LEARNERS' PERCEPTIONS AND PRACTICES ON PHYSICAL ACTIVITY: A CASE OF SELECTED REGULAR AND INTEGRATED SCHOOLS IN NAIROBI COUNTY, KENYA

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E55/12032/2009

A RESEARCH THESIS SUBMITTED IN PARTIAL FULFILLMENT OF THE REQUIREMENTS FOR THE AWARD OF THE DEGREE OF MASTER OF EDUCATION (SPECIAL NEEDS EDUCATION) IN THE SCHOOL OF EDUCATION, KENYATTA UNIVERSITY

FEBRUARY, 2016
DECLARATION

This thesis is my original work and has not been presented for award of degree in any other university, or any other award.

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DEDICATION

This work is dedicated to my wife Nelly and our children Patience and Innocent.
iii

ACKNOWLEDGEMENT

This thesis is a product of contributions by persons from various backgrounds whose inputs did not only make it possible for the successful completion of the study but provided numerous learning experiences to me. Though every contribution that I received was sincerely accepted, special mention goes my supervisors Professor Geoffrey Karugu, Professor James Otiende and Dr Maria Louisa Bruselious-Jensen for their patience, motivation and encouragement as I struggled to learn and piece this work together. Special acknowledgement to my research mentor Dr (Hon) Rachael Nyamai-Mavuui who supervised and guided me to shape this study at its formative stages. Special thanks to Dr Jens and Dr Neils Larsen for their insights and guidance in developing this cross disciplinary study. Special thanks to Steno Health Promotion Centre - Denmark for facilitating this study. I will remain indebted to Dr. Nelly Otube and Dr. Chomba Wa-Munyi who read, encouraged and gave their invaluable advice to improve the study proposal. To all those who gave their time as participants I say a big thanks. To all persons and institutions who made this study possible but your singular mention has not been done, I deeply acknowledge you. Thanks.
TABLE OF CONTENT

DECLARATION ............................................................................................................................ i
DEDICATION ............................................................................................................................... ii
ACKNOWLEDGEMENT ............................................................................................................... iii
TABLE OF CONTENT ................................................................................................................ iv
LIST OF TABLES ........................................................................................................................... ix
LIST OF FIGURES ...................................................................................................................... x
LIST OF PLATES ........................................................................................................................ xi
ABBREVIATIONS AND ACRONYMS ......................................................................................... xii
ABSTRACT ................................................................................................................................... xiv

CHAPTER ONE: INTRODUCTION ............................................................................................... 1
1.0 Introduction ........................................................................................................................... 1
1.1 Background of the Study ....................................................................................................... 1
1.2 Problem Statement ............................................................................................................... 4
1.4 Objectives of the Study ....................................................................................................... 6
1.5 Research Questions ............................................................................................................. 7
1.6 Significance of the Study .................................................................................................... 7
1.7 Scope .................................................................................................................................... 8
1.8 Limitations of the Study ..................................................................................................... 8
1.9 Assumptions of the Study ................................................................................................... 9
1.10 Theoretical Framework .................................................................................................... 9
1.11 Conceptual Framework ................................................................................................... 11
1.12 Operational Definition of Terms ..................................................................................... 15

CHAPTER TWO: LITERATURE REVIEW .................................................................................. 17
2.0 Introduction ......................................................................................................................... 17
2.1 Physical Activity Opportunities in Schools ......................................................................... 17
2.2 Children's Practices in Physical Activity ............................................. 19
2.3 School Provisions for Physical Activity ............................................. 23
2.3.1 Opportunities for Physical Activity ............................................. 25
2.4 Constraints in Accessing Physical Activity Opportunities ................. 27

CHAPTER THREE: METHODOLOGY ......................................................... 32

3.1 Introduction ....................................................................................... 32
3.2 Research Design .............................................................................. 32
3.3 Variables ......................................................................................... 33
3.3.1 Independent Variables ............................................................... 33
3.3.2 Dependent Variables .................................................................. 33
3.3.3 Extraneous Variables .................................................................. 34
3.4 Location of the Study ...................................................................... 34
3.4.1 Descriptions of Locations of the Sampled Schools ....................... 35
3.4.1.1 EL1 Primary School ............................................................... 35
3.4.1.2 EL2 Primary School ............................................................... 35
3.4.1.3 EL3 Primary School ............................................................... 36
3.5 Target Population ............................................................................ 36
3.6 Sampling Technique and Sample Size ............................................ 37
3.6.1 Sampling Technique .................................................................. 37
3.6.2 Sample Size ............................................................................... 38
3.7 Research Instruments ...................................................................... 39
3.7.1 Observation ............................................................................... 39
3.7.2 Focus Group Discussions (FGDs) ............................................... 39
3.7.3 Pedometers ............................................................................... 39
3.7.4 Key Informant Interviews (KII) ................................................. 40
3.8 Pilot Study .................................................................................................................. 40
  3.8.1 Validity .................................................................................................................. 40
  3.8.2 Reliability .............................................................................................................. 41
3.9 Data Collection Techniques ...................................................................................... 41
3.10 Data Analysis ............................................................................................................ 42
3.11 Logistical and Ethical Considerations .................................................................... 42

CHAPTER 4: DATA PRESENTATION, ANALYSIS AND DISCUSSION ............. 43
4.1 Introduction ................................................................................................................. 43

4.2 Learners Perceptions of the Adequacy of Physical Activity Opportunities in
  Schools ............................................................................................................................ 43
  4.2.1 The Physical Environment in Schools ................................................................. 44
  4.2.2 Physical Facilities and Equipment ...................................................................... 47
  4.2.3 Availability of Time for Physical Activity ............................................................ 49
  4.2.4 Utilitarian PA in School ....................................................................................... 50
  4.2.5 Opportunities for LWSN .................................................................................... 51

4.3 Learners Participation in PA in School, Home and the Neighbourhood .............. 53
  4.3.1 Environments Attracting Physical Activity .......................................................... 53
  4.3.2 Learners' Trends of Engagement in PA ................................................................. 54
  4.3.3 Physical Activities Engaged in by Learners ......................................................... 58
  4.3.4 Practices for LWSN ......................................................................................... 62

4.4 Schools' Practices in Provision of Adequate PA Opportunities to Learners ......... 65
  4.4.1 School Routine .................................................................................................... 65
  4.4.2 School Programmes and Provisions for PE/PA ............................................... 68
  4.4.3 Teachers' Enthusiasm towards PE and PA ....................................................... 72
  4.4.3.1 Learners Perceptions of Teachers' Enthusiasm on PA and PE .................... 72
  4.4.3.2 Teachers' Self Reflections on their Enthusiasm in PA .................................. 75
  4.4.4 School Provisions for LWSN ........................................................................... 79
4.5 Learners’ Constraints in Accessing Physical Activity Opportunities

4.5.1 Learners Observations of their Constraints in PA

4.5.2 Constraints for LWSN

4.5.2.1 Observations by LWSN on the Factors that Limited their Access to PA

CHAPTER 5: SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

5.1 Introduction

5.2 Summary

5.2.1 Adequacy of PA Opportunities to Learners in School

5.2.1.1 The Physical Environment

5.2.1.2 Availability of Time for PA

5.2.1.3 Utilitarian PA for Learners in Schools and Home

5.2.1.4 Physical Facilities and Equipment

5.2.1.5 PA Opportunities for LWSN

5.2.2 Learners Level of Engaging in PA

5.2.2.1 Physical Environments Encouraging PA

5.2.2.2 Learners’ Trends of Engaging in PA

5.2.2.3 Physical Activities Engaged in by Learners

5.2.2.4 PA Levels for LWSN

5.2.3 School Practices in the Provision of Adequate PA Opportunities to Learners

5.2.3.1 School Routines and Practices

5.2.3.2 School Provisions for PA

5.2.3.3 Teachers Enthusiasm in PA and PE

5.2.4 Learners Constraints in Accessing PA Opportunities

5.2.4.1 Learners’ Opinions on Constraints to PA

5.2.4.2 Constraints for LWSN
LIST OF TABLES

Table 4.1: Average Step Counts at Home..........................................................54
Table 4.2: Average Step Counts in School.........................................................54
Table 4.3: Average Daily Step Data (School, Home and Neighbourhood)...........62
Table 4.4: Step Data for Regular learners, and LWSN.......................................64
Table 4.5: Comparison between Regular Learners and LWSN............................64
LIST OF FIGURES

Figure 1.1 Conceptual Framework ............................................................................. 13
Figure 4.1: Comparison between Regular Learners and LWSN .............................. 65
LIST OF PLATES

Plate 1: Barbed wire around the school assembly ground at EL1 School. ..........46
Plate 2: A Dusty Field, and a Limited and Unsafe Playground at EL1 and EL2
    Schools Respectively. ...........................................................................47
Plate 3: A Boy with an Improvised Football Ball........................................48
Plate 4: An Expansive Golf Course Adjacent to EL2 School.........................57
Plate 5: Girls Playing Katolo on a Pavement at EL2 School..........................59
Plate 6: Grassed playground at EL3 ..............................................................70
Plate 7: An Open Area in EL2 Opposite the LRR .........................................84
Plate 8: Part of EL2 School Playground .......................................................88
Plate 9: A Child Begging for Food at EL1 School. .......................................90
### ABBREVIATIONS AND ACRONYMS

<table>
<thead>
<tr>
<th>Abbreviation</th>
<th>Description</th>
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<tbody>
<tr>
<td>AAP</td>
<td>American Academy of Pediatrics</td>
</tr>
<tr>
<td>BMD</td>
<td>Bone Mineral Density</td>
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<tr>
<td>BMI</td>
<td>Body Mass Index</td>
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<tr>
<td>CEFPI</td>
<td>Council for Education Facilities Planners Association</td>
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<tr>
<td>CHD</td>
<td>Chronic Heart Disease</td>
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<td>CHF</td>
<td>Chronic Heart Failure</td>
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<tr>
<td>CHP</td>
<td>Chronic Health Problem</td>
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<tr>
<td>COPD</td>
<td>Chronic Obstructive Pulmonary Disorder</td>
</tr>
<tr>
<td>DH</td>
<td>Department of Health</td>
</tr>
<tr>
<td>DHT</td>
<td>Deputy Headteacher</td>
</tr>
<tr>
<td>DTE</td>
<td>Diploma Teacher Education</td>
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<tr>
<td>EFA</td>
<td>Education for All</td>
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<tr>
<td>EL</td>
<td>Economic Level</td>
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<tr>
<td>EST</td>
<td>Ecological systems Theory</td>
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<tr>
<td>FGD</td>
<td>Focus Group Discussion</td>
</tr>
<tr>
<td>GoK</td>
<td>Government of Kenya</td>
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<tr>
<td>HT</td>
<td>Headteacher</td>
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<tr>
<td>KCPE</td>
<td>Kenya Certificate of Primary Education</td>
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<tr>
<td>KIE</td>
<td>Kenya Institute of Curriculum Development</td>
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<tr>
<td>KNH</td>
<td>Kenyatta National Hospital</td>
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<tr>
<td>LWSN</td>
<td>Learners with Special Needs</td>
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<tr>
<td>LRR</td>
<td>Learning Resource Centre</td>
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<tr>
<td>MoE</td>
<td>Ministry of Education</td>
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<tr>
<td>MoH</td>
<td>Ministry of Health</td>
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<tr>
<td>Acronym</td>
<td>Full Form</td>
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<td>---------</td>
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<tr>
<td>MPHSS</td>
<td>Ministry of Public Health and Sanitation</td>
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<td>NASPE</td>
<td>National Association for Sport and Physical Education</td>
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<tr>
<td>NCSL</td>
<td>National Conference of State Legislatures</td>
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<tr>
<td>NICE</td>
<td>National Institute for Health and Clinical Excellence</td>
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<td>NSHG</td>
<td>National School Health Guidelines</td>
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<td>PA</td>
<td>Physical Activity</td>
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<td>PCEA</td>
<td>Presbyterian Church of East Africa</td>
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<tr>
<td>PE</td>
<td>Physical Education</td>
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<tr>
<td>PLWD</td>
<td>Persons Living With Disability</td>
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<td>PTE</td>
<td>Primary Teacher Education</td>
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<tr>
<td>SIMSC</td>
<td>School Instructional Materials Selection Committee</td>
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<tr>
<td>SDT</td>
<td>Self Determinism Theory</td>
</tr>
<tr>
<td>QAS</td>
<td>Quality Assurance and Standards</td>
</tr>
<tr>
<td>QAS</td>
<td>Quality Assurance and Standards Officer(s)</td>
</tr>
<tr>
<td>UAE</td>
<td>United Arab Emirates</td>
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<td>UAP</td>
<td>Utilitarian Physical Activity</td>
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ABSTRACT

A lifestyle that embraces physical activity promotes good health, improved mortality rate, ability to perform personal daily duties with undue strain, enhanced self esteem, improved academic achievement and better late age life. This study explored the perceptions and practices of learners on physical activity. Analysis of the learners’ perceptions on the adequacy of physical activity opportunities in schools, their practices in engaging in physical activities, the schools’ practices in providing adequate environment for physical activity, learners’ constrains in accessing physical activity opportunities in schools and effects of physical activity on academic achievements were the objectives that the study aimed to achieve. The study was modeled along Self-Determination Theory and Ecological Systems Theory. The approach used in this study was mainly qualitative with some limited use of quantitative approach. The study employed a case study methodology to reach an in-depth understanding of the subject matter. The study was carried out within Nairobi County targeting a cross-section of socio-economic strata of low, middle and high class. The study targeted class six pupils. Views about learners were also gathered from teachers and parents. Key Informant Interviews, focus group discussions, pedometers, and observations methods were used in collecting the desired data. Validity and reliability were ensured through piloting and triangulation of data sources. Data was coded according to themes derived from the study objectives. Data was analyzed descriptively and thematically. Findings were presented in narratives and simple statistics. The study indicated that learners had interest in PA/PE. In general, schools had limited facilities and equipment for learners use in PA/PE. Teachers engaged learners in academic work during PE and games sessions. Teachers handling LWSN lacked suitable training and skills to teach adapted PE to these groups of learners. The study found out that only 17% of the PE lessons were taught. Boys engaged more in PA than girls. Boys engaged more in PA in school while girls' were more active in the home and neighbourhood environment. Learners from the middle SES background engaged less in PA than those from the lower and upper economic backgrounds. Limited time, inappropriate attire, over attention to academic work, risks of injuries and security were issues that learners perceived to hinder their access to PA. 6 out of 10 (60%) top learners in the class academic ranking were found in the upper third of learners best ranked in PA level. The government through the Ministry of Education should create awareness among parents, teachers, learners and others stake holders in education on the need for PA and its significance on academic achievement. Through the Ministry of Health parents, teachers and learners should be sensitized on the importance of PA in health promotion. Line ministries in the government should develop deliberate affirmative strategies that create barrier free environments for LWSN opportunities in PA.
CHAPTER ONE

INTRODUCTION

1.0 Introduction

This chapter presents the background to the study, the problem statement, purpose of the study, objectives of the study, research questions, significance of the study, scope, limitations of the study, assumptions of the study, theoretical and conceptual frameworks, and operational definition of the key terms.

1.1 Background of the Study

The importance placed on health by the Kenya Educational System is evident in the Eighth National Goal of Education which emphasizes the need for positive attitudes towards good health and need for a healthy environment (KIE, 2004). The Ministry of Education (MoE) in conjunction with the former Ministry of Public Health and Sanitation (MPHS) have outlined the National School Health Guidelines (NSHG) whose purpose is to operationalize the National School Health Policy by providing specific guidelines which ensure that school-age children, teachers, support staff and community members access quality and equitable services for improved health. These guidelines suppose that physically active children perform well in school and promote their health resulting in a healthy and productive population (MPHS and MoE, 2009).

The NSHG recognize children with Special Needs to include; those living in especially difficult circumstances, those with chronic health problems, those with emotional and behavioural difficulties, and the orphaned. These are children who for health reasons are unable to reach their highest possible developmental potential of life due to physical, biological, psychological, social or environmental circumstances.
Chronic health problems which include cardiovascular diseases, metabolic disorders, pulmonary diseases, musculoskeletal disorders and neurological disorders (Booth, Chakravarthy, Gordon, and Spangenburg, 2002), may have seemed alien in children about thirty years ago but have unfortunately caught up with them at a worrying rate towards the turn of the 21st century (WHO, 2000).

According to Booth et al, (2002), research confirms that these chronic health problems can be avoided or mitigated through physical activity. Advances in technology and consequent sedentary lifestyles have led to life threatening lifestyle diseases not only among adults but also among children and youth. Hallahan, Kauffman, and Pullen (2009), affirm that Chronic Health Impairments (CHI) may be prevented by among other things having a healthy diet, lowering obesity and through Physical Activity (PA).

Hallahan et al, (2009) contends that learners with Special Needs (LWSN) have erratic school attendance because of hospitalization, visits to physicians and bed-rests. These cause them to fall behind their age peers in academic achievements despite normal intelligence and motivation. They are usually rejected, feared, pitied or discriminated. The more obvious the physical flaw, the more likely it is for that person to be perceived in negative terms by the public.

According to the National Conference of State Legislation (NCSL) (2006), since 1980, obesity had doubled for children and tripled for adolescents. This accounted for 16% of the US children and adolescents as either overweight or obese with a direct cost implication on medical expenses estimated at $ 75 billion in 2003. In USA,
obesity caused about two thirds of deaths resulting from diabetes and heart diseases as well as 15% and 20% of cancer in men and women respectively (NCSL, 2006). In Iceland, lower Body Mass Index (BMI), PA and good dietary habits were all associated with higher academic achievements, while self-esteem was negatively influenced by increasing levels of BMI (Kristjansson, Alfegier, Sigfusdottin, Inga, Allegrante and John, 2000). “THE FAT TRUTH” campaign launched in 2009 in the United Arab Emirates (UAE) linked obesity to lack of exercise and increased consumption of fatty and sugary food items. Between 1990 and 2000, countries in the European Union reported obesity growth rates from 10% to 27% in men and 10% to 38% in women. Childhood obesity in Canada between the years 1989 and 2004 increased from 2% to 10% and from 2% to 9% among boys and girls respectively. In China, this obesity trend was attributed to changing dietary habits and technological advancements which have led to a decline in PA, (UAE, 2009).

In Africa, studies indicate that being overweight or obese has increased by 35% since the early 1990s (Dunhan, 2009). This was attributed to greater access to cheap, high fat and sugar laden foods in urban areas in sub-Saharan Africa. The increase was seen to be greater among poor people although the number of wealthy people who are overweight was higher. In South Africa, 64% of the black population and 50% of the white population are overweight or obese as reported by the International Association for the Study of Obesity (Dunhan, 2009). In Nigeria, some tribes discourage women from engaging in sports and encourage them to “fatten up” before marriage as a sign of beauty. A survey by World Health Organization (WHO) (2000) shows obesity rates in Western Africa to be 10% of the population with women rate being three times more than that of men.
In Kenya, 16.7% of girls and 6.8% of boys in urban dwellings are overweight (Onywera, 2010, a). Medics have observed an increasing trend in disease prevalence among children, attributing this to obesity and lack of physical activity. Onywera (2010, a) reports that studies at Kenyatta National Hospital (KNH) have found that rheumatoid arthritis was increasingly attacking younger Kenyans, especially those lacking in PA.

Availability of a suitable outdoor play environment and appropriate and stimulating play materials depend mostly on the teachers’ and parents’ choice. The school and home environments created by the teachers and parents may dictate the levels at which learners engage in PA. With many more people in their twenties and thirties succumbing to chronic health problems, medical professionals are concerned that unless children are encouraged to exercise early in life, they risk setting the foundations for unhealthy adulthood. Children’s Bill of 2001 (GoK, 2002), advocates that children need to be listened to, because their own experiences have influence on the health decisions that they may make on a daily basis.

Informed of the significance of PA as an agent in promotion of a healthy living, improving academic performance and a means to mitigate the prevalence of chronic health impairments/ disability (Booth, 2002), this study explored the perceptions and practices of learners towards physical activity.

1.2 Problem Statement

As Kenya steadily rises in economic growth, advancement in technology and improved incomes per household, tendencies of drifting towards sedentary life are on
the increase. Parents in urban centers do not only opt for motor transport for their children to school but also engage hired labour to do most of the household chores. In Kenya, walking to school has often been associated with poverty causing parents to avoid it where possible. Most urban schools in Kenya have limited playgrounds a situation which compromises PA opportunities for learners. Schools have placed a lot of emphasis on learners' academic achievement. Time allocated for PE and games is spent for regular classroom teaching. Consequent to improved per capita income in Kenya, a lifestyle drift into consuming polished and fast foods has been on the rise. These foods are rich in energy and require an active lifestyle to ensure that consumers (learners) do not have positive energy balance in their body which may likely cause obesity and possible health impairments.

Studies have demonstrated how various disabling health conditions can be avoided or controlled through PA. However, this information has not dissuaded the continuity of sedentary lifestyle amongst the Kenyan population where 16.7% and 6.8% of girls and boys respectively in urban dwellings are overweight. Research has indicated an increase in cases of chronic diseases among younger Kenyans attributed to physical inactivity.

