primary barriers preventing participation in leisure activities, such as sport.

Interpersonal constraints

Interpersonal constraints are influenced by social relationships (Öcal, 2014), and result from the interaction among persons who participate in an activity (Crawford *et al.*, 1991). Examples of interpersonal constraints include dependence on “important others [such as] family members, partner, friends” (Masmanidis *et al.*, 2009:151), and difficulty in finding co-participants to interact with in a sport or other activities (Tsai & Coleman, 2007).

Since intrapersonal constraints “pre-exist in the individual, before s/he is faced with the possibility of participating in recreational activities” (Masmanidis *et al.*, 2009:151), it seems logical to assume that attempts will be made to overcome interpersonal constraints once intrapersonal constraints have been successfully negotiated. For example, if someone has access to a number of co-participants, this might not result in overcoming a lack of confidence or developing an interest in playing sport.

Structural constraints

Structural constraints are aspects that interfere in the interaction between leisure preference and actual participation (Hurd & Forrester, 2006), for example, lack of time, lack of finances, and facility-related problems such as accessibility (Crawford *et al.*, 1991; Alexandris & Carroll, 1997; Mirsafian, 2014). Accessibility might be hindered by the inappropriate location of an activity (Tsai & Coleman, 2007). Examples of structural constraints of a financial nature are a lack of money for membership fees, equipment and travel (Tsai & Coleman, 2007). Time, a further structural constraint, might also affect the level and frequency of sport participation. It is argued that obligations such as study, work or participation in other recreational activities (Tsai & Coleman, 2007), could leave the individual with little time for playing sport. On the other hand, those who participate in sport do not have more time available than those who do not; it depends on the priority given to participation (Yusof & Shah, 2007). Participating in sport is a conscious decision to prioritise the use of one's time.

Hierarchical arrangement of constraints

Previous research (Crawford *et al.*, 1991) maintains that constraints to leisure participation are experienced hierarchically. According to this theory, intrapersonal constraints form the first level of the hierarchy and are overcome often by “some combination of privilege and exercise of the human will” (Crawford *et al.*, 1991:313). Interpersonal constraints, for example, trying to find a partner to co-participate in the leisure activity (Crawford *et al.*, 1991), constitute the second level of constraints. Once these constraints have been overcome, structural constraints become important. Finally, after structural constraints have been negotiated successfully, participation is likely to follow (Crawford *et al.*, 1991). The findings, of more recent research by Godbey *et al.* (2010), suggest that the hierarchical model is in fact circular. This means that interpersonal, intrapersonal and structural constraints can be experienced in any order and that the first level need not be intrapersonal (Godbey *et al.*, 2010).

Demographic characteristics

Characteristics such as gender may also function as constraints to sport or leisure participation. According to research quoted by Adedoyin *et al.* (2014), the prevalence of physical activity is considered higher generally in males than females. The roles and responsibilities that women have in society, resulting from family commitments and cultural beliefs, are believed to limit their freedom and choices concerning leisure participation (Drakou *et al.*, 2008; Mirsafian *et al.*, 2014). Park (2004) found that female adolescents experienced far higher intrapersonal and total constraints than male adolescents did, while Drakou *et al.* (2008) indicate that females experience a lack of technical skills, private transportation and financial resources more than males do. No conclusive results appear to exist for studies dealing with university students.

In their study of Nigerian students, Adedoyin *et al.* (2014), found no significant difference between the physical activity levels of the two genders. Male and female students at a university in Turkey experienced significantly different constraints to leisure participation (Yetgin, 2014), with regard to a lack of knowledge about the availability of facilities, a lack of companions, friends not enjoying leisure activities and having no time for leisure activities. Mirsafian (2014) found that Iranian students’ perceptions of intrapersonal, interpersonal and structural constraints differed significantly based on age, gender and level of education, while those of Hungarian students differed significantly only in the case of intrapersonal constraints. Iranian female students did not participate in sport because they experienced the impact of intrapersonal, interpersonal and structural constraints more than males, while Hungarian female students experienced higher levels of intrapersonal constraints compared with their male counterparts. Malaysian students also differed in terms of interpersonal, intrapersonal and structural constraints to sport participation. Female students experienced significantly higher structural and intrapersonal constraints than male students did (Yusof *et al.*, 2007).

