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CONCERNS ABOUT PHYSICAL INACTIVITY AMONG ADOLESCENTS IN THE STRAND, SOUTH AFRICA

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Abstract

Introduction: Strong evidence exist to support the assumption that regular physical activity is one of the most cost effective interventions for the prevention and management of chronic diseases of lifestyle, and should therefore be widely promoted. However, concerns about physical inactivity among adolescents have been raised in various countries. The levels of habitual physical activity among urbanized South Africans seems no better than what obtains in similarly urbanized populations in other countries.

Objective: The aim of the study was to highlight the type of recreational physical activities, as well as the frequency and duration in which learners from the four high schools (n=1042) in the Strand, Western Cape participated in.

Methodology: The instrument utilized was a self-administered questionnaire adapted from the one developed by the South Australian Branch of Sports Medicine to determine recreational activities in school children.

Results: A high proportion of learners were found to be involved in different recreational physical activities, which included rugby, soccer, netball and walking. However, learners were not participating at a level at which the health benefits of participation could be maximized.

Discussion: The outcome of the current study suggests that it is unlikely that the learners maximized the health benefits of participation in physical activities. They may thus be prone to the possibilities of developing chronic diseases of lifestyle.

Conclusion: High school learners should routinely be informed about the importance of incorporating physical activity into their lives.

Introduction

Chronic diseases of lifestyle are becoming major areas of concern in South Africa. There is, however, little recognition for the magnitude of the burden of chronic diseases in South Africans, where 48% of the reported mortality was due to chronic diseases in 1995. Chronic diseases of lifestyle are defined as a group of diseases that share similar risk factors as a result of exposure, over many decades, to unhealthy diets, smoking, and lack of exercise and possibly stress (Booth, 2000). They are also illnesses that do not resolve spontaneously, are rarely cured completely but are preventable. At the annual 2001 Health

Summit held in the Helderberg Administration, City of Cape Town, reports received indicated that the commonest causes of death in adults in 2000 were due to chronic diseases of lifestyle, i.e. cardiovascular diseases, cerebrovascular diseases and chronic respiratory diseases.

According to Colditz (1999) and Ferucci, Izmirlian, Leveille, Phillips, Corti and Brock (1999), it is estimated that physical inactivity is as important a risk factor for chronic diseases of lifestyle as tobacco use. According to Katzmarzyk Gledhill and Shephard (2000), physical inactivity as a risk factor for several chronic diseases can potentially be a substantial public health burden. According to Noakes and Lambert (1995), the levels of habitual physical activity among urbanized South Africans are no better than what obtains in similarly urbanized populations in other countries. Physical inactivity threatens to reverse the decades-long precess in reducing deaths from cardiovascular disease (CDC, 2000), as it can lead to obesity which has been associated with coronary artery disease, hypertension, cancers, gallstones, arthritis, diverticular disease and psychosocial problems (Friedman, 2000; Lacar, Soto & Riley, 2000).

Concerns about physical inactivity among adolescents have been raised in various countries. Heath, Pratt and Warren (1994) stated that during adolescence, many risk factors like overweight, increased levels of blood lipids and cholesterol, increased anxiety and depression are linked to physical inactivity. Overweight during adolescence has been found to be a more powerful predictor of increased mortality from all causes than obesity that begins in adulthood (Rich, 1999). Physical inactivity in youth is also associated with other health-compromising behaviours including cigarette smoking, lower fruit and vegetable consumption, and more hours watching television (O'Loughlin, Paradis, Kishchuk, Barnett & Renaud, 1999). The findings of a study on elementary school children in multi-ethnic, low income, inner-city neighbourhoods in Montreal, Canada (O'Loughlin et al., 1999) suggested that solutions should be found to address the high levels of childhood inactivity.

Therefore the overall objective of this study was to determine the levels of recreational physical activity among adolescents in the Strand, Western Cape. The specific aims of the study were to determine the recreational activities in which adolescents in high schools in the Strand participate in, and to determine the pattern of participation in recreational activities.

