Assessment of Recreational
Physical Activity amongst
Female Learners attending
Kagiso High Schools

Hajira Thabitha Mashego

A minithesis submitted in partial fulfilment of the
requirements for the degree of Masters Public Health in
the School of Public Health, University of the
Western Cape.

Supervisor: Dr. Gavin Reagon
University of the Western Cape
Faculty of Health and Social Sciences
School of Public Health
21 November 2003
Assessment of Recreational
Physical Activity amongst Female
Learners Attending Kagiso High
Schools.

Hajira Thabitha Mashego

**Keywords**
Assessment
Recreation
Physical activity
Exercise
African
Adolescents
Female
Learners
Township
High schools
ABSTRACT

Assessment of Recreational Physical Activity amongst Female Learners Attending Kagiso High Schools.

H.T. Mashego

Master of Public Health Minithesis, Department of Public Health, University of the Western Cape.

Regular physical activity is linked to enhanced health and to reduced risk for mortality and the development of many chronic diseases in adults. However, many adults are either sedentary or less physically active than recommended. Children and adolescents are more physically active than adults, but participation in physical activity declines with age during adolescence. Girls are less active than boys, older children and adolescents are less active than younger children, and among girls, blacks are less active than whites.

This study aimed to examine physical activity in female learners attending Kagiso Township high schools in Gauteng Province.

Methodology: A stratified proportional sample of 464 pupils out of a population of 3462 was selected from class registers. The 'modifiable physical activity questionnaire for adolescents' was used to gather data on type and level of recreational physical activity. A self-constructed questionnaire on opportunities for recreational physical activity was attached, section 1 of which was also given to a representative teacher of each school. The questionnaires were self-administered with supervision from the researcher. Data was analysed using microsoft excel and a statistica program. The results were rated according to the International Consensus Conference on physical activity guidelines for adolescents and opportunities for recreational physical activity were discussed. It was found that 66% of the learners in the five schools were
involved in some form of recreational physical activity within the seven days prior to the study, 51% of which did not participate in any hard exercise at all and were therefore at an unacceptable level of activity according to the International Consensus Conference. Opportunities for recreational physical activity in the schools (provision of facilities, time allocation to physical education and increased numbers of trained physical education educators) were found to be in need of great improvement. The learners' attitudes towards recreational physical activity were found to be generally positive. Lack of female sporting role models and lack of parental role modelling, male domination of sports equipment and facilities, sexual tension between the male and female learners, time-inconvenience, unsafe sporting facilities and lack of access to information and facilities were found to contribute negatively to participation in recreational physical activity.

It was recommended that relevant facilities be built in schools, activities that provide lifelong skills be promoted, female physical education educators be trained and deployed at schools, adequate time for physical education be provided at schools and accessibility to facility and equipment be improved for female learners.
DECLARATION

I declare that *Assessment of Recreational Physical Activity amongst Female Learners Attending Kagiso High Schools* is my own work, that it has not been submitted for any degree or examination in any other university, and that all the sources I have used or quoted have been indicated and acknowledged by complete references.

Hajira Thabitha Mashego

Signed: [Signature]

November 2003
ACKNOWLEDGEMENTS

I am grateful to my supervisor, Dr. Gavin Reagon for his help and guidance through the process of this minithesis. A special thank you to Sam Ntuli and Dr. Jonathan Levin who helped me process my data and make sense out of it. To Lekale-lere Mashego, my beloved brother, for helping me collect and encode the data. Last but not least to my family, for giving me time, support and encouragement I so much needed.
DEFINITION OF TERMS

Recreational physical activity: a process of voluntary participation in recreational physical activity, which contributes to the improvement of general health, well-being and the skills of the individual (adapted from the South African Department of sport and recreation's definition, 1995). This does not include work, household chores or any activity that is carried out without the sole purpose of recreation.

Physical education: A compulsory school subject in grades 1-12 in the South African Interim Curriculum. It encompasses a wide range of physical skills and activities taught to learners. It represents that component of sport, which occurs as part of the formal curriculum of the school (Centre for Education Policy Development Evaluation and Management & Education Policy Unit, 1999).

African: A person of African descent (a native of Africa), Microsoft Encarta, 1997. In the South African context “African” is an explicitly racial term. This does not mean there are biological differences between the races but race as a social construct was very real and the associated racism had profound detrimental effects on the “African” as well as the “Indian” and “Coloured” groups.

Recreation: Participation in physical activities for health and enjoyment, rather than the winning motive (Draft Protocol for School Sport, 2000).

Physical activity: A complex behaviour that encompasses such disparate domains as sport and exercise, occupational tasks, and household chores. In the broadest sense,
physical activity refers to any bodily movement produced by skeletal muscles that results in energy expenditure (Sternfeld et al, 2000).

**Leisure:** Freedom from time-consuming duties/activities. Individuals are involved in activities which are to their own benefit, which they perform voluntarily and without any pressure being exerted on them (Gouws, 1997).

**Sport:** Physical participation in a structured, recognised code where both formal and informal sport are regulated by rules. Sport is also purpose-oriented and the criteria for achieving success or failure, are obvious (Gouws, 1997)
CONTENTS

Title page
Key words
Abstract
Declaration
Acknowledgements
Definition of terms

1 INTRODUCTION

1.1 Rationale for the study
1.2 Research setting

2 LITERATURE REVIEW

2.1 Introduction
2.2 Assessment of recreational physical activity
2.3 Benefits of physical activity
2.4 Benefits of recreational physical activity
2.5 Levels of participation in physical activity
2.6 Inactivity in black women
2.7 Physical Education at schools
2.8 South African Department of Education Policies and physical education
2.9 Factors influencing participation in recreational physical activity
2.10 Conclusion
3 PROBLEM

4 PURPOSE

5 AIM

6 OBJECTIVES

7 METHODOLOGY

7.1 Study design

7.2 Selection of study sample

7.3 Sampling procedure

7.4 Data collection instruments

7.5 Data collection procedure

7.6 Data analysis

7.7 Ethical considerations

8 RESULTS

8.1 Introduction

8.2 Description of participants

8.3 Recreational physical activity

8.3.1 Exercise intensity

8.3.2 Hours spent on TV, videos & computer games

8.3.3 Past year leisure-time physical activity

8.3.4 Participation on a competitive level

8.3.5 Opportunities for recreational physical activity

8.3.6 Factors affecting participation in recreational physical activity
9 DISCUSSION OF RESULTS

9.1 Introduction 108
9.2 Types & levels of recreational physical activity 108
9.3 Health benefits of recreational physical activity 110
9.4 Opportunities for recreational physical activity 113
9.5 Factors impacting on participation in recreational physical activity 117
9.6 Summary of main findings 121
9.7 Limitations of the study 123
9.8 Conclusion 123
9.9 Distribution of study findings 124
9.10 Recommendations 124

REFERENCES 126

APPENDICES

1. Consent form 135
2. Adapted modifiable activity questionnaire for adolescence 136
3. Opportunities and inhibitors questionnaire 140
4. Metabolic cost table 144
5. Permission from UWC Faculty of Community & Health Sciences
6. Approval from the Department of Education
<table>
<thead>
<tr>
<th>Table</th>
<th>Description</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Table 7.1</td>
<td>Sample size per school</td>
<td>43</td>
</tr>
<tr>
<td>Table 7.2</td>
<td>Number of learners per grade</td>
<td>44</td>
</tr>
<tr>
<td>Table 7.3</td>
<td>Number of learners per grade per school included in the sample.</td>
<td>44</td>
</tr>
<tr>
<td>Table 8.1</td>
<td>Sample age range</td>
<td>52</td>
</tr>
<tr>
<td>Table 8.2</td>
<td>Hours per day spent on TV, videos, video games and computer games</td>
<td>71</td>
</tr>
<tr>
<td>Table 8.3</td>
<td>One activity per learner that was done the most</td>
<td>78</td>
</tr>
<tr>
<td>Table 8.4</td>
<td>Amount of energy expended in past year activity</td>
<td>80</td>
</tr>
<tr>
<td>Table 8.5</td>
<td>Types of competitive activities</td>
<td>88</td>
</tr>
<tr>
<td>Table 8.6</td>
<td>Activities offered in the schools</td>
<td>89</td>
</tr>
<tr>
<td>Table 8.7</td>
<td>Facilities available in Kagiso high schools</td>
<td>90</td>
</tr>
<tr>
<td>Table 8.8</td>
<td>Allocated physical education hours</td>
<td>90</td>
</tr>
<tr>
<td>Table 8.9</td>
<td>Reported number of physical education educators</td>
<td>91</td>
</tr>
<tr>
<td>Table 8.10</td>
<td>Learners' total score of psycho-socio-economic and general environment for recreational physical activity</td>
<td>93</td>
</tr>
<tr>
<td>Table 8.11</td>
<td>Personal inhibitors</td>
<td>94</td>
</tr>
<tr>
<td>Table 8.12</td>
<td>Personal inhibitors scores</td>
<td>95</td>
</tr>
<tr>
<td>Table 8.13</td>
<td>Role models</td>
<td>96</td>
</tr>
<tr>
<td>Table 8.14</td>
<td>Role models scores</td>
<td>97</td>
</tr>
<tr>
<td>Table 8.15</td>
<td>Sexual tension</td>
<td>98</td>
</tr>
<tr>
<td>Table 8.16</td>
<td>Sexual tension scores</td>
<td>99</td>
</tr>
<tr>
<td>Table 8.17</td>
<td>Inconvenience</td>
<td>100</td>
</tr>
<tr>
<td>Table 8.18</td>
<td>Inconvenience scores</td>
<td>101</td>
</tr>
<tr>
<td>Table 8.19</td>
<td>Male dominance</td>
<td>102</td>
</tr>
<tr>
<td>Table 8.20</td>
<td>Male dominance scores</td>
<td>103</td>
</tr>
</tbody>
</table>
LIST OF FIGURES

| Figure 8.1 | Total learner participation in recreational physical Activity 7 days prior to the study | 54 |
| Figure 8.2 | Number of learners performing light exercise in the 7 days prior to the study | 56 |
| Figure 8.3 | Participation in light exercise per school in the last 7 days prior to the study | 58 |
| Figure 8.4 | Participation in light exercise in the 7 days prior to the study by grade | 60 |
| Figure 8.5 | Participation in light exercise in the 7 days prior to the study by age | 62 |
| Figure 8.6 | Participation in hard exercise in the 7 days prior to the study | 64 |
| Figure 8.7 | Participation in hard exercise in the 7 days prior to the study by school | 66 |
| Figure 8.8 | Participation in hard exercise in the 7 days prior to the study by grade | 68 |
| Figure 8.9 | Participation in hard exercise in the 7 days prior to the study by age | 70 |
| Figure 8.10 | Hours per day spent watching TV on a normal week by school | 73 |
| Figure 8.11 | Hours per day spent watching TV on a normal week by grade | 75 |
| Figure 8.12 | Hours per day spent watching TV on a normal week by age | 77 |
| Figure 8.13 | Amount of energy expended in past year activities per school | 81 |
Figure 8.14  Amount of energy expended in past year activities by grade  

Figure 8.15  Amount of energy expended in past year activities by age  

Figure 8.16  Amount of activities participated in on a competitive level in the past 12 months
1 INTRODUCTION

1.1 RATIONALE FOR THE STUDY

Evidence shows that physical activity results in some health benefits for children and adolescents. Regular physical activity improves aerobic endurance and muscular strength. Among healthy young people, physical activity and physical fitness may favourably affect risk factors for cardiovascular disease (e.g. body mass index, blood lipid profiles and resting blood pressure). Regular physical activity among children and adolescents with chronic disease risk factors is important; it decreases blood pressure in adolescents with borderline hypertension, increases physical fitness in obese children and decreases the degree of overweight among obese children.

Physical activity among adolescents is consistently related to higher levels of self-esteem and lower levels of anxiety, stress and high-risk health behaviours.

(MacAuley, 1999)

People begin to acquire and establish patterns of health-related behaviours during childhood and adolescence; thus, young people should be encouraged to engage in physical activity. Schools and communities should promote physical activity among children and adolescents because many young people already have risk factors for chronic diseases associated with adult morbidity and mortality (US department of health and human services, 1996).

A United States department of health and human services national study’s results showed that among United States high school students, only 52% of girls and 74% of boys reported that they exercised vigorously on at least 3 of the previous 7 days.
In South Africa, Phillips (2000) reported in her unpublished study “recreational activities among high school students in Strand, Western Cape” that even though a high percentage of the learners in Strand high schools participated in recreational physical activities, their average level of participation was lower than the level at which they could optimise their health benefits.

1.2 RESEARCH SETTING

Gauteng Province is divided into North- and South-Gauteng. South Gauteng is in turn divided into many districts, with Mogale district being one of them. Mogale district consists of Krugersdorp town, Magaliesburg (which is mainly rural), Azaadvile (an Indian suburb) and two black townships (Munsieville and Kagiso). Of these places, Kagiso has the largest population (55 293) and is representative of the low socio-economic black urban population. Within the Kagiso area, there are five government high schools that cater for the adolescent age group. In January 2002, 702 female learners registered at Mandisa Chiceka High School, 765 at Kagiso Secondary, 665 at Madiba High School, 871 at Mosupatsela High School and 459 at S.G. Mafaesa High School. The study population thus included all the female learners in the above-mentioned schools (n=3462). There is also a private Catholic church run school (John Martin Catholic School), which was used to conduct a pilot study.
2 LITERATURE REVIEW

2.1 INTRODUCTION

The literature review is discussed under the following headings:

Assessment of recreational physical activity, benefits of physical activity, benefits of recreation, levels of participation in recreational physical activity, inactivity in black women, physical education, the South African Education Department’s policies on physical education and factors influencing participation in recreational physical activity. The aim of this section is to outline the importance and benefits of recreational physical activity and highlight physical activity levels in adolescents worldwide and in South Africa. Policies that guide participation in physical education and factors that influence adolescents’ performance in physical activity will also be highlighted. The section will be used to give a background to and support findings of the study. It will also give a background to the questionnaires used in identifying levels of, “opportunities for, and attitudes towards,” physical activity.

2.2 ASSESSMENT OF RECREATIONAL PHYSICAL ACTIVITY

As with other complex behaviours, such as dietary intake, physical activity is difficult to measure (Sternfeld et al, 2000). Physical activity has various components, namely occupation, daily chores, self-care, recreational activity and sedentary activity e.g. standing. Valid and appropriate measurement of physical activity is a challenging task, because the relative contribution of each of these components can vary considerably both within and among individuals and populations. Recreational physical activity is the most objective component as occupation and house chores
change over time. Recreational physical activity is also the only component over which the human being has full control.

Since physical activity levels at work have continued to decline in most industrialised countries, assessment of leisure-time physical activity is often assumed to be the best representation of physical activity in a population. For this reason, most contemporary physical activity surveys only assess leisure-time activities that require energy expenditure above that of daily chores. A focus on leisure may also be more valid for younger and healthier populations (Kriska, 1997).