Practices and environments that inculcate PA as a lifestyle among learners would be an enhancing component for sustainable good health. Learners' knowledge on factors that may thwart the promotion of this healthy practice and its sustainability is vital. Studies have been done on the prevalence of obesity and overweight, effects of exercise on diabetic patients and the effects of exercise among learners with hearing impairments in Kenya. A study that builds on this knowledge to create understanding
on how learners with or without impairments perceive and engage in PA within the school, home and their neighbourhood environments is vital. Learners' perspective may introduce ideas on how best to deal with the challenges of creating lifelong lifestyles in children that ensure a healthy adult population. Decisions on improving the natural and built environments within the learners' habitat may be realized through such a study. Since "Childhood" is "adults' pasts" (old age is a product of childhood life), it would therefore translate into a healthier population reduced cases or chronic health impairments.

1.3 Purpose of the Study

The purpose of this study was to evaluate learners' perceptions and practices in regular and integrated schools on PA as a means to attaining healthy living in some selected schools in Nairobi County.

1.4 Objectives of the Study

This study was guided by the following objectives:

a. Evaluate learners' perceptions on the adequacy of physical activity opportunities in schools.

b. Finding out the learners' level of participation in physical activities in school, home and the neighbourhood.

c. Analyze learners' views on the schools' practices in provision of materials and facilities for physical activity.

d. Identification of learners' constraints in accessing physical activity opportunities in their school, home and the neighbourhood.
1.5 Research Questions

This study sought to answer the following questions;

a. What are the perceptions of learners on the adequacy of physical activity opportunities in the schools?

b. What are the learners' level of participation in physical activities in school, home and the neighbourhood?

c. How do learners view the school practices in provision of materials and facilities for PA to them.

d. What constraints do learners face in accessing physical activity opportunities in school, home and the neighborhood?

1.6. Significance of the Study

The study findings inform policy developers and implementers in the education and health sectors on the learners' perceptions and practices on PA. The study exposes the limiting opportunities at the learners' disposal to actualize their PA needs. MoH and MoE may consider for adoption recommendations from the study which address the factors that lead to childrens' sedentary lifestyle. Schools and parents may benefit from the findings which explain the learners' PA trends in schools and at home. The findings may be used in developing awareness on the importance of PA in health promotion and general mitigation of chronic health conditions. Policy developers may use the study recommendations in creating environments and influencing practices of the general public towards healthy and active lifestyles. The study forms a basis for further relevant research and upon which studies in other urban settings may be done.
1.7 Scope

The study appreciated the existence of different ways of promoting health among differing demographics. However, this study focused on health promotion through physical activity among learners in regular and integrated primary schools. However, for purposes of interviews and data collection using pedometers, the researcher used class six learners because of their relatively long interaction with the school environment and their better ability to comprehend interview questions (Nyamai, 2005). Learners in class six (12 years of age) lie on a transition period just before adolescence when engagement in play and PA begins to decline, which made them suitable for the study. Though sedentary lifestyle is predominant in most urban areas, Nairobi County was purposively selected for the study. The study involved three primary schools distributed over the socio-economic strata of low, middle and high income levels coded as EL1, EL2 and EL3 respectively.

1.8 Limitations of the Study

As expected of any study, challenges were inevitable. Being in an urban setting, most parents were busy during the day which was a challenge to have interview sessions with them at such times. The study required ample time to comprehensively come out with the desired results; this was a limitation considering the time frames set. Being a case study, the findings were typical of schools in Nairobi County but could be generalized with caution to schools in other urban settings and a fair mirror to others in the countryside.
1.9 Assumptions of the Study

The study assumed the following circumstances would prevail throughout the study period.

a) That the school administration would co-operate and allow the researcher to undertake the study successfully.

b) That teachers, parents and learners would be willing to cooperate with the researcher.

c) That risk of chronic health impairments due to physical inactivity was real to all the learners, teachers, and parents in general.

1.10 Theoretical Framework

The study was anchored on the Self-Determination Theory (SDT) by Deci and Ryan (1985), and Ecological Systems Theory (EST) by Bronfenbrenner (1979). SDT is a theory concerned with the development and functioning of personality within social contexts. SDT encompasses concepts such as free will, freedom of choice, independence, personal agency, self-direction and individual responsibility; it focuses on the degree to which human behaviours are made by personal choice. It affirms that people are active organisms with innate tendencies towards psychological growth and development and that they strive to master challenges and to integrate experiences into a coherent sense of self. According to SDT, these innate tendencies do not operate automatically but depend on the extent to which the social context provides basic psychological needs. If the social environment satisfies these needs, a person will function effectively and develop in a healthy way, but to the extent the needs are thwarted, a person will function sub-optimally and will show evidence of ill health.
Bronfenbrenner’s (1979) EST analyses the social factors that influence the development of children. These factors according to EST are tiered around the epicenter which is the child. Factors that have direct contact and most close to the child are referred to as microsystems. They comprise of the family (home) and the school. The relationship at this mesosystem level have impact in two directions (Berk, 2000), both away from the child and towards the child. This means that children can either affect or be affected by the social structures close or distant from them. Factors in other levels indirectly affecting the child and which Bronfenbrenner (1979) refers to as exosystem, macrosystem and chronosystem respectively represent the larger social, structural, economic, political and cultural environments. These may be referred to as the child’s neighbourhood.

Evidence from previous relevant studies concur with these theories. According to American Academy of Paediatrics (AAP) 2009), supervised school yards led to an increased level of PA and less television and video game use. National Institute for Health and Clinical Excellence (NICE) (2008) found that parents’ concerns about their childrens’ levels of inactivity were largely due to environmental inadequacies. Parents raised issues with community security, motor vehicle traffic and lack of walkways, among other environmental concerns. Their concerns addressed the effect of the neighbourhood on the learners’ P.A levels. The environmental concerns could be government policies, religious beliefs and or cultural orientations of a society. Incidental PA was seen to increase when people modified the environment in which they lived while ample play areas increased participation in PA in elementary schools. The concept of the ‘walking school bus’ was another influence that changed the sedentary behavior and encouraged children to walk to school in USA (AAP, 2009)
while creation of the safe routes to school in California was noted to increase the number of children who walked.

According to AAP (2009), a pediatrician’s recommendation that a patient gets regular physical activity loses its salience if this patient’s everyday world lacks opportunities to walk, play and run. This perception was shared by Schmid (1995) in NICE, (2008) who noted that it is unreasonable to expect people to change their behaviour when the environment discouraged such changes. The two statements explain learners’ dependence on what the family, the neighbourhood and the school provide; for them to behave and become. The three institutions above shape the learners perceptions and practices through the habitat they create for them.

Nevertheless, the learners’ will and motivation also influence the environment to meet their PA needs. In school, learners supplement the available play materials by improvisations like skipping ropes, polythene-bag balls, innovative play activities and games that utilize the available space and time as well as bridge the gap of their teachers’ absence during games and PE. The learners’ will to engage in utilitarian PA like walking to school and markets demonstrates their will for self-determination. These two theories (SDT & EST) converge on the agreement that children have the potential to achieve desirable human behaviours but within a supportive social framework.

1.11 Conceptual Framework

This conceptual framework works to explain the relationship between the various factors that influence childrens’ practices and perceptions on physical activity.
Learners have the potential to map their lifestyle (Deci and Ryan, 1985) but the social settings which include family, neighbourhood and the school and other intervening factors actualize or thwart these potentialities (Bronfenbrenner, 1979).

Learners' engagement in PA is influenced by their age, gender, the degree of motivation and their competencies in performing some specific physical activities. However, learners have limited control over the intervening variables. What they practice and how they perceive it is a product of their interaction with the school, the family and their neighbourhood. The three institutions are composed of subsets that influence and determine how learners interact with them. The ecosystem in which all these players operate gives room for them to influence each other bringing forth an intricate web of interaction.

These relationships and interactions may yield to learners who are motivated and engage in an active lifestyle thus reaping the benefits of good health, improved physical fitness, high self-esteem, improved physical performance, better academic achievements, low mortality rate and quality old age. Inversely, undesirable influences from factors in the systems may cause learners to embrace a sedentary lifestyle which will yield health impairments, poor physical fitness, low self-esteem, declined physical performance, low academic achievements, high mortality rates and a frail old age which would amount to brooding disability.
**FAMILY**
- Parents
- Siblings
- SES
- Family values

**SCHOOL**
- Peers
- Teachers
- Curriculum practices

**NEIGHBOURHOOD**
- Policies
- Play areas
- Culture

**SEDENTARY LIFESTYLE**
- Health impairments
- Poor physical fitness
- Low self esteem
- Declined performance
- Low academic achievements

**ACTIVE LIFESTYLE**
- Sustained health
- Physical fitness
- High self esteem
- Improved performance
- Improved academic achievements

Fig 1.1 Conceptual Framework

The conceptual framework above shows the learner (child) as the epicenter of an ecological system within which PA is the variable that is being influenced. The learners' gender, their physical ability (competence: which could be as a result of physical impairment), extrinsic and intrinsic motivation and the learners' age determine how the learner influences or is influenced by the mesosystem. A positive interaction will nurture healthy active lifestyle and better academic achievements while a negative interaction could result in chronic health impairments, low self esteem and low academic achievements.
1.12 Operational Definition of Terms

**Brooding**: To nurture (consciously or unconsciously) habits and environments that gradually influences the end result of a process.

**Brooding Disability**: Nurturing habits and environments (consciously and or unconsciously) that gradually cause loss or reduction of functional ability in persons.

**Disability**: Any loss or reduction of functional ability to perform an activity in the manner or within the rage considered normal for human beings within a cultural context.

**Health**: A state of complete physical, mental, and social well being, not merely the absence of disease or infirmity.

**Health Education**: The process of instruction and acquisition of health knowledge aimed at increased awareness of self, change of attitudes and acquisition of skills and to ensure individual and communal well being.

**Learners’ Perceptions of PA**: The general understanding by the learner about what PA entails and its significance to them.

**Learners’ Practices of PA**: The general activities/exercises that learners engage in that exert the body energy expenditure beyond resting condition.

**Mean Score Syndrome**: A unreasoned desire to by teachers (and parents to some extent) to have learners post high grades on aggregate in examinations at all costs.

**Mungiki**: A proscribed gang in Kenya operating mainly in Central and Metropolitan regions of the country.

**Neighbourhood**: Other structures (social or physical) outside the school and home environment that impact on the child’s level of physical activity.
Physical Activity: Any force exerted by skeletal muscle that results in energy expenditure above resting condition.

Regular Learner: Learners who do not require any modifications or adaptations for instructional purposes in school.

Special Needs: Inability to reach the highest possible developmental potential of life due to physical, biological, psychological, social or other environmental circumstances.

Orange Book: KIE official catalogue with approved instructional materials purchasable with FPE funds.

Walking School Bus: An organized group of school children who walk to school escorted by an adult(s) to ensure their safety on the way.
CHAPTER TWO
LITERATURE REVIEW

2.0 Introduction

Literature under the study is reviewed under the following subheadings; Physical Activity Opportunities in Schools, Childrens' Practices in Physical Activity, School Provisions for Physical Activity, Constrains in Accessing Physical Activity Opportunities, and Relations between Academic Achievements and Physical Activity.

2.1 Physical Activity Opportunities in Schools

Physical activity is any force exerted by skeletal muscle that results in energy expenditure above resting (WHO, 2000). Children engage in physical activity as part of their daily lives when they travel to school, play around with other children or with apparatus on their own. The physical environment in which a child or an adult lives greatly influences the motivation and choice of physical activity in which to engage. The “built environment” of a community affects childrens’ opportunities for physical activity (AAP, 2009). This type of an environment should address the concerns and risks that dissuade children from engaging in active lifestyle. Such concerns and risks which include automobile traffic, cramped apartments, lack of parks and sidewalks, insecurity, long walks to schools and busy streets may prevent children from getting the physical activity they need to be healthy (Amanda, 2009; AAP, 2009).

Promoting outdoor activity may be reduced by sinking parental fear of crime (Amanda, 2009). Indeed, policies that promote active lifestyles among children and adolescents enable them to achieve the recommended 60 minutes of daily P.A. (AAP, 2009). Research shows that when children attend school in an activity-permissive
environment, they engage more in movement activities than in the traditional school environment (Foster et al., 2008). Environments that encourage utilitarian PA such as bicycling to school are an important part of a child's daily living. This active lifestyle translates into habits that children adapt through adolescence and old age. To achieve this, the environment should be structured so that it allows for a variety of play activities and sport. In Britain, National Institute for Health and Clinical Excellence (NICE) was mandated to give recommendations on creating environments that could best motivate and support PA (NICE, 2008). It came up with the following recommendations:

a. Ensuring that local facilities and services are easily accessible on foot, bicycle and other modes of transport involving PA.

b. Ensuring that pedestrians, cyclists and users of other modes of transport that involve PA are given the highest priority when developing and maintaining streets and roads. This should include people whose mobility is impaired.

c. Widening pavements and introducing cycle lanes.

d. Introduction of traffic-calming schemes to restrict vehicle speed.

e. Creating safer routes to school and improving walking and cycle routes to school.

f. Ensure routes offer convenience, safety and attractive access to work places, homes, schools and other public facilities.

g. Ensure that public open spaces are accessible on foot, bicycle and other modes of transport involving PA and should also be accessible by public means.

h. Ensure public open spaces and public paths are maintained to a high standard, and that they are safe, attractive and welcoming to everyone.

i. Campus sites, hospitals and universities should ensure different parts of the site are linked by appropriate walking and cycling routes.
j. Designers and facility managers should ensure stair cases are designed and positioned to encourage people to use them.

k. Ensure that stair cases are clearly supported and are attractive to use. This could be done by having them well lit and well decorated.

l. The school governing bodies and head-teachers should ensure that the school playgrounds are designed to encourage varied physically active play.

m. Primary schools should create areas that promote diverse individual and group PA.

These recommendations served to back remarks by AAP (2009) that, "a pediatricians recommendation that a patient gets regular physical activity loses its salience if this patient's everyday world lacks opportunities to walk, play and run." This position is also shared by NICE, (2008) in an observation that it was unreasonable to expect people to change their behavior when their environment discouraged such changes. Though recommendations by NICE (2008) may not be fully operationalized in the current African context, it would be imperative for Kenya to learn from these recommendations as it achieves the status of a middle income economy. This study observed how home, the neighbourhood and the school environments worked to provide learners' with PA opportunities.

2.2 Childrens' Practices in Physical Activity

The Children Act 2001, article 17 advocates for a child's entitlement to leisure, play and participation in cultural and artistic activities (Children Act, 2001). In support of this, one of the general objectives of the Primary Schools' Physical Education (PE) is to ensure that learners pursue PE for health, fitness and general growth and
development (KIE, 2004). The congruence of these two documents confirm the significant value placed on PA to learners by legislation and policy.

Studies indicate that PA has a multiplicity of benefits to a persons’ health. Nancy (2011) and Hope (2011) reported of research findings in USA (Harvard School of Public Health and University of California) which found that PA lowers mortality risk on men diagnosed with prostate cancer. The 18 year old study (1990-2008) observed the effect of exercise on 2,705 persons diagnosed with non-metastatic cancer. Both overall death risks and risk of dying from prostate cancer were reduced. The Physical activities reported by the patients included cycling, walking, swimming and running among other activities performed weekly. Both vigorous and non-vigorous forms of PA were found to be beneficial, though lesser workouts gave less positive results. Intensive PA for more than three hours a week reduced the mortality risk by 61% as opposed to those who exercised for less than one hour per week. Men who did more vigorous activities had the lowest chance of dying from the disease, cutting the risk by 60%. Hope (2011), reports that each year, nearly 350,000 British men are diagnosed with prostate cancer while 10,000 die from it. Being the first study of its kind on men with this type of cancer, the researchers concluded their findings as reported by Hope (2011), saying:

We have observed the health benefits at very attainable levels of activity and our results suggest that men with prostate cancer should do some PA for their overall health, even if it is a small amount such as 15 minutes of activity per day of walking, jogging, biking or gardening.

According to Weinston et al (2008), the risk of Coronary Heart Disease (CHD) is independently altered by PA and Body Mass Index (BMI). CHD risk associated with
elevated BMI is considerably reduced by increased PA levels. However, the risk is not completely eliminated reinforcing the importance of being lean and physically active. Weinston et al (2008) in a study of 38,987 women free of cardiovascular disease, cancer and diabetes at baseline in the Women’s Health Study with 10.9 mean years of follow-up found that the individual predictors of the disease were higher BMI and physical inactivity.

Graham (2008) advocates engagement in PA to trim down obesity. He observes that despite passing scores on mandated high stake tests in reading mathematics, science and social studies, parents and health experts are now asking schools to do their part to stem obesity epidemic. In a study conducted by the Medical College of Georgia, School of Medicine in 2008, exercise was shown to have a significant impact on anger expression in children (Onywera, 2010). The study looked at a group of typically sedentary 7-11 year olds who showed aggressive behaviours such as hitting and slamming doors. With exercise, major improvements were realized within 10-15 weeks.

Onywera (2010), reports that there was a significant relationship between academic achievement and physical fitness among 9-14 year olds at racially and economically diverse urban public schools. The odds of passing English and Mathematics examinations were shown to increase in proportion to the number of fitness tests passed. Solmon and Lee (2008) outlines benefits associated with engaging in PA; decreased risks of cardiovascular diseases, Type 2 diabetes and certain kinds of cancer as well as improved mental health. They observe that persons who engage in
physically active lifestyles are likely to live longer and enjoy a higher quality of life during the aging process.

Children who have difficulties executing tasks are at risk for lower perception of competence if they struggle to succeed where others can perform skills easily, this may cause their social status to suffer. The link between competence beliefs and social status can ultimately affect self-esteem (Solmon et al. 2008). The learning environment for children with exceptional abilities must therefore be individualized and appropriate. The Public Law 94-142 requires that education be provided for all students within the least restrictive environment, this includes the provisions for P.E. According to U.S. Department of Health and Human Services (USDHHS) (2000), people with mental health problems are more susceptible to a range of physical health conditions including CHD and diabetes. Lifestyle issues such as smoking and sedentary behaviours in the mental health population contribute to their poor health. Further, some antipsychotic medications have side effects on weight gain leading to increased obesity. This leaves doctors torn between the need for mental health and the risks associated with increased weight gain.

The Department of Health (DH) (2004), asserts that PA does not only contribute to well being, but it is essential for good health. Though not listed DH, (2004) notes that the increase in PA levels in the population will help to prevent or manage over 20 conditions and diseases. This includes CHD, diabetes and some forms of cancer and obesity. It also can help improve mental health as well as helping older people maintain independent lives.
Economic implications associated with physical inactivity cannot be overemphasized. According to 2004 estimates in Britain, DH (2004) points out that physical inactivity cost 8.2 million pounds annually. This included rising cost of treating chronic diseases such as CHD and diabetes. It is also estimated that a further 2.5 billion US dollars each year is spent on dealing with consequences of obesity largely resulting from physical inactivity (DH, 2004). According to NCSL (2006), obesity has doubled for children and tripled for adolescents since 1980. This has resulted to 16% of children and adolescents in USA to be either overweight or obese causing a direct cost implication on medical expenses estimated at $ 75 billion (about 6 trillion Kenya shillings) in 2003. Obesity caused about two thirds of deaths resulting from diabetes and heart diseases as well as 15% and 20% of cancer in men and women respectively (NCSL, 2006).

To mitigate the negative health consequences that young children and adolescents may suffer due to sedentary lifestyle, the study sought to determine how learners engaged in PA within their school, home and the neighbourhoods. This created the basis upon which strategies for intervention on how to improve the PA levels of learners and the youth by the stakeholders and learners themselves would be discussed from an informed position.

2.3 School Provisions for Physical Activity

During the launch of “The Fat Truth Campaign” in the United Arab Emirates (UAE, 2009) Prince Haya remarked:

Our children are the foundation of the future of our society, our commitments as parents, governments and institutions should be to take the right decisions for their long-term good and so give our
children the opportunity to enjoy a better life full of health and energy.

The UAE has 70% and 12% of overweight adults and children respectively. The campaign aimed at calling all the stakeholders in the fight against the rising rates of obesity and physical inactivity, and hence the slogan “Get Involved So They Can Too” (UAE, 2009).

The “built environment” of a community affects children practices in PA. Location of the school and the provisions therein can cause children to engage in PA as part of their daily lives (AAP, 2009). Physical Education (PE) is traditionally thought of as the primary means of offering physical exercise in the school environment. However, studies indicate that only 17% to 22% of elementary schools offer daily PE with a cumulative duration of about 85-98 minutes per week despite the 60 minutes per day in USA as recommended by the National Association for Sport and Physical Education (NASPE) (David, 2008).