Other demographic characteristics such as income, education and social background might also constrain participation in sport. Having more available income to spend on sport participation, constraints, such as inaccessibility, lack of transport and finances are significantly reduced (Godbey *et al.*, 2010). Individuals from low socio-economic

backgrounds may not have the financial resources to travel to participate in sport, nor to pay fees to join facilities that offer sport programmes; in addition, facilities in poorer areas tend to be overcrowded and not well maintained (Casper *et al.*, 2011). The current study focused on gender because senior undergraduate students have similar levels of education and few have their own income.

EMPIRICAL CONTEXT

The university that served as the empirical setting for the study is situated in the Eastern Cape Province, one of the poorest provinces in South Africa. A large portion of the students are from rural areas within the province and make use of on-campus and off-campus accommodation. Participation in organised sport at the university decreased from 20% in 2013 to 13% in 2014 (Boukes, 2015). Ethical clearance for the study was applied for and granted by the official Ethics Committee of the university. The allocated ethics number is H 2011 BUS MRK 13.

RESEARCH METHOD

Research design

A quantitative research approach and a cross-sectional survey was adopted for the study, since the data collected from a number of cases at one time was sufficient to detect patterns of association (Bryman & Bell, 2011), and to answer the research question.

Sampling

The target population for the research comprised 13 970 students in their second, third or fourth year of study enrolled at the three campuses of the university in question. The campuses have well-developed sporting facilities and student residences. Senior students were selected because first year students might find the progression from school to university challenging, for example, adjusting to university life, particularly with regard to being flexible and making choices about their daily living patterns (Bloemhoff & Coetzee, 2007), getting to know university sport structures and being integrated into teams, which could affect their participation in sport. In addition, many of the summer sport leagues have started by the time first year students arrive on campus.

A combination of purposive and convenience sampling was used to select potential respondents. Potential participants were required to answer 2 screening questions to determine their eligibility to participate in the survey. Firstly, they had to be part of a sport team at school that competed against other schools, and secondly, they should not have participated in a sport league or competed as part of a team during the 10 months preceding the date of data collection. Four hundred (400) questionnaires were distributed proportional to the number of students per campus and 283 usable questionnaires were returned (a response rate of 65.2%). Twenty-two of the respondents did not participate in competitive sport at school and thus they were excluded from the analysis.

Questionnaire

The data was collected by means of an interviewer-administered survey and a structured questionnaire. Section A of the questionnaire required respondents to indicate how strongly they disagreed (1) or agreed (5) with 27 5-point Likert scale items that measured constraints to participation in organised sport. The items included in this section were based partly on the work of Drakou *et al.* (2008) and Bloemhoff and Coetzee (2007). Factors identified by Drakou *et al.* (2008) that influenced Greek students' leisure participation included *lack of access, lack of facilities, lack of company, lack of time, lack of knowledge, lack of interest* and a *psychological dimension*. The Cronbach's alpha coefficients associated with these factors ranged from 0.60 to 0.89. Bloemhof and Coetzee (2007) identified *study responsibilities, lack of time to participate, social responsibilities, injuries, lack of financial resources, lack of effective sport administration, lack of sport facilities, lack of knowledge about sport, and other* as factors constraining sport participation among South African university students, but did not provide the respective Cronbach's alpha coefficients.

Section B contained 5 questions that captured respondents' gender, age, available money to spend on leisure, country in which they finished their schooling and home language. A convenient sample of 50 students was chosen to pilot test the questionnaire. Based on their feedback and the preliminary data analysis, a few minor adjustments were made before the questionnaire was distributed to the main sample.

Statistical analysis

The data was captured in Microsoft Excel and analysed using Statistica Version 10. The analysis was done in 3 stages, namely a calculation of descriptive statistics, exploratory factor analysis and an examination of between-group differences. Mathematical averages (mean scores), minimum and maximum values and standard deviations yielded a description of the data. The Kaiser-Meyer-Olkin (KMO) measure of sampling adequacy (Kaiser, 1974), and the Bartlett's test of sphericity (Bartlett, 1954) were used to determine whether the data was suitable for factor analysis.

The exploratory factor analysis, using principal components analysis (PCA) at the extraction stage and the direct quartimin oblique technique at the rotation stage, was performed to reduce the items describing constraints to participating in formalised sport to a more manageable set of factors latent in the data.