In developing countries such as South Africa, though, total physical activity (i.e. physical activity at work, routine household chores, sports during leisure time, and physical activity during leisure time) is higher among women than men. Many daily living activities and much work requires a relatively high degree of physical activity. Throughout the world women continue to bear primary responsibility for childcare and housework. A survey in Japan found that married women with paying jobs spent an average of two hours and twenty-six minutes daily on household chores, while married men spent an average of only seven minutes. Chores included washing clothes, preparing and cooking food, cleaning the house, watching and teaching the children, and taking care of the sick and elderly. Men, who rarely help with these domestic chores and activities, have more leisure time than women (Interactive population centre, 2003). The excessive load of household chores is detrimental to women’s physical and mental health. The ideal would be for men and women to share chores equitably in order for women to be able to increase their recreational physical activity time (Siandwazi, 1997).
Physical activity and sport has an increasingly important role in the lives of girls, because of its physical and emotional benefits. Enhanced learning, better concentration, improved self-control and self-confidence as well as promotion of healthy, positive and lifelong attitudes towards physical activity are well documented benefits of early introduction of recreational physical activity (Canadian Association for Health, Physical Education, Recreation and Dance, 1995). Physical activity through household chores and work changes with time and decreases with age, it is therefore more reliable to measure recreational physical activity, which is sustainable over time.

Measurement is further complicated because there are several health-related dimensions of physical activity, such as caloric expenditure, aerobic intensity, weight bearing, flexibility, and strength (Caspersen, 1985). The quality of the measure of physical activity is another important concern as poor quality measures can obscure important associations. Epidemiologic studies have typically used subjective measures, such as the questionnaire, to assess physical activity in populations. Such studies then use objective measures to validate the subjective activity measures. The physical activity questionnaire is typically chosen for population studies because it possesses the characteristics of non-reactiveness, practicality, applicability and accuracy. By contrast, objective measurements of energy expenditure, some of which have the advantage of providing more precise estimates of energy expenditure are not practical for most epidemiologic studies (Sternfeld et al, 2000).

Physical activity research has been conducted among different “races” and comparisons made, as “race” is a proxy measure of broader circumstances.
Behavioural manifestations among different “races” occur in response to people’s needs. The group may share the following characteristics in some combination: common geographic origin, migratory status, language and dialect, religious faith or faiths; kinship, neighbourhood and community boundaries; shared traditions, values and symbols; literature, folklore and music; food preferences; settlement and employment patterns; similar interest with regard to politics; institutions that specifically serve and maintain the group; an internal sense of distinctiveness and an external sense of distinctiveness (Spector, 1991).

In a study by Aaron et al (1992), a significant race difference was seen in the summary estimates of physical activity in Canada. White males reported a median of 23.3 h.wk⁻¹ of leisure physical activity versus 18.9 h.wk⁻¹ for non-white males (p<0.05). The racial difference was also found in females, 7.0 h.wk⁻¹ versus 4.9 h.wk⁻¹ for white females and non-white females respectively (p<0.05). The most striking finding was the high percentage of non-white females (16%) reporting extremely low activity levels compared with white females (9%).

In South Africa during the apartheid era, “race” was used to classify people into “white”, “coloured”, “asian” or “black”. Laws provided for geographic, social and political separation based on the classification. To be a “black” person meant to be given less priority in all sectors. This led to unequal allocation of resources, educational and job opportunities. Due to the apartheid legacy, the majority of “black” Africans still endure poor socio-economic conditions, they still live in inferior conditions in townships and rural areas, their children still attend under-resourced over-populated schools and therefore have less opportunity to participate in
meaningful physical activity than their “white” peers (Library of Congress Country
Studies, 1996).

2.3 **BENEFITS OF PHYSICAL ACTIVITY**

In 1997, the United States of America surgeon-general’s report on physical activity
and public health, stated that physical activity that is performed on most days of the
week, reduces the risk of developing or dying from some of the leading causes of
disease such as obesity, heart disease, diabetes, hypertension, osteoporosis, cancer and
depression. Physical activity also helps control weight, build and maintain healthy
bones, muscles and joints. In women, specifically, physical activity also alleviates
premenstrual syndrome, dysmenorrhea, and menopause-related symptoms (Brown,
2000). The surgeon general’s report recommended that to achieve health benefits,
everybody should engage in a minimum of moderate-intensity activity for a total of
30 minutes a day, most days of the week (US Department of health and human
services, 1996).

Obesity is recognised as a major health problem in western society. Maintenance of
an acceptable body weight is therefore an important aspect of a healthy lifestyle.
Obesity is one of the negative consequences of physical inactivity. It may lead to
serious morbidity and mortality through orthopaedic, neurological, pulmonary,
cardiovascular, gastroenterological and endocrine conditions. Prior to adulthood, the
obese child may develop gallstones, hepatitis, sleep apnea and increased intracranial
pressure. Evidence shows that 25-50% of individuals who are obese in adolescence
remain obese in adulthood and that females who were overweight in adolescence were
more likely to have the condition continue into adulthood than were males. (Must, 1999)

Exercise plays an important role in the prevention of weight gain. Increasing physical activity seems to be an effective way to increase the metabolic potential to maintain energy balance (Norgan, 1992).

Through its positive impact on health, physical activity has a favourable effect on productivity levels. This is demonstrated by the reduction in absenteeism associated with healthy lifestyles, resulting in savings of a minimum of 1.5 days per worker year. Sport’s contribution to the GDP is estimated at 1.9% in South Africa (Department of Sport and Recreation white paper, 1995).

2.4 **BENEFITS OF RECREATIONAL PHYSICAL ACTIVITY**

In South Africa, the national department of sport and recreation’s white paper on sport and recreation (1995) states that “sport and recreation is an investment. It is firstly an investment in the health, vitality and productivity of one’s people. It is secondly an investment in their future. The impact of sport and recreation extends beyond the confines of participation. It is felt in many other spheres of life like health, education, economy, crime, nation-building and international relations.

Sport and recreation have also been found to be a deterrent to crime. Delinquent behaviour is associated with low self-esteem, and success in sport and recreation act to improve self-esteem. Role models in sport are amongst the top opinion-makers in many countries and in South Africa, successes in sports like rugby, soccer and boxing
have led to a reduction in instances of racial prejudice. Sport therefore has contributed positively towards nation-building in this country. Sport and recreation also contribute positively towards international relations as achievements in sport come with recognition, even for small countries. Countries also increasingly drive their foreign policy via cooperation in the field of sport and recreation (the national department of sport and recreation’s white paper on sport and recreation, 1995).

Recreational activity offers physical and psychological benefits to individuals. Improved health, physical fitness and self-esteem can be gained through regular recreational activity. Children can learn social skills and body co-ordination, and older people can maintain mobility. By providing opportunities for social interaction, sport and recreation can help enhance community identity and promote community integration. Individuals learn and share community values and attitudes and can gain a better understanding of other groups in society. Participation in recreational physical activity can also have a deterrent effect on anti-social behaviour, including vandalism and petty crime (Keating, 1995).

Participation in physical activity and recreation can provide positive benefits related to psychological health, physical health, familial interactions, peer influence, academic performance, community development and other lifestyle behaviours. Recreation is fun and interesting for youth and in many cases it is the “foot in the door” to start affecting their at-risk behaviour (Canadian Parks and Recreation Association, 1999).

The healthy, active student is more likely to be academically motivated, alert, and successful. In adolescence, recreational activity may enhance the development of a
positive self-concept as well as the ability to pursue intellectual, social and emotional challenges. Throughout the school years, recreation can promote social, cooperative and problem solving competencies (National Association for Sport and physical education, 2001). Academic constructs have greater meaning for children when they are taught across the three realms of learning, including the cognitive, affective and psychomotor domains. Research has demonstrated that children engaged in daily physical education, show superior motor fitness, academic performance, and attitude towards school versus their counterparts who did not participate in daily physical education (National Association for Sport and Physical Education, 2001).

Over the years, research studies have indicated that a potential positive influence could be exerted on youth through physical activity and recreation. Physical activity and recreation have also been shown to facilitate the development of children and youth, and to play a significant role in influencing behavioural patterns and in preventing or reducing risk behaviour (Canadian Parks/Recreation Association, 2003). Children and adolescents learn to assess their social competence in sports through feedback received from educators, adults and coaches. Self-esteem is also developed through both evaluation of one’s own abilities as well as evaluation of the responses received from others.

2.5 **LEVELS OF PARTICIPATION IN PHYSICAL ACTIVITY**

The International Consensus Conference on physical activity (1994) guidelines for adolescents recommends that “all adolescents be physically active daily, or nearly every day, as part of play, games, sports, work, transportation, recreation, physical education, or planned exercise, in the context of family, school, and community
activities" and that "adolescents engage in three or more sessions per week of activities that last 20 minutes or more at a time and that require moderate to vigorous levels of exertion."

Pollock (1998) recommended a frequency of training of 3-5 days per week at an intensity of 55-90% of maximum heart rate. Training should be for 20-60 minutes of continuous or intermittent aerobic activity (duration is dependent on the intensity of the activity).

The United States department of health and human services report indicated that nearly half of American youths aged 12-21 years are not vigorously active on a regular basis: only 19% of all high school students are physically active for 20 minutes or more, five days a week, in physical education classes. Daily enrolment in physical education classes dropped from 42% to 25% among high school students between 1991 and 1995 leading to about 11% of young people reporting no recent physical activity. Inactivity is more common among females (14%) than males (7%) and among black females (21%) than white females (12%). Participation was shown to decline strikingly as age or grade in school increases and social support from family and friends are shown to be consistently and positively related to regular physical activity.

The study by McKenzie et al (2000) showed that boys engaged in more moderate-to-vigorous physical activity and expended more energy than girls during physical education. The study reported that many adolescent girls did not like to sweat during class time and preferred to socialise rather than exercise. This is detrimental to their
health, as Trudeau (1999) demonstrated that physical activity in childhood has a significant long-term positive effect on the exercise habits of women, as they reach middle and old age.

South Africans are considered to be ‘sports mad’ but the levels of habitual physical activity among urbanised South Africans are no better than what obtains in similarly urbanised populations in other countries. Participation in formal sports by black communities is further hampered by a lack of facilities and a lack of culture of physical education in schools. In a study done on the urban black African population in the greater Cape Town area, 21% of the men and only 1% of the women reported vigorous levels of occupational and leisure-time activity. However, 54% of the women and 40% of the men reported minimal-to-moderate levels of physical activity (Noakes, 1995).

Inactivity in black women is not only a South African phenomenon. It is worsened in South Africa by the lack of recreational and sports facilities in the black communities. The South African Department of Sport and Recreation's (DSR) draft white paper, "Getting the nation to play" (1995), noted the low number of adult women participants in sport (14% Black and 51% White). One of its priorities was then to motivate the community to develop active lifestyles and to channel those with talent for development into the competitive areas of sport. It stated that the DSR acknowledges the important role that women and girls can play in 'getting the nation to play' so as to facilitate positive, healthy lifestyles. It therefore resolved that national federations will be encouraged to devise training and development programmes to facilitate the participation of women, and to remove barriers that may prevent women
from following vocations in training, administration, coaching, and sport and recreation management. Specific resources will be allocated for the development of sports skills and facilities for women and girls. Suitable candidates will be identified and introduced to leadership training and coaching in sport and recreation. Role models in sport and recreation will encourage participation of women and girls in sport and recreation.

2.6. **INACTIVITY IN BLACK WOMEN**

In a survey by Sternfeld et al (2000) conducted in the United States of America it was found that different standards of usual or even “inappropriate” activity levels might prevail in different racial/ethnic groups. The American heart foundation’s biostatistical fact sheet on risk factors (2003) supports this as it states that physical inactivity is more common among women than men, among blacks and Hispanics than whites, among older than younger adults and among the less affluent than the more affluent. In women, overweight and obesity are higher among members of racial and ethnic minority populations than in non-Hispanic white women.

In the United States of America, a study conducted by the National Institute of Diabetes and Digestive and Kidney Diseases (2001) indicated that 50 percent of all black women are overweight or obese, and the numbers are steadily rising. High-fat diets, super-sized portions and lack of physical activity are resulting in extremely high rates of obesity in black women. Differences in physical activity were also demonstrated in a South Carolina study by Felton et al (2002), in which black girls reported less physical activity, had higher Body Mass Indexes and watched more television than white girls. White girls reported greater access to sports equipment and greater perceived safety of neighbourhoods than black girls.
In South Africa, obesity is increasingly becoming a serious public health problem among black African women. While in 1991 the prevalence of obesity among black African women was 34.4%, a national survey conducted in 1998 indicated that 60.8% and 35.7% of African women are overweight and obese respectively (MRC, 1998). Steyn et al, 2000 also examined the prevalence of obesity among first year female students at the University of the North, and found that 18% and 6.5% students were overweight and obese respectively. In many developing countries, the increase in the number of overweight people has occurred within the last few years. Excess weight seems to appear first among the affluent and then among low-income classes including young children and teenagers (Delpeuch et al, 1997). Economic development and urbanisation seem to alter dietary and lifestyle patterns, which promote positive energy balance when food adequacy is achieved in some population groups (Shetty, 1999). Studies conducted among black African women in South Africa (Mvo, 1999) and black American women (Kumanyika, 1993) found that although overweight women were aware of the obesity-related risk factors, they considered themselves as attractive. Dawson, 1988 examined the relationship between actual weight, self-perception and attempt to lose weight among three different ethnic South African groups and found that black women’s perception of whether they were overweight or not was influenced by their weight relative to the weight of their peers, rather than by health standards or ideal body weight norms. A study conducted by Kumanyika, 1987 on perceptions of body weight and image in black and white American girls also revealed that black women’s perception of overweight was influenced by their weight relative to that of their peers, rather than by their weight in context of health standards. A study conducted to assess body shape concerns amongst adolescent school girls representing South Africa’s ethnically and culturally
diverse population found that white girls exhibit greater body image concerns and body image dissatisfaction than mixed race or black individuals (Caradas, 2001).

Given the racial and ethnic diversity of South Africa, the public health challenge is to promote efforts that encourage and enable all groups to accept and follow physical activity recommendations. The South African department of sport and recreation has responded to the challenge by developing three objectives, namely: recruit and encourage youth and adults to participate in physical activities; motivate the populace to develop physically active lifestyles; and mobilise non-participants and convert them to participants in physical activities.

Siandwazi (1997) indicated that the promotion of physical activity programs seemed to be a major challenge for most African governments as greater priority is placed on nutrition policies and control of infectious diseases. There are high levels of poverty, malnutrition and infections such as tuberculosis, malaria and HIV/AIDS in African countries, which lead to high levels of preventable morbidity and mortality. African countries therefore view these as being greater health priorities than the rising levels of chronic diseases of lifestyle, which are directly affected by physical inactivity.

