

**HIGH SCHOOL GIRLS' PERCEPTIONS OF ENVIRONMENTAL
AND SOCIAL SUPPORT FOR PHYSICAL ACTIVITY**

BY

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DECLARATION

I hereby declare that “*High School Girls’ Perceptions of Environmental and Social Support for Physical Activity*” is my own work, that it has not been submitted, or part of it, for any degree or examination in any other university, and that all the sources I have used or quoted have been indicated and acknowledged by means of complete references.

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Signature..........

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Witnesses:

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DEDICATION

To my loving husband Patrick Kariningufu to whom I am eternally grateful for his love, patience and support through my life and to my lovely sons Yann and Allan.

You have been and are a blessing source of inspiration.

To my parents, Vital Kirenga and Therese Kayonga, whom I am forever grateful for their parenting care who made me whom I am.

To my mother-in law, Adèle Uwambaye for her love, support and warm encouragements throughout these two years far from home and, in the loving memory of my father-in-law, late Emile Kariningufu, for whom Education meant so much.

To my brothers, Viviane and Jean-Paul Kirenga, who have always been there for me.

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MAY GOD RICHLY BLESS YOU ALL

ABSTRACT

According to the World Health Organization (WHO), physical inactivity or sedentary life is one of the leading causes of the major non-communicable diseases, which contributes to the global burden of diseases, death and disability. Regular physical activity has significant benefits for health and everyone should engage in at least 30 minutes of moderate physical activity every day. Girls are reported to be less active than boys. The amount of physical activity declines with the increasing age and this decline is greater in girls than boys. The aim of study was to determine Rwandese high school girls' perceptions regarding environmental and social support for physical activity. A descriptive study using a cross sectional survey was used. Six high schools in Kigali, Rwanda, registered for the academic year 2008-2009, were selected. Three hundred and fifty (350) high school female learners were selected using a stratified random sampling technique. The participants were selected by class or grade. A self-administered questionnaire, including questions from the Physical Education Program Improvement and Self-study as well as the Modifiable Adolescent Physical Activity Questionnaire was used to collect data. Descriptive and inferential statistics were calculated with the Statistical Package for Social Sciences (SPSS) version 16.0. Chi square and student t-tests were used to determine the association between perceived support and socio demographic characteristics. Alpha level was set at 0.05. The mean age was 16.06 years (SD=1.4). The majority of learners in both categories reported not to meet the average of days required for moderate days of physical activity (66%) as well as for vigorous days of physical activity (70.9%). Almost one third (34%) of the participants were classified as physically inactive while 66% were classified as physically active when the WHO's guidelines for classification of physical activity was used. The overall study sample responded positively when asked about support for physical activity in the school environment. Furthermore, the overall study sample responded positively to friends' support but negatively when asked about the family support. Significant differences were observed between support from family, social support and moderate physical activity. The findings of the present study highlight the need for the planning and implementation of a physical activity intervention program for high school girls in Rwanda.

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CHAPTER ONE

INTRODUCTION

1.1 INTRODUCTION

In this chapter, the background of the study is given to highlight the health burden of physical inactivity, threatening people's health worldwide and the initiatives of the World Health Organisation (WHO) to address the growing burden of chronic diseases as a result of physical inactivity. It also describes the consequences of physical inactivity as it relates to adolescence. The chapter further reflects on the physical activity levels among adolescents in some countries around the world including Rwanda. The statement, aims and objectives of the study and the significance of the study are outlined. The chapter ends with definitions of terms used as well as a summary of the chapters that will follow in this study.

1.2 BACKGROUND OF THE STUDY

Physical activity is essential for our health and well being. Physical activity for an individual is a strong means for prevention of diseases and for nations, a cost-effective method to improve public health across the population (WHO, 2003a). Regular physical activity – such as walking, cycling, or dancing, has significant benefits for health. It can reduce the risk of cardiovascular disease, diabetes and osteoporosis, help control weight and promote psychological well-being (WHO, 2007). However, the WHO (WHO, 2007) further states that more activity may be required for weight control. Regular physical activity, fitness, and exercises are critically important for health and well being of people of all ages. Research has demonstrated that virtually all individuals can benefit from regular physical activity, whether

they participate in vigorous exercise or some type of moderate health-enhancing physical activity (Centers for Disease Control and Prevention, 2002). Guidelines from a Canadian Research Institute recommend that adolescents should engage in three or more sessions per week of activities that last 20 minutes or more at a time, that require moderate to vigorous levels of exertion (Canadian Fitness and Lifestyle Research Institute, 2002).

