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A SYSTEMATIC REVIEW OF RECREATION PATTERNS AND PREFERENCES OF STUDENTS WITH PHYSICAL DISABILITIES

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ABSTRACT

Students with physical disabilities at higher education institutions are often excluded from recreational activities due to lack of appropriate inclusive integration programmes. This study systematically reviewed literature that identified recreational patterns and preferences of students with physical disabilities to provide recommendations for their recreational programmes. Articles were reviewed using Ebscohost (Medline, CINAHL, PsyArticles, Academic Search Complete), LANCET, Directory of Open Access Journals (DOAJ), Project Muse, BioMed Central Journal, JSTOR, Google Scholar and Sports Discus databases for the period 1997 to 2014. Articles extracted comprised qualitative, quantitative and mixed method studies that met level three on the JBI level of evidence scale. Articles that were favourably rated for methodological quality by two reviewers were included. The articles were methodologically appraised using a modified CASP instrument. A total number of 426 821 articles were identified, of which 90 were selected for further investigation whilst 69 were excluded after the first review and a further three following evaluation of methodological quality. Thus, 18 articles were included. There was a lack of recreational programmes available for students with physical disabilities. Opportunities for recreation for disabled students should be provided. There was a need for suitable holistic campus recreational programmes at universities.

Key words: Physical disabilities; Mobile impairments; Recreation; Students; Inclusivity; JBI (Joanna Briggs Institute) Scale.

INTRODUCTION

The United Nations (2014) reported that approximately one billion people live with disabilities, many of whom fall within marginalised population groups (WHO, 2011). In the 2011 Census survey, Statistics South Africa identified 5.6% of the population as being disabled (Statistics South Africa, 2011), whilst Disabled Persons South Africa (DPSA) believe that close to 10% of the South African population are disabled (Parliamentary Monitoring Group, 2013). The World Health Organisation (WHO) broadly refers to disability as "impairments, activity limitations and participation restrictions" where impairments refer to body function or structural challenges which can hinder the individual's activities (WHO, 2014:online). Therefore, it is of the utmost importance to ensure that persons with disabilities are afforded fair opportunity to participate in various activities that promote integration and development. To this end, recreational activities may provide access to marginalised groups. Recreation can

be understood as the opportunity for individuals to engage in activities that are able to restore soul, body and mind (Kelly, 1996). Individuals are able to partake in these activities in their free time and are able to choose the types of activities in which to engage, as it may ensure holistic development and provide numerous benefits (Kelly, 1996). Recreation is relevant for all ages, races, religions, cultures, genders and for people with various abilities and would be hugely beneficial for people living with disabilities.

The South African White Paper on the Transformation of Health Services in South Africa, recognises the importance of meeting the needs of people with disabilities (Republic of South Africa, 1997). To this end they have identified strategic objectives that may provide integration for persons with disabilities with the aim of fostering independence. In addition, the promotion of social reintegration and participation of persons with disabilities is lauded. Leisure and Recreation Association South Africa (2014) similarly identify the need to improve transformation and social inclusion in South Africa. These needs can be met by providing recreational opportunities for persons with disabilities, which could aid transformation and integration into communities.

Impact and benefits of recreation

The role and impact of recreation includes social inclusion, health and wellness for individuals and provides a psycho-social impact on the community being served (Wright & Titus, 2013). Rimmer *et al*. (2004) similarly recognise that moderate levels of physical activity among people with disabilities is an important goal for public health and public policy, as regular physical activity improves well-being and contributes to the prevention of chronic disease. Skills development is important for people with disabilities, including students in tertiary education who are able to engage in physical activity and recreation as extramural activities.

Wright and Titus (2013) highlighted that universities need to make more sporting and recreational opportunities available for students with disabilities. They believe that integrating students with disabilities will benefit students if they participate in recreational activities on campus. However, the physical, social and managerial constraints are acknowledged as having an impact on accessibility to recreation for people with disabilities (Wright & Titus, 2013). Therefore, recreation for students with physical disabilities should be specific in order to meet their needs and accommodate them according to their disabilities. However, the recreational patterns and preferences of recreational activities of students with mobile impairments appear to be dependent on the opportunities and programmes that are offered at their institutions.