Method

The study was carried out in four high schools in the Strand, Western Cape. The Strand is situated in the Helderberg Basin, which is part of the City of Cape Town Municipality. The key subregions in the Helderberg Basin include Somerset West, Strand, Gordons Bay, Lwandle-Namzamo

and Sir Lowry's Pass Village. Within the Strand area, there are four high schools that cater for the adolescent age group. These schools have learners from the age of 13 years in grades 8 to 12. The study was carried out at these four high schools in the Strand, Western Cape.

The study was a quantitative study using a cross-sectional survey design. The instrument utilized in this study was a self-administered questionnaire adapted from the one developed by the South Australian Branch of Sports Medicine to determine recreational activities and injuries in school children in South Australia (Grimmer, Trott, Ruston & Williams, 1996:7). The questionnaire was divided into three parts. The first part requested for demographic data like age, gender and grade. In the second part of the instrument, subjects were requested to identify the recreational physical activities they took part in during the past one year. Subjects who did not take part in any recreational physical activity were asked to stop completing the questionnaire. Subjects who continued with the questionnaire were requested to identify up to three recreational physical activities they were involved in most during the past one month, as well as the pattern of participation. To cause no disruption of normal school activities, the questionnaire was administered during the English language teaching periods as an exercise in 'filling in forms'. Learners completed the questionnaire independently and anonymously during a single school period. The supervising teacher was instructed not to allow any conferring between learners and to respond only to the learner's queries about procedure.

Results

The overall response rate was 86.9% (n=1042). Of the 1042 participants, 42.8% (n=446) were males, while 57.2% (n=596) were females. The mean age of the study sample was 15.9 years. The mean age for male participants was 16.1 and that of female participants was 15.7 years. There were 224 participants in grade eight, 208 in grade nine, 272 in grade ten, 232 in grade eleven and 106 in grade twelve.

One thousand and fourteen learners (97.3%) took part in recreational physical activities in the past one-year. Of these 571 were females and 443 males. The remaining 28 participants (25 females, 3 males) did not take part in any activity. The activities that males participated in most were rugby, cricket, soccer, athletics and running as reflected in Table 1. The activities that females participated in most were netball, walking, dancing, running and swimming as reflected in Table 2. The majority of learners took part in various recreational activities 2-3 times per week. The period spent in physical activity on each occasion ranged from less than one hour to more than two hours. Most of the learners spent an average of one hour while participating in some physical activities. A one-month recall of recreational activities was obtained for

1014 learners. Only 978 learners (431 males, 547 females) were involved in recreational physical activities in the past one-month. Learners (n=978) were categorized into irregularly active (i.e. involved in physical activity for 1-3 days of the week), regularly active (i.e. involved in physical activity for more than 3 days of the week) or sedentary (i.e. no participation in physical activity in the past one month as illustrated in table 3 and 4.

Table 1: Recreational physical activities male subjects participated in frequently in the schools

School 1	School 2	School 3	School 4
Rugby (58.3%)	Rugby (62.8%)	Rugby (56.4%)	Soccer (76.7%)
Cricket (51.4%)	Cricket (56.2%)	Cycling (40.6%)	Cricket (40.6%)
Soccer (47.2%)	Soccer (37.2%)	Athletics (36.1%)	Tennis (32.5%)
Athletics (37.5%)	Athletics (21.5%)	Skateboarding (33.1%)	Rugby (21.7%)
Walking (30.6%)	Running (17.4%)	Cricket (32.3%)	Running (20.8%)

* Some learners took part in more than one activity

Table 2: Recreational physical activities female subjects participated in frequently in schools.