2.7 PHYSICAL EDUCATION AT SCHOOLS

School physical education is recognised as the most widely available resource for promoting physical activity among children and adolescents and increasingly it is being viewed as an important component of a coordinated school health program (CPRA,1999). Children spend a fair amount of time in school, which makes school-based interventions important. These include encouraging schools to devote more
time for physical education and encouraging a positive attitude to activity among children. Physical education is a critical setting for promoting health-related physical activity. School-based programmes, where regular exercise was integrated into the school curricula, have been shown to be successful in improving weight and health status of children in Australia (Dwyer et al, 1983).

Schools, through physical education programs, are the major way of regularly contacting and influencing a large percentage of the world’s children. Physical education is vital to all aspects of the normal growth and development of children and youth. This includes not only physical growth but social and emotional growth as well. Enhanced learning, better concentration, improved self-control and self-confidence as well as the promotion of healthy lifelong positive and lifelong attitudes towards physical activity, are well-documented benefits of quality physical education in schools. In addition, school physical education establishes the foundation of skills for a lifetime of participation, while at the same time building a natural immunizing effect against many sedentary lifestyle diseases (CDC, 1997).

Despite widespread public acceptance of the need for physical activity, quality physical education is not seen as a priority for many policy makers in most school systems. In the USA, where physical education exists today it is under very strong attack. It occupies a tenuous place in the school curriculum, and in some cases it is being replaced and moved out of the curriculum. Budget cutbacks, inadequate and aging facilities, the absence (and continued attrition) of physical education specialists and insufficient allocation of time within the school timetable, are contributing to its perilous status (CDC, 1995).
In South Africa in recent years, the rationalisation and redeployment of teachers has squeezed teachers of non-examinable subjects, such as health educators and physical educators out of the system. The curriculum has and continues to marginalise physical education both in terms of allocated time, and the perpetuation of its "perceived" non-examinable status. Lack of commitment to qualify "specialist" physical educators over this last period and the reality that current practitioners have been the primary victims of rationalisation, has disadvantaged physical education even more (Kojana, 2002).

The lack of trained personnel in the USA is a barrier to implementing safe, organised, and effective physical activity instruction and programs for young people. National, regional and local education and health agencies, institutions of higher education and professional organisations should collaborate to provide teachers, coaches administrators, and other school personnel pre-service and in-service training in promoting enjoyable, lifelong physical activity among young people (CDC, 1997).

In Canada, the lack of opportunities at school for daily physical education, coupled with the continuing decline in physical activity within the home setting, is leading to the development of sedentary lifestyle patterns, that will continue into adulthood and throughout life. Furthermore, efforts to recognise physical activity as a strategy to offset unhealthy behaviours have not been realised (Canadian Association for Health, Physical Education, Recreation and Dance, 1995).

Physical education curricula should therefore be developmentally appropriate, provide youngsters with enjoyable experiences that build exercise self-efficacy, provide significant amounts of physical activity, and promote cognitive learning related to
lifelong participation in physical activity. These curricula also should acquaint youngsters with physical activity resources in their community. The school environment should encourage physical activity for all students and promote development of physically active lifestyles. The school curriculum should not overemphasise sports and activities that selectively eliminate children who are less skilled. Resources must therefore be invested in creative, culturally sensitive, linguistically appropriate programs to give all learners the opportunities and motivation they need to become more active (CDC, 2002).

2.8 SOUTH AFRICAN DEPARTMENT OF EDUCATION POLICIES AND PHYSICAL EDUCATION

In South Africa in the past, education failed the majority of the population by perpetuating race, class, gender and ethnic divisions, and emphasising separateness rather than common citizenship and nationhood. In most schools of the former Department of Education and Training (DET), physical education was viewed as a luxury activity that was participated in by the advantaged whites. Physical education and school sport were not considered priorities due to a lack of funds, lack of qualified specialists, lack of sufficient facilities and lack of equipment. The result was a wide disparity between schools in their access to school sport facilities and consequent widely different degrees of participation. Since the inception of democracy in South Africa, many initiatives, such as the Reconstruction and Development Programme (RDP) have been launched to address the inequities of the past. These initiatives are geared towards social and economic transformation. The
RDP acknowledges sport and recreation opportunities as important components of the country’s overall development strategy (Third draft protocol for school sport, 2000).

On 21 February 2000, Professor Kader Asmal, Minister of Education and Mr. Ngconde Balfour, Minister of Sport and Recreation issued a media statement affirming the importance of physical education and sport in programmes at all levels of education and agreed that physical education and sport should be reinstated in institutions of learning. They also agreed that a policy for physical education and school sport would be collaboratively developed for implementation by a range of partnerships involving related national strategies and that the Department of Education would take a lead in this matter. The resultant report from this collaboration includes physical education as a compulsory non-examinable school subject, but in some cases, schools have never offered physical education at all and do not have the facilities, expertise, or possibly even the will to do so. Some of them have allowed informal game-playing to take the place of formal instruction in physical education (Third draft protocol for school sport, 2000).

The Centre for Education Policy Development, Evaluation and Management (CEPD) and the Education Policy Unit in Natal (1999), found in their research that many schools have begun phasing out physical education as a subject, although national policy states that it is a compulsory, non-examinable subject in the school curriculum. It appears that the policies of educator rationalisation and redeployment have resulted in physical education specialists either leaving the teaching profession or teaching other subjects. Although there is a national interim syllabus for physical education, many provinces and stakeholders are either not aware of its existence, or unfamiliar with its contents. Hence provinces and schools have adopted varying approaches to
the teaching of physical education. The research also shows that the majority of
teachers are not trained to do either physical education or sport at schools.

The principle of rationalisation of education and teacher redeployment was introduced
to ensure equity and redress in the public service. The state made it clear that no money was available to hire extra teachers so the issue of teacher redeployment became central. The rationalisation plan was to be phased in over a maximum period of 5 years, effective from 1 April 1995. Agreement was reached around voluntary severance packages although teachers with critical skills (such as maths) would not have this option. The state had focused specifically on the issue of voluntary severance packages and sidelined plans to create new posts, build new classrooms, and retrain teachers. Posts occupied by teachers accepting the packages were frozen and not transferred to under staffed schools. This redeployment and retrenchment affected physical education the most negatively, as physical education educators were not regarded as having critical skills and were therefore the first ones to be retrenched (COSATU, 1997).

The United School Sports Association of South Africa (1994) highlighted that the “non-existent” physical education structures affected female learners more negatively than male learners. Throughout Africa, girls not only participate in the tasks, which boys carry out in their spare time, but also take on extra domestic duties. School Sport has tended to be a male domain, particularly in black communities. School playgrounds are often dominated by boys playing ball games, while girls rest, observe or use small peripheral areas for games involving skipping, chasing or rhythmic clapping. Girls’ attempts to play soccer or cricket are frequently ridiculed as intrusions into a male domain. Advocacy will therefore be necessary to improve girls’
access to opportunities to play and exercise in pursuit of healthier and more productive lifestyles. Physical education may be used as a vehicle for advocacy as in the secure and protective environment of a school, a girl should be able to practise physical education and sport in a way that enhances, rather than detracts from, her female being.

2.9 FACTORS INFLUENCING PARTICIPATION IN RECREATIONAL PHYSICAL ACTIVITY

Technology and social evolution have changed children’s lives. Many do not have to walk long distances to school, or work to support their families. Playing outside is not safe in many neighbourhoods and child entertainment, in the form of television, computers, and video games, is more involving than ever (Rich, 1999). Modern urban children in California, Louisiana and Minnesota use their free time to engage in a variety of leisure activities, including some sedentary and some physical activities. The sedentary activities included watching television for a minimum average of 24 hours per week, and playing video games (Simons-Morton, 1997).

Rich (1999) stated that increases in television watching have been directly associated with lower physical activity levels and increases in obesity. McGinnis (1992) found that 13-year-old children watched an average of 23 hours of television each week, and at least 72% of high school seniors watched television every day. A study conducted by Harrel (1997) on the leisure time activities of elementary school children in the United States, showed that the activities most often reported by girls were doing
homework (39%), bicycling (31%), watching television (30%), dancing (27%) and reading (23%).

Morbidity Mortality Weekly Report (1999) stated that lack of knowledge of the health benefits of physical activity, limited access to facilities and environmental issues such as neighbourhood safety, can be considered as possible barriers to participation in physical activity. Factors that have contributed to make staying at home or driving cars more attractive, included the fact that many American communities have few pavements, no cycle paths, inaccessible stairways, inadequate public transport systems, problems with safety on streets, and stores, schools and workplaces that are many miles from homes. Persons who perceived their neighbourhood to be unsafe were also more likely to be physically inactive (Milligan, 1997).

Rabinovitz (1997) found that youth face many barriers to participation in physical activity and recreation. The most common barriers included lack of money, transportation and lack of information. Lack of family and parent support, cultural expectations, adolescent and peer group norms, participation in other risky behaviours, low competency in sports, exposure to few role models, as well as gender bias, were also identified as barriers.

Greenoockle (1990), in his study on 9th and 10th graders, found that significant others, particularly their peers and teachers, had a stronger impact on behaviour than personal attitudes about activity. According to Di Lorenzo (1998), a longitudinal study conducted among children in the United States of America concluded that the child's enjoyment, the child's exercise knowledge, mother's physical activity and child's
friend support system, were predictors for participation in physical activity by girls. A study by Gordon-Larsen et al. (2000) showed that participation in school physical education programs and use of a community recreation centre, were associated with an increased likelihood of engaging in high level moderate to vigorous physical activity. Maternal education was inversely associated with high inactivity patterns. High family income was associated with increased moderate to vigorous physical activity and decreased inactivity. High neighbourhood serious crime level was associated with a decreased likelihood of falling in the highest category of moderate to vigorous physical activity.

Demographic, individual, interpersonal, and environmental factors are associated with physical activity among children and adolescents. Demographic factors include sex, age, and race or ethnicity. Individual factors positively associated with physical activity among young people include confidence in one’s ability to engage in exercise, perceptions of physical or sport competence, having positive attitudes toward physical education, and enjoying physical activity. Perceiving benefits from engaging in physical activity or being involved in sports is positively associated with increased physical activity among young people. These perceived benefits include excitement and having fun, learning and improving skills, staying in shape, improving appearance, and increasing strength, endurance and flexibility. Conversely, perceived barriers to physical activity, particularly lack of time, is negatively associated with physical activity among adolescents. In addition, a person’s stage of change (i.e. readiness to begin being physically active) influences physical activity among adults and may also influence physical activity among young people. Interpersonal and environmental factors positively associated with physical activity among young
people include peers’ or friends’ support for and participation in physical activity. Among older children and adolescents, physical activity is positively associated with that of siblings, and research generally reveals a positive relationship between the physical activity level of parents and that of their children, particularly adolescents. Parental support for physical activity is correlated with active lifestyles among adolescents. Physical activity among young people is also positively correlated with having access to convenient play spaces, sports equipment, and transportation to sports or fitness programs (CDC, 1997).

Females face social pressures that have historically linked physical prowess and athleticism to maleness, and gender differences in activity have traditionally been accounted for by perceptions that femininity is not consistent with vigorous activity and sports play. Social issues continue to act as important impediments to involvement in exercise by girls. In adolescence these influences are compounded by the burgeoning sexuality at puberty and strong desire for attractiveness to the opposite sex. In males, sexual desirability is often linked to physical capabilities in sports participation and physical activity. In females, on the other hand, attractiveness is focused on physical features, often perceived as incompatible with vigorous physical activity.

Inevitable changes in body composition at the time of puberty may also work to the adolescent female’s disfavour. Rising oestrogen levels in the early teen years promote an increase in body fat in females, while the androgenic influences of puberty augment muscle mass in males. This increased fat serves as an inert load that must be transported during weight-bearing physical activity. That makes exercise more
difficult, causing a tendency to avoid physical activity, which in turn results in increases in body fat and diminished physical fitness. The end result of this cycle is entrenched sedentary habits in the young female during the teen years, which are difficult to reverse (Preschal, 2001).

2.10 CONCLUSION

Physical recreation is highly beneficial to adolescents. It should be performed at optimal levels to obtain health benefits. Adolescents worldwide and in South Africa perform recreational physical activities at different levels.

In a report from the Medical Research Council on the impact of chronic diseases of lifestyle, Noakes (1995) recommended that future studies should identify the habitual physical activity patterns in the different South African communities. In achieving the objectives of the 'Mobilizing the nation to play' program (South African Department of Sport and Recreation, 1995) in South Africa, it is necessary to know the current levels of physical activity in young people. South African researchers would make a unique contribution by studying the levels of physical activity and their effects in groups other than the often studied middle-aged, predominantly affluent, upwardly-mobile, white males.

Opportunities for participation and factors affecting participation are also important to look at as they have a great influence on the levels of physical recreation.
3 PROBLEM

It was observed by the investigator that physical activity in Kagiso High Schools seemed minimal and that female learners were less involved than male learners. Extensive literature also shows that females all over the world are less physically active than their male counterparts. Factors contributing to insufficient activity in previously disadvantaged communities including, among others, lack of facilities, socialisation of females not to partake in recreational activity and a lack of culture of physical education in schools also contribute to the low levels of recreational physical activity. As research proves that physical activity that is performed on most days of the week reduces the risk of developing or dying from some of the leading causes of disease such as obesity, heart disease, diabetes, hypertension, osteoporosis, cancer and depression, it is important to foster a culture of physical activity among the youth, in order to prevent future chronic diseases of lifestyle. Recreational physical activity improves physical, mental and emotional health and is sustainable over a lifetime. Measurement thereof is therefore more reliable than that of other physical activities (e.g. chores) that change over time.

4 PURPOSE

Most literature has studied physical activity in the whole population. Literature shows that women worldwide are less physically active than men (CDC, 2001). It also points out that black women are even less physically active than their white counterparts (Aaron et al, 1992). As physical activity is a learnt behaviour (Aaron et al, 1995) and carries through from childhood to adulthood, it is important to investigate patterns of behaviour in the most physically inactive group (black women) at an early stage.
(early to late teens). Interventions can then be introduced at a stage where behaviour can still be changed, in order to improve future health outcomes. The results of the study and recommendations on learners’ physical activity will be presented to the Gauteng department of education, the Kagiso high schools’ teachers and will also be submitted for publication in Education Journals. The educators will be equipped with knowledge on how to create an optimal environment for female learners’ participation in recreational physical activity and thus improve their health status.

5 AIM

To determine Kagiso High Schools female learners’ types and levels of participation in recreational physical activities, opportunities for participation and factors affecting participation.