The Australian Federal Government in 2005 introduced a legislation requiring all primary and junior schools to provide a minimum of two hours per week for PA to be implemented within the curriculum during class time (Cleland, Dweyer Blizzard and Ven, 2008). This legislation is vital considering the opinions of Corder et al. (2010) that physical activity declines with age and habits so formed during early years will last into adulthood, including prevention of further decline in PA. Malla (2004) points out that 80% of obese children become obese adults. According to Corder et al (2010), 80% of parents of inactive children wrongly thought that their children were significantly active, while 40% of inactive children overestimated their PA levels.
This overestimation may have led to an assumption that all was well therefore, influence the practices that could provide for suitable and adequate environment for activity.

According to McNeil, et al. (2009), there is international commonality in the constraints that are faced in the provision of PE in schools. In their study on the impact and status of facilities, staffing, timetabling and curriculum time that involved 78 primary schools, 74 secondary schools, 12 junior colleges and 474 teachers, McNeil et al. (2009) found out that Singapore had inadequate facilities and equipment, insufficient allocation of time. Primary schools had staff shortage and limited facilities and equipment for PA. PE lessons were found to be both inadequate in number and duration to achieve the desired outcomes of the syllabus. Class sizes were found to be too large for any meaningful learning to occur, hence teachers prioritized management issues instead. This compares to the introduction of Free Primary Education in Kenya which caused a strain to the existing PA facilities in public primary schools. It further decreased the teacher-learner ratio making it difficult to effectively offer individualized instructional attention during PE lessons.

By understanding the entry levels of the schools in providing for the PA needs of the learners, the study was able to make constructive recommendations on better ways of improving PA in schools.

2.3.1 Opportunities for Physical Activity

McNeil et al (2009) indicated that PE in schools may not be sufficient to meet the required PA levels. The school and the community in general should therefore create
an enabling environment that provides for opportunities to engage in incidental or utilitarian PA. These opportunities according to AAP (2009) could be realized by:-

a. Having a neighbourhood design that motivates children and adults to be physically active. This includes positioning homes, school, business, parks and sidewalks within a neighbourhood.

b. Having smaller street blocks.

c. Having a higher residential density.

d. Having access to walkways.

e. Building communities that are more less car dependent to reduce the level of air pollution associated with exacerbation of asthma. Low density sprawl promotes vehicle dependence.

f. Creative design solutions that blend connected streets with green space protected from automobile traffic.

g. Shared outdoor set aside within the heart of a cluster of residence. Entrances of homes face the street and the back entrance faces the shared outdoor spaces which are only accessible to the residents. This separates the recreational areas from traffic and increased sense of supervision while allowing people to walk along the streets to the neighbourhoods.

Though the Kenyan case may not exactly fit into the above recommendations in entirety due to her present economic and development level, there is need to learn from the developed world and prepare not to fall into PA inhibiting environments. Recommendations by NICE (2008) require that school playgrounds be designed to encourage varied physically active play and to create areas that promote individual and group PA. As observed by Graham (2008), PE lessons are viewed as part of the
day that provides for planning time. In Kenya’s primary schools, the MoE through the Kenya Institute of Curriculum Development (KICD) saw the introduction of Life Skills as a subject which took one of the PE lessons from classes 4 to 8. This reduced the learners’ time to engage in PA far below the recommended 60 minutes on all or most days of the week (David, 2008).

In USA, 81% of parents wished PE to be compulsory in schools (Graham, 2008). However, no such study has been done in Kenya hence making it imperative for this study to find out the suitability of the school environments for learners to engage in PA/PE. From the reviewed literature, suitable environments increased the activity levels of learners while the reverse was fundamentally true.

2.4 Constraints in Accessing Physical Activity Opportunities

Physical activity is a global term referring to any bodily movement produced by the skeletal muscle that results in a substantial increase over the resting energy expenditure, whereas physical inactivity or sedentary behaviour can be defined as a state when the body movement is minimal and energy expenditure approximates resting metabolic rate (WHO, 2000). Since PA declines with age (Corder et al., 2010), it is important that habits are formed during childhood that will last into adulthood including prevention of a decline into physical inactivity.

Research has shown that provision of an open-supervised school yard leads to increased levels of PA and less television and video game use (AAP, 2009). In the 1950’s, many states in USA established policies on the size and location of school buildings. The guidelines recommended a minimum acreage of elementary schools to
be at least 10 acres with an extra acre for every additional 100 students. These recommendations from the Council of Education Facilities Planners International (CEFPI) were revised in 2004 and no longer recommend for minimum acreage (AAP, 2009).

In USA, parents' concerns about the danger from traffic and crime have been addressed in many cities by organizing for 'walking school bus'. Groups of school children supervised by volunteer adults walk together through the neighbourhood to 'pick up' other children waiting with their parents at designated 'bus stops' (AAP, 2009). In 1999, California passed the Safe Routes to School Legislation which funded improvements such as pedestrian crossing, sidewalks and bicycle routes. Subsequent data demonstrated that children walked to school more frequently after the improvements were made. This hatched the Federal Safe Routes to School programme in 2005 which emphasized the 'walking school bus', traffic calming and sidewalks improvements (AAP, 2009).

According to Graham (2008), some school principals view PE as the period in the day that provides needed planning time for classroom teachers. Others view it as a break from the rigours of classroom academic work routines that allows children to 'blow off steam' before returning to the classroom. Parents too seem to know very little and largely inaccurate information about their children's PE programme in school (Graham, 2008). However, a study conducted by the National Association for Sport and Physical Association (NASPA) between 2000 and 2004 indicates that 87% of parents with children of ages 6-7 years had positive perception and 81% agreed that PE should be mandatory in schools.
Constraints of achieving significant progress in the teaching of PE in schools has been outlined by Locke and Graber (2008) to include; underprepared classroom teacher, insufficient time provided in the school schedule and absence of knowledge base for the design of programmes that influence subsequent lifestyles. They further contend that whether tacit or explicit, there is growing expectation among both professionals and the public that a good PE programme will set children firmly on the path to healthy lifestyle as adults.

According to NICE (2008), increasing PA levels in a population helps to prevent or manage a myriad of health conditions and diseases. These include CHD, diabetes, and some forms of cancer. It helps improve mental health and also helps older people to maintain independent and better quality lives. AAP (2009) observes that in 1969, 40% of all American children walked to school. Currently, only about 12.9% of the total school population walks to school and in some areas as few as 5%. Further, levels of inactivity reported by NICE (2008) indicate that 65% and 76% of men and women in Britain respectively do not reach the recommended 30 minutes of at least moderate intensity activity on most days of the week, while 30 and 39% of boys and girls aged 2-15 years do not meet their requirements of 60 minutes of activity each day. WHO (2000) shows that the amount of television watching by young children is predictive of BMI some years later. Analyses of mortality rates show that there is an almost linear relationship between BMI and death with the risk increasing with the duration lived with obesity. Though obesity should be viewed as a disease in its own right, severe obesity is associated with a 12 fold increase in mortality in 25-35 year olds compared with lean individuals. This explains the importance of preventing obesity in children and weight gain throughout adult life (WHO, 2000).
Limitations to achieving optimal PA levels from a learners’ perspective was paramount to the study because they were the prime beneficiaries of the study recommendations. Through a participatory approach, recommendations for countering the learners’ constraints of engaging in PA would be learner centered and tailor made developments.

As demanded by Public Law 94-142, education should be provided for all students within the Least Restrictive Environment (LRE). This includes provision of facilities for PE to learners with impairments that limit their full participation in physical activities within the regular and inclusive school settings. Learners with exceptional abilities must also be provided with individualized and appropriate facilities, equipments and an enabling environment to attain their fullest potential in physical health.

From the reviewed studies, there is critical need to assess and address the PA trends in children who happen to be the adults of tomorrow (Allison et al, 1998). Evidence of increasing chronic health conditions among children and adolescents and the magnitude of its costs is worrying. However, studies indicate that participation in PA by children and people across all age brackets has helped to prevent and or controlled the adverse effects of impairing health conditions adding to the individuals’ improved quality of life, productivity and averted disabilities.

Learners can be instrumental in developing information and solutions to challenges that that they face in their environments. As seen in Bruselius-Jensen, Danielsen & Hansen (2014), learners can generate very useful insights and suggest solutions to
their challenges in the environments in which they live through a participatory approach. It is inaccurate to assume that learners do not understand their needs and challenges they face in accessing PA/PE and play opportunities in general. It is therefore imperative to find out from learners how they perceive and engage in PA within their habitat.
CHAPTER THREE
METHODOLOGY

3.1. Introduction

This chapter comprises of research design, variables, the study location, target population, sampling technique and sample size, research instruments, pilot study, data collection techniques, data analysis and logistical and ethical considerations.

3.2. Research Design

The study adopted a case study design under a qualitative approach. However, limited use of quantitative approach was employed to tap some limited but vital information. Qualitative research refers to a set of methods, techniques or procedures which provide a means of accessing unquantifiable facts about actual people that researchers observe (Berg, 1989). The following considerations were made to justify the use of qualitative approach,

a. That possible range of responses were not to be pre-set as this allowed more time with the participants in the field which allowed for development of good rapport.

b. That the flexibility of qualitative research techniques gave room for probing and pursuing leads on serendipity emergence of data or phenomenon which may not have been initially anticipated. This lacks in quantitative research (Chamber, 1992).

c. That it allowed the researcher to share and understand the perceptive world view of the subject in the way they organized and gave meaning to their daily lives (Muia, 2000).
d. That the design allowed the researcher to become an instrument of research in
the process through the use of multisensory approaches in collection and
compilation of relevant information,

However, cautiously the researcher was aware of the challenges of using the approach
which included; adequate time and sufficient preparations prior to commencing the
study, expected capacity of the researcher to be flexible and patient as the pace of data
collection at times could be determined by contextual factors some of which could
have been beyond his control (Patton, 1990).

3.3. Variables

Variables are the dynamic sets that influence a study. This study had three sets of
variables namely independent, dependent and extraneous variables.

3.3.1. Independent Variables

Independent variables comprised three interacting sections of the social system that
act upon the dependent variables. These variables included the school which
comprised of peers, teachers and the core and co-curriculum practices; the family
which encompassed the parents, siblings and the socioeconomic status (SES); and
finally, the neighbourhood comprising of policies, religion, culture and the physical
environment.

3.3.2. Dependent Variables

Dependent variable was the factor under observation. The dependent variables were
the physical activity perceptions and practices among learners.
3.3.3. Extraneous Variables

Extraneous variables were variables that remained constant but could have influence on the dependent variables. These variables included age, gender, motivation, and competence. They defined the child (learner) whose perceptions and practices were under observation.

3.4. Location of the Study

The study was conducted in three schools from Nairobi County. The schools were representative of the diverse social economic classes of the catchment area ranging across low, middle to high classes. Nairobi County hosts the capital city of Kenya and has a wide continuum in her populations' socioeconomic potentials. It is divided into nine administrative districts namely Westlands, Dagoreti, Kasarani, Starehe, Kamukunji, Embaksi, Njiru and Makandara. According to the 2009 population census, (Republic of Kenya, 2010), Nairobi has a population of 3,138,369 (1,605,230 male and 1,533,139 female). Children aged 5-14 years total to 553,843 with 271,851 and 281,991 being male and female respectively.

Nairobi is a cosmopolitan county inhabited by people who represent the country's diverse cultural, ethnic, and socio-economic backgrounds. It has a good network of public and private primary schools whose admission trends are influenced by the economic status of the parents or guardians. Mostly, public schools tend to attract the lower income populations while private schools appeal more to those in the middle and upper segments of the income brackets. However, the location and the economic levels of the schools' neighbourhood community shaped the economic profile of individual schools. This cultural and socioeconomic diversity was the basis for the
selection of this study location. The study schools selected for this study were coded as (Economic Level) EL1, EL2 and EL3 for ethical considerations.

3.4.1 Descriptions of Locations of the Sampled Schools

3.4.1.1 EL1 Primary School

EL1 Primary School is a public day mixed primary school. It is located to the extreme East of Nairobi bordering Kiambu County. It has pre-school and primary school sections with a population of 1260 learners and 15 teachers. It embraces inclusion and had a unit for learners with MH. The school lies on an 8 acre piece of land which was sufficient for its current and future expansion plans according to the school administration. The school draws her learners from areas around Kiwanja market and the adjacent informal settlements of Kamae, Garissa, and Kamiti prisons area. Some learners come from areas around Githurai a distance of about 8km from the school. Noticeably, the school has a public borehole which serves the local community with clean water. Neighbours fetch water on their backs, bicycles, donkey carts, wheelbarrows and a few others use motorbikes. At the time of the study the nearest road for public transport service was about 200 metres away from the school.

3.4.1.2 EL2 Primary School

EL2 Primary School is located in Nairobi West district. It neighbours a prestigious and popular high-end estate. The estate houses many foreign diplomats and senior government officials. The school is located on an approximately 2.5 acre piece of land with a population of 1245 learners, 36 teachers, and 20 members of support staff. It borders’ a super highway, a slum and major public hospital on the eastern end. The school is sandwiched between expansive golf courses to the south and north. It is
about three kilometers from Nairobi city centre. Most of the learners in the school are from middle level social-economic backgrounds. A noticeable feature in the school is the limited play area available for such a large population of learners.

3.4.1.3 EL3 Primary School

EL3 primary school is located to the west of Nairobi County. It had a population of 1300 pupils spread from preschool to class eight. It had a teacher population of 25 and 14 members of support staff. It has a large grassed playground which accommodates football, netball and volleyball pitches. In the field is a concrete basketball court. Around the field are some metallic benches used for resting. The compound too has a large open space used as a car park. This area is also commonly used by lower primary and preschool learners as a play area. There are some slides, swings, ladders and merry-go-round for use by the preschool and lower primary school children adjacent to their classes. Foot paths that link various sections in the school are paved. EL3 school had a majority of its learners from high social economic background. Most of the parents of this school were either in well-to-do self employment or in relatively well-paying formal employment. This was evident by the number of children who were picked from the school by either hired family drivers or parents themselves.

3.5 Target Population

The target population comprised of learners, parents and teachers in the three selected schools in Nairobi County. Class 6 learners were targeted for in-depth interviewing because of their relatively long interaction with the school environment and their ability to comprehend interview questions better (Nyamai, 2005). Learners above this
level may tend to focus more on their core curriculum work therefore could jeopardize the study. Learners below class 6 were unsuitable because of the depth of understanding of the anticipated interviews. It was relatively easy to train this study class on how to record data and take care of the pedometers. Due to the nature of their responsibilities, the class teachers, the PE teachers, the games masters, and the Headteachers (HT) from the study schools were involved in the study. Parents of 8 learners (top 4 and bottom 4 learners from each study class) were selected from each of the schools for follow-up key informants in the study.

3.6 Sampling Technique and Sample Size

3.6.1 Sampling Technique

Participants in this study included learners, teachers and parents from the three selected schools. The schools were purposively sampled; one each from across the social economic status (SES) backgrounds categorized as low, medium and high. This was arrived at based on a simple of economic indicators which include annual levies to the school, means of transport used by learners, the of cost of housing in the neighbourhood and the general economic worth of the school neighbourhood. Learners were purposively sampled from standard six because of their relatively long interaction with the school environment and their fairer ability to comprehend interview questions (Nyamai, 2005). Parents were conveniently sampled to represent learners equally by gender from a pre-selected group of learners' based on their PA levels determined from pedometer counts. Sampling for teachers in the study was also purposefully done. These included the standard six class and PE teacher, the school games teacher and the HT. Purposive sampling allowed the researcher to select a sample that provided the information that was required (Mulasa, 1988).
3.6.2 Sample Size

Sample size in qualitative studies depends on what the researcher wants to know, the purpose of the study, what is useful and what can be done within the available time and resources (Patton, 1990). The sample size for this study consisted of the following informants.

a. Learners

A sample of 45 learners representing 33% of the study class from each of the three sampled primary schools and 5 learners with MH totaling to 150 learners. This total included 16 Learners with Special Needs (LWSN) drawn from EL1 and EL2 schools and 134 regular school learners. LWSN were comprised 4 learners with PH representing 100% from the study class and 5 trainable learners with MH representing 20% of this category of learners in the EL1 school. There were 7 learners with VI representing 35% of this category of learners from EL2 school.

b. Teachers

Teachers were drawn from four categories of teacher-respondent groups from each of the three study schools. These four categories were HTs, games teachers, class 6 class-teachers, and class 6 PE teachers. These categories represented 25% of teachers of the study class. All games teachers in the schools were sampled representing 100%. However, in the sampled schools, the class teachers also served as the PE teachers. This caused the interviews for class teacher and PE teacher to be answered by one person.

c. Parents

A sample size of 24 parents out of 135 parents was used in the study. 8 parents were sampled from each study class per school representing 18% of the parents' population. The sampled were parents to the top 2 and bottom 2 boys and girls in
the pedometer PA level ranking per study class from the three study schools. This sample represented 17.78% of parents in the study class per school.

3.7 Research Instruments

The study used observation, Focus Group Discussions (FGD), pedometers, and interviews.

3.7.1 Observation

Observation is a technique that involves systematically selecting, watching, and recording behaviour and characteristics of living beings, objects or phenomena (Hordon, Boonmongkon and Streefland 2001). It entailed making observations in the areas of interest that contributed to achieving the objectives of the study.

3.7.2 Focus Group Discussions (FGDs)

FGDs involve organized discussions with a selected group of individuals to gain insight into their views, feelings, beliefs and experiences regarding a certain topic (Hordon, et al, 2001). This study made use of 4 FGDs in each school with 3 FGDs for learners (boys, girls and mixed gender) and another one for all the parents in each school making a total of 12 FGDs.

3.7.3 Pedometers

A pedometer is a simple instrument for measuring the level of physical activity through movement by recording the number of steps a person makes. Pedometers were used to establish the activity levels of individual learners in school and in the home and neighbourhood environments. The step counts aimed at assessing the
physical activity levels and practices in children at school and home. Data gathered from the pedometer counts was used in ranking learners according to their PA levels which helped to identify key informants among parents. Step data from pedometers was also useful in identifying environments that favoured learners’ engagement in PA.

### 3.7.4 Key Informant Interviews (KII)

KIIIs were used to make in-depth interrogation of issues pertinent to the study. KII respondents were parents, class teachers, PE teachers, games teachers and HTs. The interviews were used to crosscheck, confirm and validate information from the other sources. Structured interviews were tailored to suit the individual categories of respondents while ensuring that the basic points were covered (Kane, 1995).

### 3.8 Pilot Study

The purpose of the pilot study was to pre-experience the realities on the ground before the actual study and to pretest the study tools. Pilot study was conducted at Kenyatta University Primary School. This was a school with characteristics expected during the actual study in the field. The school had some learners who walked to school and others used motorized public transport. The learners were from a fairly divergent economic background. The schools’ population compared well with the sampled schools making it ideal for piloting.

### 3.8.1 Validity

Validity is concerned with ability of the instrument to measure what it is intended to measure, the appropriateness and usefulness of the conclusion the researcher makes
based on the data collected using a particular instrument and the degree to which results obtained actually represent the phenomenon under study (Kombo & Tromp, 2006; Mugenda & Mugenda, 2003; Orodho, 2009). Validity of instruments was ensured through piloting and triangulation of information from the various data sources.

3.8.2 Reliability

Reliability means that another researcher is likely to arrive at the same results in a similar study using the same participants (Fraenkel & Wallen, 2009). It defines the extent to which results are consistent over time and an accurate representation of the total population under study (Joppe, 2000). It also means that the research instruments are dependable and can produce similar results under similar circumstances. Golasfshani (2003) argues that the basis of reliability enables the researcher to secure consistency, stability and the ability to repeat measurements within a given period. Through piloting of research tools the researcher ensured that the tools collected accurate and reliable data.

3.9. Data Collection Techniques

Before data collection process commenced instruments for gathering data were prepared. The instruments were composed of open observation, FGDs, pedometers, Key Informant Interviews and walk-and-talk. A research authorization letter (Appendix X1) was obtained from the National Commission for Science, Technology and Innovation which allowed the researcher to conduct research in schools within Nairobi County. A pre-visit to the study schools was made by the researcher to
establish rapport and familiarize himself with the participants. Data collection tools were administered at different times to the corresponding respondents.

### 3.10. Data Analysis

Data collection, analysis, verification and the development of theoretical explanations occurred simultaneously throughout the study period as applies in qualitative studies (Bogdan and Biklen, 1992). Data analysis was therefore a continuous process throughout the study period. However, this was done at two levels; first along the course of study where field notes, interviews and various observations were analyzed. The data was manually coded according to the study objectives and the emerging themes aligned to the theoretical model that guided this study. Finally, the coded information was analyzed in content and then descriptively and thematically presented to give meaning and answer the research questions of this study.

### 3.11 Logistical and Ethical Considerations

This study dealt with primary school children who were not in a position to give consent for research. Ethical considerations were therefore taken into account to prevent abuses as well as to delineate responsibility. The researcher sought consent from informants who are minors by proxy from their parents and HTs for them to voluntarily participate in the study. The researcher ensured that the school authorities and all informants of the study were properly informed of what the study entailed. All confidential information was treated as so and informants were made aware of their liberty to withdraw from the study if they deemed it fit. The study findings were shared with the schools of study and the informants in general.
CHAPTER 4
DATA PRESENTATION, ANALYSIS AND DISCUSSION

4.1 Introduction

This chapter presents data collected from the study, analysis and discussion of the findings. Data presented in this chapter was generated from interviews with the pupils, parents and teachers; FGDs' with the pupils; observations made in the school, home and the neighbourhoods, and pedometer step data collected from pupils both at home and within the school environment.

