

PHYSICAL ACTIVITY LEVELS AMONG YOUNG PEOPLE WITH PHYSICAL DISABILITIES IN SELECTED HIGH SCHOOLS IN KENYA AND THEIR PERCEIVED BARRIERS AND FACILITATORS TO PARTICIPATION

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Abstract

Purpose:

To determine the levels of and potential contributing factors to participation in physical activity among young people with physical disabilities attending high school in Kenya.

Methods:

A cross-sectional survey, using a pre-piloted and validated self-administered questionnaire, was carried out in a purposively selected sample of 234 young people with physical disabilities drawn from three inclusive high schools in Kenya. The questionnaire comprising outcome measures for physical activity levels, barriers, and facilitators to physical activity participation was administered to the young people. Data was analyzed using the Statistical Package for Social Sciences (SPSS) and both descriptive and inferential statistics were done.

Results:

Almost half of the children in the sample were inactive. Key barriers to physical activity were found to be: fear avoidance and disability, lack of time and the need to rest. Finding ways to exercise that are enjoyable, as was enjoying and having fun and not being in good health were associated significantly to gender ($p < 0.05$). Likewise, age was significantly associated with gaining peer acceptance, as was encouragement from family and having disability ($p < 0.05$).

Conclusion:

The results indicate there is a need, for activity counselling and provision of local disability-friendly and/or conducive environments to increase physical activity participation in this sample. All stakeholders should be enlisted in making recommendations and designing physical activity programmes for young people with disabilities in their schools.

Key words:

Barriers, facilitators, physical disabilities, young people, inactivity.

Introduction

Physical inactivity has emerged as a major health risk behaviour that is prevalent among adolescents with physical disabilities (Pan, Frey, Bar-Or & Longmuir, 2005). Researchers have shown that the habit worsens as adolescents approach adulthood (Norman, Schmid, Sallis, Calfas & Patrick, 2005). The behavior of inactivity may be linked to secondary conditions such as overweight and obesity among persons with disabilities (Boyle & Coldero, 2005;

Rimmer, Rowland & Yamaki, 2007). Research has also shown that regular physical activity assists in reducing the risk factors for coronary heart disease, type 2 diabetes and hypertension among adolescents (Strong et al 2005). By adulthood, the prevalence of chronic diseases is 2 to 3 times higher among people with disabilities than their normal peers (Kinne, Patrick & Doyle, 2004). The increasing incidence of chronic diseases among those with physical disabilities has increased the social and

economic costs of healthcare and social services in developed countries (McDougal et al, 2004). Reports of studies on risks of physical inactivity among children and adolescents with disabilities are available for developed countries such as USA (Norman et al, 2005; Rimmer et al 2007) and Canada (McDougal et al,2004; Pan et al 2005)] with few on developing countries.

Research has also found that participation of children with physical disabilities in structured school activities was lower than that of their peers without disabilities and less vigorous indicating poor social integration (Law, King, King, Kertoy, Hurley & Rosenbaum, 2006). In addition, a study by Heller, Ying, Rimmer & Marks (2000) highlighted that there are various factors that impede participation which include lack of transport, poor knowledge about exercise facilities, lack of exercise equipment at home, and lack of support from caregivers. Education for all with specific emphasis on inclusive education has been accepted in different national documents in various African countries (Peters, 2004). Within this context it has been suggested that the participation of disabled children in physical activity at schools should be encouraged (Sit, McManus, McKenzieT & Lian, 2007)]. The debate continues regarding the appropriateness of full inclusion but the reality is that more children with disabilities are interacting with mainstream peers. The literature regarding physical activities for children with disabilities in inclusive schools is limited, with no reported studies in Kenya. Therefore, this study aimed at reducing this void by investigating the state of physical inactivity among young people with physical disabilities in Kenya and factors influencing their participation.

Materials and Methods

A cross-sectional study was conducted in selected high schools in Kenya that offer inclusive education to young people with disabilities. The population of people with disabilities in Kenya is estimated at 10% of the total population and 25% of these are school-going children. Approximately 2% of these children are enrolled in educational programmes for children with disabilities and the same number are integrated into regular schools.

Population and Sampling

All high schools offering inclusive education in

Kenya were contacted to participate in the study. The three inclusive schools volunteered and together they had a total number of 546 school children. Purposive sampling was used to target all the adolescents with physical disabilities attending the schools offering inclusive education aged between 14 and 21 years of both gender who could read, write, and speak fluent English. All children (n=262) with physical disabilities were contacted and requested to participate in the study voluntarily. Guardians of the children aged below 18 years signed on their behalf in accordance with the requirements of the relevant ethical review boards.