6 OBJECTIVES

- To investigate the demography of the participants
- To investigate the types of recreational physical activities in which Kagiso High Schools female learners partake
- To investigate the female learners’ levels of recreational physical activity
- To investigate opportunities available to Kagiso High Schools female learners for participation in recreational physical activity.
- To investigate factors affecting participation in recreational physical activity
7 METHODOLOGY

7.1 STUDY DESIGN

A descriptive cross-sectional study was done. A research survey is best conducted using a descriptive method as descriptive methods attempt to specify and delineate the relevant variables affecting a research question. A descriptive method was chosen over an experimental one as experimental methods seek to specify relationships between variables in a causal fashion, which is not the aim of this research. A quantitative approach was chosen over a qualitative approach as it best suits a population survey addressing the scientific study of human behaviour.

7.2 SELECTION OF STUDY SAMPLE

Study Population

There are five (5) government High Schools in Kagiso with female learner populations (aged 12-21 years) ranging from 459 to 871. The populations studied were:

A) The female learners in those 5 high schools (n= 3462).

B) Educators involved in physical education in those schools.

Sample size

Learners: Using Epi 2000, it was determined that for a 95% confidence level with a 5% error, 464 learners was an adequate sample size. The sample size is adequate to prevent results from being due to chance.
Educators: One educator, who is involved in physical education, was selected in each school to complete the opportunities questionnaire. This was used to verify the learner’s information.

7.3 SAMPLING PROCEDURE

Stratified proportional random sampling of learners by grade and school was done to prevent sampling bias. Confounding was also minimised as the sample was stratified through proportional sampling and was randomised.

1. All 5 schools were selected.
2. Sample size in each school was proportional to female learner numbers in the school.
3. All grades were selected.
4. Sample size per grade per school was proportional to female learners per grade per school.
5. A random sample was taken from the grades.

The following tables indicate the sample numbers obtained.

Table 7.1 Sample size per school

<table>
<thead>
<tr>
<th>School</th>
<th>Population size</th>
<th>Sample size</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mandisa Chiceka</td>
<td>702</td>
<td>95</td>
</tr>
<tr>
<td>Kagiso</td>
<td>765</td>
<td>102</td>
</tr>
<tr>
<td>Madiba</td>
<td>665</td>
<td>89</td>
</tr>
<tr>
<td>Mafaesa</td>
<td>459</td>
<td>62</td>
</tr>
<tr>
<td>Mosupatsela</td>
<td>871</td>
<td>116</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>3462</strong></td>
<td><strong>464</strong></td>
</tr>
</tbody>
</table>
Table 7.2 Sample size per grade

<table>
<thead>
<tr>
<th>Grade</th>
<th>Population size</th>
<th>Sample size</th>
</tr>
</thead>
<tbody>
<tr>
<td>8</td>
<td>776</td>
<td>104</td>
</tr>
<tr>
<td>9</td>
<td>739</td>
<td>99</td>
</tr>
<tr>
<td>10</td>
<td>828</td>
<td>111</td>
</tr>
<tr>
<td>11</td>
<td>627</td>
<td>84</td>
</tr>
<tr>
<td>12</td>
<td>492</td>
<td>66</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>3462</strong></td>
<td><strong>464</strong></td>
</tr>
</tbody>
</table>

Table 7.3 Number of learners per grade per school included in the sample

<table>
<thead>
<tr>
<th>Grade</th>
<th>Mandisa</th>
<th>Kagiso</th>
<th>Madiba</th>
<th>Mafaesa</th>
<th>Mosupatsela</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>8</td>
<td>32</td>
<td>16</td>
<td>27</td>
<td>8</td>
<td>21</td>
<td>104</td>
</tr>
<tr>
<td>9</td>
<td>21</td>
<td>17</td>
<td>16</td>
<td>20</td>
<td>25</td>
<td>99</td>
</tr>
<tr>
<td>10</td>
<td>20</td>
<td>29</td>
<td>23</td>
<td>9</td>
<td>30</td>
<td>111</td>
</tr>
<tr>
<td>11</td>
<td>10</td>
<td>27</td>
<td>12</td>
<td>14</td>
<td>21</td>
<td>84</td>
</tr>
<tr>
<td>12</td>
<td>12</td>
<td>13</td>
<td>11</td>
<td>11</td>
<td>19</td>
<td>66</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>95</strong></td>
<td><strong>102</strong></td>
<td><strong>89</strong></td>
<td><strong>62</strong></td>
<td><strong>116</strong></td>
<td><strong>464</strong></td>
</tr>
</tbody>
</table>

Purposive sampling of educators was done: one educator, who is involved in physical education, was selected in each school to complete the opportunities questionnaire.

7.4 DATA COLLECTION INSTRUMENTS

An adapted version of a previously validated “modifiable activity” questionnaire for adolescents (appendix 2), was administered to the female learners (Aaron et al, 1992). The questionnaire was tested for validity by Aaron et al in 1995. The questionnaire
was divided into three sections. The first section requested demographic details such as school, grade and age. The second section investigated the types of activities the learners were involved in and the amount of time spent in the activities. The third section investigated past-year level of activity.

A self-constructed questionnaire on opportunities and factors for recreational physical activity was administered to both female learners and educators (appendix 3). Section one of the questionnaire investigated the opportunities that female learners in the schools had for participation in recreational physical activity. This section had to be completed by both the learners and selected educators. Section two investigated the learners' attitudes towards recreational physical activity.

7.5 **DATA COLLECTION PROCEDURE**

Permission to conduct the study was obtained from the Gauteng Department of Education. Principals of the individual schools were then contacted for permission and for an appointment to conduct the study in their respective schools. Each school was asked to provide the name of a staff member (involved in physical education) to co-ordinate the process and complete the educator questionnaire. To cause no disruption of normal school activities, the questionnaire was administered during break periods. The purpose of the study was explained to the learners and the requirements of each section also highlighted. The questionnaires were self-administered with supervision from the researcher. Learners completed the questionnaire independently and no conferring between learners was allowed. The learners were allowed to ask for clarification from the researcher at any point in the
completion of the questionnaire. The questionnaire was administered from 18 to 26 September 2002.

7.6 DATA ANALYSIS

Data was coded and captured on a spreadsheet using the Microsoft Excel computer program. It was then analysed using the “Statistica” programme. The demography of participants and types of recreational activities were described and presented graphically.

Physical activity guidelines for adolescents (Sallis, 1994) were used to grade the level of physical activity of the learners. The guidelines state that:

1) Adolescents should be physically active daily or nearly every day engaging in light to moderate physical activity for at least 30 minutes per day.

2) They should engage in 3 or more sessions per week of activities that last 20 minutes or more at a time and that require vigorous levels of exertion.

The intensity of the activities was analysed as follows:

Using the classification by energy cost of human physical activities (Ainsworth, 1993), the recreational physical activities were converted to their metabolic cost values (met) (appendix 4) and graded according to the following classification of physical activity based on exercise intensity for women (McArdle, 1994)
<table>
<thead>
<tr>
<th>Level of activity</th>
<th>Metabolic cost/hours/week</th>
</tr>
</thead>
<tbody>
<tr>
<td>Unacceptable</td>
<td>0-8.3</td>
</tr>
<tr>
<td>Light</td>
<td>8.4-18.9</td>
</tr>
<tr>
<td>Moderate</td>
<td>19.0-30.1</td>
</tr>
<tr>
<td>Vigorous</td>
<td>30.2&gt;</td>
</tr>
</tbody>
</table>

The hours/week were calculated as follows:

\[
\text{Past year: } (\text{months/yr}) \times (4.3\text{weeks/month}) \times (\# \text{days/week}) \times (\# \text{minutes/day}) \times (60 \text{ min/hr}) \times (52 \text{weeks/year})
\]

= hour/week averaged over the past year.

To express the results in Met-hr-wk, the hrs/wk for each activity were multiplied by the activity’s MET equivalent (Appendix 4).

It was then possible to conclude whether Kagiso high schools female learners satisfy the recommendations.

**Opportunities and factors for participation questionnaire**

Opportunities were presented using frequency tables and graphs and were used to guide the discussion. Factors in the questionnaire (see appendix 3) were scored as follows:

Negative factors were assigned a score of 0 and positive factors a point of 2. For points 1-22, the answer TRUE indicates a negative factor and was scored as 0 and the answer FALSE indicates a positive factor and was scored as 2. For points 23-26, the answer TRUE indicates a positive factor and was scored as 2 and the answer FALSE
indicates a negative factor and was scored as 0. An overall weighting of factors was done as follows:

As there are 26 questions, a score of 52 represented 100% i.e. 2 x 26.

Scores 0- 22 indicated 0%-45%, which represented an overall negative factor response

24- 28 indicated 46%-55%, which represented an overall neutral response

30- 52 indicated 56%- 100%, which represented an overall positive factor response

The factors were then also grouped into the following categories in order to assess opportunities for recreational physical activity:

1. Personal inhibitors: These indicated internal psychological factors that might influence participation in recreational physical activity.

2. Role modelling: Role modelling by peers, adults in the community, educators and sporting celebrities plays a role in influencing participation in recreational physical activity.

3. Sexual tension: Adolescents struggle with sexual issues. This influences their participation in recreational physical activity.

4. Inconvenience: perception of recreational physical activity as an inconvenience, negatively affects participation in it.

5. Male dominance: Male dominance of sporting activities and facilities negatively affects female participation in sport.

6. Access to information and facilities: Access to recreational physical activity information and facilities influences participation in it.

7. Beneficial: perception of recreational physical activity as beneficial positively affects participation in it. (Womensport West, 2001)
Validity

The modifiable physical activity questionnaire for adolescents was tested for validity by Aaron et al in 1995 (p<0.05). A relationship between the past-year questionnaire and an average of four past-week questionnaires was assessed using Spearman correlations. The percent of agreement between reported sports participation and interscholastic rosters was also assessed. The validity of the “opportunities and inhibitors” questionnaire has not been formally tested but it is thought to have face validity based on the fact that it was constructed from literature reviewed. Experts were also consulted on the questionnaire content and the questionnaire design.

Reliability

The modifiable physical activity questionnaire for adolescents was tested for reliability by Aaron et al in 1995. A relationship between the first test, one-month and one-year retests using spearman correlations was done (p<0.05) where one hundred junior high school learners completed the questionnaire. Reliability of the “opportunities and inhibitors” questionnaire could not be tested due to time and resource constraints.

Generalisability

The results of the study may be generalised to girls (12-21 years old) attending high schools in similar communities.
7.7 **ETHICAL CONSIDERATIONS**

No physical, emotional or social harm was caused to the learners and educators.

Participants gave informed consent to participate voluntarily in the study. They had freedom to withdraw from the research at any time. A consent form (appendix 1) was attached to the questionnaires and was signed by the participants after the study had been fully explained to them. The participants' right to anonymity was observed, as confidentiality will be assured in dissemination of results.

Recommendations based on the results of the study will lead to an improvement in physical education in schools in Kagiso and other urban townships.

As soon as the university research committee had approved the proposal, the Gauteng department of education was contacted for permission to conduct the study. The principal of each school (including the private school which was used for the pilot study) was then contacted for permission to conduct the study in his/her respective school.
8 RESULTS

8.1 INTRODUCTION

The results of the study will cover the description of participants, the amount of recreational physical activity, the type of recreational physical activity, the opportunities for recreational physical activity and the prevailing attitudes towards recreational physical activity.

8.2 DESCRIPTION OF PARTICIPANTS

The description encompasses the schools that the learners attended, the grades that the learners were in and the learners' age.

Sample size achieved

The sample size achieved was exactly the same as the sample size that was initially planned (n = 464). Educators were told the numbers of learners required for the study per school and per grade and systematic sampling was done to obtain the exact numbers. Nobody refused to participate and all questionnaires handed out were completed and returned.

Sample size achieved per school and grade

Since the sample size achieved was 100%, the breakdown per school and grade achieved was also exactly the same as the planned breakdown.
Mosupatsela had the highest sample number as it had the highest population of female learners. As Mosupatsela is the biggest high school in Kagiso township, this is understandable.

**The learners’ age**

Table 8.1 represents the age ranges of the learners investigated.

**Table 8.1 Sample age range**

<table>
<thead>
<tr>
<th>Age range</th>
<th>Frequency</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>12-15</td>
<td>176</td>
<td>38</td>
</tr>
<tr>
<td>16-18</td>
<td>228</td>
<td>49</td>
</tr>
<tr>
<td>19-21</td>
<td>60</td>
<td>13</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>464</strong></td>
<td><strong>100</strong></td>
</tr>
</tbody>
</table>

The 16-18 age range had the highest representativity (49%). This represents the fact that most learners complete high school before the age of 19 and probably enter after the age of 12.

**8.3 RECREATIONAL PHYSICAL ACTIVITY**

The types of recreational physical activities in which Kagiso high schools' female learners partake and the female learners' levels of recreational physical activity were investigated. The following section demonstrates the results obtained.
8.3.1 Exercise intensity

Physical activity guidelines for adolescents as formulated by the International Consensus Conference (Sallis, 1994) were used to grade the level of physical activity of the learners. The guidelines state that:

1) Adolescents should be physically active daily or nearly every day engaging in light to moderate physical activity for at least 30 minutes per day.

3) They should engage in 3 or more sessions per week of activities that last 20 minutes or more at a time and that require vigorous levels of exertion.

**Total exercise**

Figure 8.1 illustrates the total number of learners who participate in physical recreational activity.
Fig. 8.1 Total learner participation in recreational physical activity 7 days prior to the study (n=464)

Notably, 34% of the learners did not participate in any exercise at all.
Notably, 34% of the learners did not participate in any exercise at all.

**Light exercise**

The amount of days in a week in which light exercise was participated in was investigated and compared to the International Consensus Conference recommendations.

Figure 8.2 indicates the distribution of learners who did at least 20 minutes of light exercise in the seven (7) days prior to the questionnaire and the number of days they had done light exercise on.
Figure 8.2 Number of learners performing light exercise in the 7 days prior to the study (n=464)
Of note is that 34% of the learners did not participate in light exercise at all and only 14% of those who participated in light exercise satisfied the recommendations of the International Consensus conference.

The above findings were stratified per school, grade and age and are shown below:
Fig. 8.3 Participation in light exercise per school in the last 7 days prior to the study
Mafaesa and Mandisa learners showed an alarming inactivity with 55% and 46% respectively of the learners at the schools not participating in any exercise at all.
Fig. 8.4 Participation in light exercise in the 7 days prior to the study by grade (n=464)
Grades 8, 11 and 12 have significantly high frequencies of learners who did not participate in any light exercise at all.
Fig. 8.5 Participation in light exercise in the 7 days prior to the study by age (n=464)
In all age groups, the majority of the learners did not participate in any light exercise at all, or only participated for 1-2 days. They therefore did not satisfy the International Consensus conference recommendations. There is no difference in range of light physical activity amongst the three age groups.