4.2 Learners Perceptions of the Adequacy of Physical Activity Opportunities in Schools

PA is vital in promotion of healthy living and its sustenance. It entails any force exerted by skeletal muscle that results in energy expenditure above resting (WHO, 2000). Data collected showed that learners perceived adequacy of PA opportunities in terms of the available time and equipment devoted to them for play activities and games. To the learners, PE meant the designated play time during class hours while games meant play and sports activities after regular school lessons. Limitations to access PE and games opportunities were seen as an impediment to PA in general. Learners considered Utilitarian Physical Activity (UPA) in school which included sweeping, cleaning classes, gardening and fetching water as burdensome work which was unnecessary; they wished they could avoid it altogether. They felt that their perceived PA (play and games) opportunities needed to be provided to them by members of the wider society including but not limited to parents and their teachers alone.
4.2.1 The Physical Environment in Schools

The physical environment of a school plays a key role in determining the extent to which learners engage in and perceived PA. Factors which affected PA included safety, access by LWSN, size of the school compound, school policies, cleanliness. To the learners, the school compounds were the officially designated areas that were used as playgrounds. The researcher observed a lot of PA going on around the school compound. Play activities were observed in front and behind the classrooms, along footpaths, between flower gardens, entrances to the schools, pavements, walkways connecting various blocks and on idle land within the school compounds. Learners perceived the adequacy of PA opportunities within the school environment as a product of the user friendliness of the school compounds and the physical size of the playgrounds.

a) Size of the School Compound

Learners felt that the school compound had a big influence on the way they engaged in PA. They believed that a playground proportionate to the number of learners was crucial in ensuring that all learners interested in engaging in PA in the field got a chance to do so. Learners reported incidences where smaller children were chased away from the playgrounds to give room for the senior ones to play. As observed by the games teacher at EL1 primary school; “When one team is playing football there, another team is playing volleyball here (pointing to an unmarked open space littered with stones and concrete chippings) and another one playing netball there. Those who are not engaged in any of the three games play behind there” (pointing to another open space which had trenches, compost pits, some tree stumps and adjacent to the pupils toilets). This indicated that not all learners could be accommodated in the field of play where safe and reasonable amount of space for PA
opportunities was available. During an FGD with boys at EL2 primary school, a learner said; “Some pupils bully others away from the playground.” Another boy interjected; “Sometimes class 8 pupils chase us out of the field, but when we tell the H/T they are chased away and we continue playing”.

The H/T confirmed the learner’s views by saying, “We do not have a play field and this is a major problem considering our huge enrollment”.

A girl at EL1 primary school said, “The field is so congested. All pupils flock to the field at the same time denying us space to play”. This “all” implied boys who dominated the field with football at every opportunity they got.

b) User Friendliness of the Compound

During an FGD with girls at EL1 school, a girl pointed that “The field is too small for very many children. The field is not grassed which makes us to fear to get dirty”. The games teacher at EL1 school noted, “When the field is dusty they avoid it, they concentrate around the grassed area near the coffee farm.” Learners with (Visual Impairments) VI observed the use of barbed wire in fencing off of the pathways inside the school compound as limiting their PA. This made them cautious as they moved and played around in the school compound.

At EL2 School, learners play area which they referred to as Banguu (Plate 9) was a hilly place with many protruding roots and stones. It had a deep gully on one end and other smaller gullies cutting across. A very small section towards the lower fence was level, but got waterlogged during rainy weather. A girl in the school observed that children feared getting injured. She said, “When you get home, parents will quarrel
you if you got injured during play in school. They will ask you whether you went to school to play or to learn”.

Plate 1: Barbed wire around the school assembly ground at EL1 School.

Learners with VI at EL2 School were discontented with the school layout. One of them said, “The compound should be friendly enough to allow me to make movements freely, sometimes I fall down because of stones on the paths; sticks placed on the paths by the sighted pupils, trenches, stair cases everywhere and barbed wire along the paths”. Another VI learner said “Movement in the Banguu is very tricky for a blind person; I avoid going there because it is bumpy, hilly and full of stumps and stones”.

Observations done by the researcher showed that most open play areas in EL2 and EL1 schools were dusty, uneven ground had concrete chippings from earlier construction works, holes and pieces of broken furniture within the play areas. According to David (2008), the built environment influences childrens’ attraction to engage in PA.
4.2.2 Physical Facilities and Equipment

Learners across the three study schools said that schools had a responsibility to provide them with facilities and equipment to enhance their participation in PA. However, provision of these facilities varied from one school to the other. In EL1 School, the researcher observed virtually no play-enhancing facility provided to the learners by the school in the compound. Some of the expected play facilities in school could have been swings, slides, merry-go-rounds, and marked out play areas for some specific games like volleyball, netball, handball and badminton among other affordable facilities. Learners were left on their own to improvise and find means of getting the equipment they required. The games teacher at EL1 School observed, "Most of these learners you see standing during their free time have no better activities, places and games to engage in". The H/T informed the researcher that learners brought their own play materials like ropes and bean bags to school. This was confirmed by the researcher's observation of many children who brought their own improvised play materials to school. Girls brought skipping ropes, bean bags and
small balls made from old pair of socks for playing ‘Catie’, while boys brought balls made from waste plastic bags to play football and marbles to play ‘banu’.

Plate 3. A Boy with an Improvised Football Ball at EL1 School

In EL3 school there were a variety of well maintained facilities. The field was well taken care of with trimmed grass and suitably marked play fields for football, volleyball, netball and basketball. The school had a swimming pool which was available for use by learners during swimming lessons.

However, the researcher observed that there was only one football ball for the high number of learners in the large playfield at each given time. This prompted the researcher to ask learners during an FGD why there seemed to be lack of play equipment in the school. One boy from retorted, “They are in the office; big, medium, small, all sizes. They are decorations for the store. 90% of those balls have never been used.” This was also the case at EL2 School where learners confirmed that they brought their own play materials to school. School equipments were mostly used during official interschool competitions and thereafter returned to the games’ store.
Teachers in EL2 School confiscated play equipments brought by the learners to school. The researcher observed a box full of improvised balls in the Deputy Headteacher’s (DHT) office and probed to know their source. The DHT quipped “I have impounded so many balls from children but I cannot remember who they belong to. They are just here lying in my office.” This contrasted the wish of the games-teacher in the same school who noted, “I wish the school administration could see the importance of providing a little more on equipment like balls”. This statement confirmed the inadequacy of play materials availed to learners in the school. The finding also concurs with McNeil et al. (2009) who reported that Singapore faced constrains of inadequate facilities, equipment and allocation of time.

4.2.3 Availability of Time for Physical Activity

“This is time for break, not, time for learners.” This was a chorus statement from learners in a mixed FGD at EL3 School to mimic their class teacher who was also their PE and games-teacher. The statement implied that learners were not entitled to free time because there were other “more useful” things to be done. The statement was also used during PE lessons to imply that the lesson could be put to “better use” than play by learners. “It is time for PE not your time” the teacher would tell them.

A candid disclosure during an FGD with boys at EL3 School indicated that there was very limited time availed for learners to relax, have fun or play around in school. One boy said, “During break time we complete our class assignments which teachers demand we hand in after break. This keeps us in class during break and PE time.” Teachers handling PE served as the class teachers and were required by the school policies to handle other key subjects in those classes. This was a common practice
across the three study schools. The idea behind this as informed by the HT at EL3 was to use the time allocated for PE to cover the syllabus in other subjects. Nevertheless, she was quick to applaud the learners' interest in PE by observing that, "just tell them it is time for PE even during another subject, their excitement will tell you they were yearning for it." Learners' concerns that teachers did not offer adequate attention to PE agrees with Graham (2009) that principals view PE as a period in the day that provides planning time for classroom teachers or as a break from the rigours of classroom work. According to McNeil (2009), teachers in Singapore prioritized management issues at the expense of PE. Findings from the data collected in this study concur with McNeil where teachers in selected schools Nairobi County prioritized academic work.

4.2.4 Utilitarian PA in School

Learners in EL1 and EL2 Schools were observed to engage in some utilitarian PA within the school. The activities were not meant for health benefits that go with PA but as useful labour for the school. Learners in EL1 School had a routine duty of tidying the school in the morning by sweeping the foot paths and corridors around the buildings. Learners collected litter around the school compound every morning before going for their morning studies at 7:20am. The learners walked around the compound during these routine duties.

EL1 School had flower gardens outside classes, around the flag post, around the administration block and along the main entrance. These flowers were tended to by learners during out of class hours. Sometimes, learners who committed petty offences like noise-making in class and lateness to school were made to tidy the school
compound. Learners in EL1 and EL2 fetched water from a tank 30 meters away to clean their classrooms and latrines. Cleaning was done 3 times every week during the school days. Boys preferred fetching water as girls did the washing. This was a communal activity where all learners were involved except those with physical challenges. Some learners in senior classes (class 6, 7 and 8) had been allocated the duty to clean the staffroom and other administration offices.

At EL2 School learners swept their classes daily and washed it twice in a week. Sweeping was done in a roster while washing was done by all learners in that class. As was the case in EL1, boys in EL2 preferred fetching water as girls did the washing. Washing involved moving desks to give space for the cleaners and rearranging them after the class was washed. Learners in the school were also involved in tidying the compound by collecting litter and taking it to the dumpsite where it was burnt. Learners with V.I were exempted from this communal work and were not included in the duty rota. Most of the other manual jobs in the school were done by hired labour.

Utilitarian PA in EL3 School was different from EL1 and EL2 schools since virtually all the manual work was done by hired labour. The researcher observed workers cleaning the classes, offices, the dining hall, toilets and also collecting litter around the school compound.

4.2.5 Opportunities for LWSN

EL1 School had a unit for learners with MR and allowed integration of learners with physical handicap (PH). As observed, LWSN were almost not engaged in PA schools. Learners with PH were exempted from manual duties like sweeping and cleaning of
their classes but were occasionally involved in collecting paper around compound alongside regular learners. This was light task which teachers described as less demanding in physical exertion.

Learners with PH were not under any obligation to attend PE and games sessions as was the case for the others. One of the learners with PH said "Teachers allow me to sit down and become a spectator during PE and games sessions." This was confirmed by girls at EL1 School during an FGD as they made a comment on the engagement of learners with special needs in the school. They said, "They (learners with PH) watch as others play in the field, while those with MR are occasionally given a ball to play with." They remarked that, "If they are given a ball, they play. Unfortunately they are left on their own without further instructions." The games teacher at EL2 School confirmed this in reference to learners with VI, "Am sorry, they do not do anything. They sit around telling stories as others play."

Discussing why learners with disabilities made fewer steps on the pedometer counts during an FGD, learners with visual impairments demonstrated their willingness to engage in PA if the environment was made favourable for them. "We the blind need to have play activities that are suitable for us. Most play activities are concentrated on sighted people; football, netball and volleyball. I think a fair ground and fair activities for us to participate in will make a difference on the number of steps we make." they observed.

A girl with VI felt that loss of sight was not to blame for her limited PA, "I do not blame my sight but the denial by persons with the responsibility of according me the
opportunity or freedom to involve myself in PA. I blame them for failing to accept that I can play even with my disability. I need a compound that is friendly enough to allow for my free movement.” These sentiments were shared by boys during an FGD who confirmed that, “To say the truth (an indication that sometimes the truth is not told), these people (learners with special needs) are not taken care of.”

4.3 Learners Participation in PA in School, Home and the Neighbourhood

Learners’ level of PA around their environment was determined using step counters (pedometers). Home and the neighbourhood step data was recorded by the researcher in the morning as individual learners reported to school while school environment step data was recorded as each learner left the school in the evening. Experience from the pilot study the researcher found that it was more reliable to record learners’ pedometer data in school for consistency and reduce chances of error. After reading and recording the step data, pedometers were reset to zero to start a new count. The PA that learners engaged in outside the school environment was referred to as the home and neighbourhood PA while that within the school was referred to as school PA. The researcher observed that opportunities for PA in the neighbourhood were influenced by safety of footpaths, availability of open play areas and security of learners outside the school and home environments.

4.3.1 Environments Attracting Physical Activity

The level of PA by learners varied according to their physical environment. Some environments elicited greater engagement in PA than others. From the pedometer data, both boys and girls from EL1 School had higher levels PA in the home environment than they did within the school. They had more step counts within the
home environment than in school while the reverse was true for learners in both EL3 and EL2 Schools.

Table 4.1 Average Step Counts at Home

<table>
<thead>
<tr>
<th>SCHOOL</th>
<th>BOYS</th>
<th>GIRLS</th>
<th>AVERAGE</th>
</tr>
</thead>
<tbody>
<tr>
<td>EL1</td>
<td>8265</td>
<td>7747</td>
<td>8006</td>
</tr>
<tr>
<td>EL2</td>
<td>6581</td>
<td>4578</td>
<td>5585</td>
</tr>
<tr>
<td>EL3</td>
<td>6272</td>
<td>4882</td>
<td>5577</td>
</tr>
<tr>
<td>AVERAGE</td>
<td>7039</td>
<td>5736</td>
<td>6388</td>
</tr>
</tbody>
</table>

Table 4.2: Average Step Counts in School

<table>
<thead>
<tr>
<th>SCHOOL</th>
<th>BOYS</th>
<th>GIRLS</th>
<th>AVERAGE</th>
</tr>
</thead>
<tbody>
<tr>
<td>EL1</td>
<td>5683</td>
<td>4464</td>
<td>5074</td>
</tr>
<tr>
<td>EL2</td>
<td>7208</td>
<td>5447</td>
<td>6328</td>
</tr>
<tr>
<td>EL3</td>
<td>8964</td>
<td>5567</td>
<td>7266</td>
</tr>
<tr>
<td>AVERAGE</td>
<td>7285</td>
<td>5159</td>
<td>6223</td>
</tr>
</tbody>
</table>

From the Tables 4.1 and 4.2 above, it was evident that boys had a higher level of PA than girls both in school and at home and the neighbourhood environments. On average learners were within the recommended ranges of PA. The fairly good PA level was not entirely a factor of suitable PA environment or deliberate effort by the learners but the availability of UPA for learners from low SES populations. Nevertheless, boys had healthier PA levels with 14324 steps compared to 10895 steps for girls.

4.3.2 Learners' Trends of Engagement in PA

Although engagement in PA may not be fully confined to a particular time, there emerged trends which indicated that learners engaged in PA with a bias to specific times and opportunities. The trends as observed by the researcher took the following forms:-
a) PA Trends in School

By observing the school routine, the researcher noted that schools had controlled time when learners were free to engage in PA. Across all the study schools, this time included; 20 minutes break from 9:30-9:50 am, 30 minutes break between 11:00-11:30 am, lunch break from 12:40-2:00 pm, after lessons from 3:10-3:30 pm and during PE lessons. In the three schools, learning commenced at 7.00 am for upper primary school classes and 7.30 for the lower primary school. Learners were expected to be punctual in school. Break times according to the HT of EL3 School were meant to give learners a moment to relax and re-energize as they prepared for the subsequent learning sessions. Learners in EL1 School engaged in utilitarian PA by tidying up the school before going for morning preps and before they left school in the evening. As provided for in the primary school syllabus there were 4 PE lessons of 35 minutes each per week for upper primary and 5 PE lessons of 30 minutes each for lower primary (Discussions as to how these lessons are conducted follow under 4.5 below). Besides PE lessons, the three schools had an assigned day for games as an education policy requirement. Coincidentally, Thursday had been picked by all the study schools. During the study period the researcher observed only one teachers’ guided games session in EL2 School. It was also observed that PE lessons were used for teaching other examinable subjects assigned to the PE teacher, while break time in EL2 and EL3 schools was commonly used by learners to complete their class assignments and or buy snacks.

b) PA Trends at Home

The study was conducted during the school term therefore what was observed from the home environment were periods after school and during the weekends. For learners to arrive in school in time, most of them on average left home between 5am
and 6am. Learners attending EL3 and EL2 Schools left home much earlier to beat traffic jam while those from EL1 School left home much later because most of them came from close proximity to the school. At EL1 School, parents interviewed, said their children took between 25 to 40 minutes to walk to school. Learners from EL1 School during an FGD said that they engaged in utilitarian PA such as fetching water and firewood, collecting pasture for domestic animals, washing clothes, utensils, going to the market, and cooking.

Learners from EL3 and EL2 Schools were mostly confined to their houses after school whereas those from EL1 School remained outdoors until sunset. This gave them more time to engage in play activities than was the case for learners in the other two schools who reported to engage in sedentary play activities like watching TV, play stations, video games and or doing their school assignments. A parent in EL2 School expressed her challenge in trying to offer her daughter some play area at home, “The ground has no play area. Hakuna mahali pa kucheza ni balcony tu (there is no play area but the balcony). The balcony too is not good enough because there are cloth lines, a bag of charcoal and water containers which do not fit in the house.”

From Table 4.2 it was notable that learners from EL1 School recorded very high step counts at home compared to learners in the other schools. This trend served to support the availability of UPA in the home environments for EL1 learners as well as the cultural practice of burdening the girl child with family chores at home.
c) PA Trends in the Neighbourhood

Participation in PA by learners in the neighbourhood was influenced by availability of play areas, security, safety, play materials, and opportunities for UPA at home. Learners from EL1 School reported that they were engaged in household chores in form of fetching water from public water points which they carried on their backs, bicycles, wheelbarrows or used donkeys, collected firewood, swept the home compound, walked to and from school 5 days in a week. There was a large public play ground near the school where learners spent some of their time playing on their way home and over the weekends. In contrast, neighbouring EL2 School was an expansive golf course where learners and other members of the public had no access. Learners reported cases of harassment when they played their balls over to the course. “When we play a ball accidentally over to the golf field, it is confiscated by the field attendants.” Said a boy during an FGD at EL2 School.

Plate 4: An Expansive Golf Course Adjacent to EL2 School

A Learner from an adjacent slum area who schooled at EL2 told the researcher that they used the open spaces around the dumpsites near their home to play some games.
Participants during an FGD with boys at EL2 noted that; "some of us are from the slums, we have some open grounds around dumpsites close to our homes which are free to use. If there are no play areas we improvise small games that do not require a lot of space."

Roads and pathways around the catchment area of EL2 and EL3 schools were not suitable to walk or play along due to heavy vehicle traffic and congestion by people as they walked to and from different directions. This was a major disincentive of walking to and from school. The PE/Games teacher at EL3 posed; "Do you think these learners have a chance to play at home? No, very few, indeed very few, they only play when they are here in school. At home, no! no!"

4.3.3 Physical Activities Engaged in by Learners.

a) Physical Activities in School

The researcher observed that learners engaged in a variety of physical activities within the school environment. These activities included structured play, spontaneous play activities and UPA.

Structured play activities included PE lessons, games, and learners organized games during their free time. The commonly observed play activities in structured play included swimming (in EL2 and EL3 schools), running, football, catie, bladder, katolo, banu and rope skipping. These games were common across the three schools though their intensity differed from one school to the other. As seen in Plate 6 below, learners engaged in activities that could fit within the space, facilities and equipment available.
Spontaneous play activities cropped up especially among boys by way of joking around with each other. It was common to find a child kidding another one and a chase for a short while ensued. This was very common among boys especially during short breaks when learners did not have ample time to organize a game. Spontaneous play was observed to be most common at EL3 with EL2 and EL1 lesser in intensity in that order. The researcher observed generally more learners in the field at EL3 School than in the other two schools. Learners in EL1 and EL2 Schools were engaged in UPA which involved cleaning the classes and other facilities in the school, sweeping, watering and tending the flower gardens, fetching water for use in the kitchen (observed in EL1 only) and collecting litter around the school compound. These was a routine UPA tasks excluded LWSN.

b) Physical Activity at Home and the Neighbourhood

During the school days, learners left home as early as 5.00am and got back between 4:30 pm and 7:00 pm in the evening. The researcher observed that virtually all
learners from EL1 School walked to and from school. Majority of the learners from EL2 School used vehicles to get home while virtually all learners from EL3 School used vehicles to commute. It was notable that the further the distance from school the higher the chances the learner had of using motor transport to school. During FGDs learners noted that it was rare for parents to suggest any meaningful engagement in PA during the school day. The major avenue for PA that parents engaged them in was by work at home. A parent from EL1 School said, "When my son comes home from school he goes to fetch water from the river or from the water kiosk. He either uses a bicycle or a wheelbarrow to carry water. This he does every day." A parent to the girl with the highest PA level on step data from EL1 School said, "From school, my daughter washes utensils, her clothes, fetches water, gathers firewood then settles to do her homework. She carries a 20 litre container of water from the river which is about 40 minutes round trip. As a rule, play comes after all work has been done." According to this parent, work was distinct from PA. It was done as a duty but not purposed for health promotion. Another parent added, "My son knows the routine; fetch water, do any other work at home before he does what he loves most, playing football."