According to a study done in the United States by Slevin (2002), heart disease, one of the major non-communicable diseases, remains the leading cause of death in women. Sedentary lifestyle and poor nutrition are major risks factors for heart disease and stroke in women. The World Health Report (2002) identified five out of the ten leading global disease burden risk factors as high blood pressure, high cholesterol, obesity, physical inactivity and unhealthy diet. Together with alcohol and tobacco use, these preventable risks play a key role in the development of chronic diseases. Physical activity is known to reduce the risk of cardiovascular disease (Lee, Paffenbarger, Thompson, 2001), some cancers (Hardman, 2001) and type 2-diabetes (Diabetes UK, 2003).

The insufficient amount of physical activity in children and adolescents has a disturbing effect in term of health. In Australia physical inactivity is so substantial that it ranks second to smoking as the major cause of death and disability, 7% and 11% respectively (Struber, 2004). Consequently, overall 2.7 million deaths annually are attributable to low fruit and vegetable intake and overall 1.9 million deaths are annually attributable to physical inactivity (WHO, 2008a). Encouraging increased physical activity is one way to aid young people in achieving a balance energy intake and expenditure and establishing healthy behavior that will continue into adulthood. In addition to contributing to weight control, physical activity helps

young people to build and maintain healthy bones and muscles and contributes to psychological well-being (Troiano, 2002). There is scientific evidence showing that habitual physical activity provides people of all ages with considerable physical, social and mental gains and well being throughout their life span (WHO, 2003a; Fox & Boutcher, 2000).

The Centers for Disease Control and Prevention (2001) in the USA warned that physical activity levels of all people across all ages tend to decrease. According to a study done in the United States by Ward, et al. (2006), a decline in activity begins in late elementary school and continues throughout high school and young adulthood. Van Mechelen, Twisk, Post, Snel and Kemper (2000) also confirmed that the amount of physical activity declines with increasing age and this decline is greater in girls than boys. Yang, Telema, Leina and Viikari (1999) also affirmed also that physical activity in childhood and in adolescence is an important prerequisite to physical activity in adulthood. Young, Phillips, Yu and Haythornthwaite (2006) stated in their study that a National Youth Risk Behavior Survey in United States found 40% of high school girls and 27% of high school boys to have insufficient physical activity to meet these recommendations. Tobias and Roberts, 2001 further stated that according to a study done in New Zealand, the current physical inactivity mortality burden was estimated to be 2600 deaths per year (9% of all deaths and the prevalence of physical inactivity is further estimated that by 2021 it will be 4%. Riddoch and Boreham (1995) also found that decline in physical activity levels in adolescents, especially amongst girls in New Zealand.

The decline in physical activity among adolescents as they age has also been noted in Africa. Phillips (2006) found that the high school learners in grade 9 were more likely than those in grade 10 to participate in physical activity in a study among female high school learners in South Africa. A study done among high school going adolescents in Kenya also revealed that older learners were significantly more likely to be classified as more sedentary than younger learners (Kibet, 2006). A study done in 2001 among high school learners in Kigali found that participants were spending an average of 10.8 hours per day in sedentary activities (Murenzi, 2001). This study further found that girls were more likely to engage in sedentary activities than boys. Although there is little recent information about physical activity participation among female adolescents in Rwanda, there is evidence of physical inactivity among adult women. In 2004, a study conducted in urban Kigali, found that working adults were living sedentary lifestyles. The study found that 72% of women workers were classified as sedentary and only 28% were physically active (Kagwiza, Phillips & Struthers, 2005).

Interventions that provide opportunities and motivation for young people to be active could help address this problem of physical inactivity. Schools present unique opportunities to provide time, facilities and guidance for young people to participate in physical activity. In most countries, through physical education programmes, schools offer the only systematic opportunity for young people to take part in and learn about physical activity. According to the National Association of Sport and Physical Education in America (2001), physical education can serve as a vehicle for helping students to develop the knowledge, attitudes, motor skills, behavioural skills and confidence needed to adapt and maintain physically active lifestyles. School physical education classes can assist young people to "Move for Health" by providing them with opportunities and time to safely access physical activity facilities in an environment that is supported by teachers, parents and friends (WHO, 2008b).

The outcomes of physical education programmes should include the development of each student's physical competence, health-related fitness, self-esteem and overall enjoyment of physical activity. These outcomes enable students to make informed decisions about and choices leading to a physically active lifestyle.

According to Motl et al. (2002), perceived neighborhood safety and equipment accessibility are two physical environmental variables that might influence the physical activity behaviours of adolescent girls. The same authors further state that perceived lack of accessible equipment in the home (e.g., bicycles, balls, skates) and in the community (e.g., playgrounds, parks, gyms) might impede physical activity participation among adolescent girls. This is supported by Dunton, Janner, & Cooper, 2003; Saunders, Motl, Dowda, Dishman, & Pate, 2004) who stated that perceptions of equipment accessibility, neighborhood safety, social support, and self-efficacy have been identified as correlates of self-reported physical activity in adolescent girls.