**Hard exercise**

The amount of days in a week in which hard exercise was participated in was investigated and compared to the International Consensus Conference recommendations.

Figure 8.6 indicates the distribution of learners who did at least 20 minutes of hard exercise in the seven (7) days prior to the questionnaire and the number of days they had done hard exercise on.
Figure 8.6 Participation in hard exercise in the 7 days prior to the study (n=464)
Only 20% of the learners satisfied the International Consensus Conference recommendations.

The above findings were stratified per school, grade and age and are shown below:
Fig. 8.7 Participation in hard exercise in the 7 days prior to the study by school (n=464)
More than half the learners at Mandisa and Mafaesa did not participate in any hard exercise at all.
Fig. 8.8 Participation in hard exercise in the 7 days prior to the study by grade (n=464)
A very high percentage of grade 11 and 12 learners did not participate in any hard exercise at all.
Fig. 8.9 Participation in hard exercise in the 7 days prior to the study by age

- None
- 1-2 days
- 3-4 days
- 5-7 days

% by age:
- 12-15 yrs
- 16-18 yrs
- 19-21 yrs

Age
Among all the age groups, most learners either did not participate in any hard exercise at all or only participated for 1-2 days. Age group 19-21 had very high percentages with no hard exercise.

8.3.2 Hours spent on TV, videos & computer games

Rich (1999) stated that increases in television watching have been directly associated with lower physical activity levels. The hours spent watching television and videos, or playing computer or video games per day were therefore investigated. Table 8.2 indicates the amount of hours per day spent on TV, videos, video games and computer games.

Table 8.2 Hours per day spent on TV, videos, video games and computer games.

<table>
<thead>
<tr>
<th>Number of hours</th>
<th>Frequency of learners</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>None</td>
<td>49</td>
<td>11</td>
</tr>
<tr>
<td>≤ 1</td>
<td>133</td>
<td>29</td>
</tr>
<tr>
<td>2-3</td>
<td>130</td>
<td>28</td>
</tr>
<tr>
<td>4-5</td>
<td>68</td>
<td>15</td>
</tr>
<tr>
<td>+6</td>
<td>81</td>
<td>17</td>
</tr>
<tr>
<td>Total</td>
<td>464</td>
<td>100</td>
</tr>
</tbody>
</table>

Almost one third of the learners watch 4 or more hours of TV per day. This is an astoundingly large amount of time to spend on a sedentary recreational activity. Interestingly, 11% of learners do not spend any time watching TV. It is likely that they do not have any access to TV as 46% of South African households, and 45% of
Mogale district households, under which Kagiso falls, do not have a TV according to Statistics South Africa's 2001 census.

The above findings were stratified per school, grade and age and are shown below:
Fig. 8.10 Hours per day spent watching TV, etc. on a normal week by school (n=464)
The majority of Mafaesa learners do not seem to watch TV at all. The school is not in a poorer area than the other five schools. The learners might have misinterpreted the question, as 52% is a very high percentage.
Fig. 8.11 Hours per day spent watching TV, etc. on a normal week by grade (n=464)
Sedentary activities show a decrease with grade but this could mean that they are being replaced by studying, which, itself, is a sedentary activity or by learners having to take on more family responsibilities. Almost half of grade 12 learners stated that they do not watch TV.
Fig. 8.12 Hours per day spent watching TV, etc. on a normal week by age
There are minimal decreases in the percentage of learners watching 6 or more hours of TV per day with age.

8.3.3 Past year leisure-time physical activity

Past-year recall of physical activity gives a general indication of the types of activities participated in by the learners and the level of participation in these activities.

Types of leisure-time physical activity

Table 8.3 indicates the types of activities participated in at least 10 (ten) times in the past year and the frequency & percentage distribution of learners that participated in them. Forty-five (10%) learners did not participate in recreational physical activities at least 10 times in the past year.

Table 8.3: One activity per learner that was done the most (the activity had to have been done at least ten times in the Past Year)

The learners were instructed to only mention only one activity (the activity that they did the most in the past year).
<table>
<thead>
<tr>
<th>Activity</th>
<th>Frequency</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Netball</td>
<td>113</td>
<td>27</td>
</tr>
<tr>
<td>Athletics</td>
<td>65</td>
<td>15</td>
</tr>
<tr>
<td>Soccer</td>
<td>39</td>
<td>9</td>
</tr>
<tr>
<td>Volleyball</td>
<td>34</td>
<td>8</td>
</tr>
<tr>
<td>Dancing</td>
<td>28</td>
<td>7</td>
</tr>
<tr>
<td>Tennis</td>
<td>23</td>
<td>5</td>
</tr>
<tr>
<td>Basketball</td>
<td>15</td>
<td>4</td>
</tr>
<tr>
<td>Modelling</td>
<td>14</td>
<td>3</td>
</tr>
<tr>
<td>Aerobics</td>
<td>11</td>
<td>3</td>
</tr>
<tr>
<td>Walking</td>
<td>11</td>
<td>3</td>
</tr>
<tr>
<td>Gymnastics</td>
<td>9</td>
<td>2</td>
</tr>
<tr>
<td>Handball</td>
<td>9</td>
<td>2</td>
</tr>
<tr>
<td>Cricket</td>
<td>8</td>
<td>2</td>
</tr>
<tr>
<td>Hockey</td>
<td>7</td>
<td>2</td>
</tr>
<tr>
<td>Band/drill team</td>
<td>5</td>
<td>1</td>
</tr>
<tr>
<td>Swimming</td>
<td>4</td>
<td>1</td>
</tr>
<tr>
<td>Bicycling</td>
<td>3</td>
<td>1</td>
</tr>
<tr>
<td>Chess</td>
<td>3</td>
<td>1</td>
</tr>
<tr>
<td>Karate</td>
<td>3</td>
<td>1</td>
</tr>
<tr>
<td>Rugby</td>
<td>3</td>
<td>1</td>
</tr>
<tr>
<td>High jump</td>
<td>2</td>
<td>0.5</td>
</tr>
<tr>
<td>Softball</td>
<td>2</td>
<td>0.5</td>
</tr>
<tr>
<td>Table tennis</td>
<td>2</td>
<td>0.5</td>
</tr>
<tr>
<td>Weight training</td>
<td>2</td>
<td>0.5</td>
</tr>
<tr>
<td>Shot-put</td>
<td>2</td>
<td>0.5</td>
</tr>
<tr>
<td>Squash</td>
<td>1</td>
<td>0.2</td>
</tr>
<tr>
<td>Long jump</td>
<td>1</td>
<td>0.2</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>419</strong></td>
<td><strong>90</strong></td>
</tr>
</tbody>
</table>

Netball had the highest percentage of participation. Seventy-one percent of the learners were in the top 6 activities. One percent of the learners mentioned chess, which is a sedentary recreational activity.

**Energy expenditure**

Table 8.4 illustrates the energy expended by the learners expressed in Mets/hr/week.

This is an objective tool to measure exercise intensity and can therefore be used to assess whether the learners satisfy the International Consensus Conference recommendations (see page 46).
Table 8.4 Amount of energy expended in past year activity

<table>
<thead>
<tr>
<th>Level of activity</th>
<th>Mets/hrs/wk</th>
<th>Freq. Of learners</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Unacceptable</td>
<td>0-8.3</td>
<td>238</td>
<td>51</td>
</tr>
<tr>
<td>Light</td>
<td>8.4-18.9</td>
<td>96</td>
<td>21</td>
</tr>
<tr>
<td>Moderate</td>
<td>19.0-30.1</td>
<td>50</td>
<td>11</td>
</tr>
<tr>
<td>Vigorous</td>
<td>30.2&gt;</td>
<td>80</td>
<td>17</td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td>464</td>
<td>100</td>
</tr>
</tbody>
</table>

It was of concern that 51% of learners had unacceptable levels of activity.

The above findings were stratified per school, grade and age and are shown below:
Fig. 8.13 Amount of energy expended in past year activities per school (met/hr/wk) (n=464)
In all the schools, the majority of learners only expended 0-8.3 mets/hr/wk, which is below the recommended levels for health.
Fig. 8.14 Amount of energy expended in past year exercise by grade (met/hr/wk) (n=464)
Inactivity seems to be a major problem in all grades.
Fig. 8.15 Energy expended in past year activities by age (met/hr/wk) n=464
High percentages of the 12-15 year and 16-18 year ranges showed high rates of inactivity.

8.3.4 Participation on a competitive level

All athletes should have the opportunity to acquire lifelong skills and to experience the excitement and camaraderie of athletic competition (Josephson, 2002). Figure 8.16 indicates the frequency of learners that participated in sport on a competitive level during the past 12 months and the frequency of activities performed on a competitive level.
Fig. 8.16 Amount of activities participated in on a competitive level in the past 12 months (n=464)
The majority of learners did not participate in any competitive activity at all.

Types of competitive activities

The types of competitive activities that the schools were involved in were as follows:

Table 8.5 Types of competitive activities

<table>
<thead>
<tr>
<th>School</th>
<th>Netball</th>
<th>Soccer</th>
<th>Volleyball</th>
<th>Athletics</th>
<th>Chess</th>
<th>Tennis</th>
<th>Basketball</th>
<th>Band/drill</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mosupatsela</td>
<td>•</td>
<td>•</td>
<td></td>
<td>•</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mandisa</td>
<td>•</td>
<td>•</td>
<td>•</td>
<td>•</td>
<td>•</td>
<td></td>
<td></td>
<td>•</td>
</tr>
<tr>
<td>Mafaesa</td>
<td>•</td>
<td>•</td>
<td>•</td>
<td></td>
<td>•</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Kagiso</td>
<td>•</td>
<td>•</td>
<td>•</td>
<td>•</td>
<td>•</td>
<td>•</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Madiba</td>
<td>•</td>
<td>•</td>
<td></td>
<td></td>
<td>•</td>
<td>•</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Mandisa educators and learners also mentioned chess, which is a sedentary recreational activity. The learners also mentioned dancing competitions even though this competitive activity was not done in their respective schools. This means that those competitions were probably done as extra-mural activities.
8.3.5 Opportunities for recreational physical activity

Opportunities for recreational physical activity were investigated as the availability of opportunities positively affects participation in activities.

Activities offered in the schools

The school sport activities that the learners and educators stated that female learners could get involved in are tabulated in table 8.6 below:

Table 8.6 Activities offered in the schools

<table>
<thead>
<tr>
<th>School</th>
<th>Volleyball</th>
<th>Netball</th>
<th>Soccer</th>
<th>Band/drift</th>
<th>Basketball</th>
<th>Athletics</th>
<th>Tennis</th>
<th>Chess</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mosupatsela</td>
<td>•</td>
<td>•</td>
<td>•</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mandisa</td>
<td>•</td>
<td>•</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mafaesa</td>
<td>•</td>
<td>•</td>
<td></td>
<td></td>
<td></td>
<td>•</td>
<td>•</td>
<td>•</td>
</tr>
<tr>
<td>Kagiso</td>
<td>•</td>
<td>•</td>
<td>•</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>•</td>
</tr>
<tr>
<td>Madiba</td>
<td>•</td>
<td>•</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Even though activities were offered in the respective schools, they were not necessarily competed in e.g. Mosupatsela offered volleyball but did not compete in it.

Facilities available in the schools

Educators at Mandisa and Mafaesa reported that the schools had no sport facilities although recreational activities were offered and competed in by the schools. The 2
schools use bare land in the schoolyards for recreation. Others reported that the following facilities were available in Kagiso high schools:

<table>
<thead>
<tr>
<th></th>
<th>Volleyball</th>
<th>Netball</th>
<th>Soccer</th>
<th>Athletics</th>
<th>Basketball</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mosupatsela</td>
<td>•</td>
<td>•</td>
<td>•</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Kagiso</td>
<td>•</td>
<td></td>
<td>•</td>
<td>•</td>
<td>•</td>
</tr>
<tr>
<td>Madiba</td>
<td>•</td>
<td>•</td>
<td></td>
<td>•</td>
<td>•</td>
</tr>
</tbody>
</table>

Dancing and tennis were also listed by the learners and not by the educators. This could mean that they were participated in as extra-mural activities.

Allocated physical education hours per week

Table 8.8 indicates the stated number of hours of recreation/physical education the schools allocated per week according to both learners and educators.

<table>
<thead>
<tr>
<th>School</th>
<th>Physical education hrs per week</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mosupatsela</td>
<td>None</td>
</tr>
<tr>
<td>Mandisa</td>
<td>1</td>
</tr>
<tr>
<td>Madiba</td>
<td>1.5</td>
</tr>
<tr>
<td>Mafaesa</td>
<td>3</td>
</tr>
<tr>
<td>Kagiso</td>
<td>6</td>
</tr>
</tbody>
</table>
Sixteen learners (3%) stated hours ranging from 11-26 hours. This was incompatible with the rest of the learners and the educators.

**Male and female physical education educators per school**

Table 8.9 indicates the learner- and educator-reported number of female and male physical education educators in the schools.

**Table 8.9 Reported number of physical education educators**

<table>
<thead>
<tr>
<th></th>
<th>Mosupatsela</th>
<th>Mandisa</th>
<th>Mafaesa</th>
<th>Kagiso</th>
<th>Madiba</th>
</tr>
</thead>
<tbody>
<tr>
<td>Female</td>
<td>3</td>
<td>3</td>
<td>1</td>
<td>5</td>
<td>0</td>
</tr>
<tr>
<td>Male</td>
<td>5</td>
<td>3</td>
<td>1</td>
<td>6</td>
<td>0</td>
</tr>
<tr>
<td>Total</td>
<td>8</td>
<td>6</td>
<td>2</td>
<td>11</td>
<td>0</td>
</tr>
</tbody>
</table>

Two percent of the learners reported physical education educator numbers greater than 6.

Madiba has no physical education educators but despite this it allocates 1.5 hours of physical education hours per week. During this allocated time, learners play unstructured, unsupervised games.
Sacrifice of physical education time

Madiba, despite having no physical education educators reported that no physical education time was sacrificed. The educators at Mosupatsela and Kagiso also stated that physical education time does not get sacrificed, while Mandisa and Mafaesa stated that it does. Asked how often during the month previous to the survey it was sacrificed the latter 2 schools reported that it was sacrificed 4 times and once respectively. Seventy percent of the total sample of learners (all the schools) reported that physical education time gets sacrificed more than 4 times a month. There was inconsistency in the amount of times reported by learners in the different schools.

Is recreational physical activity compulsory?

All educators stated that recreational physical activity is not compulsory in the 5 (five) schools.