Learners from EL3 School were not engaged in UPA after school. A parent described her daughters' routine as; "After school she showers, snacks and then does her homework, and over the weekend she goes to swim." Another parent from EL3 cited distance as the reason behind his preference for motor transport for his son. He said, "This (vehicle) is my preferred mode of transport. Home is far from here – about 10km away. There's no option."
Parents from EL3 School indicated that they had some play areas at their homes but which children could not make use of because homework which they brought from school. During an FGD a girl confirmed what her mother had said in an interview “After school she likes to play with her younger brother. But most of the times it does not happen. She gets home late, between 6:30 and 6:45pm with a lot of homework to do.” Learners expressed displeasure in the way their parents just like in school focused too much on academic work as noted from a boy in an FGD at EL3; “When you get home from school the head is full and a parent tells you to go and read, you are locked in the study room and you continue struggling. You will rest only when you go to bed. You also sleep a little and at 4.00am you are woken up to prepare to go to school.”

Learners’ getting home late from school was a concern that parents and the PE teacher in EL2 School saw as denying them time to engage in play after school. This was compounded by lack of play areas and UPA. “Some children stay in flats and the only available space is the corridor,” noted the PE teacher at EL2 School. A parent from EL3 School said, “There are no chores he (son) is given to do at home after school. He’s given good time to do his studies.” From EL2 a parent similarly observed, “My daughter works at home only if we do not have a house girl, and even then, only washing utensils and her clothes; BUT only when I do not have a house girl.” She also said, “2 Km is too far for her to go to school on foot.” These responses from parents from EL3 and EL2 indicated the limited access to UPA had at home.
From Table 4.3 above, the average PA level as indicated by step data showed that girls recorded higher step counts in the home and neighbourhood environments than in the school environment whereas boys were more physically active in school than they were at home. However, learners from EL1 School had better levels of PA in their home and the neighbourhood environment than in school. Overall, boys had higher levels of PA with an average of 14,324 counts of step data per day while girls had 10,895 counts.

Table 4.3 indicates that girls from EL1 School had higher PA levels in the home and neighbourhood environment than boys from EL2 and EL3 Schools. This according to the researcher was attributable to the high engagement of learners from EL1 in UPA as confirmed during discussions with learners and parents and teachers interviews.

4.3.4 Practices for LWSN

LWSN in integrated schools were not fully integrated in PE games programs in their schools. Most respondents sympathized with them and thus failed to engage them in activities like their non-disabled peers. The PE teacher at EL1 school referring to a girl with PH (non-remorsefully) said, “To say the truth, I just ignore her. You know PE is not the main thing and therefore she can take part in other (academic) things in class. For PE she can just forget about it.” The games teacher
reported that he too never engaged the girl in games and sports. According to the learner, "I gets out of class together with the others but sit down while others play." The girl said that her mother refused her to engage in play activities but was engaged in simple tasks at home like being sent to the shop. She said she was uncomfortable in the leather shoes prescribed to all learners as school uniform and which she was also expected to be in while in school.

EL2 School had an integrated programme for learners with VI. These learners were hardly engaged in PA both at home and in school. Answering to a question on whether he engaged Learners with VI in games, the games teacher said, "In fact I feel guilty that during games I have never thought about them and unfortunately the specialist teachers have also not taken any initiative in that direction." It therefore occurred that out of the perceived inability to perform like their sighted peers, learners with VI were not included in the schools PE and games routine. The games teacher further admitted that there were no play or games materials in his store for use by the VI learners. The sighted learners in an FGD said, "Saying the truth, those people (VI) are not taken care of. As we play here with the balls, they remain bored in class. When we go for PE they go to the resource room where they sit and chat or work on the Braille machines." Responding to whether there were any special play materials for the learners with VI in the school, the HT affirmed the sentiments of the games teacher by saying, "May be in their resource rooms, but not that which I know. If I knew there was something special for them I would buy" Ignorance of PA needs for LWSN by the school administration demonstrated their exclusion from the same and a justification to their low PA levels as compared to their non-disabled peers in step data.
### Table 4.4 Step Data for Regular learners, and LWSN

<table>
<thead>
<tr>
<th>SCHOOL</th>
<th>DAY 1</th>
<th>DAY 2</th>
<th>DAY 3</th>
<th>DAY 4</th>
<th>DAY 5</th>
<th>AVERAGE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Learners with PH (EL1 School)</td>
<td>7776</td>
<td>7820</td>
<td>5439</td>
<td>5869</td>
<td>6820</td>
<td>6745</td>
</tr>
<tr>
<td>Learners with VI (EL2 School)</td>
<td>4132</td>
<td>4050</td>
<td>4015</td>
<td>4524</td>
<td>5771</td>
<td>4499</td>
</tr>
<tr>
<td>Daily average for regular learners</td>
<td>13091</td>
<td>14380</td>
<td>13354</td>
<td>11569</td>
<td>11345</td>
<td>12746</td>
</tr>
</tbody>
</table>

LWSN had lower count on step data an indication of their low PA level. The average step counts indicated that learners with PH attained higher pedometer step counts than those with VI. However, since the handicapping conditions were different and each disability had its own unique challenges, the two sets of data were presented independently.

From the interviews, LWSN low levels of PA as recorded by the pedometer step confirmed the double disadvantage they faced in their access to PE in particular and PA in general. Their low PA level was pronounced first as a consequence of the general factors that were equally affecting other learners besides their own unique challenges due to the disabling conditions. Learners with VI and PH attained 30% (4499 steps) 45% (6745 steps) respectively of the recommended activity level of 15,000 steps per day.

### Table 4.5 Comparison between Regular Learners and LWSN

<table>
<thead>
<tr>
<th>Learners category</th>
<th>Day 1</th>
<th>Day 2</th>
<th>Day 3</th>
<th>Day 4</th>
<th>Day 5</th>
<th>AVERAGE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Regular Learners</td>
<td>13,091</td>
<td>14,253</td>
<td>13,354</td>
<td>11,569</td>
<td>11,345</td>
<td>12,611</td>
</tr>
<tr>
<td>LWSN</td>
<td>5,954</td>
<td>5,935</td>
<td>4,727</td>
<td>5,197</td>
<td>6,296</td>
<td>5,622</td>
</tr>
</tbody>
</table>
4.4 Schools' Practices in Provision of Adequate PA Opportunities to Learners

Schools are places where learners spend most time during their early life. According to the MOE term dates, learners in primary schools in Kenya attended school for 39 weeks which constitutes about 75% of the learners' days in a year (KIE, 2004). Schools nurture, shape and influence the choices that learners make in life including the preferences for healthy lifestyles which they adapt later in old age. A focus on schools' practices in the provision of PA opportunities was therefore critical in the realization of this study's objective. School routine, provisions and practices by the school towards PA, teacher's practices in promoting PE and PA, and provisions for the LWSN were core themes under this objective.

4.4.1 School Routine

The study schools had established routines which were either part of the established school rules or had been formed as a result of habits by the members of the school community. In the three study schools, PE was taught by class teachers. As was
observed from the class timetable it was routine for PE teachers to teach at least two other subjects in the same class. In EL1 the PE teacher taught Science and Kiswahili, in EL3 he taught Mathematics and Science while at EL2 she taught Mathematics, English and Religious Education. According to the HTs in the three schools, PE was given to class teachers to allow them to have more contact time with the learners in class. The three schools had one hour allocated for games on Thursday between 3:30 to 4:30pm of every week. A games teacher in each school had been assigned to coordinate games activities in conjunction with other teachers.

As observed, the games routine was not adhered to and on most occasions it was ignored. According to the DHT at EL1 School, games in the school programme were primarily for preparing school teams for inter-school competitions. The DHT, “We agreed in a staff meeting to suspend games immediately after competitions to concentrate in academics.” She observed that, “Some teachers demand to be given PE lessons because they believe that, that time is meant to supplement the teaching hours for the examinable subjects.” During a reflection session she qualified her statement by adding, “Yes, PE is not examinable so we do not take it seriously. Most of that (PE) time is used for teaching the examinable subjects. If there are competitions, we train the pupils for one or two days, and once they are over, games days are eliminated” This was confirmed by learners during an FGD with girls at EL3 School who noted that they had one games day in a week but when examinations (mid-term or end of term evaluation tests) approached they would remain in class for revision. According to the HT at EL1 School, “Teachers take learners out for PE occasionally,” while the games teacher at EL3 said, “Teachers do not value PE and games as much.”
The researcher observed that there were limited instructional materials for PE in the study schools despite there being funds under FPE for such use. Course books for PE which could be used in selection and preparation for the content to be taught at various class and age levels missed in the study schools. As a rule, learners in EL3 despite the expansive and well grassed playground were only allowed to play football during games time on Thursdays. This was limiting to learners who mainly depended on football as their main avenue for exercise and PA. In EL1 School, the large but bare playground kept off many learners from play. EL2 School lacked adequate play areas for its large enrollment, though the limited space available was not safe for use by learners (Plate 9).

Due to demands for better academic performance at the end of primary school course, the games teachers hinted that learners in standard 7 and 8 were sometimes exempted from participating in games competitions so as to avoid disruption of their class attendance. A further observation by the researcher revealed that a majority of learners remained in class during break time to do class assignments. With an 80 minutes lunch break provided in the school schedule (12:40-2:00pm), learners were allowed a maximum of 50 minutes then spend the rest of the time in class. “Sometimes we fail to go for break so that we can revise. We compete between the 3 streams in our class. Last time we were defeated and we must win this coming examination,” said a girl during an FGD at EL2 School.

Walking is a good way of attaining reasonable levels of PA. However, schools were not keen to encourage this health enhancing lifestyle. A parent at EL3 School was reprimanded for not paying for school transport and letting his son to walk to and
from school every day. The HT, “We called the parent to school and he promised to pay for the school van for his son’s transport to and from school. There are those parents who do not care.” He cited another case, “There is another parent in class 8 whose son foots from California (about 2.5km) to and from school. The father is a senior (wealthy) man. This is one of the parents who are just difficult.” This was an indication of how walking to school was not encouraged.

Girls at EL3 School felt discriminated against in play opportunities. They noted that teachers gave boys play materials more readily than girls. Girls in an FGD, “When we ask for balls we are sometimes given, but, boys are given always. And sometimes teachers call boys to go for the balls.” The researcher observed that boys were dominant in the fields of play than girls.

Across the schools, parents said they never got any feedback from teachers about their children on matters relating to PE, games or PA in general. Nevertheless, they were regularly called in school for academic clinics and on matters of improving the learners’ academic performance. Parents admitted that they were no better than the teachers because they too did not make any follow-ups on the matter. “We take our children to school to learn but not to play. We do not bother much about games unless teachers ask for it like in the case of buying track suits,” said a parent from EL2 School.

4.4.2 School Programmes and Provisions for PE/PA

Schools are expected to have programmes and provisions that meet specific needs of learners in their respective institutions. PA at an early age helps young persons to
develop lifelong inclination towards an active lifestyle which is essential in setting a sustainable healthy living.

Findings on how schools provided for PE formed a theme from the data collected. The PE teacher at EL1 School noted, "Teachers have forgotten PE. They are now looking at academic grades." This indicated that a lot of interest was placed on academic achievement regardless of the other factors that could have a positive effect on the learners. Parents too were assimilated into the quest for examination achievements as observed by a parent from EL3 School, "The school will not be known for drama, games, PE, or such like activities, but it will be known for academics." To achieve this fame, parents seemed to approve the all-but-academic programmes in learning institutions.

Though time could have been considered a constraint to attaining a physically active lifestyle, the games teacher at EL3 School felt that time allocated for PA was adequate if it was properly utilized. EL3 School had adequate physical facilities according to the HT and the games teacher. The HT said, "I can assure you that we have enough facilities. We have a well stocked games store, a nice field and a swimming pool. We are far better off compared to other schools in this county." The availability of these facilities in EL3 School seemed to motivate learners to be physically active in school. Step data from the school showed that learners in EL3 made more steps in school than their counterparts involved in this study. As observed by the researcher, learners in EL3 School were all over the field whenever they were allowed to be out of class. Each child seemed to have ample space to play. The well grassed field attracted learners to the playground. As observed in Plate 7 below,
learners who did not have appropriate shoes to play could remove them and play bare feet in the grassed field.

Plate 6: Grassed Playground at EL3

EL3 School had its compound well leveled, paved footpaths and dust free play areas. Little children had a reserved play area which helped to reduce conflict with the learners from the senior classes. Nonetheless, learners were prohibited from playing some games which were seen to make the school compound untidy. Katolo, which was a very popular game among girls was disallowed in EL3 School. Girls noted during an FGD that, "Teachers do not allow us to play Katolo here in school because they say it makes the compound dirty. We only use chalk to draw the game on the ground." Across the three study schools, parents supported the school arrangements for PE and games whenever teachers called for it. However, this varied according to the financial ability of individual parents. In EL3 School, parents in collaboration with the teachers and learners helped to raise funds to rehabilitate the school's swimming pool. This was a major project which according to the HT cost about Ksh1.25 Million. Learners participated in a fund raising walk to realize that amount. This was a strong indicator of the parents' and learners' desire for PE in the school. At EL2 School,
parents paid Ksh 1,100 every term as maintenance fee for the swimming pool. This was not a mean cost compared to EL1 School where some parents could hardly provide their children with a pair of canvas shoes for games.

Although PA was appreciated by all respondents as way of promoting healthy living, practices in the study schools suggested the contrary. During the schools' fun and awards day at EL3, the researcher observed that learners who raised the highest amounts of money for the rehabilitation of the swimming pool were given awards which seemed to negate the purpose of healthy living for which they were being recognized. Although the winner was awarded a bike which enhanced PA, the first runner up was given a play station. This was likely to make the learner sedentary as it did not encourage much exercise. Play station was also likely to eat into the learner’s free time that could have been used for active play. The third best fundraiser was presented with a gift voucher of lunch for 2 people at a prestigious hotel in the neighbourhood which could likely to expose the learner to junk food. This matched what the games teachers at EL3 and EL1 Schools pointed out, “Games are done basically to prepare teams for competition. There is no consideration for PA as a means to health promotion in our schools.”

During an FGD with boys at EL3, they argued, “Our school has plenty of play equipments but they are like decorations for the school store.” They complained of carrying games kits to school while time and opportunity to use them was denied. This discouraged learners from carrying their kits to school, and lowered their motivation for PA. Boys at EL2 School observed during an FGD that their playground was unsuitable for play activities (plate 9).
Failure to integrate academic work with PA was noted by parents as holding back the holistic development of learners. They observed the numerous homework given to learners every day as a deterrent to their engagement in PA. A parent remarked, "I don't think my child gets enough time to play in school because they are always occupied with class assignments." This concurred with other respondents and observations that learners especially those in upper primary school spent virtually the whole day doing class work. Parents too observed that there was no forum availed by the school administration to discuss matters related to PE and PA during parents meetings.

4.4.3 Teachers’ Enthusiasm towards PE and PA

The teacher readiness to provide PA opportunities to learners in school influenced the practices and perceptions of learners towards it. Observations by the researcher together with responses from teachers’ interviews showed that PE which formed a major component of the PA opportunities for learners in school was observed not be taught fully.

4.4.3.1 Learners Perceptions of Teachers’ Enthusiasm on PA and PE

Learners’ perceptions were informed by the language that was used by teachers in regard to PE and PA and the consequent opportunities that were availed to them in school. The schools’ socio-economic diversity made it advisable to analyze the findings from each school separately.
a) Observations from EL1 School

Learners noted that their PE teacher took them out for the lesson on very rare occasions. During the few occasions that the teacher turned up for the lesson, "He sits on a chair and watches us as we play. He sits there doing nothing until the lesson is over," said the girl who had been assigned the duty of carrying the chair to the field. Learners reported that teachers provided them with play equipments like balls during preparations for interschool competitions after which they were securely locked in the HT’s office. This according to the learners favoured only a few elite players disadvantaging majority of the regular learners and LWSN.

Learners in a mixed gender FGD pointed out that, "Teachers fail to take us out for PE lessons as a way of punishment when they were annoyed with us." Learners claimed that teachers ignored LWSN during PE and games, an observation shared by girls during FGD.

b) Observations from EL3 School

As in EL1 School, the PE teacher overlooked the significance of PE in his pedagogical routines. The researcher observed that PE lessons during the study period were not attended to and pupils were instructed to remain in class for academic instructions. During an FGD with boys, they claimed that the school administration sometimes hired out the field to outsiders during school days. They said "Sometimes when we go for games, outsiders come to use the school field and we are told go back to our classes." Learners felt that scoring good academic grades was more valued by teachers than being physically fit. Asked what they did during PE lessons, they said "We do Mathematics, Science and Kiswahili." These were the very lessons taught by
the PE teacher as observed from the class-timetable. Occasionally learners were given balls during free time in this school. Boys were favoured in this arrangement as noted by girls; "But boys are given (balls) always or even teachers call them to go and take during games times." This discrimination could point to the causes of girls' low levels of PA pedometer records.

c) Observations from EL2 School

Learners from EL2 School felt that the amounts of home work they were given was an indication of their teachers disinterest in PA. Boys in an FGD observed, "Sometimes we have a lot of class work and only those who are bright and fast enough have time to play. We are required to finish class work before doing other activities; otherwise we will be beaten by our teachers."

Because of the focus on academic performance, learners were pushed to work extra time on the examinable subjects so as to score higher grades in the end of year examinations. In an FGD boy observed, "We sometimes miss to go for break so that we can revise." Another one observed, "There is a lot of homework from school so there is little time left for play when we get home."

LWSN said they liked to take part in PA but were excluded from the minimum opportunities that were availed to their regular peers. A girl with VI, (with some bitterness) said, "Sincerely, I do not blame my sight but persons in responsibilities who deny me the opportunity, empowerment and freedom to involve myself in physical activity." This particular learner also felt that teachers did not make any efforts beyond what learners with VI could achieve on their own. "Our PE teacher says,
"everybody go out for P.E" She knows I cannot do most of the activities in a regular P.E class. She is not bothered when I do not turn up for the session. BUT! (Showing some disgust) if I do not attend a swimming lesson she definitely wants an explanation – she knows I can swim which I learnt before I lost my sight."

4.4.3.2 Teachers' Self Reflections on their Enthusiasm in PA

Teachers interviewed admitted their dismal engagement of learners in PE. Though no instructed PE lesson was observe during the data collection period, teachers responses in interviews showed that they had offered 50% instructed that time. This was outrightly inconsistent with the researchers’ first hand observations during the study period. Though the reflections were similar across the three schools an individual look at each particular school brought out the uniqueness of individual cases.

a) Teachers' Reflections at EL1 School

It was notable that all the teachers interviewed in this school had served for at least 20 years in primary schools and had taught PE at various times during their service. The PE teacher was open and forthright with information during the interviews. During his introduction, he claimed that he used to attend all the PE lessons as provided for in the class timetable. With a shy face he noted "Hiyo ni sheria kwanza." (This is law in the first place). However, this was inconsistent with the researchers’ observation where he noted learners not going out for PE, and on one occasion learners went out on their own and placed a teachers chair under a shade by the side of the field just in case he showed up for the lesson.
According to the teacher, "stealing" half or more of the PE lesson to teach Science is okey which he did more often than not. "I may steal 10 to 20 minutes from the P.E lesson. If a teacher comes and requests to teach his subject during the P.E lesson, I willingly grant him/her," he said. The laxity with which he managed PE lessons demonstrated the value he attached to the subject.

One objective of teaching PE in schools supposes teachers to guide and encourage learners towards positive attitudes and healthy habits which they could assimilate in their adult life (KIE, 2004). However, in EL1 School the PE teacher faulted this by saying, "They (learners) get very little support if any from the school administration and the teachers in general despite their immense interest in PE." "During a staff meeting we (teachers) unanimously agreed to suspend games during third term so that we could concentrate on learning," the teacher informed. The HT shyly shared with the researcher the essence of PE on the timetable saying, "PE lesson is not meant for PE but to cover other (examinable) subjects like Mathematics; and for games time, teachers normally rest after being so busy throughout the day."

EL1 School having embraced inclusion besides the Unit for learners with MR, had learners with PH in the study class. The class teacher admitted that there was no care taken for LWSN in terms of their inclusion during PE and games sessions. He observed, "She (referring to a learner with PH) just stands somewhere laughing and watching. Rather she is not catered for in the lesson."

Interest by teachers to effectively administer PE lessons was best summed by the PE teachers' admission that, "In fact, I may say I have never owned a games kit. (Laughs)"
But the games teachers wear sometimes when they are going out to officiate during inter-school competitions. In school, it will look odd to be in PE kits, even children will be surprised."

b) Teachers' Reflections at EL3 School

EL3 Schools' physical facilities and the playground portrayed an area that would naturally encourage teachers to engage in PA. Teachers' orientations, nonetheless, did not reflect this expectation. Their reflections on how PE and engagement of learners in PA was consistent with all the respondents interviewed in the school.