Despite the numerous benefits of recreational activity for students with disabilities, it appears that these students have not been adequately integrated into their institutions. Students with disabilities at universities do not have sufficient access to a variety of recreational opportunities which are suited to their needs. The Department of Social Development (2004:2) in South Africa confirmed this by stating that "people with disabilities still face extreme social, economic and political levels of inequality and discrimination, contributing to their underdevelopment, marginalisation, and unequal access to resources and lack of service provision".

To further understand the barriers of recreational programmes for students with physical disabilities, Rimmer *et al*. (2004) suggested that it is important for facilitators of recreational programmes to understand the barriers that affect the participation of people with disabilities. It "could provide important information necessary for developing interventions that have a greater likelihood of success" (Rimmer *et al*., 2004:419). Some of the barriers include "inaccessible access routes, doorways being too narrow for wheelchair access, lack of elevators" (Rimmer & Rowland, 2008:144). In addition, high levels of competitiveness make it undesirable for sport coaches to accommodate people with disabilities (Rimmer & Rowland, 2008). As a result, there are few recreational programmes available that cater for all types of students and, therefore, the benefits of active participation in recreational programmes are lost.

PURPOSE OF RESEARCH

This study sought to determine the patterns and preferences of students with physical disabilities by means of a systematic review. Therefore, the aim of this study was to systematically evaluate/assess literature regarding the patterns and preferences of recreational activities of students with physical disabilities in order to provide recommendation for recreational programmes at higher education institutions. This study is guided by the following question, "what are the recreational patterns and preferences amongst students with physical disabilities"?

METHODOLOGY

A systematic approach to the review was adopted and reported in a narrative form after each article was systematically evaluated/assessed and the relevant data extracted to support the study according to keywords agreed upon by the four researchers.

Search strategy for identification of studies

Databases used to extract articles were Ebscohost (Medline, CINAHL, PsyArticles, Academic Search Complete), LANCET, Directory of Open Access Journals (DOAJ), Project Muse, BioMed Central Journal, JSTOR, Google Scholar and Sports Discus. Articles searched covered the period 1997 to 2014. This period was used because the researchers took into account when the relevant policy documents were gazetted within the new democratic dispensation.

Manual searching of reference lists was undertaken and articles that were referred to the authors by experts in the field were also included. Search terms were constructed after some review of relevant literature and included students with disabilities, recreation participation, physical activity, tertiary institution scholars, college students, recreation preferences, recreation patterns and disability sport with various permutations.

Criteria for review

The search included qualitative, quantitative and mixed method studies on Level 3 of effectiveness on the JBI (Joanna Briggs Institute) scale. Effectiveness relates to the evidence about the interventions, for instance when the intervention is used appropriately, does it

produce the desired outcome? It is thus used to evaluate the relationship between the interventions and the desired outcomes (Pearson *et al*., 2005).

Method of review

The initial search was conducted by 2 researchers who also then reviewed the abstracts and the full articles. Firstly, a screening process was conducted by searching for articles on 9 databases by using permutation-specific key words, which included: leisure; recreation; students; participation patterns; and recreation preferences. The total hits were 426 821. Full text articles were then collected and the relevant articles amounted to 90. All of these articles were recorded on an excel database.

Table 1. **APPRAISAL TOOL**

	Questions	**Yes**	**No**
1.	Was the study conducted in a higher education setting?		
2.	Was the study conducted in the field of recreation?		
3.	Was the study conducted in the field of disability?		
4.	Was the sampling process clearly stated?		
5.	Did the research design appropriately address the research question?		
6.	Was the research design clearly indicated?		
7.	Are the research methods made explicit? (Interviews, focused groups, topic guide etc.)		
8.	Had the researcher clearly responded to reflexivity during the study?		
9.	Was the drop-out rate reported		
10.	Has the ethical issues taken into consideration?		
11.	Was the data analysis sufficiently rigorous?		
12.	Were the findings explicit?		
13.	Did the authors identify new areas for research?		
	Grading of quality assessment checklist for observation score:		
	0-33% Poor / 34-66% Satisfactory / 67-100% Good	Yes=1	No=0

Based on the PICO criteria for this study, ultimately 21 relevant articles were chosen for review. The criteria were population (students), intervention (recreation programmes), comparison (global comparisons) and outcomes (recreation patterns and preferences). These articles were systematically evaluated/assessed using an evaluation/assessment tool developed from CASP instruments (Table 1). Of the 21 articles appraised, 18 articles were included in the study.