8.3.6 Factors affecting participation in Recreational Physical Activity

Psycho-social and general environmental factors that affect participation in recreational physical activity were divided into the following sub-sections: personal inhibitors, role models, sexual tension, inconvenience, male dominance, access to information & facilities; & beneficial factors (see page 47 for an explanation of each sub-section). The learners then had to respond with true or false to statements listed under the particular factors. Positive responses were given a score of 2 points and negative ones a score of 0. The following table indicates the learners’ overall score. The maximum score possible was 52 points.
Table 8.10 Learners' total score of psycho-socio-economic and general environment for recreational physical activity

<table>
<thead>
<tr>
<th>Description of environment</th>
<th>Score</th>
<th>Number of learners</th>
<th>% Distribution of learners</th>
</tr>
</thead>
<tbody>
<tr>
<td>Poor</td>
<td>0-22</td>
<td>109</td>
<td>24</td>
</tr>
<tr>
<td>Good</td>
<td>24-28</td>
<td>159</td>
<td>34</td>
</tr>
<tr>
<td>Excellent</td>
<td>30-52</td>
<td>196</td>
<td>42</td>
</tr>
</tbody>
</table>

The majority of learners (76%) stated that the environment was conducive toward exercise.
Personal Inhibitors

Internal factors were grouped as personal inhibitors. Statements were listed and the following responses obtained:

**Table 8.11 personal Inhibitors n=464**

<table>
<thead>
<tr>
<th></th>
<th>Frequency</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Learners who liked the sports available to girls</td>
<td>388</td>
</tr>
<tr>
<td>2</td>
<td>Learners who were satisfied with the selection of their physical education activities</td>
<td>41</td>
</tr>
<tr>
<td>3</td>
<td>Learners who were satisfied with the design and choice of their sports uniform</td>
<td>59</td>
</tr>
<tr>
<td>4</td>
<td>Learners who did not prefer to watch television and play computer games than play active sport</td>
<td>333</td>
</tr>
<tr>
<td>5</td>
<td>Learners who had the skills/ability necessary to take part in sport</td>
<td>362</td>
</tr>
</tbody>
</table>

Learners were generally not satisfied with the choice of their physical education activities and with the design of their sport uniform.

The personal inhibitors were given a group total score (10) and learners’ responses scored against the total.
Table 8.12 Personal Inhibitors scores

<table>
<thead>
<tr>
<th>Personal inhibitors (Score)</th>
<th>Frequency</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Excessive (0-2)</td>
<td>65</td>
<td>14</td>
</tr>
<tr>
<td>Average (4-6)</td>
<td>363</td>
<td>78</td>
</tr>
<tr>
<td>Minimal (8-10)</td>
<td>36</td>
<td>8</td>
</tr>
<tr>
<td>Total 10</td>
<td>464</td>
<td>100</td>
</tr>
</tbody>
</table>

Eighty-six percent of the learners responded positively and were therefore not affected negatively by personal inhibitors.
Role models

Positive role modelling affects participation in recreational physical activity positively. Statements were listed and the following responses obtained:

**Table 8.13 Role Models n=464**

<table>
<thead>
<tr>
<th></th>
<th></th>
<th>Freq.</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>6</td>
<td>Learners who felt they had enough female physical education educators</td>
<td>83</td>
<td>19</td>
</tr>
<tr>
<td>7</td>
<td>Learners who felt they had enough female sporting role models</td>
<td>202</td>
<td>45</td>
</tr>
<tr>
<td>8</td>
<td>Learners who felt that women’s sport received enough coverage in the media</td>
<td>227</td>
<td>52</td>
</tr>
<tr>
<td>9</td>
<td>Learners whose parents take part in sport</td>
<td>144</td>
<td>32</td>
</tr>
<tr>
<td>10</td>
<td>Learners whose friends take part in sport</td>
<td>293</td>
<td>65</td>
</tr>
</tbody>
</table>

The majority of learners were not satisfied with the availability of female sporting role models. They also indicated a lack of parental role modelling.

The role model factors were given a group total score (10) and learners’ responses scored against the total.
### Table 8.14 Role models scores

<table>
<thead>
<tr>
<th>Role models (Score)</th>
<th>Frequency</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Poor (0-2)</td>
<td>144</td>
<td>31</td>
</tr>
<tr>
<td>Good (4-6)</td>
<td>273</td>
<td>59</td>
</tr>
<tr>
<td>Excellent (8-10)</td>
<td>47</td>
<td>10</td>
</tr>
<tr>
<td>Total 10</td>
<td>464</td>
<td>100</td>
</tr>
</tbody>
</table>

The majority of learners (69%) responded positively and were therefore not affected negatively by lack of role modelling.
Sexual Tension

Adolescents struggle with issues of sexuality and these issues usually affect all other spheres of their lives. Statements were listed and the following responses obtained:

Table 8.15 Sexual Tension n=464

<table>
<thead>
<tr>
<th></th>
<th></th>
<th>Freq.</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>11</td>
<td>Learners who found it not embarrassing to be in the same physical education class as boys</td>
<td>301</td>
<td>68</td>
</tr>
<tr>
<td>12</td>
<td>Learners who did not feel that taking part in sport while boys watch makes them less attractive to boys</td>
<td>325</td>
<td>72</td>
</tr>
</tbody>
</table>

The sexual tension factors were given a group total score (4) and learners’ responses scored against the total.
Table 8.16 Sexual Tension scores

<table>
<thead>
<tr>
<th>Sexual Tension (Score)</th>
<th>Frequency</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tension (0)</td>
<td>144</td>
<td>31</td>
</tr>
<tr>
<td>Some tension (2)</td>
<td>273</td>
<td>59</td>
</tr>
<tr>
<td>No tension (4)</td>
<td>47</td>
<td>10</td>
</tr>
<tr>
<td>Total 4</td>
<td>464</td>
<td>100</td>
</tr>
</tbody>
</table>

The majority of learners (69%) scored positively and therefore did not find sexual tension of significance to their participation in exercise.
Inconvenience

Finding sport to be an inconvenience negatively affects participation in it. Statements were listed and the following responses obtained:

Table 8.17 Inconvenience n=464

<table>
<thead>
<tr>
<th></th>
<th>Freq.</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>13 Learners who did not feel that sport takes too much time and is too serious.</td>
<td>146</td>
<td>32</td>
</tr>
<tr>
<td>14 Learners who felt that there was enough privacy in the shower and change rooms</td>
<td>168</td>
<td>38</td>
</tr>
<tr>
<td>15 Learners who did not feel that there are too many rules and regulations in sport, making sport undesirable.</td>
<td>221</td>
<td>50</td>
</tr>
</tbody>
</table>

Learners generally found sport to be an inconvenience.

The inconvenience factors were given a group total score (6) and learners’ responses scored against the total.
Table 8.18 Inconvenience scores

<table>
<thead>
<tr>
<th>Attitude (Score)</th>
<th>Frequency</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Highly inconvenient (0-2)</td>
<td>301</td>
<td>65</td>
</tr>
<tr>
<td>Minimal inconvenience (4)</td>
<td>132</td>
<td>28</td>
</tr>
<tr>
<td>No inconvenience (6)</td>
<td>31</td>
<td>7</td>
</tr>
<tr>
<td><strong>Total 6</strong></td>
<td>464</td>
<td>100</td>
</tr>
</tbody>
</table>

A significantly high number of learners scored negatively. This indicates that most learners find sport to be an inconvenience.
Male Dominance

Male dominance of sporting activities and facilities affects female participation negatively. Statements were listed and the following responses obtained:

Table 8.19 Male Dominance n=464

<table>
<thead>
<tr>
<th></th>
<th>Freq.</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>16</td>
<td>Learners who did not feel that male learners dominated all sports equipment and facilities</td>
<td>191</td>
</tr>
<tr>
<td>17</td>
<td>Learners who did not feel that their parents promote sport for boys more than they do for girls</td>
<td>252</td>
</tr>
<tr>
<td>18</td>
<td>Learners who did not feel that girls in their community are not given the opportunity to play traditionally male sports</td>
<td>302</td>
</tr>
</tbody>
</table>

Most learners felt that male learners dominated sports equipment and facilities.

The male dominance factors were given a group total score (6) and learners’ responses scored against the total.
Table 8.20 Male Dominance scores

<table>
<thead>
<tr>
<th>Male dominance (Score)</th>
<th>Frequency</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Heavy dominance (0)</td>
<td>58</td>
<td>12</td>
</tr>
<tr>
<td>Some dominance (2)</td>
<td>166</td>
<td>36</td>
</tr>
<tr>
<td>Minimal dominance (4)</td>
<td>147</td>
<td>32</td>
</tr>
<tr>
<td>No dominance (6)</td>
<td>93</td>
<td>20</td>
</tr>
<tr>
<td><strong>Total 6</strong></td>
<td><strong>464</strong></td>
<td><strong>100</strong></td>
</tr>
</tbody>
</table>

Male dominance does not seem to play a major role in sports participation.
**Access to information and facilities**

Access to information and facilities affects participation in sport positively.

Statements were listed and the following responses obtained:

<table>
<thead>
<tr>
<th></th>
<th></th>
<th>Freq.</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>19</td>
<td>Learners who felt they had enough information on available sports and sporting facilities in the community</td>
<td>141</td>
<td>31</td>
</tr>
<tr>
<td>20</td>
<td>Learners who felt they had enough money to buy sporting equipment / register for the sport they like</td>
<td>79</td>
<td>17</td>
</tr>
<tr>
<td>21</td>
<td>Learners who felt that the sport facility they would like to use is accessible</td>
<td>182</td>
<td>40</td>
</tr>
<tr>
<td>22</td>
<td>Learners who felt that sports facilities in their community are safe</td>
<td>240</td>
<td>53</td>
</tr>
</tbody>
</table>

Access to information and facilities seems to be a major problem as most learners responded negatively to the above statements.

The access to information and facilities factors were given a group total score (8) and learners’ responses scored against the total.
Table 8.22 Access to information and facilities scores

<table>
<thead>
<tr>
<th>Access to information &amp; facilities (Score)</th>
<th>Frequency</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>No access (0)</td>
<td>159</td>
<td>34</td>
</tr>
<tr>
<td>Some access (2)</td>
<td>191</td>
<td>41</td>
</tr>
<tr>
<td>Adequate access (4-6)</td>
<td>114</td>
<td>25</td>
</tr>
<tr>
<td>Total 8</td>
<td>464</td>
<td>100</td>
</tr>
</tbody>
</table>

Access to information and facilities is a major problem. Learners scored very poorly in response to these factors.
Beneficial

Perception of sport as socially and psychologically beneficial positively affects participation in it. Statements were listed and the following responses obtained:

Table 8.23 Beneficial factors n=464

<table>
<thead>
<tr>
<th></th>
<th>Freq.</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>23 Learners who felt that sport keeps them slim and fit</td>
<td>383</td>
<td>84</td>
</tr>
<tr>
<td>24 Learners who felt that through sport, they can socialize, have fun and belong to a team</td>
<td>416</td>
<td>91</td>
</tr>
<tr>
<td>25 Learners who felt that sport makes them feel good, relax and relieve stress</td>
<td>433</td>
<td>95</td>
</tr>
<tr>
<td>26 Learners who felt that through sport, they can learn new tricks.</td>
<td>420</td>
<td>92</td>
</tr>
</tbody>
</table>

The beneficial factors were given a group total score (8) and learners’ responses scored against the total.
Table 8.24 Beneficial factors scores

<table>
<thead>
<tr>
<th>Benefits of sports (Score)</th>
<th>Frequency</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>None (0)</td>
<td>10</td>
<td>2</td>
</tr>
<tr>
<td>Some (2)</td>
<td>6</td>
<td>1</td>
</tr>
<tr>
<td>Several (4-6)</td>
<td>124</td>
<td>27</td>
</tr>
<tr>
<td>Many (8)</td>
<td>324</td>
<td>70</td>
</tr>
<tr>
<td>Total 8</td>
<td>464</td>
<td>100</td>
</tr>
</tbody>
</table>

The majority of learners found sport to be beneficial.
9. DISCUSSION OF RESULTS

9.1 INTRODUCTION

Discussion of results will follow the following sub-topics:

- Types and levels of recreational physical activity
- Health benefits of recreational physical activity
- Opportunities for recreational physical activity
- Attitudes towards recreational physical activity

9.2 TYPES AND LEVELS OF RECREATIONAL PHYSICAL ACTIVITY

One hundred and fifty (34%) of the learners did not participate in recreational physical activities at all in the 7 days prior to the study. This was expected, as the researcher had observed inactivity among female learners attending Kagiso high schools prior to the study. Mafaeza learners were the most inactive (55% did not participate in any light exercise). Light exercise seemed to peak at grade 10 and then decreased with further grades. This could be because studying, which is a sedentary activity, and family responsibilities take up more time in the higher grades. Levels of light exercise did not change with age, though. This is positive as it indicates that age does not negatively affect participation of the learners in light exercise.

Fifty one percent of the learners did not participate in any hard exercise at all 7 days prior to the study. Only 20% of the learners met the International Consensus Conference guidelines pertaining to minimum levels of hard exercise for adolescents. This study showed lower exercise levels than those of the United States department of
Health and Human Services national study, where 52% of girls reported that they exercised vigorously on at least 3 of the previous 7 days (The United States department of Health and Human Services’ report, 1996) This difference in results could be because the United States’ physical education policies have been successfully implemented and schools have relevant recreational facilities and a positive culture of physical activity. The results showed a decrease in hard exercise with an increase in grade. The Canada Youth Risk Behaviour Survey yielded the same results when it indicated that 81% of boys in grade 9 participated in vigorous activity during 3 or more days in the week (Canadian Parks and Recreation Association, 2000). This proportion decreased steadily during the high school years to only 67% in grade 12. Between the ninth and twelfth grades the percentage involved in such vigorous activity in girls fell from 61% to 41%. The United States department of Health and Human Services’ report (1996) also stated that participation declined strikingly as age or grade in school increases. This was confirmed by the great difference in hard exercise performance between the 16-18 year (20%) and the 19-21 year (13%) age groups in Kagiso.

Strategies to increase the amount of physical activity for boys and girls need to be different, because girls tend to prefer different types of physical activity and pursue it for different reasons than do boys. Since girls are more likely to have low self-esteem related to their physical capabilities, programs that serve girls should provide instruction and experiences that increase their confidence, offer ample opportunities for participation, and establish social environments that support involvement in a range of physical activities. Resources must be invested in creative, culturally sensitive, linguistically appropriate programs (CDC, 1999). The South African Draft
Policy for physical education (2000) states that there must be equitable distribution of opportunity and codes for boys and girls in the school. Where possible, codes involving learners must be broadened to facilitate the inclusion of girls, albeit in totally female teams or with provision in the rules for the female physique, e.g. female soccer, cricket, wrestling or boxing.

Ninety percent of the learners performed a particular recreational physical activity at least ten times in the past year. Netball seemed to be the sport most participated in (this could be due to the fact that all the schools participated in netball even though 2 of the schools did not have the relevant facilities), followed by athletics and soccer. These are cheap sports and are affordable to low socio-economic communities. This finding was different to that of Pate, conducted in London in 1994, where it was found that bicycling, followed by swimming, and ball sports were the predominate physical activities reported. The London finding demonstrates the availability of varying facilities to adolescents in the country.