Lastly, an independent t-test, Analysis of Variance (ANOVA) and a measure of effect sizes were performed to determine whether significant differences in the resulting factors were evident between various groups of respondents. Where significant differences were detected, Tukey's HSD test was used to determine where the differences occurred.

RESULTS

Characteristics of the study sample

The average age of the respondents was 21.39±4.10 years (Male: 21.54±3.91; Female: 21.29±4.27). IsiXhosa was the home language of 48%, while 22% and 19% spoke English

and Afrikaans, respectively. A further 6% spoke other languages indigenous to South Africa, such as Sesotho, Sepedi and Northern Sotho, and 5% spoke a foreign language. Males made up 44% of the respondents. Available monthly allowance for leisure was as follows: none (5%), less than R200 (43%), R201 to R400 (22%), R401 to R800 (15%) and above R800 (14%). Only 1% of the respondents did not indicate an amount.

Factor analysis

The Kaiser-Meyer-Olkin (KMO) measure of sampling adequacy (0.78) was only slightly lower than the recommended level of 0.80 (Kaiser, 1974). The Bartlett's test of sphericity (Bartlett, 1954), reached statistical significance ($p < 0.001$), detecting the correlations among the indicators. Both these measures supported the factorability of the data. Cattell's (1966) scree plot rule (retention of factors above the elbow), Horn's Parallel Analysis (PA) test (Pallant, 2013), and Kaiser's (1960) eigenvalue rule (retention of factors with eigenvalues > 1), were used to determine the appropriate number of factors.

While the scree plot did not show a clear elbow, Horn's PA test suggested 6 factors. Eight factors had an eigenvalue exceeding 1.0. Six of these factors each accounted for more than 5% of the total variance and together these 6 factors explained 60.2% of the total variance. These results met the rule of thumb that a factor solution accounting for 60% or more of the total variance is satisfactory, and a single factor accounting for 5% or more of the total variance, is meaningful (Hair *et al.*, 2010).

Based on these rules and the results of Horn's test, a 6-factor solution was considered. Only items with factor loadings greater than 0.30 were regarded as contributing to that factor, thus meeting the minimum required level (Hair *et al.*, 2010). Consequently, 2 items with smaller loadings were excluded from further analysis. No items appeared to cross-load onto more than 1 factor. Following a further round of rotation, the resulting factors were interpretable and therefore the 6-factor framework was deemed acceptable (Table 1). The factors' reliability coefficients (Cronbach's alpha) ranged from 0.72 to 0.81, indicating internal consistency reliability (Malhotra, 2010). Average inter-item correlation coefficients ranged from 0.31 to 0.59, and percentage variance explained per factor ranged from 9.3% to 11.0%.

As shown in Table 1, the following constraints to participation in organised sport were identified: *accessibility* (Factor 1), *time and scheduling* (Factor 2), *socialising activities* (Factor 3), *personal/psychological factors* (Factor 4), *facilities* (Factor 5) and *lack of partners* (Factor 6). *Time and scheduling* had the highest mean score and was the only factor with a mean score exceeding 3.00 on the 5-point Likert scale. *Time and scheduling* constraints seem to imply that students are too busy to participate in sport and times of organised sporting activities do not fit in with their schedules. *Accessibility* had the second highest mean score ($M=2.57$), indicating that transportation and affordability may prevent students from participation in organised sport. Based on mean scores, *lack of partners* ($M=2.29$) was ranked third and *facilities* ($M=2.03$) fourth. *Socialising activities* ($M=1.87$) and *personal/psychological factors* ($M=1.73$) had mean scores below 2.0. Considering the latter 2 scores, it can be argued that time spent with family, friends and socialising on-line, and aspects, such as interest, feelings and perceptions, are of relatively little relevance in inhibiting participation in organised sport.