The data was extracted from the full text articles by using an excel database as shown in Table 2 to identify the relevant information, such as author, date, study design, population size, method of data collection, intervention and outcomes. The JBI level of evidence was assessed by each reviewer independently and, in cases where there was a dispute, a third reviewer was called in to adjudicate. The methodological quality of the articles was done using a quality assessment sheet[1]. The rating score had 3 levels: Poor (0-33%), Moderate (34%-66%) and Strong (66-99%).

Table 2. **SCORING SHEET**

	Reference	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	***TS**	**%**
1.	Blinde & Taub, 1999.	1	0	1	1	1	1	1	1	0	0	1	1	1	10	76.92
2.	Martinez, 2000.	0	0	1	0	1	0	1	0	0	0	1	1	0	5	38.46
3.	Amosun, Volmink & Rosin, 2005.	1	0	1	0	1	1	1	1	0	0	0	0	1	7	53.84
4.	Andrijasevic, Pausic, Bavcevic & Ciliga, 2005.	1	1	0	1	1	1	1	0	0	0	1	1	0	8	61.53
5.	Beaton, 2005.	0	1	1	0	1	1	0	1	0	0	0	0	0	5	38.46
6.	Research Application, 2006.	1	1	0	1	1	1	1	0	0	0	0	0	0	6	46.15
7.	Faircloth & Cooper, 2007.	1	1	0	0	0	0	0	0	0	0	0	0	1	3	23.07
8.	Dik & Hansen, 2008.	1	1	0	1	1	1	1	0	0	0	1	1	0	8	61.53
9.	Yoh, Mohr & Gordon, 2008.	1	1	1	1	1	1	1	0	0	0	1	1	1	10	76.92
10.	Wise, 2009	1	1	0	0	0	0	0	0	0	0		0	0	2	15.38
11.	Collet-Klingenberg & Kolb, 2011.	1	0	0	1	1	1	0	0	0	0	0	0	0	4	30.76
12.	Koca-Atabey, Karanci, Dirik & Aydenir, 2011.	1	0	1	1	1	1	1	1	0	0	1	1	1	10	76.92
13.	Papasotiriou & Windle, 2012.	1	0	1	1	1	1	1	1	0	0	1	1	0	9	69.23
14.	Mullins & Preyde, 2013.	1	0	0	1	1	0	1	1	0	0	1	1	1	8	61.53
15.	Wright & Titus, 2013.	1	1	1	1		1	1	1	0	0	1	1	1	11	84.61

Scoring method: (*TS) Total score divided by the total number of items

[1]The appraisal tool below is an example of the qualitative tool only. Three tools were used based on whether the article was quantitative, qualitative or a mixed method study.