The association of social support, particularly peer and family, and PA levels in adolescents is well established (Troost et al., 2003; Davison, Cutting and Birch, 2003; Neumark-Sztainer, Story, Hannan, Tharp & Rex, 2003). Adolescent girls' perceptions of support for physical activity (PA) in the school environment (ie, school climate) may be particularly important because most adolescents spend significant time at school and many opportunities for PA, such as physical education [PE] and school-based sports and activities, take place within the school setting (Grieser, et al., 2008).

The-increasing levels of inactivity among adolescents and specifically adolescent girls highlight the urgent need to investigate the reasons for physical inactivity among them. This

could assist in implementing appropriate interventions at schools to increase levels of physical activity.

1.3 PROBLEM STATEMENT

Physical activity levels are decreasing among young people, especially female adolescents in countries around the world, –more so in poor urban areas. It is estimated that less than one-third of young people are sufficiently active to benefit their present and future health and well-being (WHO, 2008a). Many factors such as lack of time, poor motivation, inadequate support and guidance, lack of safe facilities and limited accessibility to physical activity facilities influence the participation of young people in physical activity (WHO, 2008b). Similar to what happens internationally, female adolescents in Rwanda are not physically active and the knowledge on the benefits of physical activity is not known. To date, no study has been done to determine Rwandese high school girls' perceptions of environmental and social support of physical activity which may increase their awareness about it and thus increase the promotion of a healthy lifestyle.

1.4 RESEARCH QUESTIONS

- What is the level and type of physical activity among female high school learners?
- What are high school girls' perceptions of social support of physical activity in and outside of the school environment?
- Do perceptions of support for physical activity influence their participation in physical activity?

1.5 AIM OF THE STUDY

The aim of the study is to determine high school girls' perceptions regarding environmental and social support for physical activity.

1.6 OBJECTIVES

2. To determine the patterns of physical activity participation (vigorous and moderate) among high school girls in Kigali, Rwanda.
3. To determine high school girls' perceived social support for physical activity in the school environment.
4. To determine high school girls' perceived social support for physical activity outside the school environment (i.e. family and friends).
5. To determine high school girl's enjoyment of physical activity and physical education.
6. To establish the association between perceived support for physical activity and patterns of participation.

1.7 SIGNIFICANCE OF THE STUDY

One of the strategies suggested by the World Health Assembly was that the health sector be called upon to take up the leading role in making policy decisions through the Global Strategy on physical activity to address the growing burden of chronic diseases (WHO, 2008c). The impact of these diseases influences physiotherapy services as they are indicated in the prevention and rehabilitation process. Most of the challenging chronic health problems that might result in disabilities rehabilitated by physiotherapists are caused by risk factors due to physical inactivity (Australian Physiotherapy Association, 2008). The physiotherapists' role in public health promotion, disease prevention and education in primary health care therefore comes into effect.

Studies done in Rwanda regarding levels of physical activity among high school learners indicate that levels might be low. The physiotherapists in Rwanda will be challenged and helped by the results of this study to develop more preventive measures of such chronic health problems rather than rehabilitating them. This will be done through promoting physical activity, which is likely to prevent chronic conditions including back pain, chronic diseases of lifestyle and some disabilities. In addition, adolescence is the best time for learning behaviours that are likely to persist in adulthood (Bradley, McMurray, Harrell, Deng & Shiging, 2000). Consequently, there is a need for intervention programmes. Physiotherapists, with their expertise in body mechanics, anatomy, and physiology can play a vital role in helping people develop appropriate and safe exercise programmes (Wilson, 2002). But for intervention programmes to be successful, we need to pay attention to environmental and social factors related to physical activity. Therefore the results may have implications for school-based programmes and recommendations of this study may serve as a strategy to raise awareness about the importance of physical activity among the youth in general, but the girls specifically.

1.8 DEFINITION OF KEY TERMS

Physical activity: This is any bodily movement produced by skeletal muscles that results in energy expenditure and is positively correlated with physical fitness (Centres for Disease Control and Prevention, 2002).

Health Promotion: It is the process of enabling people to increase control over, and to improve, their health; to reach a state of complete physical, mental and social well-being, (Coulson, Goldstein & Ntuli, 2002).

Adolescents: This refers to the young population between the ages of fourteen and twenty-five years for males and twelve to twenty one years for females (Spear & Kulbok, 2001).

High school learners: High school learners are learners aged 13-18 years who attend a secondary school.

Exercise: is defined as a physical activity that is planned, structured, repetitive, with the objective of improving the general physical fitness though the increased in strength, endurance and flexibility (Durstine & Moore, 2003).