Measurement Instruments

A self-administered questionnaire was used to assess: demographic data, physical activity levels, barriers and facilitators to physical activity participation. The physical activity scale for individuals with physical disabilities was used to determine the physical activity levels (Washburn, Zhu, McAuley, Frogley & Figoni, 2002) and other relevant literature was used to determine the barriers (Whiteneck et al, 2004) and facilitators. Participants selected appropriate responses on a 5 point Likert rating scale to determine the barriers and facilitators. All modifications were done with consideration to the Kenyan context where the study was conducted. Although the original questionnaires had been used in different contexts and had excellent test-retest reliability, such as the barriers scale (Whiteneck et al 2004), the implications of modification on this reliability was taken into account. Reliability testing of the questionnaire was done using the test- retest method. A pilot study was therefore conducted to pre-test the research questionnaire in Kenya among fifteen (n=15) young people with physical disabilities, who were not included in the main study. The barriers scale test yielded a moderate reliability (Cronbach's α of 0.67 [ICC=0.67]). Reliability of the 25 variables in the facilitators scale was good (Cronbach's α of 0.807 [ICC= 0.807]).

Data Analysis

Based on the aim of the study, descriptive statistics for the variables such as levels of physical activity, barriers and facilitators to physical activity participation for the adolescents were calculated. Chi-square test of association was done between independent variables and levels of physical

activity, and between independent variables and variables in the barriers and facilitators scales. The SPSS version 14.0, soft-ware, was used to analyze the data collected from the survey.

Results

Of the 262 adolescents with disabilities contacted, 234 (89%) consented and filled the questionnaires completely. The majority of the adolescents (140) were aged between 14-17 years and 94 were aged

18-21 years. The mean age was 17.09 ± 1.90 years. Of the 234 adolescents, 52 had other health conditions which included poor eyesight (21), epilepsy (5), asthma (2), urinary incontinence (2) and hearing problem (1). Twenty-one of the participants did not specify their problem. Only 154 children reported using special equipment. Of these 89 (69.0%) were males and 65 (62.5%) were females. Table 1 summarises the distribution of physical impairments by gender.

Table 1: Physical impairments by gender in decreasing order (N=234)

| Physical Impairment | Males (n=129) | Females (n=105) | Total Frequency (N=234) |
|--|------------------|--------------------|----------------------------|
| Paralysis of limbs | 54 | 34 | 88 (38%) |
| Congenital malformations | 13 | 23 | 36 (15%) |
| Spinal injuries and deformities | 20 | 13 | 33 (14%) |
| Amputated limbs | 15 | 6 | 21 (9%) |
| Aquired deformities: contractures | 6 | 5 | 11 (5%) |
| Osteogenic problems e.g. brittle bones | 4 | 4 | 8 (3%) |
| Muscle dystrophy | 1 | 3 | 4 (2%) |
| Stroke and poor health status | 0 | 1 | 1 (.4%) |
| Missing | - | - | 32 (14%) |

Levels of Physical Activity

There was no significant association between gender and the level of physical activity. Of the 234 adolescents, only 52% (121) were active, while 48% (n=113) did not attain the benchmark score. The prevalence of inactivity was higher among the older adolescents (50%) than the younger group (47%). Independent sample t-test showed there was no difference in mean physical activity level between the two age groups ($T [df. =232] = 1.443, P = .150$) and there was no significant association between gender and physical activity levels ($p = 0.54$).

Perceived Barriers and Facilitators to Physical Activity

The most prevalent barriers and facilitators to physical activity perceived by adolescents are

presented in Table 2 below. Lack of transport was significantly associated with levels of physical activity ($P < 0.03$). Chi-square test was done to determine the association between independent variables (gender and age) and variables facilitating and barring physical activity. Gender was significantly associated (at 5% level) with finding ways to exercise that are enjoyable ($P = 0.031$) and this was more prevalent amongst the females, as was enjoying and having fun ($P = 0.041$). Age was significantly associated with gaining peer acceptance ($P = 0.040$) especially among males, as was encouragement from family to be active ($P = 0.032$). Having an injury or disability was significantly associated (at 5% level) with age-group ($P = 0.018$), as was health is not good with gender ($P = 0.036$).