The DHT admitted the teachers shortcomings, "I would like to be honest and admit that PE lessons are attended to occasionally in this school. Am sure you must have observed this, teachers are not thorough with PE." As was the case in other schools, PE was assigned to class teachers who were required to have at least two other key examinable subjects in the same class. This led to neglect of PE as teachers focused their energies on learners' excellence in academic achievements. Learners were not allowed to play football on any other day except Thursdays which was the designated day for games. This was an official position held by the school administration.

As was the case in EL1, the HT affirmed that teachers had a tendency of using the PE lesson to teach other subjects, a routine that appeared normal and acceptable to all. This position was shared by the Games master, Class teacher, and the PE teacher of the study class. The PE teacher blankly put it, "PE is a subject that is not taken seriously by many people. Some think it is taught as a formality; The Mean Score Syndrome is a major challenge especially in the big schools. School administrators
and teachers feel that they are wasting pupils' time by taking them out for PE.” Despite a provision by the MOE to procure instructional materials for PE alongside other subjects, PE teachers had never forwarded any proposal to the School Instructional Materials Selection Committee (SIMSC). The researcher viewed this revelation by the DHT who is also chair to the SIMSC as an illustration that teachers did not entirely lack resources to engage learners in PE and games but rather the enthusiasm to do so.

c) Teachers’ Reflections at EL2 School

The school had a fairly dedicated games teacher who despite weak support by other members of staff managed to take learners out for games on the designated dates of the week.

The games teacher appearing disturbed observed that less than 50% of the teachers in the school were keen to help learners in games. He mumbled “mmm... honestly about 50% or below participate, and even those who do are not very keen about pupils’ participation. Those who are keen and interested are influenced by others until their enthusiasm comes down.” He singled out a case on a day when a teacher took away an improvised ball from a boy during break time. “I did not see the reason why the ball was taken. It was in the morning and the boy had a lot of energy. There was no need to make this boy cry.” He concluded the interview by pointing out the most frustrating thing in his department; “Teachers who would rather have children in class than go for games, that is very frustrating.”
EL2 School had adequate staff according to the national primary school staffing standards. With 36 teachers against 21 streams, failure in any department was inexcusable according to the HT. In general all subjects were well done except the wanting performance in PE. She noted that, "they would not like me to know, but I know they use it for other subjects." To ensure that it was attended to, she said, "... with a little push they go for PE." This affirmed teachers' reluctance to engage in PE. The PE teacher felt that time allocated for PE was adequate. He admitted failure to follow up learners with VI. She shyly said, "Mmm... I have not been following them to see what they do."

From the teachers' reflections, there was a general trend that showed poor teachers' motivation to engage learners in PA and PE regardless of the school status. Teacher's low interest and motivation went against learners' will despite their own admissions that learners were enthusiastic to engage in PE and play activities.

4.4.4 School Provisions for LWSN

LWSN should be provided with a Least Restrictive Environment (LRE)' besides an Individualized Educational Programme (IEP), (Hallahan, Kauffman, and Pullen. 2009). Meeting these conditions allows learners to have a holistic development thus enabling them to favourably integrate into the society. During the study, LWSN barely took part in the regular play activities that other learners in the school engaged in. This necessitated adaptation of the play activities, physical environment and the instructional techniques suitable for LWSN.
Data on how schools provided for LWSN was drawn from EL1 and EL2 Schools because they had integrated programmes. EL1 School had integrated learners with PH and it had a unit for learners with MR. Data from learners with MR was collected primarily by observations and interviews with the teachers. It proved difficult to collect step data from learners with MR due to the nature of their impairment. They would remove the pedometers once they were mounted on their belts while others dismantled them to see what was inside. A few others feared to wear the step counters altogether. EL2 School had an integrated programme for learners with VI. These learners were cooperative and data collection from them was done in the same way as was with their sighted peers.

a) Provisions at EL1 School

EL1 School had two categories of LWSN, learners with MR and those with PH. There were 3 learners with PH and 11 learners with MR. There were no individualized programmes to put them on board for PE with their non-disabled peers. PE Lessons ignored specific concerns for learners with disabilities. In the study class, the learner with PH was simply ignored by the games and PE teachers. The PE teacher unapologetically, "I just ignore her. You know PE is not the main thing in school. She can take part in other things in class. For PE she can just forget." The PE teacher was not privy to any plans in the school to improve or change the way PE lessons were conducted. Due to the nature of the learners' disability (PH), it necessitated her to wear light canvas shoes which was a misdemeanor not to be in full school uniform which including black leather shoes.
The games teacher admitted that he did not engage LWSN during games but allowed them to be on their own during that time. He said “they join others in the field but we do not engage them in sports.” In a mixed gender FGD, “When we go out for games or PE they (LWSN) follow us to the field where they sit down and watch as we enjoy ourselves in the field.” Learners’ use of the words “they follow us” implied that LWSN were ‘strangers’ in the lesson. However, LWSN were engaged in some minor work especially of tidying their classes by collecting litter and cleaning their classrooms together with the rest of the learners.

An interview with a mother to a girl with PH revealed the girls’ experiences in school during games and PE sessions, “Teachers do not tell her what to do. She tells me she just sits down. She gets out of class with the others but sits down while others play. She is not given any activity to do. After the lesson she walks back to class with the others.”

Though the playground was fairly big for the schools’ population, LSWN had a difficult time using it together with the rest of the learners. Fighting for the available space and the limited play materials in the field worked to their disadvantage. In general, the means of access to PA for LWSN at Kiwanja School involved walking to and from school and tidying the compound besides the other movements of necessity within the school compound.

b) Provisions at EL2 School

EL2 primary School had an integrated programme for learners with VI. At the time of this research there were 18 learners with VI. Out of these, 6 learners were used
including 3 from the study class. The school had a resource room where learners with VI received individualized academic attention from specialist teachers to supplement what they learnt in the regular classes. The resource room had Braille machines, Braille reading materials, offices for the specialist teachers and some reading area for use by the learners.

The researcher observed that learners with VI spent most of their time in the resource room whenever they were free, including PE and games sessions. The school did not provide adapted games and PE lessons to learners with VI. The games master reported that there was not a single teacher specialist in VI in the schools' games committee. During an FGD a boy made the following observation, "It's true that those pupils (VI) are not taken care of. As we play with the balls in the field, they remain bored in class. Sometimes they go to the resource room as we go for PE. There, they work on the braille machines or sit and chat." The PE teacher shared similar views, "Most of my lessons they go to the learning resource room (LRR), but, what they do there I have never known or thought about" The HT could also not single out any adapted provisions that the school had put in place for LWSN. "Maybe they have some materials in the LRR but am not sure. If I knew there was something special required for them I would buy," she said.

During a reflection session with 5 learners with VI to find out the insights they had acquired from the step data and how they perceived it. They appreciated that their movements within and without the school environment were fundamentally meant to serve specific gainful purposes unlike their sighted peers who had plenty of leisure walk. "We go to limited and particular places and for specific reasons. These steps
are a reflection of what we do in and out of school," said one boy. They concurred that PA in the school was concentrated on people who had sight. They gave examples of volley ball and football which were the major games activities supplied to the learners by the school. Without an adapted play area reserved for them, learners with VI said it would always be impossible to play and run around. "Sighted learners are all over the place. We feel that a fair ground and fair activities to participate in will make a difference on the number of steps we make," observed a girl in the FGD.

Learners with VI said that the school had failed to provide play materials and to ensure that the school compound was suitable to facilitate their movements. To demonstrate that it was not impossible to have them engage in PA, one girl enlisted some of the things she could do if she was the school administrator. She noted, "I would pick the open ground around the LRR because all the VI learners are conversant with it, fence it off, plant some fine grass all over that area and then put some play materials that we can use. The place would be exclusively reserved for learners with VI. To ensure that it is properly taken care of, I would then assign one specialist teacher to be in charge of that place."
In general, provisions for LWSN in PE and games was desperately inadequate. Teachers and the school administration ignored the plight of LWSN in their efforts to create PA enhancing areas. Data from the study schools agreed with the findings of McNeil et al. (2009), and Graham (2008) which found out that schools were constrained in their provision of PA due to inadequate facilities and equipment, insufficient allocation of time and general provisions. PE lessons were found to be both inadequate in number and duration to achieve the desired outcomes of the curriculum. Class sizes were found to be too large for any meaningful learning to occur, thus teachers prioritized management issues instead. A major constraint to adequate PA as noted by Graham (2008) was that some school principals viewed PE as the period in the day that provided needed planning time for classroom teachers. Others viewed it as a break from the rigors of classroom academic work routines that allowed children to ‘blow off steam’ before returning to the classroom.
4.5 Learners’ Constraints in Accessing Physical Activity Opportunities

Learners across the study schools faced almost similar constraints in accessing PA opportunities in their different forms of environment. However, besides the challenges being largely common, some constraints were unique to the SES of either the family or the school to which individual learners belonged. Respondents viewed learner’s constraints according to how they interacted with them. The constraints noted by the respondents were opinions drawn out from their personal experiences.

4.5.1 Learners Observations of their Constraints in PA

Arising from collected data, learners were noted to have an intrinsic desire for PE and PA. It was observed that they desired to use their free time in active play whenever opportunity allowed. During data collection, learners understood and outlined what limited their involvement in PA and what the most outstanding constraints were.

a) School Enrolment

Enrolment in the three schools could generally be described as moderate for regular academic purposes. The enrolment was 1200, 1254 and 1338 learners in EL1, EL2 and EL3 Schools respectively. Learners considered this as a high enrolment which caused scramble for the limited play facilities and equipment in the school which kept many learners off the field of play. The games teachers in EL2 and EL1 Schools admitted that their schools had insufficient play materials for the learners.

During an FGD with girls at EL1 School they noted that, “Our field is so congested, all pupils flock into the field at the same time denying us (girls) space to play.” This according to them could not be the case if the enrolment was commensurate to the
facilities and equipment in the school. At EL2 School, learners in the study class complained, "sometimes class 8 pupils chase us out of the field, but when we tell the HT they are chased away and we continue playing." This indicated that enrollment was not in proportion to the available facilities.

b) Emphasis on Academic Achievements

The emphasis on core curriculum and academic achievements as a constraint to PA and PE was best described by a parent at EL1 School who said, "Ndungimira na utheke." (A Kikuyu idiom translated as you cannot simultaneously laugh and blow your nose). This parallel demonstrated the parents’ understanding of the impossibility of integrating play (PE and PA) and academic work. This advised learners against engaging in other activities that would distract their attention from achieving well in academics. Learners noted the pressure piled on them by their parents to focus their mind singularly on academic work. A boy during an FGD at EL2 School said, "Ukifika nyumbani kichwa kimejaa na tena mzazi anakwambia nenda usome," unafungiwa kwa bedroom, unang'ang'ana na utapumzika tu kwa kitanda." (When you get home from school your head is full but the parent insists that you go and continue studying. You are locked in the bedroom where you continue struggling. You will only rest when you go to bed.) Rightly put by the HT EL2 School, "Class teachers are assigned PE and at least 2 other key subjects so that they can have "adequate time" with the learners in their classes. PE lessons are used to provide extra time to teach the examinable subjects in the curriculum."

At EL2 School, a boy observed that they would forego their free time to improve on their academic performance to avoid being beaten by their teachers. A girl in the same
school noted her mother’s admission that PE was good but her future was better in books. “Am advised by my mother that my future is in books not in play.” In this school, learners were engaged in earnest academic competition between streams where a comparison of the mean grades attained by each stream was done at the end of the term awarding the winners and those with low grades vilified.

At EL3 School, a girl reported what she was told by her mother, “Do you know that soon you will be a candidate? If you bring me 200 marks (40% score) you will get a high school for yourself and you will look for a job to pay your school fees.” This was after the girl requested to go out and play with her younger siblings one Sunday afternoon. The parent wanted the girl to sit in the house and do private studies instead of play.

c) Facilities and Equipment

Learners in the three schools blamed the limited facilities and equipment at their disposal both at school and their homes as major constraints to their PA levels. At EL1 School, learners said that they lacked balls, games kits, and grassed playground. Te researcher observed that most of the big girls in the school avoided the playground because it was very dusty which could make their clothes dirty. They said that the school had only one football ball and none for volleyball and netball which were the major games and avenues of PA they could engage in. At EL2 School the roughness of the field kept most of the learners away. “Our field is small, hilly, and rough and has no grass, so there are high chances of injury. This makes us not to play or lose interest in games altogether.” said a boy during an FGD (Plate 9 below). He noted that this greatly affected girls because they feared looking or getting dirty.
At EL3 School, learners in the study class noted the school administration’s failure to allow them to use the many balls that lay idle in the games store. They expressed displeasure with teachers who confiscated the play materials they brought to school.

At home, play areas were a challenge to the learners. Most learners lived in flats and congested neighbourhoods where play outside the houses was either prohibited by parents for security reasons or the play area was itself not safe. PA along the sidewalks to EL3 School was described by a one girl in a mixed FGD as “unsafe and a risky affair because of many cars and sidewalks that are bumpy and have holes/ditches.”

d) Security and Safety of Learners

From FGDs in the three schools, mention of security concern by learners came from EL3 School. In EL1 and EL2 security concerns came from parents. A girl in an single gender FGD in the school said that she was forbidden by her parents to go out of the home compound unless she was accompanied by an adult. Another girl in low tones
said “kwetu kuna mungiki” (there is Mungiki in our neighbourhood) which makes it unsafe for us to go out in the neighbourhoods to play. This was confirmed by another girl who said, “I go out with my elder siblings but stay at home when they are not there.” Due to security concerns, a girl who wished to get to school on foot said that her parents insisted on dropping and picking her every day. “Some parents just lock you up in the house to watch TV.” This was a sentiment from a girl at EL2 School who believed that her parents who operated a food kiosk in an informal settlement had no better place to leave her when she was not in school. The researcher noted that security concerns were commonly noted during FGDs with girls. Learners were conscious of the risks of using unsafe playgrounds and the possible conflict with their parents if they exposed themselves to injuries. A girl at EL2 School noted, “Our field is small, hilly, has stones all over, tree stumps and protruding roots and has no grass (Plate 9), so there are high chances of injury. If you go home with bruises your mother may refuse you to play another time. We are warned against exposing ourselves injuries. This makes us not to play or hate games altogether.” A boy in the school said he was a victim of the schools’ “unsafe” grounds; “I have a loose tooth after I feel down and hit a rock in the field.”

e) Social Economic Status

Learners at EL1 and EL2 Schools expressed lack of food as a factor to their limited engagement in PA. In EL2 School a boy observed, “Some children have very little to eat at home. Some parents give their children a piece of roast maize and porridge or tea for a meal. These children will obviously lack energy to play.” Asked by the researcher about what would enhance a physically active lifestyle among learners, a boy responded by saying, “Children should be given food in school. We cannot play
without food, we need energy to play." This was complimented by the researcher's observation of a boy borrowing food from his peers during lunch break at EL1 School. The hungry boy confided that he did not have anything to eat for lunch and he could not afford the 20 shillings ($0.25) meal that was being sold in school.

Plate 9: A Child Begging for Food at EL1 School

Learners at EL1School lacked basic games attire canvas shoes, t-shirts and pair of shorts for sports. With the school uniform expected to serve also as the games attire, learners from EL1 and some from EL2 Schools preferred to keep off the field to ensure that their cloths remained clean and lasted longer. Learners who walked bare feet were hesitant to play football with their friends in leather shoes.

How well learners' environment got endowed with facilities limited or empowered their engagement in PA though family affluence was noted to diminish engagement in UPA. Learners from high SES lacked the opportunity to walk to and from school as their parents preferred to drop and pick them. Others in this category organized for school transport where learners could be picked and dropped at their doorsteps. Most
learners from EL3 and EL2 Schools reported that they only bathed and took dinner and then embarked on their home-works after school. Most of them said there were house-helps who did virtually all the manual work in their homes. During their free time, majority of learners had play stations as their pass time activities. Failure to engage learners in UPA due to the families SES constrained their PA opportunities. In EL3 School, there were 4 cleaners who kept the compound, toilets and classes clean. This was similar to EL2 School except that learners swept and washed their classes while workers attended to other parts of the compound. In EL1 School these manual duties were all healthy opportunities that raised learners' PA levels.

f) Other Constraints Observed by Learners

i. **Weather**

Learners lacked alternative play areas when the weather became unfavourable. Three days during data collection were rainy thus provided for observation on how weather affected PA. As noted in the step data, there were fewer steps recorded during rainy days in comparison to fair weather days. None of the three schools provided for indoor games or a hall where learners could engage in play during adverse weather conditions.

ii. **Time**

Time availed to the learners for both PE and games was not utilized for the intended purpose. Boys in an FGD at EL1 School quipped, "*Teachers should give us games days, we only go for games in 1st term when there are interschool competitions. This is unfair to us.*"
### School Policies

Some school rules were detrimental to learners' engagement in both PE and PA. Girls in EL3 Hill were not allowed to engage in one of the best girls' pastime play activity called *Katolo*. The school policy proscribed *Katolo* claiming it made the compound dirty. Schools commonly provided football balls to learners whenever this privilege occurred irrespective of their gender. This favoured the boys as most girls could not equitably engage in football an essentially boy's dominated game. "Boys are given football balls while girls are left to choose what to do," observed a girl from EL3 School. To achieve the health benefits from PA the learners' habitat should be provide the requisite opportunities and designed to motivate engagement in PA (AAP, 2009).

#### 4.5.2 Constraints for LWSN

LWSN involved in the study included those with PH, and MR from EL1 School and learners with VI from EL2 School. Being in integrated programmes, the researcher observed that LWSN were not given preferential treatment in their access to PA but had to contend with the same provisions and environments as were for the regular learners.

#### 4.5.2.1 Observations by LWSN on the Factors that Limited their Access to PA

The researcher conducted interviews and FGDs with LWSN to establish causes they believed were constraining their access to PA. LWSN were candid and reasonably conversant with the challenges they faced. Like their regular peers, they pointed out school assignments as a major constraint which deprived them time that they could engage in play and attend PE and games sessions. At EL1 School, a learner with PH said that she remained in class as others went for break to complete her homework.
"My condition naturally disadvantages me from engaging in PA. Most people including my parents, teachers and my peers are hesitant to include me in activities that are physically challenging. I know they fear that I may get injured but this may not always be the case. My mother also sends me to a nearby shop but she strictly refuses me to play with my siblings." he said sighting her physical conditions of her and overprotection as constraints.

"Sir, it's not that am too old to do these activities (PA). I believe there are challenges we go through. If you observe, the sighted children are jumping, skipping, and running. Their movement is much easier than ours because we have to walk keenly, and maybe, only to certain places where we are supposed to go to," quipped a 14 year old girl with VI to the researcher at EL3 School. To justify the constraint caused by impairment, the learner contrasted the daily movement activities of learners with VI and the regular learners. She noted the following, "Getting to the classroom, we go directly there. If it's up to the gate, we head there straight, so we go to particular places of importance to us. BUT other children are here, there, there and they are running all over and at times you find they are playing. So they do a lot of movements that but we cannot do. That's why I think our steps are fewer than theirs. The steps (referring to step data) are a reflection of the things that we do." Recommendations by NICE (2008), urges school governors to ensure that playgrounds are designed to encourage varied physically active play within the school environment. This would help learners with VI to identify PA activities within their abilities to engage in.

Regular learners in both EL1 and EL2 Schools were in agreement that LWSN were ignored by PE and games teachers. "These people are not taken care of. As we play in
the field, they remain bored in class or they go to the resource room where they sit and chat,” said a boy at EL2 School during an FGD.

An acquired constraint caused by learnt helplessness was noted among LWSN especially those with PH. They had admitted that their conditions had condemned them to a permanent state of physical inactivity. In EL1 School one such girl said, “I do not like going for games. Mimi sijiwezi (I am disabled). I cannot run. I play with one hand but mostly I sit down.” The fact that the learner could walk around as observed by the researcher and could play using one of her hands implied that she had the potential to engage in active play. Believing in her words that “hajiwezi” (she’s disabled) caused low self worth. This made her to justify her exclusion from PE and games sessions.

LWSN argued that their schools lacked individualized programmes in PE and games to cater for their needs. A learner with VI at EL2 School said, “We the blind need to have play activities that are suitable for us. Most activities in school are concentrated on learners who have sight. They play volleyball, football, handball, and netball which we the blind cannot manage. These games are meant for the sighted.”