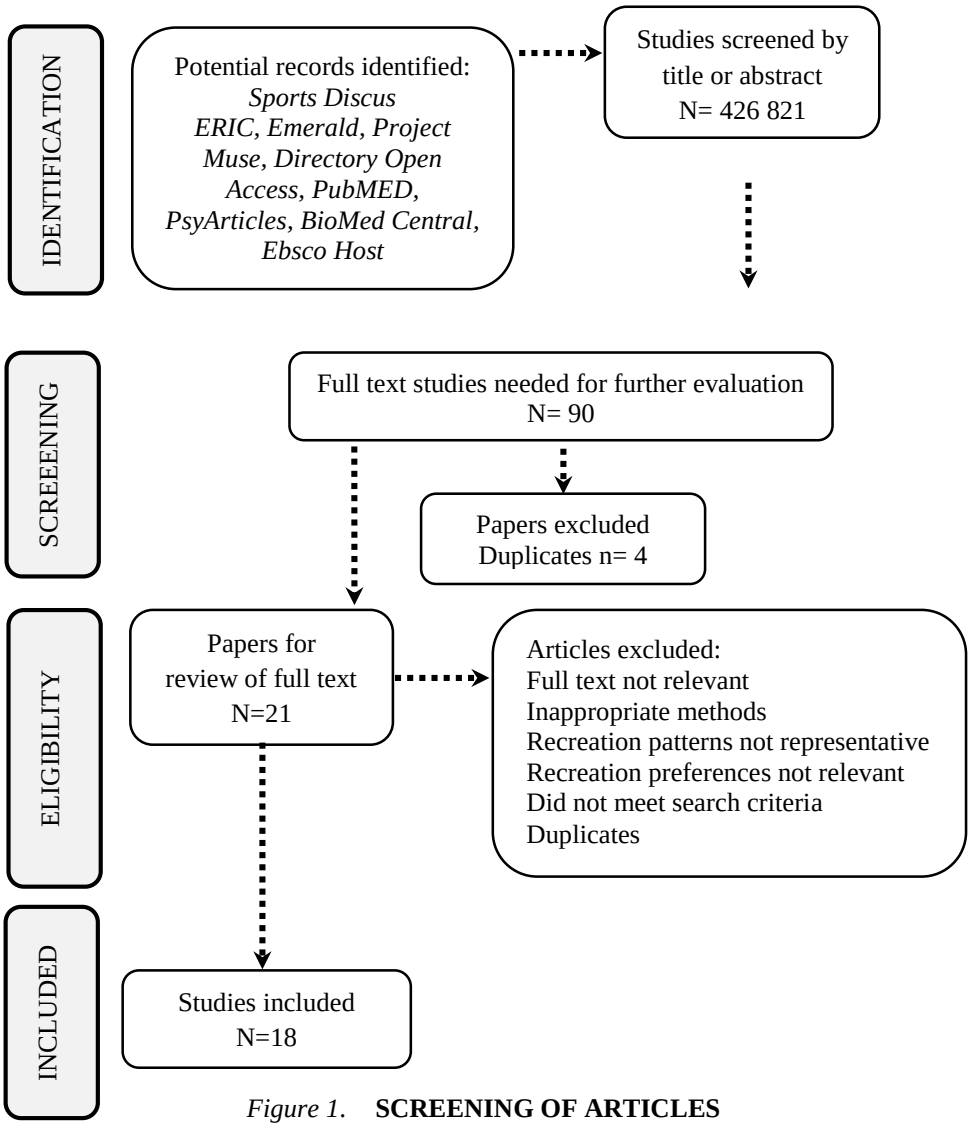

Figure 1. **SCREENING OF ARTICLES**

RESULTS

A total of 21 articles were appraised, of which 18 were included in this study. In Table 2, the appraised articles were extracted using the appraisal tool. The 18 articles met the criteria for inclusion in the study as can be seen in Table 3.

Table 3. **DATA EXTRACTION INFORMATION OF ARTICLES FOR THIS REVIEW**

Author & date	Study design	Population & sample size	Instrument	Country	Intervention	Outcome
Morgan & Leung, 1980.	Quantitative	Physically disabled university students. 14 participants (9 female & 5 males) 18-40yrs old	Questionnaire	America	Effects of assertion training on physically disabled university students' acceptance of disability.	Assertion training may be effective for increasing acceptance of disability in physically disabled university students.
Blinde & Taub, 1999.	Qualitative	College students, physical disabilities. N=28 males	Interviews	America	Empowerment through sport and physical fitness	Perceived competence as a social factor. Facilitation of goal attainment. Social integration.
Martinez, 2000.	Qualitative	College students with physical disabilities. N=70 participants	Questionnaire	America	Explanatory style as a predictor of performance	Individuals making internal stable global attributors are prone to depression when faced with negative events. Explanatory analyses showed that those with a more optimistic explanatory style obtained higher GPA's.
Iwasaki, 2001.	Qualitative	University students. No sample size indicated.	Repeated assessment field design	Canada	Role of leisure in coping with stress	Leisure-generated self-determination had significant and positive correlation with psychological well-being. Leisure empowerment had significant and negative correlation with mental ill health. Leisure friendship was significantly and positively correlated with psychological well-being.
Kalyvas & Reid, 2003.	Qualitative Quantitative	Students with and without physical disabilities. N=35 Age 7-12 years.	Questionnaire & Interviews	Australia	Sport adaptation, participation and enjoyment	For students with disabilities, the adapted games resulted in more successful grades, more active time on tasks and less inaccurate time on task.
Amosun, Volmink & Rosin, 2005.	Qualitative/ ethnographic	2 undergraduate medical students	Assimilation	South Africa	Perceived images of disability	Students dealing with their own perceptions resulted in feelings of inferiority and lowered self-esteem. Students identified obstacles in the environment, which hindered integration. Students reported significant positive change in their attitude towards persons with disabilities.