Table 2: Barriers and facilitator to physical activity participation

| Barriers to participation | | Facilitators to participation | |
|---|-----|---|-----|
| Fear of getting injured | 53% | Maintaining a healthy body | 87% |
| Lack of transport | 43% | Enjoying and having fun | 84% |
| Uneven playgrounds | 41% | Learning new skills and experience | 84% |
| Current injury or disability | 36% | Gaining more self confidence | 83% |
| Lack of time | 36% | Making new friends | 81% |
| Don't have the right equipment or clothes | 35% | Participation in physical education classes at school | 80% |
| No suitable facilities | 34% | Encouragement from family to be active | 79% |
| I need to rest in my spare time | 34% | Improving my ability to move without assistance from others | 79% |
| There is no one to do it with | 31% | Positive attitude from family | 78% |
| I'm not the sporty type | 30% | Having access to suitable facilities | 77% |

Discussion

Research has consistently shown increasing prevalence of inactivity among young people with or without disabilities, raising public health concern (Packer, Briffa, Downs, Ciccarelli & Passmore, 2006). Evidence has also shown that a high proportion of young people do not attain the recommended levels of physical activity (Jones, 2003). The current study highlights yet again that nearly half of the young people are struggling to meet the basic requirements recommended to be physically active. Similarly using the modified version of the Canada Fitness Survey tool to quantify physical activity research reported that 2 out of 5 children and adolescents with physical disabilities were inactive (Pan et al. 2005). According to available evidence, inactivity among adolescents in transition is associated with being older (Norman et al. 2005).

Although active participation of the disabled is encouraged by World Health Organisation, the study still revealed real barriers preventing participation of the learners. Barriers were linked to personal factors, environmental and social factors. It has been shown that subjects with low self-efficacy have fear of movement/ (re)injury, and catastrophizing and avoid movement (Denison, Asenlof, Sandborgh & Lindberg, 2007). The implication of fear in the adolescents is the potential

to often engage in the less intensive activities that have no proven health benefits, and are socially isolating (Blomquist, Brown, Peersen & Presler, 1998; Boyce, 2001; Skar, 2003). The current study showed a significant proportion of young people perceived barriers in transportation, uneven play grounds, having a disability, lack of time, lack of clothes/equipment, need of rest, and to a lesser extent lack of suitable facilities nearby. Similar to the current findings, research has found that children with disabilities experienced barriers from uneven surfaces, unsuitable footwear, time pressure, physical inaccessibility and personal assistants (Mihaylov, Jarvis, Colver & Beresford, 2004). In addition, other studies have also highlighted transportation, facilities and social support as barriers to participation (Heller et al, 2000).

The current study highlights that health professionals need to understand that various factors influence participation in physical activity and, contextual factors such as environmental and personal factors need to be considered when dealing with disabled youth. It has been emphasized in literature that when encouraging physical activity participation among those with disabilities, health professionals need to take into consideration the "impairments, activity limitations and participation restrictions within the context of

person-environmental factors" (WHO, 2001). Additionally, in order to successfully implement or encourage physical activity programs, health professionals need to understand factors that are associated with successful participation (WHO, 2001). There also needs to be efforts directed at implementing community based programmes and even school based programmes that are relevant to specific sectors of the population. Research has highlighted that physiotherapists play a major role in assisting in the integration and encouraging active participation of children with disabilities in mainstream school (Mahon & Cusack, 2002).

Limitations of the Study

One of the limitations was the sampling method which was purposive. The result of such a sample is only limited to the sample surveyed and cannot be representative. Another limitation was the subjective nature of data collection tool which was on self-report only. There was no objective observation or test for performance of physical activity. Lastly, there was a possibility of the young people over-reporting or under-reporting on activities. In addition, this study only focussed on children with physical disabilities as the challenges faced by children with intellectual disabilities may differ and needs to be addressed.

Conclusion

The results show that inactivity affects one out of two adolescents with physical disabilities and a significant proportion experience a variety of barriers to physical activity participation. These highlighted barriers indicate the need for, activity counselling, and provision of local disability-friendly or conducive environments to increase physical activity participation in this sample. Therefore, all stakeholders should be enjoined in recommending and designing physical activity programmes for adolescents with disabilities in their schools.

Implications

The WHO ICF model encourages a focus on activity limitations and participation restrictions, within the individual's particular socio-cultural context, it is the hope that this current study could be used to ensure the inclusion of activities in schools that allow for the full participation of the disabled youth and will address their barriers at an environmental and personal level.

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