Lack of a LRE suitable for use by LWSN was a constraint as observed by learners with VI at EL2 School. As described by a boy with VI, the play area was tricky for them to access. He observed that, “There are hills, stones, tree stumps and trenches which need to be flattened and made accessible to me. Sometimes I fall down because of stones and get injured by the barbed wire along the paths.” Another learner who
had similar a view retorted, “*At times I think a fair ground and fair activities to participate in will make a difference on the number of steps we make.*”

Lack of an affirmative action to empower LWSN to exploit their abilities in achieving an active lifestyle was observed as a major impediment to active lifestyle by learners with VI. During an FGD one boy in the group bitterly said, “*Sincerely I do not blame my sight but the denial by persons in authority to accord me opportunities and an enabling environment to engage myself in physical activity.*” As an entitlement through the Children Act, every child should be facilitated to engage in meaningful play and leisure activities (Children Act, 2001). The school environment should therefore ensure that LWSN rights are protected and accorded to them as the case to other learners.
5.1 Introduction

This chapter presents a summary of the research findings, conclusions, and recommendations as informed by the findings of the study. The chapter makes suggestions for further research aimed at creating awareness among learners, parents and teachers that nurture active lifestyles and healthy living. The recommendations are based on the functioning of a person/learner within social contexts which provide basic needs (Deci and Ryan 1985) and the interplay between social structures (home/family, school, and the neighbourhood) that either affect or are affected by the learners (Bronfenbrenner, 1979).

5.2 Summary

Nurturing an active lifestyle in young children creates a generation free from chronic health ailments associated with sedentary lifestyles. This study attempted to achieve this broad objective by analyzing learners’ perceptions and practices in PA from some selected regular and integrated schools in Nairobi County. The study specifically looked at the learners’ perceptions on the adequacy of PA opportunities in schools, their levels of participation in PA in school, home and the neighbourhood, school practices in the provision of adequate environment for PA for learners, learners’ constraints in accessing PA opportunities in school, home and their neighbourhoods and the impact of PA on their academic achievements. The summary of this study was built according to the themes that developed from the study objectives.
5.2.1 Adequacy of PA Opportunities to Learners in School

Though PA implies any activity that exerts the body muscles beyond resting, learners perceived it in terms of play and engagement in play activities and sports. UPA which included walking to school and cleaning was seen by learners as work which they disliked wished to avoid. Any limitation to accessing play and games opportunities was interpreted by learners as a hindrance to PE and PA altogether.

5.2.1.1 The Physical Environment

The physical environment was a major factor that influenced the way learners engaged in PA. Learners considered safety and size of playground, school policies and hygiene as factors in the environment that affected opportunities to PA in schools. They were conscious of their safety during play. They pointed out the use of barbed wire along foot paths, pavements, classroom corridors and around the play areas as scaring away potential play opportunities. Learners engaged less in play activities in playgrounds that had tree stumps, trenches, potholes, concrete chippings and dust due to risks of injury and getting soiled.

The size of the available playground in relation to the school enrollment determined the number of learners who engaged in play at any particular time. Limited play areas caused bullying of girls and smaller children by boys in higher level classes as they scrambled for the available space. This conflict lowered the activity levels of girls and the small children in PA negatively.

Some school policies demanded that learners could not engage in certain kind of games in school. Katolo, a high intensity play activity predominantly played by girls
was banned by the EL3 School administration claiming it made the school environment untidy. Football too (a very popular avenue for PA among boys) was only allowed on Thursdays in this school.

Two out of the three study schools had their playgrounds not properly grassed therefore prone to dust and muddy during rainy weathers. The fairly big (mature) learners feared to soil themselves with dust or mud during the rainy season. Parents encouraged their children to take care of their school uniform and avoid soiling themselves in school.

5.2.1.2 Availability of Time for PA

Schools were places where learners spent most of their time in a year. Learners spent 73% of their days in school annually. Provision of adequate access to PA would therefore be advanced to the learners better in schools than at home and the neighbourhood environments. However, teachers used the time availed for engaging learners in PE and games for teaching and engaging learners in other academic activities. PE and games sessions were used for academic purposes despite the learner’s great desire to engage in them.

Learners used the time allocated for breaks to have brief periods to engage in play when they did not have class assignments to do. Learners at EL3 and some from EL2 School spent reasonable duration of their break time buying snacks from the tack shop and the kitchen respectively while those from EL1 School could hardly afford that “luxury” and therefore opted to play instead.
5.2.1.3 Utilitarian PA for Learners in Schools and Home

Schools with low and middle SES had an opportunity for learners to engage in utilitarian PA as they made the school tidy through cleaning the classes, offices and tidying the compound. This opportunity was very limited for learners in high SES schools because most of the work was done by hired labour. Most learners in low SES walked to schools despite their desire to use motorized means. At home, learners from less endowed economic backgrounds were involved in providing labour in the family through gardening, shopping trips, fetching water, washing clothes, tidying the compound, cooking and other minor errands. These work activities were opportunities for PA to low SES learners.

5.2.1.4 Physical Facilities and Equipment

Due to the learners’ high interest in PA, some of them carried improvised play materials to school. Boys in low and some from middle economic backgrounds made balls from waste plastic bags while those from higher SES brought factory-made balls to school. The large grassed play field at EL3 Hill School attracted learners to engage in plays activities. The general failure by the schools to issue play materials to learners from the games or HT’s store denied them opportunities to play and engage in physical activity.

5.2.1.5 PA Opportunities for LWSN

There was extremely minimal effort by the school administration and teachers to engage LWSN in PA according to the study findings. LWSN were left out or deliberately ignored during PE and games sessions in schools. While it was mandatory for learners to attend games and PE sessions whenever this happened,
teachers neither bothered to engage LWSN nor mind what these learners did during such sessions.

LWSN had great interest in PA and expressed their displeasure with teachers’ failure to include them in the school’s PA routine. Teachers did not make learning of PE individualized so as to cater for LWSN. The physical environment was too restrictive for individuals with disabilities thus making them disabled. Presence of staircases along some parts of the footpaths, stumps and stones in the playfields and barbed wire along footpaths were enormous disincentives to PA for LWSN.

5.2.2 Learners Level of Engaging in PA
Understanding learners’ level of participation in PA generates a critical baseline index which may inform the development of strategies to be used in ensuring learners adequate engagement in PA and establishment of suitable environments that promote the practice. The study found that learners engaged more in PA the environment was safe and provided ample space.

5.2.2.1 Physical Environments Encouraging PA
The levels of engagement in PA were influenced by factors within a particular physical and social environment. Some physical environments elicited greater engagement than others. User friendliness of the physical environment made learners to be more physically active in some environments than others.

The home and neighbourhood environments which posed little threat to learners’ security and safety encouraged more engagement in PA. Learners’ level of
engagement in PA was better in environments that allowed them to engage in utilitarian PA. Learners from EL2 and EL3 Schools were limited from walking to school due to congested foot paths, dangers of crossing the roads and insecurity along the road. At EL1 School, learners had the opportunities of cleaning and tidying the home environment, washing clothes, cooking, walking to and from school, fetching water and firewood, going shopping and tending to the school and family farms. However, these UPA opportunities were common among learners from lower socio-economic bracket of the respondents.

Girls in the lower economic bracket made more steps within the home and neighbourhood environments than the rest of the learners. This was indicative of their responsibilities in utilitarian activities at home as attested to by their responses during FGDs. Girls from low SES had higher PA levels at home than both boys and girls in the middle and high SES levels according to pedometer step data. Step data indicated that learners in the lower socio-economic brackets were about one and a half times more physically active in the home and neighbourhood environment than their counterparts from the middle and upper economic levels. Home environment recorded higher PA levels for girls while the school environment elicited higher levels of PA among boys. Learners from the middle SES had the least levels of PA while those from low SES had the highest. Learners from upper SES lay midway between the two SES groups.

Spacious and grassed school playgrounds attracted higher step count and greater learner participation in PA. This was attributed to an environment which allowed learners to play optimally whenever they had the opportunity to.
5.2.2.2 Learners' Trends of Engaging in PA

The school, home and neighbourhood environments’ setup influenced how learners engaged in PA. Schools had a regulated programme which prescribed the time when learners could be free to engage in play and other forms of physical PA including PE lessons. Despite these provisions, learners spent most of the free sessions with teachers in class. 5 out of 6 lessons PE lessons were not attended to across the three study schools. Learners spent most of their free time doing class assignments instead of going out for break and play.

Learners had limited play areas in their homes because most of them lived in congested estates and high rise flats. The estates lacked open play grounds. Parents were also apprehensive to allow their children to go out and play where open space was available due to security concerns. This caused learners to engage in sedentary past time activities like computer games and watching TV whenever they were free after doing their homework. Learners were eager to go for PE and cheered whenever they were given that opportunity. Their immense interest in PA was demonstrated by the way they dashed out to the playground whenever they got some free time.

5.2.2.3 Physical Activities Engaged in by Learners

Across the three study schools, learners engaged in similar play activities. There was an almost definite cultural demarcation between play activities for girls and those for boys during self directed play. The play activities were seen as either feminine or masculine in nature for girls and boys respectively, though none was prohibited from taking part in either. Boys commonly played football, banu, catching the thief, volleyball, mbira, high jump and running while girls mainly engaged in catie,
bladder, katolo, and rope skipping. Though the study was not comparative, it was noted that learners engaged in more fun play in EL2 and EL3 Schools than in EL1.

At home, learners from low SES engaged in UPA that helped in providing family labour while those from middle to higher SES engaged in sedentary play activities like computer game and watching television.

5.2.2.4 PA Levels for LWSN

LWSN were almost invisible in the play world in schools. Teachers admitted that they neither engaged them in games and PE lessons nor assigned them school communal duties where the rest of the learners got an opportunity to engage in UPA. LWSN were sympathized with by both teachers and parents. This caused them not to engage in most of the activities done by other regular peers. Teachers left out LWSN during PE and games sessions instead of developing an IEPs to make the lessons relevant this disadvantaged group. The performance of LWSN compared dismally with that of the regular learners on step data. They attained an average PA level below 50% of their none disabled peers in the pedometer data.

5.2.3 School Practices in the Provision of Adequate PA Opportunities to Learners

Schools have set practices which influenced the planning of their daily activities. According to the 2011 Kenya Primary school’s calendar, learners spent 73% of their days in school. This made the school environment to be a critical component in influencing and shaping learners interest in PA and healthy living in general.
 Members of the school community are assimilated into these practices and embrace them as a way of life in the institution. The identified practices in the study schools that influenced the provision of PA opportunities to learners according to the study findings included school routine and practices, school programmes, teachers enthusiasm to PE and PA, and schools’ prioritization in providing for LWSN.

5.2.3.1 School Routines and Practices

There were routines in the study schools which were followed by both the teachers and pupils. In the three schools, PE was taught by class teachers besides who had also to have at least two other key examinable subjects in the same class. PE lessons were used to supplement for the time used in teaching the other examinable subjects. This practice had been informally sanctioned by the school administration and the teachers in general. It was universally agreeable in the schools that time for PE was not necessarily meant for physical exercises as intended in the curriculum.

On Thursdays, the study schools had a one hour games session in the afternoon. However, this was only practiced if there were games competitions in the term. Games sessions in the schools were meant to prepare teams for competitions but not for learners’ PA. Teachers had generally agreed to suspend games in third term to prepare learners for the end of year examinations and ensuring syllabus coverage for the examinable subjects in the non-examination classes. Like other non-examinable subjects, PE as a subject was not valued for the intended purposes. PE and games did not have instructional materials in schools despite provisions for the same in the government allocations to schools. None of the SIMSC had ordered materials for PE despite there being provisions in the FPE catalogue (orange book).
EL3 School allowed learners to play football on Thursdays only while the playing of *katolo* was banned in the institution. These activities were favourite to majority of boys and girls respectively. Their denial was therefore detrimental to the learners' levels of PA. It was also common practice for teachers to confiscate play materials like balls and ropes from learners when they were found using them within the school compound. Teachers did this to discourage learners from "wasting" valuable school time. Learners in standard 7 and 8 were discouraged from taking part in interschool competitions to avoid 'wasting time' in doing 'other things.'

Learners from the upper socio-economic backgrounds were encouraged by teachers to use motorized transport to school. Occasionally learners were given a footballs ball to play in the field. This opportunity disadvantaged the girl learners because the game was dominated by boys. This bias might have caused girls to be less physically active in school as compared to boys. Teachers did not provide any progress report on learners' performance in PE and PA to the parents as they did for academic performance.

5.2.3.2 School Provisions for PA

The study schools had more regard for academic work to the detriment of PA and promotion of physical health in general. However, EL3 School had fairly sufficient physical facilities that attracted learners to engage in PA whenever they had a chance. Though majority of the parents were willing to support schools in creating enabling environment for learners to engage in PA, the school administrators and the teachers were reluctant to engage them in that course.
Play materials and equipment were kept in the school administration offices where learners did not have access to them as easily as they could have wished. Games equipments were preserved for use during interschool competitions but not for learners play activities in school. Except in EL3 School where good maintenance of the playground was observed, the playgrounds in the other two schools were dusty, had stones and concrete chippings, had tree stumps, and dangerously uneven surfaces to play from.

5.2.3.3 Teachers Enthusiasm in PA and PE

Enthusiasm by teachers to engage learners in PE was noted as a factor that impacted negatively on learners’ level of engagement in PA. This theme developed from parents’ interviews, learners FGDs, and teachers’ reflections on the way they engaged learners in PA and PE in particular.

Parents pointed out that teachers engaged learners with assignments virtually all the time both in school and at home. This kept the learners reading without an opportunity for meaningful time to engage in PA. Teachers’ demand for learners to arrive in school very early in the morning and leave late in the evening so as to create more time for class work denied learners time to engage in play activities. Though PE was a subject like any other in the school curriculum, teachers neither evaluated learners nor gave progress reports to their parents on the same.

Teachers’ referred to play in a demeaning language that dissuaded learners’ interest in it. Learners in standard 6, 7 and 8 were said to be “not serious in academic work” if they engaged in play activities during their free time. Those who remained in class
during their free time were referred to as “focused and understood better the purpose for being in school.” Teachers hardly attended the PE lessons but instead used that time to teach the examinable subjects, take a breather or to prepare for other lessons. Teachers who on rare occasions allowed learners to go for PE either remained in class, or had a chair in the field to sit on and watch as some learners engaged in free play while others stood in groups to chat. LWSN were ignored and just left to do whatever they wished during the PE lesson. Without regard for individual differences, teachers occasionally gave football balls to learners which disadvantaged the smaller children and the girls due to physical nature of the game. Teachers ignored the essence of engaging all learners in play and PA. The games teachers took more interest in learners (elite athletes) who could represent the school during interschool competitions. They argued that learners’ measure of success in a school was how well they performed in examinations but not their levels of physical fitness or sporting prowess.

Besides having provisions to procure PE and games instructional materials under the FPE programme, SIMSC members chaired by DHT did not so in any of the study schools. This demonstrated the low value that the teachers and the school administration in general attached to games and PE as a subject. Further, learners’ efforts to provide play materials for themselves were often frustrated by teachers who confiscated them on grounds that they were a nuisance within the school compound. Though teachers hardly took learners for PE, they claimed that the 105 minutes allocated to subject per week was sufficient for the learners’ physical wellbeing.
Another pointer to teachers’ low level of enthusiasm in PA/PE was in the way they handled LWSN. During the rare occasions that learners’ were taken for PE, teachers did not prepare IEPs to address their special needs. Instead, they left LWSN on their own to idle and waste the entire lesson. Teachers said that they did not have any immediate plans to change the way they handled this group of learners.

Teachers failed to secure play areas that could be used by LWSN to reduce unbalanced competition for the limited available spaces in the compounds. At EL2 School the HT admitted that she was not aware of the provisions necessary for learners with VI to engage PA/PE.

5.2.4 Learners Constraints in Accessing PA Opportunities
Perceptions of the constraints faced by learners in accessing PA was shaped by experiences, responsibilities, expectations and the value they attached to PA. Each group of respondents had their own views on the causes of these constraints. However, some responses and observations were fundamentally similar.

5.2.4.1 Learners’ Opinions on Constraints to PA
Learners noted school enrolment as a key issue that constrained PA/PE in schools. They observed that high enrolment caused scramble for the limited play areas and competition for the few play equipment that the schools could afford to provide to them. This caused children in lower level classes to be chased away by those in senior classes. This constrain caused some learners to play along class corridors and pavements (Plate 7). To strike a balance, some teachers forced learners in senior
classes to abandon their play activities and leave the field for learners in lower classes.

The desire for academic achievement by parents and teachers made learners to be kept in class for long hours while more class work was carried home as homework daily. Parents and teachers seemed to agree on what one parent said "You cannot simultaneously laugh and blow your nose." Learners were therefore expected only to engage in academic work but not any other business while in school.

Lack of play facilities both in school and at home constrained learners' engagement in PA. Some boys and girls in avoided play areas that could soil their clothes causing sedentary tendencies in learners. Safety of the play areas caused learners to be apprehensive of their PA engagement. These areas included play fields in EL1 and EL2 Schools, congested walkways, high-rise and congested flats, uneven ground and open trenches in the estates.

Some neighbourhoods were unsafe for learners to walk or play around due to crime and motor vehicle traffic. Learners in such neighborhoods commonly remained indoors and preferred to use motorized transport to and from school instead of walking. Poor nutritional supply caused learners participation in PA to regress. Learners from low SES backgrounds observed that they could not sustain or actively engage in vigorous physical activities because they lacked the energy to do so. They requested to be given free food supplies in school because they never got enough at home. Some learners EL1 School skipped lunch while some at EL2 School claimed they did not get enough food at home. However, learners from the higher economic
bracket (EL3 School) were also negatively affected because they spent a lot of their free time buying snacks at the school tuck shops.

Learners in the low economic bracket lacked suitable play equipment and right attire to engage in play activities both at home and in school. Inappropriate play attire discouraged PA due to fears of injury and possible damage to the school uniform.

Learners from affluent background reported greater use of sedentary play activities like watching TV and use of play stations. At home and in school, these learners were rarely engaged in utilitarian PA because their parents could afford to pay for hired labour.

Other challenges noted by learners in the study included adverse weather conditions like rains and very hot days. These adverse conditions discouraged outdoor play activities because school lacked indoor games facilities. It was noted that the pedometer data during such days were reasonably low. Learners blamed some school policies like proscribing some games, allowing time for PE lessons to be used to teach examinable subjects, and allowing outsiders to use playground during school hours as issues that also constrained their engagement in PA.

5.2.4.2 Constraints for LWSN

All respondents concurred in their observations that LWSN experienced unique challenges besides the general constraints they endured together with their regular peers.
Parents noted the lack of adapted facilities both at home and in school to engage LWSN in PA. Overprotection of LWSN by their parents who felt that they were obliged to ensure their safety from any harm or injury dissuaded them from joining other children in active play. Teachers sympathized with LWSN and failed to demand for their participation in games and other UPA as they did for the regular learners. In their respective schools, teachers simply ignored LWSN who chose not to attend PE lessons. However, there lacked teachers with skills in adapted PE to competently handle this category of learners in the study schools. Lack of competencies made teachers to sympathize and "relieve" LWSN of the burden of PE/PA altogether.

From their own perspective, LWSN admitted that their constraints stemmed from the handicapping conditions they had. However, the constraint to achieve optimal levels of PA was aggravated by how these handicapping conditions were perceived by other people in the society. The built environment restrained them to engage mainly in essential PA unlike their regular peers who engaged in several instantaneous play activities. Learners with VI said they made movements only to specific places and for specific purposes unlike their sighted peers who jumped and ran all over the places because the designers of the built environment did not have the needs of LWSN in the mind. Due to their disabling conditions, LWSN appeared withdrawn and interacted mainly amongst themselves. They expressed learnt helplessness in their remarks through statements like, "mimi sijiwezi" (I am disabled).

Teachers did not have IEPs for LWSN so as to engage them in PE equitably with their non disabled peers. Schools too failed to comply with policy provisions for a LRE that could provide for fair PA opportunities to all learners.
A learner with VI summed up their reasons for low levels of PA to a society that did not embrace inclusion and which was not mindful of the minorities’ welfare. She singled out cases where sighted learners left pieces of sticks, stones or other objects on the footpaths making it difficult, and discouraging for them to engage actively within the environment.

5.3 Conclusions
The study findings drew very insightful information from the themes that addressed the study questions. Plenty of meaningful serendipity information was gathered during data collection giving significant furtherance of knowledge creation in this specific area of study.

5.3.1 Perceptions on the Adequacy of PA Opportunities in School
Learners perceived adequacy in PA opportunities in terms of how well they were provided with time, suitable environment, and facilities to engage in play activities. Their interest in play activities was overwhelming. Virtually all learners irrespective of their physical ability expressed reasonable attempts to engage in some form of physically exerting play activities on a daily basis. Though PA involves any activity that exerts the body beyond its rest position, UPA which mainly came in form of walking to school, tidying the school, washing and sweeping the classes, moving to various important points within the school, and gardening was viewed by learners as work which they wished to avoid.
Learners concurred that they did not have adequate opportunities to engage in PA in school. They noted limitations by the size and user friendliness of the school compound, play equipments and facilities, safety of the play playgrounds, and denial by teachers to engage learners in the games of their choice. Besides the above inadequacies, there would be sufficient opportunities for PA if the time allocated for learners to engage in PE and games was utilized for the intended purposes other than doing class assignments and learning examinable subjects assigned to the PE teachers. LWSN like their non-disabled counterparts had similar observations besides their own unique views. They were excluded or ignored during PE and games sessions because teachers sympathized with them and or did not know how to handle them altogether. Games provided for by the teachers were elitist and for the regular learners with athletic prowess thus unsuitable for LWSN. In general LWSN were convinced that both teachers and the school in general were inadequately prepared to provide for their needs in PE, games, and PA in general.