School 1	School 2	School 3	School 4
Walking (50.3%)	Netball (47.7%)	Walking (48.1%)	Netball (66.2%)
Dancing (37.0%)	Walking (43.2%)	Swimming (36.9%)	Dancing (23.5%)
Netball (29.6%)	Dancing (27.0%)	Athletics (36.9%)	Running (21.3%)
Swimming (27.0%)	Athletics (27.0%)	Running (36.3%)	Tennis (9.6%)
Running (25.4%)	Running (17.1%)	Netball (34.4%)	Athletics (8.8%)

* Some learners were involved in more than one activity

Table 3 Physical activity participation of males one month prior to study (%)

Variable	School 1	School 1	School 1	School 1
Regularly active	2.8	52.1	29.4	46.9
Irregularly active	95.8	47.1	65.5	53.1
Sedentary	1.4	1.7	5.1	0

Table 4 Physical activity participation of females one month prior to study (%)

Variable	School 1	School 1	School 1	School 1
Regularly active	11.6	34.6	47.2	43.1
Irregularly active	85.1	55.1	46.3	56.3
Sedentary	3.3	10.3	6.5	0.6

Discussion

In this study there was a distinct difference between girls and boys in their physical activity choices. The most common activities boys participated in were rugby, cricket, soccer and athletics while girls preferred netball, walking, dancing and running. This is similar to previous research that indicated boys prefer competitive games that are played with partners or in teams, as opposed to girls who are more likely to engage in games with fewer numbers of players (Hovell, Sallis, Kolody & McKenzie, 1999). According to the National Children and Youth Fitness Study (Pate, Long & Heath, 1994) girls were found to spend more time participating in recreational physical activities that lead to lifetime habits. Such activities included walking, running, swimming and dancing which are the same activities female learners in this study were involved in.

According to Hovel et al. (1999), the top five activities that boys participated in could be a disturbing trend as only one of these activities (running) are likely to carry over in adulthood. These authors further stated that although formal sports may be valuable for teaching character, establishing strength and aerobic fitness, they may not lead to lifetime physical activity. There is some room for optimism in the physical activity choices of girls.

Of their top five activities, i.e. netball, walking, dancing, running and swimming, four of these can be considered lifetime activities.

According to the Health Education Authority (2000), being active does not have to be hard work; everyday activities like dancing, cycling, walking and swimming could improve health. Sothern Loftin, Suskind, Udall & Blecker. (1999) also stated that with new guidelines promoting a less intense and more time efficient approach to regular activity, it is hoped that an upward trend in the physical activity patterns, and specifically children at risk for chronic diseases, will develop in future.

The recent policy of the Department of Sports and Recreation was aimed at ensuring that every South African engaged in a minimum of one sports-related activity by the end of 1999 because of the health benefits of physical activity (Frantz, Phillips & Amosun, 2000). Therefore, this study, which was conducted in the first half of 2000, may therefore contribute to the formative evaluation of the policy. The results of the study indicated that 97.3% of the learners participating in the one-year recall took part in at least one recreational activity each. A similar pattern was noted for the one-month recall in which 96.4% of the learners took part in at least one recreational physical activity. There is therefore the impression that most of the learners were involved in at least one recreational physical activity, thus meeting the goals of the Department of Sports and Recreation.

However, most (64.8%) of the learners were considered to be irregularly active in that they got involved in recreational

physical activity for 1-3 days of the week, and for an average duration of only one hour on each occasion. In the Report of the Surgeon General on physical activity and health, it was concluded that minimal health benefits could be obtained by including a moderate amount of physical activity for at least 30 minutes, on most, if not all days of the week (CDC, 1997). Additional health benefits can also be gained through greater amounts of physical activity. The World Health Organization also stated that much health gain can be obtained by participating in physical activities that are moderate in amount and intensity, performed for a minimum of 30 minutes on most, if not all days of the week (WHO/OMS, 1999). The outcome of the current study therefore suggests that it is unlikely that the learners maximized the health benefits of participation in physical activities.

If the learners are not optimizing the health benefits of physical activities, they may be prone to the possibilities of developing chronic diseases of lifestyle. According to Pivarnik (2000), recent investigations clearly show that low aerobic fitness and habitual physical inactivity are independently related to increased cardiovascular disease risk. It is therefore necessary to educate the learners on their lifestyle within the period of time in which they are not involved in recreational physical activity. The learners should routinely be informed about the importance of incorporating physical activity into their lives.