TABLE 1. RESULTS OF EXPLORATORY FACTOR ANALYSIS: CONSTRAINTS

Latent factors and questionnaire items	Factor loading	Mean±SD	Cronbach's alpha	Mean r	% Variance
<u>Factor 1: Accessibility</u>	-	2.57±1.06	0.75	0.38	9.40
Cost of transportation	0.746	2.59±1.46	-	-	-
Lack of public transportation	0.696	2.18±1.37	-	-	-
Not having my own transportation	0.747	2.77±1.67	-	-	-
No opportunities to participate where I live	0.401	2.86±1.55	-	-	-
Cannot afford to play sport	0.339	2.42±1.41	-	-	-
<u>Factor 2: Time & Scheduling</u>	-	3.15±0.97	0.72	0.39	9.20
Too busy with university studies	0.530	4.03±1.15	-	-	-
Do not want to interrupt daily schedule	0.509	2.33±1.27	-	-	-
Times to play sport do not fit in programme	0.799	3.13±1.43	-	-	-
Sport timetable does not fit in with mine	0.657	3.10±1.41	-	-	-
<u>Factor 3: Socialising activities</u>	-	1.87±0.83	0.74	0.44	10.50
Too busy with family	-0.460	2.23±1.20	-	-	-
Too busy with friends	-0.645	2.07±1.21	-	-	-
Too busy with social media	-0.666	1.71±1.10	-	-	-
Too busy socialising online	-0.634	1.47±0.90	-	-	-
<u>Factor 4: Personal/Psychological factors</u>	-	1.73±0.70	0.72	0.31	10.80
Playing sport is too tiring	0.544	1.84±1.09	-	-	-
Afraid of getting hurt	0.395	1.73±1.09	-	-	-
Not confident enough	0.398	1.80±1.12	-	-	-
Did not enjoy sport in the past	0.460	1.53±1.00	-	-	-
Not interested in participating in sport	0.710	1.73±1.12	-	-	-
Do not like sport activities offered	0.639	1.73±1.06	-	-	-
<u>Factor 5: Facilities</u>	-	2.03±0.98	0.81	0.59	7.70
Facilities are poorly kept	-0.724	1.93±1.11	-	-	-
Facilities are crowded	-0.856	2.10±1.17	-	-	-
Facilities are inadequate	-0.656	2.05±1.18	-	-	-
<u>Factor 6: Lack of Partners</u>	-	2.29±1.19	0.78	0.56	10.00
My friends do not like to play sport	-0.470	2.05±1.35	-	-	-
Nobody to play sport with	-0.824	2.31±1.42	-	-	-
Difficult to find others to play sport with	-0.853	2.51±1.50	-	-	-

r= Mean inter-item correlation

% Variance= % Variance explained by factor

Social media= Facebook, Twitter, Mix it, BBM

Socialising online= Chat rooms, e-mail, online forums, blogs

Results of t-tests

Independent t-tests were used to examine differences between constraints in terms of gender (Table 2). *Lack of partners* was the only factor that showed a significant difference ($p < 0.05$; Cohen's $d = 0.39$), between the genders. Females had a higher mean score for *lack of partners* compared with male respondents (2.49 and 2.03, respectively). Females also had higher mean scores than males for *accessibility* and *facilities*, but none of these differences were significant.

TABLE 2. COMPARISON OF RESULTS BASED ON GENDER

Factors	Females (56 %)	Males (44 %)	Significance of differences		
	Mean±SD	Mean±SD	t-value	df	p
Accessibility	2.59±1.065	2.54±1.08	-0.33	258	0.7386
Time & scheduling	3.09±0.99	3.22±0.95	1.12	258	0.2644
Socialising activities	1.85±0.84	1.88±0.82	0.25	258	0.8062
Personal/psych. factors	1.72±0.71	1.74±0.69	0.23	258	0.8160
Facilities	2.04±1.00	2.00±0.96	-0.32	258	0.7498
Lack of partners	2.49±1.20	2.03±1.12	-3.13	258	0.0019*

*p<0.05

Results of the Analysis of Variance (ANOVA)

Anova was employed to determine whether the identified constraints differed in terms of money available for leisure activities. Table 3 shows a significant difference in the case of *accessibility*, *socialising activities* and *facilities*. *Accessibility* had the highest mean score (M=3.04) for those who had less than R100 per month to spend on leisure activities, and the lowest mean score (M=2.07) for those with more than R800. Although affordability of membership, equipment and transport costs had mean scores of below 2.60 on the 5-point scale, these factors were relevant depending on the available amount of money students had to spend on sport. It is reasonable to assume that membership, equipment and transport costs pose a greater problem to respondents with R100 and less to spend on leisure activities than to those with R800 and more available.