Table 3. **DATA EXTRACTION INFORMATION OF ARTICLES FOR THIS REVIEW** (*cont.*)

Author& date	Study design	Population & sample size	Instrument	Country	Intervention	Outcome
Andrijasevic, Pausic, Bavcevic & Ciliga, 2005.	Qualitative	Sample of 449 (380 females & 69 males). Mean age of 21yrs	Questionnaire	Croatia	Inquiry into which students at University of Split spend their leisure time and what was the portion of sporting activities in it in relation to self-appraisal of their health status.	Students with longer sport experience felt far less health-related discomfort than others. Discomforts reported by the young female students are comparable to those already reported by the general population.
Beaton, 2005.	Qualitative	Disabled people	Descriptive account	Scotland	Outline of public library service offered to disabled people in Glasgow.	Services currently being delivered and supported available to encourage people with disabilities to access public library services.
Research application, 2006.	Qualitative	81 university/ colleges. 52 public institutions 29 Private	Survey	America	Accessibility to campus recreation programmes	Recreation programmes for individuals with disabilities were the least offered programmes. Student employees related to accommodating people with disabilities were relatively low in numbers. Only 35% of universities offered training sessions for students with disabilities.
Sylvia-Bobiak & Caldwell, 2006.	Mixed methods	University students. N=874	Questionnaire	America	Complex relationship of social cognitive constructs, gender and active leisure.	Valuable insight into the mechanisms of influence on active leisure among this university population.
Dik & Hansen, 2008.	Quantitative	Students, working age adults and retirees. 262 students, 409 workers and 194 retirees.	Questionnaire	America	Examination of the structure of leisure interests	Four themes emerged: artistic, athletic, social and outdoor activities. People at different developmental stages embraced same major components of leisure interests even though the vehicle for actualising interests may vary.
Yoh, Mohr & Gordon, 2008.	Quantitative	College students with physical disabilities. N=122 participants.	Survey	America	Assessing satisfaction with campus recreation facilities	Satisfaction was low. 83 students used university recreational facilities less than 5 times a semester. 45 students never used university recreational facilities. 39 students used university recreational facilities more than 5 times a semester.

Table 3. **DATA EXTRACTION INFORMATION OF ARTICLES FOR THIS REVIEW** (*cont.*)

Author& date	Study design	Population & sample size	Instrument	Country	Intervention	Outcome
Koca-Atabey, Karanci, Dirik & Aydenir, 2011.	Qualitative	Physically disabled students. 70 students.	Questionnaire	Turkey	Psychological well-being of disabled Turkish university students by examining influences of stress-related growth and psychological distress.	Disability burden, daily stress factors and helplessness-coping were significant predictors of psychological symptoms.
Papasotiriou & Windle, 2012.	Qualitative	Physically disabled university students. N=4 participants	Interviews	Australia	Experiences of physically disabled university students	Reported limited social interaction at university due to exclusion attitudes and awkward situations with peers.
Rochette & Loiselle, 2012.	Quantitative	Disabled students	Disability Creation Process model	Canada	Reflect on what it means to successfully perform a university student's role despite presence of impairments	Inclusive education domain may lead to employment, with the influx of emerging population presenting "invisible" deficits.
Badia, Orgaz, Verdugo & Ullan, 2013.	Quantitative	Sample of 237 aged 17-65yrs, living in the community	Interviews	Spain	Participation in and preference for an interest in leisure activities of the young and adults with developmental disabilities	Leisure participation among people with developmental disabilities is likely to be more affected by environmental factors than personal factors.
Mullins & Preyed, 2013.	Qualitative	University students with dyslexia, attention-deficit hyperactivity disorder and mental illness	Interviews	Canada	Perceptions of students with invisible disabilities experienced at university.	Enhanced understanding of the lived experience of having an invisible disability, and provide both individuals with and without disabilities strategies to facilitate an open and accessible university environment.
Wright & Titus, 2013.	Qualitative	5 students (3 male & 2 female) with physical, visual & hearing disabilities.	Interviews (face-to-face and telephonic).	South Africa	Experiences & perceptions of students with disabilities; recreational sport whilst at university.	Findings indicate that benefits of active participation led to increased cognitive awareness & expression of internal motivation to pursue recreational sport on campus.

Several articles were excluded from this review because the outcomes did not include recreation patterns and preferences of university students with disabilities. Of the 18 articles (Table 3) that were included in the systematic review, 13 of the articles were qualitative, 5 of the articles were quantitative and 1 was mixed methods. Eight of the studies were conducted in the USA, 3 in Canada, 2 in South Africa, 1 each in Australia, Croatia, Scotland, Spain and Turkey. Data were collected through interviews and questionnaires, and 1 by means of a descriptive account. The target population was 13 studies involving physically disabled university students. The other studies targeted males, working adults and reflective studies.