5.3.2 Learners' Level of Participation in PA in School, Home and the Neighbourhood

The level of participation in PA by learners was a factor of their age, gender, and physical ability on one hand and the influence of the school, family and neighbourhood environments on the other.

Using pedometer step data as an indicator of PA levels, regular learners’ activity levels were within the recommended healthy limits of between 12,000 to 15,000 steps per day. However, the activity level of LWSN was worrying at 36% of the expected limits. Though data the average data indicated that learners performed better in school
than the home environments, there difference was marginal. However, LWSN PA level within the home and neighbourhood environment was too low (35% of the daily average) compared to that of the school environment. The big disparity could be indicative of the levels of sympathy by parents and siblings which resulted in overprotection of LWSN at home.

An observation of the learners' performance by gender indicated that boys' average at home and the neighbourhood was 7,029 compared to girls' 5,735 while the average within the school environment was 7,318 and 5,159 for boys and girls respectively. Both boys and girls from low economic backgrounds had much higher step counts within the home and neighbourhood environment than their counterparts in the higher economic brackets while the reverse was true in the school environment. The middle SES class learners had step counts lying below those of learners in the two ends of the economic continuum. Learners from the middle SES group represented by EL2 School suffered a double disadvantage. They did not only fail to benefit from UPA at home like learners from EL1 School but also lacked to be in a school that could provide for a descent and adequate playground as was the case for learners in EL3 School.

LWSN had low activity levels compared to their regular counterparts; their handicapping conditions coupled with the setbacks that affected other learners affected their activity levels. They were in essence exempted from utilitarian PA both in school and at home besides being limited by the restrictive environments.
5.3.3 School Practices in Providing for Adequate Environment for PA for Learners

The primary schools' calendar provides that pupils remain in school for about 73% of the weeks in a year. The major avenues used by schools to provide PA were breaks provided between the lessons, the three 35 minutes PE lessons per week for upper primary and four 30 minutes lessons for lower primary, plus one 40 minutes games session per week. Learners too were engaged in UPA in school in the form of cleaning classes, tidying the compound and occasionally tending to the school flower garden. The study schools had an established routine where PE and games sessions were used as extra time to teach the examinable subjects assigned to the class teachers. It was a tradition in the study schools to have the class teacher teaching PE and at least 2 other major examinable subjects in the class he was assigned.

Save for EL3 School, fields in other schools exposed learners to dangers of injuries due to their rough terrain, potholes, tree stumps, concrete and concrete chippings. Games were primarily conducted to prepare an insignificant number of learners for inter-school competitions. Learners who were not talented enough to make it to the school team were not keenly followed up during games sessions. Schools had a general shortage of play materials for learners to use during their free time. Nonetheless, the limited play equipments like balls available were locked up in offices where learners could hardly access them.

Learners carried a lot of home work from school which they did until late in the night. Besides, there were multiple class assignments which took away most of their free time in school. Parents and teachers lay emphasis on academic excellence at the
expense of learners’ physical activity, physical health in general and formation of a lifelong healthy lifestyle. Teachers’ diminished enthusiasm of engaging learners in PA across the study schools was evident. On average, only 1 out 6 PE lessons was taught, while the other 5 lessons were either used to teach the examinable subjects, learners asked to do their private studies, or to complete their class assignments at that time. Play and PE were demeaned by teachers such that they referred to them in derogatory phrases like “waste of time,” and “being idle.”

LWSN were ignored by games and PE teachers when they engaged other learners in PE and games. Teachers failed to prepare IEPs for LWSN for their PE and games sessions. Except in EL3School where the field was fairly kept, the other two study schools had compounds that were a hindrance to PA for learners living with disabilities.

5.3.4 Learners Constraints in Accessing PA Opportunities

The study identified the constraints learners had in accessing PA opportunities to be as a result of human factors, lack of knowledge and skills, social economic effects, and learners’ physical capability. From the study, insecurity in the neighbourhood discouraged learners from walking to and from schools and playing outside the confines of the school and their homesteads. Kidnaps, defilement and exposure to vices and bad company were major concerns that made parents to keep their children indoors when they were out of school. They addressed this concern by ensuring that their children were picked and dropped from their homes by organized school transport or family car. Due to concerns of their own safety in the environment, learners feared to walk along the roads for fear of being hit by vehicles and
molestation by some pedestrians along the congested walk way especially in the morning. Poorly maintained playgrounds (Plate 2 and Plate 3) that had dust, mud, uneven, had concrete chippings or rocks, trenches and stumps kept many learners (especially girls) away from these play areas.

The size of land on which an institution stood determined the size of playground that was available to the learners. Competition for space caused some learners to keep off the field of play while others were molested out of the field altogether in the philosophy of survival for the fittest.

An all but academic oriented culture in schools caused parents, teachers, and learners to devote their time to academic work at the expense of PE, breaks and games sessions. Games in school were primarily done for purposes of competition engaging mainly elite athletes and leaving out several other children especially LWSN.

Both at home and in school, learners lacked facilities and equipments which they could use for play and exercise activities. School play equipments were locked up by the school administration while most parents never bought their children play materials. Some teachers confiscated play items that learners brought to school and proscribed some popular play activities that learners engaged wished to engage in denying them play opportunities.

Lack of teacher specialists in PE caused the subject to be taught by persons who had no skills and passion for the subject. LWSN lacked teachers with special training and skills in adapted PE to make the lessons relevant to their needs. LWSN were
sympathized with by teachers and parents consequently denying them involvement in utilitarian PA both at home and in the school environments. As an expression of sympathy, regular learners failed to engage LWSN in their group play activities or sharing out of manual work that was assigned to them by the teachers.

Poverty and affluence both constrained access to PA in varying degree. Poor nutritional supply made some learners to complain due to lack of the energy to engage in play while learners from affluent backgrounds spent their free time snacking or queuing at the tuck shops as others continued to play. Endowed families and schools made use of hired labour to work denying children an opportunity for UPA.

There were hardly any playgrounds in the neighbourhoods where learners could play when they were out of school. This caused them to remain indoors and engage in sedentary activities like watching TV, listening to music and playing computer games.

5.4 Recommendations

From the study, significant insights and knowledge was generated on the learners' perceptions and practices in PA. The study highlighted issues of adequacy, levels of participation, school practices, constraints by learners in accessing PA opportunities, and effects of PA on academic achievements.

5.4.1 Adequacy of PA Opportunities to Learners in Schools

For learners to attain adequate opportunities in PA in school, deliberate efforts to improve the physical environment by the schools, parents and relevant government agencies should be done. This would address the safety of learners in the playground
and the school compound in general. Schools should ensure that objects that obstruct learner's movements like stumps and concrete chippings in the field should be removed and the ground leveled to avoid the dangers of tripping off. Foot paths should be fenced off with smooth rails other than barbed wire to encourage learners especially those with VI to move freely without the dangers of injuries.

Development of a **minimum school land policy** should be put in place through the MoE and other relevant government ministries to ensure that schools have adequate space for learners to engage in play activities. The Quality Assurance and Standards (QAS) department in the MoE should ensure that the quality of playfields allows learners to engage in play activity without the fear of getting soiled or encountering undue injuries.

The school administration should ensure that PE and games sessions are conducted as envisioned in the curriculum. The quality assurance and standards officers (QASO) should enforce this as a requirement in all schools and ensure full compliance by the respective teachers. Inclusion and integration policies in schools should be seen both in and out of class. LWSN should be integrated in all the school programmes including PE and games. Members of the school community should be sensitized on the value to empathize with LWSN and embrace them in PA. Schools through the games department should be liberal and allow learners to engage in play activities that are most appealing to them. They should not enforce the 'not too kidish' activities which learners neither identify with nor have interest in, as long as these activities are not dangerous to them.
5.4.2 Learners Level of Participation in PA

The study recommends that schools should set aside adapted play areas for LWSN to facilitate their engagement in PA and minimize competition for play space with the regular learners. Orientation and mobility for learners with VI in such an area would translate to confidence and increased participation in PA for them.

Parents from middle and high SES backgrounds should therefore create opportunities for learners to engage in UPA or create other possible avenues for their children to engage in PA when they are at home. Parents to LWSN should be sensitized on the need to let their children engage in PA when they are at home. A collaboration between schools and the MoH could help address the situation.

To increase activity levels within the neighbourhoods, learners should be encouraged to walk to and from school. Circumstances that may not allow for free walking to schools should be addressed by the all the stakeholders in the society. Parents, teachers and pupils should be made aware that it is for the good of the learners’ health that they should embrace walking to school but not to see it as a social status issue. Sensitization to change the cultural mindsets where activities that learners engage in were defined by their gender is recommended for boys and girls to freely engage in play activities irrespective of their gender as long as this contributes positively to their health. Parents and teachers should therefore provide PA opportunities without bias to the learner’s gender.
5.4.3 School Practices in Provision of Adequate PA Opportunities to Learners

The study recommends that PE teachers should have specialized training and skills in teaching the subject. The MoE should deploy teacher specialists in adapted PE to special schools, units and integrated programmes to offer relevant, skilled and specialized attention to LWSN.

To address the dismal levels of PA for LWSN the study recommends that an affirmative PA policy for LWSN be formulated by the MOE to enforce LRE in schools. The affirmative action could involve provision of adapted/suitable play materials to LWSN. Tax rebate on PA equipments for use by LWSN should be introduced by Kenya Revenue Authority (KRA). This study also recommends diversification of play/games facilities and equipment in schools to encourage girls' participation in more vigorous PA. Schools in conjunction parents may include grassed playground, paved footpaths, racket games, and indoor games and sports.

Data from the study and reviewed literature indicates that time for PE lessons is used to teach the examinable. This study recommends that Teachers Service Commission (TSC) should post teachers specialized in PE and assign them adequate teaching load of PE lessons only in each. This would allow teachers to offer undivided attention to the subject.

The school administrators should ensure that time allocated for learners in school is be adequately utilized to satisfy the educational needs of learners for each particular day and desist from giving learners loads of extra academic (homework) work to take home. Games teachers should encourage participation in games by all learners
irrespective of their gender or ability. The study recommends that the MoE incorporates interschool competitions in the games calendar for learners in the different age brackets to spread the interest in sports and PA across all the school grades.

5.4.4 Learners’ Constraints in Accessing PA Opportunities

The study noted that most of the constraints that learners encountered in accessing PA opportunities could be addressed effectively through concerted efforts of the stakeholders.

Due to the risks of defilement, rape, kidnapings, and general harassment of learners as they walked to school where distances could allow, the study recommends that parents in collaboration with the school administration could have their children escorted to school by a parent(s) or person(s) of sound integrity in the idea of 'walking bus to school.' A recommendation to the ministry of roads and public works to construct safe footpaths, foot bridges, speed bumps and zebra crossings is considered for this study. The government housing department should ensure that urban development plans factor in open play areas in the residential estates for children. This will not only encourage children to engage in but will also control the risks of injuries and accidents as children play on the streets.

The QASOs in the MoE should ensure that the school playgrounds stimulate PA to all learners. A policy guideline on minimum school land policy by the MoE should be put in place to ensure a proportionate land size to the number of the enrolled learners.
Schools administrators should facilitate games departments in setting up indoor games for learners to engage in play in times of adverse weather conditions.

The study recommends for intervention by the government to ensure that all learners in school receive adequate nutritional supply (food). Nutritional supplies through the school feeding programmes would ensure that all learners have sufficient energy to engage in PA. It would also be advisable for the KICD to develop curriculum content that exposes the dangers of over-nutrition (obesity) to create to learners early enough on the dangers of sedentary lifestyle. The current primary school curriculum teaches about nutritional deficiency diseases but does not address the dangers associated with over-nutrition and chronic health impairments associated with obesity and sedentary lifestyles which may result in "brooding disability."

5.5 Further Research

A lot of studies have been done on matters of health promotion among the general population with nothing specific about LWSN. This study focused on regular and integrated units in Nairobi County on the state of learners' perceptions and practices towards PA whose choice could have limited the sample size of LWSN. This study having outlined their challenges in accessing PA opportunities, it would therefore be imperative to carry out a study to establish the national PA levels for LWSN. Data that would indicate specific PA levels for categories of persons with specific handicapping conditions would be an important benchmark in creating awareness, improving the physical environments and eventually learners PA levels.
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Appendix I

Interview Guide for Class Teachers

a. For how long have you been a teacher?
b. How long have you taught in this school?
c. How many PE lessons are supposed to be taught in a week?
d. How many P.E lessons actually exist on the time table?
e. Are all PE lessons attended to?
f. What is the average time spent out with learners during a PE lesson?
g. What equipment does the school provide for PE lessons?
h. In your own assessment, do you consider these equipments adequate?
i. What other times are learners allowed out for PA?
j. What would you say about teachers as models in PA?
k. How would you rate teachers’ preparations for PE lessons?
l. What do you think are the limiting factors to learners’ participation in P.A?
m. How do you rate the learners’ interest in PE?
n. Do teachers make lesson plans and schemes of work for their PE lessons?
o. Do you think learners have adequate time for PE?
p. How are LWSN taken care of in your class during PE and games?
q. What constraints do learners experience in accessing P.A?
Appendix II

Interview Guide for P.E Teachers

a. How long is your teaching experience?
b. How long have you been a PE teacher for this class?
c. How many PE lessons are provided for in the syllabus per week?
d. How many P.E lessons appear on the time table?
e. Of the lessons in (d) above, how many do you actually attend per week?
f. How do you conduct your PE lessons?
g. What are the common activities that learners engage in during P.E lessons?
h. How do you incorporate LWSN in your PE lesson?
i. What is the average time spent per P.E lesson?
j. Does the school provide play equipment for PE lessons?
k. How would you describe the adequacy of the physical activity equipment and facilities in this school?
l. As a PE teacher what challenges do you encounter in achieving your goal?
m. From you observations, do learners enjoy taking part in physical activity?
n. What do you think is the learner’s main hindrance to full participation in your PE lessons?
Appendix III

Interview Guide for Games Masters

a. How long is your teaching experience?
b. How long have you served as a games master in this school?
c. How is the games routine in the school?
d. Is the routine followed?
e. How long does a game session last?
f. What activities do learners engage in during games?
g. Does the school provide play equipments to the learners during games?
h. How well do LWSN fit into the games programmes in the school?
i. How would you describe the games facilities you have in your school in terms of adequacy and appropriateness?
j. How would you describe the learner’s perceptions in games and physical activity in general? How would you describe their interest in play activities?
k. As a games master what challenges do you encounter in executing your duties?
l. What do you think would be the learners’ major hindrance to participate in games activities?
m. Are there benefits you can single out that accrue from learners participation in games and other forms of PA?
Appendix IV

Interview Guide for Head-Teachers

a. How long is your teaching experience?

b. How long have you served as a head-teacher in this school?

c. Are PE and games sessions included in the school routine?

d. Other than during the above session, are there other times when learners are engaged in P.A?

e. What is your assessment on the learner's interest in P.A?

f. Are PE lessons taught as outlined in the syllabus?

g. What is your position on the adequacy of the facilities and equipment provided by your school to the learners?

h. What is the most preferred mode of transport of learners to and from school?

i. What constrains does the school have in providing adequate P.A opportunities to learners?

j. Are you satisfied in the way PE/PA programs are run in the school?

k. How best do you think they can be improved?

l. What benefits do learners get if any by engaging in PA?
Appendix V

Interview Guide for Parents

a. What do you do for your living?
b. What is the distance from here (home) to your child’s school?
c. What means does your child use to get to school?
d. Is this means of transport your preferred choice?
e. Does your child seem to like it?
f. How does your child spend his/her free time at home?
g. What free time activities does he/she like engaging in at home?
h. Is there an open play area where your child goes to play?
i. What play equipments does your child use at home?
j. Does he/she have time to make use of them?
k. Do you discuss your child’s performance in P.A with your PE teacher?
l. In your own opinion what hindrances are there to your child’s sufficient engagement in P.A?
m. Do you think your child benefits in any way by engaging in physical activity?
Appendix VI

FGD Guide for Learners

a. Does your school have a school bus?

b. What mode of transport do you prefer to and from school?

c. Do you like taking part in P.A?

d. Given a chance why would you choose not to engage in P.A?

e. Do you think your school, home and the neighborhood provide adequate opportunities for you to engage in P.A?

f. What do you think the above institutions should do to satisfy your needs for adequate engagement in P.A?

g. What benefits do you get by engaging in PA/PE or play activities?
Appendix VII
Observation Checklist

1. General appearance of the school compound and the playground/play areas.
2. General appearance of the neighbourhood environment.
3. Common play activities engaged in by learners.
4. Attendance to PE lessons and Games by learners and teachers.
5. Availability of PE equipments /facilities in the school.
6. School provisions for PE and PA for LWSN.
7. Learners’ attire during PE and games.
8. Learners’ safety during PE/PA in school and the neighbourhood.
9. Other observable features that may influence learners engagement in PA.
10. Learners mode of transport to and from school.
### Appendix VIII

#### Pedometer Counts Table

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<th>Learners (Code)</th>
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## Appendix IX

### Research Budget

<table>
<thead>
<tr>
<th>Items</th>
<th>Kenya shillings</th>
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</thead>
<tbody>
<tr>
<td><strong>Typing and printing</strong></td>
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<tr>
<td>- Draft proposals and Fair copies</td>
<td>= 24,800</td>
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<tr>
<td>- Thesis drafts and final copies</td>
<td>= 13,300</td>
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<tr>
<td>- Thesis binding</td>
<td>= 2,500</td>
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<td><strong>Travel</strong></td>
<td>50,000</td>
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<td><strong>Book allowance</strong></td>
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<td><strong>Photocopy</strong></td>
<td>10,000</td>
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<td><strong>Stationary</strong></td>
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<tr>
<td><strong>Communication</strong></td>
<td>10,000</td>
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<tr>
<td><strong>Research Equipments/instruments</strong></td>
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</tr>
<tr>
<td>- Digital video camera</td>
<td>50,000</td>
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<tr>
<td>- Tape recorder</td>
<td>8,000</td>
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<tr>
<td><strong>School incentives - ksh2000 per-month/school</strong></td>
<td>24,000</td>
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<tr>
<td><strong>Internet (ksh 2,000 per month)</strong></td>
<td>12,000</td>
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<tr>
<td><strong>Administrative fee- flash disk, modem and cell phone</strong></td>
<td>16,000</td>
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<tr>
<td>- Air time (ksh 2000 per month)</td>
<td>12,000</td>
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<tr>
<td>- Laptop</td>
<td>50,000</td>
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<tr>
<td><strong>Principle investigator-honorarium</strong></td>
<td>180,000</td>
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<tr>
<td><strong>TOTAL</strong></td>
<td>478,600</td>
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</table>
## Appendix X

### Research Time Schedule

<table>
<thead>
<tr>
<th>ACTIVITIES</th>
<th>YEARS 2010 – 2011</th>
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<tbody>
<tr>
<td></td>
<td>Feb 2011</td>
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<tr>
<td>Proposal Writing and Submission</td>
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<tr>
<td>Piloting and Validation of Research tools</td>
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<tr>
<td>Data Collection</td>
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<tr>
<td>Data Analysis</td>
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<tr>
<td>Thesis writing and Submission</td>
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</tr>
</tbody>
</table>
The Permanent Secretary,
Ministry of Higher Education, Science & Technology,
P.O. Box 30040,
NAIROBI

Dear Sir/Madam,

I write to introduce Mr. Nyaga Michael Simon who is a Postgraduate Student of this University. He is registered for an M.Ed degree programme in the Department of Special Needs Education in the School of Education.

Mr. Nyaga intends to conduct research for a thesis project entitled, "Learners' Perceptions and Practices on Physical Activity: A Case of Selected Regular and Integrated Schools in Nairobi County, Kenya."

Any assistance given will be highly appreciated.

Yours faithfully,

MRS. LUCY N. MBAABU
FOR: DEAN, GRADUATE SCHOOL

LN/MWk
Appendix XIV

Research Permit

THIS IS TO CERTIFY THAT:

MR. MICHAEL NYAGA SIMON
of KENYATTA UNIVERSITY, 1103-60100
Embu, has been permitted to conduct
research in Nairobi County
on the topic: "LEARNERS’ PERCEPTIONS
AND PRACTICES ON PHYSICAL
EDUCATION: A CASE STUDY OF
SELECTED REGULAR AND INTEGRATED
SCHOOLS IN NAIROBI COUNTY, KENYA.
for the period ending:
31st December, 2013.

Signature

Permit No.: NACOSTI/P/13/8527-721
Date of Issue: 1st November, 2013
Fee Received: KSh. Ksh1000.00

NATIONAL COMMISSION FOR SCIENCE,
TECHNOLOGY AND INNOVATION

Chairperson

Secretary

National Commission for Science,
Technology and Innovation

RESEARCH CLEARANCE PERMIT

CONDITIONS: See back page