1.9 ABBREVIATIONS USED IN THE STUDY

WHO:	World Health Organization
CDL:	Chronic Diseases of Lifestyle
CDC:	Centers for Disease Control and Prevention
PA:	Physical Activity
PE:	Physical Education
VPA:	Vigorous Physical Activity
MPA:	Moderate Physical Activity
MMWR:	Morbidity and Mortality Weekly Report
SPSS:	Statistical Package for Social Sciences
YRBS:	Youth Risk Behavior Survey

1.10 OUTLINE OF THESIS

Chapter one describes the background of the study, including the benefits of physical activity and levels of physical activity among female adolescents. It highlights how the WHO has put forward physical activity to be one of the strategies to reduce the burden of CDLs due to sedentarism or physical inactivity. The chapter highlights the motivation for the study, which is due to the fact that most of declines in physical activity occur among adolescents as they age. Finally, the statement of the problem, aim and objectives, significance of the study and lastly the definitions of key terms are all given by this chapter

Chapter two presents a review of relevant literature to understand the need for the study. It focuses on the health benefits of physical activity to health, the recommended levels of physical activity and the current guidelines of physical activity participation for the youth. The prevalence of physical inactivity among adolescents and the consequence of physical inactivity are also reviewed. Factors influencing physical activity among adolescent girls was reviewed, the factors included physiological, physical environment, weather, social and role of physiotherapist in the promotion of physical activity w also reviewed.

Chapter three considers the methodological issues relevant to the study. It also provides an overview on the study design. Other aspects discussed in this chapter include the research setting, procedures, study sample and data analysis.

Chapter four contains the results of the statistical analysis of the data that attempt to answer the objectives stated in the chapter one.

Chapter five presents the discussion of the results presented in the chapter four. The limitations of the study are also outlined.

Chapter six draws conclusion based on the study. It also attempts to make recommendations based on the study.

CHAPTER TWO LITERATURE REVIEW

2.1 INTRODUCTION

This chapter reviews literature regarding the benefits of physical activity specifically among youth and girls in particular. It highlights the levels of physical activity among youth with emphasis on girls as well as the factors that influence their participation in physical activity. The role of the school environment in promotion of physical activity is also described and lastly the role of physiotherapy in health promotion.

2.2 GUIDELINES ABOUT PHYSICAL ACTIVITY FOR YOUTH

Lifestyle physical activity has deviated from the traditional methods of exercise prescription by advocating accumulated, unstructured activities of daily living, according to individual preference and convenience (Pescatello, 2001). Recent Canadian guidelines suggest that children should engage in 60 minutes or more of active play daily, alternating between bouts of activity and rest periods as needed (Canadian Fitness and Lifestyle Research Institute, 2000). The guidelines further recommend that adolescents should engage in three or more sessions per week of activities that last 20 minutes or more at a time, that require moderate to vigorous levels of activity participation (Kibet, 2006).

Katzmarzyk and Arden (2004) in their review of physical activity in Canadian children and youth, stated that the development of guidelines for physical activity levels in children and youth does not have a long history, primarily due to the fact that children and youth have traditionally been more active and presumed to be healthier than adults. They further summarized physical activity guidelines used up to 2002 internationally as shown in Table

2.1 below.

Table 2.1 Physical activity Guidelines for children and youth

<i>Organization</i>	<i>Year</i>	<i>Recommendation</i>
1993 Seattle Conference of Pediatric Exercise Scientists	1993	Daily physical activity as part of lifestyle, plus vigorous physical activity for at least 20 min/session, 3 times/ week.
US Surgeon General	1996	30 min of moderate physical activity on most, preferably all, days of the week.
UK Health Education Authority	1998	60 min of at least moderate-intensity physical activity per day, or, for those doing little activity currently, at least 30 min of at least moderate-intensity activity, plus activities to enhance muscular strength, flexibility and bone health at least 2 times/week
US National Association for Sport and Physical Education	1998	30–60 min of active play or sustained physical activity on all, or most, days of the week, plus accumulation of >60 min, and up to several hours of activity per day is encouraged.
Australian Commonwealth Department of Health and Aged Care	1999	30 min of moderate activity on most, preferably all, days of the week, plus vigorous exercise for 30 min/d, 3–4 times/week.
Health Canada	2002	Children and youth should increase the time they currently engage in moderate or vigorous physical activity by at least 30 min/d (in periods at least 5–10 min long), progressing to ≥90 min more of increasingly vigorous physical activity, plus decrease the time spent doing sedentary activity (television, video games, Internet) by at least 30 min/d, eventually decreasing by ≥90 min the amount of time spent daily on these activities.

Katzmarzyk & Arden (2004)