The mean scores for *socialising activities* were all below 2.20; those with more than R800 to spend on leisure obtained the highest score. The mean scores for *facilities* were generally higher for those respondents with less spending money than those with more money. The results of subsequent Tukey's HSD tests indicated significant pair wise differences for *accessibility* in the case of those with R100 and less relative to those with R401 to R800 ($p<0.05$; $d= 0.82$) and those with R801 and more ($p<0.05$; $d= 0.96$). A significant difference also existed between respondents with R101 to R200 and those with R800 and more ($p<0.10$; $d= 0.60$). Significant differences for *socialising activities* were found for those with R400 to R800 and more than R800 ($p<0.05$; $d= 0.67$). Differences for *facilities* occurred between the group with R101 to R200 and the group with R401 to R800 per month for leisure activities ($p<0.10$; $d= 0.59$).

TABLE 3. COMPARISON OF CONSTRAINING FACTORS: MONEY AVAILABLE FOR LEISURE ACTIVITIES

Constraints	None M±SD	R100 or less M±SD	R101-R200 M±SD	R201-R400 M±SD	R401-R800 M±SD	R800+ M±SD	F	p
Accessibility	2.91±1.10	3.04±0.87	2.70±1.00	2.48±1.15	2.30±0.92	2.07±1.15	4.67	0.0004*
Time and scheduling	2.72±0.88	3.11±1.04	3.23±0.93	3.14±0.90	3.02±1.04	3.32±1.04	1.01	0.4114
Socialising activities	1.68±0.77	1.79±0.70	1.78±0.77	2.06±0.96	1.61±0.67	2.16±0.96	2.71	0.0210*
Personal/psych. factors	2.07±0.98	1.71±0.62	1.69±0.68	1.84±0.75	1.55±0.67	1.66±0.63	1.58	0.1661
Facilities	2.26±0.95	2.21±1.08	2.12±0.91	2.09±1.05	1.62±0.88	1.82±0.92	2.28	0.0474*
Lack of partners	2.45±1.36	2.45±1.09	2.17±0.14	2.18±1.19	2.42±1.18	2.21±1.32	0.58	0.7162

*p<0.05 M±SD= Interval Mean±Standard Deviation

DISCUSSION

Physical, psychological and social benefits are derived from participation in sport. Organised sport offers the additional benefits of regular practice and competition, which may enhance teamwork, cooperation and loyalty. Despite these benefits, there is a worldwide decline in sport participation, also among university students, the cohort of individuals who typically might become future opinion leaders and policy makers and so have an influence on societal principles and norms. The aim of this study was to determine what prevents senior undergraduate students at the university in question, who have participated in organised sport at school, from continuing this practice as a senior student. The results showed that students mostly experience structural constraints. Interpersonal constraints seem to play a lesser role, while intrapersonal constraints are of little importance.

Intrapersonal constraints

Intrapersonal constraints include personal factors related to the psychological state of an individual, such as perceiving sport participation as too tiring, being afraid of getting hurt and lacking the interest or confidence to participate in the activity. The results of this study indicate that intrapersonal constraints did not have a significant effect on senior undergraduate students' participation in organised sport. This finding supports some previous research findings but contradicts others. For example, while intrapersonal factors had an inhibiting effect on Iranian students' participation in sport, it did not significantly affect Hungarian students (Mirsafian, 2014), and was the least constraining factor affecting sport participation by Malaysian students (Yusof & Shah, 2007), and by Greek students (Masmanidis *et al.*, 2009).

Gender did not significantly affect students' perceptions of intrapersonal constraints. In contrast, female Malaysian students experienced higher levels of intrapersonal constraints compared with their male counterparts (Yusof *et al.*, 2007).

Interpersonal constraints

Interpersonal constraints relate to social activities and the interaction between individuals. In the current study, these constraints were reflected by two factors, namely socialising activities, such as spending time with family and friends and socialising online, and finding partners with whom to share the activity. Both factors had mean scores of below 2.30 on a 5-point scale suggesting that these constraints do not significantly inhibit respondents' participation in sport. Previous researchers found similar results. For example, Drakou *et al.* (2008) found that Greek students ranked a lack of partners only in the fourth position. While not of primary importance to Hungarian and Iranian students, Hungarian female students were particularly concerned about a lack of partners (Mirsafian (2014). The latter finding was supported by the results of the current study. *Lack of partners* received a significantly higher ($p < 0.05$) mean score in the case of female students ($M = 2.49$) when compared with the males ($M = 2.03$).