9.3 HEALTH BENEFITS OF RECREATIONAL PHYSICAL ACTIVITY

The surgeon general’s report (1996) recommended that to achieve health benefits, everybody should engage in a minimum of moderate-intensity (8.4 mets/hour/week) activity for a total of 30 minutes a day most days of the week. Fifty one percent of the learners were inactive or minimally active. This finding was significantly higher than that reported by the United States Department of Health and Human Services (1996) which found 21% of black females inactive. This could be due to the lack of a culture of recreational physical activity in South African township schools, a shortage of facilities and a lack of role models.
Millions of South Africans suffer from illnesses that can be prevented or improved through regular physical activity such as coronary heart disease, adult-onset (non-insulin dependent) diabetes, colon cancer, hip fractures, high blood pressure and obesity (CDC, 2001). Physical activity, therefore, has to be introduced and sustained in children and adolescents in order to develop a culture of healthy behaviour and thereby prevent future chronic diseases.

Twenty one percent of the learners were active at less than the recommended intensity level for attainment of health. They only achieved the first recommendation of the International Consensus Conference. Only 28% of the learners achieved both the first and second recommendations. This finding is higher than that of the United States department of health and human services report, which indicated that only 19% of all high school students are physically active for 20 minutes or more, five days a week, in physical education classes. These results show that even though there’s a lack of facilities and inadequate physical education, Kagiso learners find ways to keep moderately physically active. Technology (television, computer games, video games) is also more accessible in the USA and adolescents in the country therefore have more opportunity to participate in sedentary recreational activity.

Only 6% of the learners participated in an activity throughout the year. This could be due to the fact that some activities are seasonal due to climatic conditions, and that some learners only get active in preparation for inter-school competitions. Both the North Carolina Youth Fitness Study-1 (1999) and the Canada Fitness Survey (2001) (where climatic conditions are more severe), which showed a marked increase in activity during the summer months, support this contention. During the active months,
78% of the learners exercised for 3 or more days per week and 96% exercised for 30 minutes or more per day.

Sedentary activities such as TV watching and playing video games seemed to occupy a significant amount of the learners’ time. Thirty two percent of the learners were found to spend more than 3 hours per day on sedentary activities such as television watching, video and computer games. This study shows a similar amount of time to Simons-Morton’s study (1997) conducted in four states of the United States of America, which showed that learners spent a minimum average of 24 hours per week (3.5 hours per day) watching television and playing video games. Seventeen percent of the learners spent more than 6 hours a day on sedentary activities.

Time spent with various media may displace other more active and meaningful pursuits such as exercising and playing with friends. Research has shown primary negative health effects of television viewing on violence and aggressive behaviour, sexuality, academic performance, body concept and self-image, nutrition, dieting, and obesity and substance use (American Academy of pediatrics, 2001).

The amount of time spent on sedentary activities showed a decline with an increase in grade. The majority of Mafaesa learners claimed not to watch any television at all. It is uncertain whether this is due to a lack of televisions or through choice. Under reporting might also be a factor.

One hundred and ninety four (42%) learners did not participate in any competitive activities at all. Competitive activity also showed a decline with an increase in grade and age. This finding is in line with the statement by CDC, 1999 that physical
education should emphasise skills for lifetime physical activities rather than those for competitive sports. Physical education curricula and instruction that emphasise enjoyable participation in physical activity and that help students to develop the knowledge, attitudes, motor skills, behavioural skills, and confidence needed to adopt and maintain active lifestyles, should be implemented (CDC, 1999).

9.4 OPPORTUNITIES FOR RECREATIONAL PHYSICAL ACTIVITY

For school sport to take place, it is a prerequisite that minimal (basic) facilities and equipment be supplied. The neglect of the discipline of physical education and the short-sightedness of planning for basic facilities in South African schools has resulted in a backlog. The basic physical facilities for the presentation of physical education sport include a level piece of ground of a minimum of 50X50 metres, an adequate supply of clean water, and an adequate ablution facility. The basic equipment required is an adequate number of balls and bats of different types, depending on learner population and the identified, popular code of sport, and/or games for mass participation (Policy for physical education/Human Movement and School Sport, 2000). Kagiso learners have access to the following activities and facilities: dancing, netball, soccer, tennis, volleyball, athletics, band/drift team and basketball. These are the typical facilities available in black, low socio-economic schools, as minimal resources are needed for such facilities.

Activities and facilities that provide skills for lifetime physical activity and make physical activity enjoyable such as dance, strength training, jogging, swimming, bicycling, walking and hiking should be emphasised by physical education educators
in order to increase accessibility to and sustainability of recreational physical activities. Recreational physical activities that can be participated in by an individual are more sustainable than group activities as the individual can structure their own activities in a way that suits them best. These activities therefore have a lifelong potential. Group activities on the other hand are dependent on group dynamics, prescribed time and group aims instead of individual aims. These activities therefore tend to decline with an increase in age as they clash with individual needs.

The availability of resources is not enough if time is not officially allocated to use them. Schools, through physical education programs are the major way of regularly contacting and influencing a large percentage of the world’s children. Children spend a large portion of their day in school, during which physical education and recess provide the opportunity to accumulate time spent in physical activity (Dale, 2000).

For physical education to make a meaningful and consistent contribution to the recommended amount of young people’s physical activity, students at every grade level should take daily physical education classes and should be physically active for a large percentage of class time. A sound policy on physical education that emphasises that physical education is an essential part of every learner’s preparation for adult life, therefore has to be drawn up by each country (US Department of Health and Human Services, 1996). The California State board of education policy requires that courses of study at primary and high school include physical education and specifies the minimum amount of physical education minutes to be provided to students. Learners at high schools are required to undergo 400 minutes of physical education each ten days. This policy has led to increased fitness levels among learners.
attending California schools (California State Board of Education, 1999). In Cuba, physical education is allocated two or three classes per week, apart from up to eight hours of mass participation within the teaching timetable in the primary and secondary levels. On the other hand, more time is devoted to the competitions, championships, festivals, meets, dual meets, contests, etc., which increase the daily practice time of the learners. In Britain, 8% of curriculum time (2 hours per week) is allocated to physical education (National Sports Council South Africa, 1995).

In South Africa, the policy for physical education/ Human Movement and School Sport was drafted in 2000 and states that school sport shall be recognised as an integral extra-mural co-curricular component of the holistic education programme. Each school shall allocate time on a daily basis for participation in school sport during or after formal school hours. Kagiso schools do not strictly adhere to this policy, though; as different hours were allocated to physical education by the different schools and physical education is not compulsory in all 5 schools. Mosupatsela does not allocate any physical education hours at all.

Mandisa and Mafaesa sacrifice physical education time while Madiba has no trained physical education educators. Madiba learners therefore participate in unstructured games and play during physical education time. This does not comply with the draft protocol (South Africa, 2000) for school sport, which states that each school shall have a structured programme for recreational school sport, which may take the form of festivals or non-competitive fun games. Relevant games and activities that promote mass participation shall be identified, prioritised and implemented. All learners shall
participate in these activities on an ongoing basis throughout the academic year and not as once-off festivals.

Sacrifice of physical education time in order to catch up on other subjects has a negative effect on the learners' cognitive learning, as research has demonstrated that children who engage in daily physical education show superior motor fitness, academic performance, and attitude towards school, versus their counterparts who did not participate in daily physical education. Physical education learning experiences also offer a unique opportunity for problem-solving, self-expression, socialization, and conflict resolution (National Association for Sport and physical education, 2001).

Madiba has neither male nor female physical education educators. This supports the statements by learners that there was a lack of sporting role models, as 81% of the learners stated that their school needs more female physical education educators and 55% stated that there are a few or no female sporting role models. The Global Vision for School physical education (1995) stated that all teachers responsible for teaching physical education must be professionally prepared physical educators. Through their preparation and ongoing professional development, all teachers should have a sound knowledge of the contribution of movement to the total education of children and youth; and that each school must have at least one professionally prepared physical education specialist. The lack of trained personnel is a barrier to implementing safe, organised, and effective physical activity instruction and programs for young people. Instructor training has proven to be efficacious: for example, physical education specialists teach higher quality lessons. Planning, implementing, and evaluating physical activity instruction and programs require specially trained personnel.
Physical education specialists spend more time on developing skills, impart more knowledge, and provide more moderate and vigorous activity than do classroom teachers (CDC, 1999). In order to achieve expertise in physical education, the South African policy on school sport and physical education/human movement stresses that it aims at improved educator training, qualifications, career-pathing/planning and promotion opportunities related to the physical education learning area of the Outcome Based Curriculum and voluntary work that promotes extra-mural sport and the proficient management of sport.

9.5 **FACTORS IMPACTING ON PARTICIPATION IN RECREATIONAL PHYSICAL ACTIVITY**

The Council of physical education for Children (2001) stated in its position paper that attitudes, habits, and perceptions are critical prerequisites for persistent participation in physical activities. Seventy six percent of the learners had a positive attitude towards sport. Eighty six percent like the sports available to girls but they want to be more involved in the selection of their sport (91%) and in the design & choice of their sports uniform (87%). Most learners (72%) want to be physically active rather than watch TV and feel that they have the skills necessary to partake in sport (80%).

There seems to be a lack of sporting role models, though, as 81% of the learners stated that their school needs more female physical education educators and 55% stated that there are a few or no female sporting role models. This supports the
Canadian Parks (2000) study, which found gender bias to exist in leadership leading to a lack of female leadership opportunities and role models. Sixty eight percent of the learners also stated that their parents do not partake in any sport. This has a negative effect on participation as there is a positive relationship between the physical activity level of parents and that of their children, and parental support for physical activity is correlated with active lifestyles among adolescents (CDC, 2001). On the positive side, 52% stated that women’s sport does receive enough media coverage. Sixty five percent stated that their friends partake in sport. Friends’ or peers’ support for and participation in physical activity is an interpersonal factor that is positively associated with physical activity among young people (CDC, 2001).

Sexual tension seems to play a role in impeding participation in physical education as 32% of the learners were embarrassed by the presence of boys in their physical education class, and 28% felt that participating in sport makes them less attractive to boys. This could be one of the reasons why 34% do not partake in recreational physical activity. Body consciousness did not only relate to the opposite sex, though, as was demonstrated by 62% stating that there is not enough privacy in the shower and change rooms. This leads to embarrassment, which is a possible deterrent toward participation.

Male dominance affects female participation in recreational physical activity negatively and could contribute to the 34% that do not participate in recreational physical activity. Fifty eight percent stated that boys want to use all sports equipment
and facilities. This showed similar results to Womensport West (2000) where girls reported that boys dominate sports equipment and facilities and exclude girls who wish to use them by intimidating, denigrating or ignoring them. Forty four percent agreed that their parents promote sport for boys more than they do for girls, in support of the Womensport West study, where the majority of girls reported that their parents tend to promote sport for boys more than they do for girls. This is a negative finding as parental support for physical activity is correlated with active lifestyles among adolescents (CDC,1997). Thirty three percent said that girls in their community were not given the opportunity to play traditionally male sports. This could lead to boredom with the available activities and therefore non-participation as reported by the respondents in the Womensport West study (2000) who claimed to be bored with the lack of variety of sports generally available to girls and would like more involvement in non-traditional sport.

The majority of learners found sport to be an inconvenience as 68% stated that sport takes too much time and is too serious. The same results were yielded by Womensport West (2000) where it was found that having to train deterred many adolescent girls from playing sports, because it makes sport too time consuming and serious. The deterring seriousness of sport was further indicated by half of those surveyed stating that there were too many rules and regulations in sport, making it undesirable.

Even though learners found sport to be an inconvenience, they also recognised its benefits as 84% said it kept them slim and fit, while 91% said it helped them
socialise, with 95% saying it made them relax and relieved stress; and 92% said it helped them learn new tricks.

Accessibility to information and facilities seemed to be a major problem. Sixty nine percent stated that they did not have enough information on available sports and sporting facilities; and 83% stated that they did not have enough money to buy sporting equipment or register for the sport that they liked. Sixty percent stated that the facility they would like to use is too far away and too expensive to reach. The same findings were reported in the Canadian Parks report (2000) where lack of money, transportation and information were found to be common constraints to participation. Sports facility safety was also an issue, as 47% stated that the facilities were not safe. This also negatively affects participation in sport.

The National Heart Foundation (1996) stated that physical activity offers physical and psychological benefits to individuals. Improved health, physical fitness and self-esteem can be gained through regular activity. Children can learn social skills and body co-ordination. This is supported by the study’s findings where the majority of the learners found sport to be beneficial. Even though the learners realised the benefits of sport, 34% of them still do not participate in it. These 34%’s participation is highly likely to be due to the other psycho-socio-environmental inhibitory factors mentioned above.
9.6 SUMMARY OF MAIN FINDINGS

Recreational types and levels

Thirty four percent of the learners did not participate in any recreational physical activity at all and 51% did not perform any hard exercise in the 7 days prior to the study. A decline in hard exercise by age and grade and in light exercise by grade was observed. The most common recreational physical activities participated in were netball, athletics and soccer. Sedentary activities took up a lot of the learners’ recreational time, with 17% spending more than 6 hours a day on television. Forty two percent of the learners did not participate in any recreational physical competitive activity at all.

Energy expenditure on physical recreational activity

Fifty one percent of the learners did not meet the minimum recommendation of the International Consensus Conference, while 21% only met the “basic” recommendation and 28% met the “advanced” recommendation.
Opportunity for recreation

There was an absolute lack of recreational physical activity facilities at Mandisa and Mafaesa, and a relative lack at Mosupatsela, Madiba and Kagiso. Allocated physical education hours in the different schools range from none (Mosupatsela) to 6 hours (Kagiso) per week. As physical education is not compulsory in any of the schools, Mandisa and Mafaesa sacrifice their physical education time for other activities and Madiba has no physical education educators at all.

Factors impacting on participation in recreational physical activity

Seventy six percent of the learners feel that participation in sports is beneficial but the majority of learners would like to be more involved with the choice of their physical education activities and the design of their sport uniform. On the negative side, it was found that there is lack of female sporting role models and parental role modelling, male learners dominate sports equipment and facilities and there is sexual tension between the male and female learners. Even though sport was found to be beneficial, it was also an inconvenience and the majority of learners found sporting facilities to be unsafe. They also identified lack of access to information and facilities. These factors contribute negatively to participation in recreational physical activity.
9.7 LIMITATIONS OF THE STUDY

- This study only investigated recreational physical activity. It would form a clearer picture if other physical activities were investigated as well.
- The 1-year recall only investigates the activity done the most during that year. It would be better if all recreational physical activities that the learners were involved in were investigated, as there could have been a seasonal bias.
- The proportions of learners involved in the various types of activities are skewed as learners were only asked to name the activity they most often engaged in, rather than all activities they engaged in.