References

Booth, M. (2000). Assessment of physical activity: An International perspective. *Research Quarterly for Exercise and Sport,* 71: 114-120.

Center for Disease Control and Prevention (2000). Assessing Health Risk Behaviors among Young People. http://www.cdc.gov/nccdphp/dash/yrbs/yrbsaag.htm

Centers for Disease Control and Prevention (1997). Report of the Surgeon General. Physical activity and Health. US Department of Health and Human Services.

Colditz, G.A. (1999). Economic costs of obesity and inactivity. *Medicine and Science in Sports and Exercise,* 31: S663-667.

Ferrucci, L., Izmirlian, G., Leveille, S., Phillips, C.L., Corti, M.& Brock, D.B. (1999). Smoking, physical activity and active life expectancy. *American Journal of Epidemiology,* 149: 645-653.

Frantz, J.M., Phillips, J.S., Amosun, S.L. (2000). The National Policy Framework on Sport and Recreation in South Africa: A Review. *African Journal for Physical, Health Education, Recreation and Dance,* 6: 112-128.

Friedman, J.M. (2000). Obesity in the new millennium. *Nature,* 404: 632-634.

Grimmer, K.A., Trott, P.H., Ruston, S., Williams. J. (1996) Survey of recreational activity in South Australian school children.

Health Education Authority, (2000). Active for Life Programme. United Kingdom.

Heath, G.W., Pratt, M., Warren, C.W. (1994). Physical Activity Patterns in American High School students. *Arch Pediatric Adolescent Medicine,* 148: 1131-1136.

Hovell, M.F., Sallis, J.F., Kolody, B., McKenzie, T.L. (1999). Children's physical activity choices: A developmental analysis of gender, intensity levels and time. *Pediatric Exercise Science,* 11: 158-168.

Katzmarzyk, P.T., Gledhill, N., Shephard, R.J. (2000). The economic burden of physical inactivity in Canada. *Canadian Medical Association Journal* 163: 1435-1440.

Lacar, E.S., Soto, X., Riley, W.J. (2000). Adolescent obesity in a low-income Mexican American District in South Texas. *Archives of Pediatrics and Adolescent Medicine,* 154: 837-840.

Noakes, T.D., Lambert, E.V. (1995). Chapter 6: Exercise. Medical Research Council Technical Report.

O'Louglin, J., Paradis, G., Kishchuk, N., Barnett, T., Renaud, L. (1999). Prevalence and correlates of physical activity behaviors among elementary schoolchildren in multiethnic, low income, inner-city neighborhoods in Montreal, Canada. *Annual Epidemiology,* 9: 397-407.

Pate, R., Long, B.J., Heath, G. (1994). Descriptive Epidemiology of Physical Activity in Adolescents. *Pediatric Exercise Science,* 6: 434-447.

Pivarnik, J.M. (2000). Position Statement: Importance of physical activity for children and youth. *Michigan Governor's council on physical fitness, health and sports.*
Http:www.mdch.state.mi.us/pha/vipf/KidText.ht

Rich, M. (1999). It's your shot! Immunization by basketball. *Annual Epicemiology,* 9: 394-396.

Sothern, M.S., Loftin, M., Suskind, R.M., Udall, J.N., Blecker, U. (1999). The health benefits of physical activity in children and adolescents: implications for chronic disease prevention. *European Journal of Pediatrics*, 158: 271-274.

World Health Organization/OMS (1999). Active Living. Benefits of active living.
Http://www.who.int/hpr/active/benefits.html.

The Department of Physiotherapy, staff and students would like to congratulate all 2006 physiotherapy graduates as well as Dr. J. Phillips and Dr. P. Struthers (far left and right respectively) who obtained doctorates during the 2006 graduation ceremony.