Structural constraints

Structural constraints are external to the individual and in the current study included *time and scheduling*, *accessibility* and *facilities*. Respondents indicated that *time and scheduling* constraints were the most profound reason for not participating in organised sport. The reasons given were that they were too busy with their studies, did not have enough time for sport, and that sport schedules did not fit their programmes. No significant differences were found based in relation to gender. These findings reiterate those of Bloemhoff and Coetzee (2007:151), who cited study responsibilities and lack of time as the major constraints “in terms of sport and physical recreation participation”, among third year students enrolled at a South African university. In contrast, a lack of time was only the fourth most important constraint listed by Greek students (Drakou *et al.*, 2008), and was not a constraint to students at a Turkish university (Öcal, 2014), nor to students in Hong Kong (Tsai & Coleman, 2007).

Accessibility, which in the current study received the second highest ranking based on factor mean scores but did not differ based on gender, was influenced by the lack and the cost associated with transportation and the affordability of membership and equipment. Accessibility and financial constraints also played no role in the active recreation process of students in Hong Kong or in Australia (Tsai & Coleman, 2007). In contrast, accessibility was found to be the main barrier to participation in physical activities among students enrolled at universities in Greece (Alexandris & Carroll, 1997; Drakou *et al.*, 2008; Masmanidis *et al.*, 2009).

Facilities include quality and adequacy. In the current study, *facilities* received the third lowest mean score of all the constraints. These results are not supported by other studies. For example, facilities was the most effective factor constraining Hungarian students’ sport participation (Mirsafian, 2014) and those of Malaysian students (Yusof & Shah, 2007), and the second most important factor among Greek students (Drakou, *et al.*, 2008).

Hierarchical arrangement of constraints

The results of the current study show that the most profound barriers preventing undergraduate students’ continued participation in organised sport from school to senior levels at university can be arranged as follows: *time and scheduling* (structural constraints), *accessibility* (structural constraints), *lack of partners* (interpersonal constraints), *facilities* (structural constraints), *socialising activities* (interpersonal constraints) and *personal/psychological factors* (intrapersonal constraints). These results suggest that the student sample did not experience constraints in a specific hierarchical order and thus supports Godbey *et al.*’s (2010) assertion that constraints can be experienced in any order. This contradicts the contention of Crawford *et al.* (1991), that constraints are experienced hierarchically with intrapersonal constraints being the most powerful and structural constraints the least powerful.

CONCLUSIONS AND RECOMMENDATIONS

The current study confirms that specific factors constrain students’ participation in organised sport. These factors have an intrapersonal, interpersonal and structural nature. The most profound barrier is related to time and scheduling constraints. It is possible that the perception

of a lack of time is not due to the physical number of hours available, but to the prioritising of activities. There might be merit in Tsai and Coleman's (2007) suggestion that while many cite time constraints as a justification for non-participation in sport, participants tend to make an effort to overcome time constraints. In addition to making students aware of the health benefits of sport and being physically active, and of the benefits associated with participating in organised sport, students can be trained to manage and optimally use their time. The respondents indicated that the scheduling of sport activities does not fit their schedules. Sport administration at a university could collaborate with the academic Timetabling Committee when establishing times for sport practices and matches.

The most important interpersonal constraint experienced by respondents related to the *lack of partners*. This constraint can be addressed by sport administrators through actively promoting team sport, particularly among female students, who seemed to experience more difficulties in this regard than male students did. Not only does team sport foster a sense of belonging, the set times for sport practices and matches make members more accountable to the team, and hence finding a co-participant makes it less constraining.

LIMITATIONS AND IMPLICATIONS FOR FURTHER RESEARCH

This study is not without its limitations and, therefore, also reveals opportunities for future research. Firstly, geographically, the research was restricted to students enrolled at certain campuses of the university. Investigating the constraints to students' participation in organised sport across all the campuses may provide opportunities for a comparative study, given the different physical locations of the campuses excluded from the current study. Secondly, the research focused on constraints to sport participation in an organised, formalised context. Further research on informal sport participation and the physical activity preferences of students could enhance the understanding of constraints. Another comparative analysis of constraints to participation in sport on a formalised level could be undertaken using students who participated at school, but did not continue at university level, students who occasionally participate in organised sport and those who participate on a regular basis.

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