All the interventions differed from each other. These included, amongst others, empowerment through sport, disability imaging, leisure interventions, assertion training, accountability in campus recreation programmes and many more. As a result of the varied interventions, the outcomes for many of the studies were different. Outcomes from the interventions showed that social integration was good (Blinde & Taub, 1999) or limited (Papasotiriou & Windle, 2012). Satisfaction with facilities was also low, as well as under-used (Yoh *et al*., 2008) and recreation programmes for persons with disabilities were the least offered programmes (Research Application, 2006). According to the findings reported in the articles, there was a realisation of actualisation, increase in psychological well-being, improved academic results and an increase in cognitive awareness as a result of recreation activities (Iwasaki, 2001; Kalyvas & Reid, 2003; Dik & Hansen, 2008).

DISCUSSION

This systematic review was conducted on the recreation patterns and preferences of students with physical disabilities in order to provide recommendations of recreational programmes for persons with physical disabilities. The results of the study suggest that there is limited social interaction among university students with disabilities, which is due to exclusions as highlighted by Blinde and Taub (1999) and Papasotiriou and Windle (2012). Consequently, there are problems, such as helplessness-coping and other psychological implications. Positive psychological implications could include confidence, empowerment, well-being and self-concept of students with disabilities (Papasotiriou & Windle, 2012).

The findings in the current study suggest that universities that offered recreational programmes for students with physical disabilities included assertion training as an effective strategy for increasing acceptance of physically disabled university students (Morgan & Leung, 1980). This is particularly important as the social impact, as highlighted by Blinde and Taub (1999), played a major role in the empowerment of individuals through sport and physical activity. However, there were cases where students with disabilities reported limited social interaction within the institution due to exclusion attitudes with their peers (Papasotiriou & Windle, 2012). Exclusion by peers also impacted the willingness of students with disabilities to participate in recreation programmes. As a result, this would not be beneficial to their participation motivation as this would be dependent on the direction and intensity of efforts (Sage, 1977).

The findings indicate that students with physical disabilities did not engage with the tertiary institution's recreational facilities often because they were not satisfied with access to facilities or that they were the least offered programmes at institutions. In the research study conducted by Yoh *et al*. (2008) satisfaction with access to campus recreation facilities was low. The low

satisfaction can be explained through barriers for students with disabilities, such as inadequate availability of adaptive equipment (Yoh *et al*., 2008). Yoh *et al*. (2008) identified that physical activity of students with disabilities was affected by the lack of access and adaptive equipment for these students which contributed to the low satisfaction of students. A reason that these programmes were least offered was because of a lack in educational facilitators (Koca-Atabey *et al*., 2011).

Satisfaction with recreation programmes at tertiary institutions was low because they did not meet the accessibility needs of students with disabilities. Many students with disabilities identify that there were obstacles in the environment which hindered integration. Yoh *et al*. (2008) similarly identified that these environmental barriers, such as architecture, accessibility and design existed. Koca-Atabey *et al*. (2011) identified lack of facilities in the form of wheelchair access, lifts in buildings and sound alert systems as barriers. Yoh *et al*. (2008:107) also highlighted the lack of accessibility to outdoor environments, which included "narrow and damaged sidewalks, steep slopes, poor signage, and lack of available restroom facilities". Some of the barriers that students in wheelchairs were challenged with, included not having the physical strength to propel themselves around in certain facilities that were not wheelchair friendly (Amosun *et al*., 2005). Other implications included disability burden, daily stress factors and helplessness-coping (Koca-Atabey *et al*., 2011). Considering these barriers, students were hesitant to participate in these programmes.

CONCLUSION

Whilst this review focused only on students with physical disabilities, it does not detract from the invaluable evidence gathered with regard to recreation programmes available to students with other disabilities. This study has revealed that there is a great need for recreational programmes for students at universities, as it is evident that participation in these programmes at universities was poor. This could be due to lack of awareness of activities that were on offer. It is herewith recommended that the implementation of programme policies should be monitored and evaluated. This will bode well for recommendations linked to structural developments at higher education institutions that would facilitate accessibility to facilities and foster integrated recreation activities for persons with disabilities. Furthermore, it is recommended that skilled recreation practitioners develop programmes that are relevant and that can accommodate students with disabilities.

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