9.8 CONCLUSION

A high percentage (34%) of the learners in the five schools were not involved in any recreational physical activity. Of those who did participate in recreational physical activity, 51% of the learners did not meet the minimum recommendation of the International Consensus Conference, while 21% only met the “basic” recommendation and 28% met the “advanced” recommendation. The highest percentage (27%) of learners participated in netball (27%), followed by athletics (15%) and soccer (9%). Opportunities for recreational physical activity in the schools need considerable improvement. This applies to provision of facilities, time allocation to physical education and increased numbers of trained physical education educators. Attitudes towards recreational physical activity were found to be generally positive. Lack of female sporting role models and lack of parental role modelling, male domination of sports equipment and facilities, sexual tension between the male and female learners, time-inconvenience, the unsafe sporting facilities and lack of access
to information and facilities were found to contribute negatively to participation in recreational physical activity.

9.9 DISTRIBUTION OF STUDY FINDINGS

The results of the study and recommendations on learners’ physical activity will be presented to the Gauteng department of education, the Kagiso high schools’ teachers and will also be submitted for publication in an Education Journal.

9.10 RECOMMENDATIONS

The following recommendations can be drawn out from the results of the study:

- Relevant basic physical recreational facilities should be provided in black township schools in order to make physical recreation more accessible.
- Municipalities should ensure that community facilities are accessible and safe.
- Activities with a potential for lifelong sustainability should be introduced in schools.
- Each school should have trained recreational physical education educators (especially female ones) who will structure recreational physical activities and provide the necessary information about recreational physical activity.
- Physical education time should be increased to be in line with the current physical education policy and should not be sacrificed for the benefit of other subjects.
- Schools should formulate programmes that ensure that female learners have equitable access to sports facilities and equipment in order to prevent male domination.
All of these recommendations are in line with the current school physical education policy.
REFERENCES


Centres for Disease Control and prevention (1997). Guidelines for school and community programs to promote lifelong physical activity among young people. MMWR 46 (RR-6) 1-36


Centre for Education Policy Development, Evaluation and Management (CEPD) and the Education Policy Unit (1999). An investigation into the organisation and placement of school sport report: Volume 1
Council of physical education for Children (2001). Physical education is critical to a complete education: A position paper from the National Association for Sport and physical education.


http://www.lessonplanspage.com/PHYSICAL_EDUCATION/ImprovingPHYSICAL_EDUCATION/articleAll.htm


EDUCATIONC/support.htm


Statistics South Africa (2001). Table: Census 2001 by municipality, household goods and population group of head of household (derived).


APPENDICES

APPENDIX 1

Consent form:

I, ________________, agree to take part in a project about physical activity in female learners attending Kagiso high schools done by Hajira Mashego. I will complete a questionnaire. The purpose and procedures of the project have been fully explained to me. I am taking part because I want to, and I have been told that I can stop at any time I want to.

______________________________
Signature

______________________________
Date

UNIVERSITY of the WESTERN CAPE
APPENDIX 2

Adapted Modifiable activity questionnaire for adolescence

DATE_______________ ID (official use)
SCHOOL____________________ CLASS____________________
AGE______

For the following 4 questions, tick the choice that applies to you

1. How many times in the past 7 days have you done at least 20 minutes of exercise
   hard enough to make you breathe heavily and make your heart beat fast? (Hard
   exercise includes, for example, playing basketball, jogging, or fast bicycling;
   include time in physical education class)
   1) None
   2) 1 to 2 days
   3) 3 to 4 days
   4) 5 to 7 days

2. How many times in the past 7 days have you done at least 20 minutes of light
   exercise that was not hard enough to make you breathe heavily and make your
   heart beat fast? (Light exercise includes walking or slowly bicycling; include time
   in physical education class)
   1) None
   2) 1 to 2 days
   3) 3 to 4 days
   4) 5 to 7 days
3. During a normal week how many **hours a day** do you watch television and videos, or play computer or video games before or after school?

1) None
2) 1 hour or less
3) 2 to 3 hours
4) 4 to 5 hours
5) 6 or more hours

4. During the past 12 months, how many team or individual **sports** or activities did you participate in on a **competitive** level? (If none, skip to question 6)

1) None
2) 1 activity
3) 2 activities
4) 3 activities
5) 4 or more activities

5) What activities did you compete in?

........................................................................................................................................

........................................................................................................................................

........................................................................................................................................

........................................................................................................................................

........................................................................................................................................
PAST YEAR LEISURE-TIME PHYSICAL ACTIVITY

Tick the activity that you did the most in the PAST YEAR. The activity should have been done at least 10 times. Do not include time spent in school physical education classes.

<table>
<thead>
<tr>
<th></th>
<th>Aerobics</th>
<th>12</th>
<th>High Jump</th>
<th>22</th>
<th>Skateboarding</th>
</tr>
</thead>
<tbody>
<tr>
<td>2</td>
<td>Athletics</td>
<td>13</td>
<td>Hiking</td>
<td>23</td>
<td>Softball</td>
</tr>
<tr>
<td>3</td>
<td>Band/drill team</td>
<td>14</td>
<td>Hockey</td>
<td>24</td>
<td>Soccer</td>
</tr>
<tr>
<td>4</td>
<td>Baseball</td>
<td>15</td>
<td>Modelling</td>
<td>25</td>
<td>Swimming</td>
</tr>
<tr>
<td>5</td>
<td>Basketball</td>
<td>16</td>
<td>Netball</td>
<td>26</td>
<td>Table tennis</td>
</tr>
<tr>
<td>6</td>
<td>Bicycling</td>
<td>17</td>
<td>Roller-skating</td>
<td>27</td>
<td>Tennis</td>
</tr>
<tr>
<td>7</td>
<td>Boxing</td>
<td>18</td>
<td>Roller-blading</td>
<td>28</td>
<td>Volleyball</td>
</tr>
<tr>
<td>8</td>
<td>Chess</td>
<td>19</td>
<td>Running</td>
<td>29</td>
<td>Walking</td>
</tr>
<tr>
<td>9</td>
<td>Cricket</td>
<td>20</td>
<td>Rugby</td>
<td>30</td>
<td>Weight training</td>
</tr>
<tr>
<td>10</td>
<td>Dancing</td>
<td>21</td>
<td>Squash</td>
<td>31</td>
<td>Wrestling</td>
</tr>
<tr>
<td>11</td>
<td>Gymnastics</td>
<td>32</td>
<td>Shortput</td>
<td>33</td>
<td>Long jump</td>
</tr>
<tr>
<td>34</td>
<td>Handball</td>
<td>35</td>
<td>Karate</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Write the activity that you ticked above in the “Activity” box below.

Tick the months you did the activity and then estimate the amount of time spent in the activity.

<table>
<thead>
<tr>
<th>ACTIVITY</th>
<th>JAN</th>
<th>FEB</th>
<th>MAR</th>
<th>APR</th>
<th>MAY</th>
<th>JUN</th>
<th>JUL</th>
<th>AUG</th>
<th>SEP</th>
<th>OCT</th>
<th>NOV</th>
<th>DEC</th>
<th>Months per year</th>
<th>Days per week</th>
<th>Minutes per day</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>


APPENDIX 3

OPPORTUNITIES and INHIBITORS QUESTIONNAIRE

Section 1: Learners only

List the recreational/sport activities that girls can get involved in, in your school

1 ______________________ 2 ______________________
3 ______________________ 4 ______________________
5 ______________________

List the sport facilities (grounds, courts, halls) that the school has:

1 ______________________ 2 ______________________
3 ______________________ 4 ______________________
5 ______________________

How many hours of recreation/physical education per week do you attend?________

How many female physical education educators are there in the school?________

How many male physical education educators are there in the school?________

Does physical education time get sacrificed for other activities e.g. extra lessons?

YES ☐ NO ☐

If yes, how often during past month did this happen?

____________________
Section 1: Educators only

List the recreational/sport activities that girls can get involved in, in your school

1. __________________________
2. __________________________
3. __________________________
4. __________________________
5. __________________________

List the sport facilities that the school has

1. __________________________
2. __________________________
3. __________________________
4. __________________________
5. __________________________

How many hours of recreation/physical education are allocated by the school per week? ______

How many female physical education educators are there in the school? ______

How many male physical education educators are there in the school? ______

Does physical education time get sacrificed for other activities e.g. extra lessons?

YES ☐ NO ☐

If yes, how often during past month did this happen?

Is recreational physical activity compulsory?

YES ☐ NO ☐

Is the school involved in female competitive sport?

YES ☐ NO ☐

In which sports does the school have competitions?

1. __________________________
2. __________________________
3. __________________________
4. __________________________
5. __________________________
### Section 2: Learners only

<table>
<thead>
<tr>
<th>PHYSICAL EDUCATION/PERSONAL INHIBITORS</th>
<th>True</th>
<th>False</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 I do not like any of the sports available to girls</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2 I want to be more involved in the selection of my physical education sport</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3 I want to be more involved in the design and choice of my sports uniform</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4 I prefer to watch television and play computer games than play active sport</td>
<td></td>
<td></td>
</tr>
<tr>
<td>5 I do not have the skills/ability necessary to take part in sport</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>ROLE MODELS</th>
<th>True</th>
<th>False</th>
</tr>
</thead>
<tbody>
<tr>
<td>6 Our school needs more female physical education (PHYSICAL EDUCATION) educators</td>
<td></td>
<td></td>
</tr>
<tr>
<td>7 There are a few or no female sporting role models</td>
<td></td>
<td></td>
</tr>
<tr>
<td>8 Women’s sport does not receive enough coverage in the media</td>
<td></td>
<td></td>
</tr>
<tr>
<td>9 My parents do not take part in any sport</td>
<td></td>
<td></td>
</tr>
<tr>
<td>10 My friends do not take part in any sport</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>SEXUAL TENSION</th>
<th>True</th>
<th>False</th>
</tr>
</thead>
<tbody>
<tr>
<td>11 It is embarrassing to be in the same physical education class as boys</td>
<td></td>
<td></td>
</tr>
<tr>
<td>12 Taking part in sport while boys watch makes me less attractive to boys</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>INCONVENIENCE</th>
<th>True</th>
<th>False</th>
</tr>
</thead>
<tbody>
<tr>
<td>13 Sport takes too much time and is too serious.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>14 There is not enough privacy in the shower and change rooms</td>
<td></td>
<td></td>
</tr>
<tr>
<td>15 There are too many rules and regulations in sport, making sport undesirable.</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>MALE DOMINANCE</th>
<th>True</th>
<th>False</th>
</tr>
</thead>
<tbody>
<tr>
<td>16 Boys want to use all sports equipment and facilities</td>
<td></td>
<td></td>
</tr>
<tr>
<td>17 My parents promote sport for boys more than they do for girls</td>
<td></td>
<td></td>
</tr>
<tr>
<td>18 Girls in my community are not given the opportunity to play traditionally male sports e.g. soccer</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>ACCESS TO INFORMATION &amp; FACILITIES</th>
<th>True</th>
<th>False</th>
</tr>
</thead>
<tbody>
<tr>
<td>19 I do not have enough information on available sports and sporting facilities in the community</td>
<td></td>
<td></td>
</tr>
<tr>
<td>20 I do not have enough money to buy sporting equipment / register for the sport I like</td>
<td></td>
<td></td>
</tr>
<tr>
<td>21 The sport facility I would like to use is too far and expensive to</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>reach</td>
<td></td>
</tr>
<tr>
<td>---</td>
<td>-----------------------------------------------------------------------</td>
<td></td>
</tr>
<tr>
<td>22</td>
<td>Sports facilities in our community are not safe</td>
<td></td>
</tr>
</tbody>
</table>

**BENEFICIAL**

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>23</td>
<td>Sport keeps me slim and fit</td>
</tr>
<tr>
<td>24</td>
<td>Through sport, I can socialize, have fun and belong to a team</td>
</tr>
<tr>
<td>25</td>
<td>Sport makes me feel good, relax and relieve stress</td>
</tr>
<tr>
<td>26</td>
<td>Through sport, I can learn new tricks.</td>
</tr>
</tbody>
</table>
## APPENDIX 4

Classification by Energy cost of human physical activities (Ainsworth, 1993)

<table>
<thead>
<tr>
<th>ACTIVITY</th>
<th>METS</th>
<th>ACTIVITY</th>
<th>METS</th>
<th>ACTIVITY</th>
<th>METS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Athletics</td>
<td>10.0</td>
<td>Hiking</td>
<td>6.0</td>
<td>Table tennis</td>
<td>4.0</td>
</tr>
<tr>
<td>Band/drift</td>
<td>4.0</td>
<td>Hockey</td>
<td>8.0</td>
<td>Tennis</td>
<td>7.0</td>
</tr>
<tr>
<td>Baseball</td>
<td>5.0</td>
<td>Netball</td>
<td>8.0</td>
<td>Volleyball</td>
<td>4.0</td>
</tr>
<tr>
<td>Basketball</td>
<td>8.0</td>
<td>Rollerskating</td>
<td>7.0</td>
<td>Walking</td>
<td>6.5</td>
</tr>
<tr>
<td>Rugby</td>
<td>10.0</td>
<td>Rollerblading</td>
<td>7.0</td>
<td>Weightlifting</td>
<td>6.0</td>
</tr>
<tr>
<td>Bicycling</td>
<td>12.0</td>
<td>Running</td>
<td>8.0</td>
<td>Softball</td>
<td>5.0</td>
</tr>
<tr>
<td>Boxing</td>
<td>12.0</td>
<td>Squash</td>
<td>12.0</td>
<td>Wrestling</td>
<td>6.0</td>
</tr>
<tr>
<td>Cricket</td>
<td>5.0</td>
<td>Skateboarding</td>
<td>5.0</td>
<td>Television</td>
<td>1.0</td>
</tr>
<tr>
<td>Dancing</td>
<td>6.0</td>
<td>Soccer</td>
<td>10.0</td>
<td>Video games</td>
<td>1.5</td>
</tr>
</tbody>
</table>
To Whom it May Concern

We hereby confirm that masters student Majiza Mathego, (student No 2056093) has the full permission of the Faculty of Community and Health Sciences at the University of the Western Cape, to conduct a research study entitled “Assessment of recreational physical activity amongst female learners attending Kagiso High School”.

The proposed study was found to be highly relevant, ethical, methodologically sound and likely to be of great benefit not only to female learners in Kagiso, but throughout South Africa as well.

Yours sincerely,

Dr. G. Reagon
Chairperson: Higher Degrees Committee
Date: 13 September 2002

Name of Researcher: Mashego H.T.
Address of Researcher: P.O. Box 281
Kagiso

Telephone Number: (012) 5214539
Fax Number: (012) 5215684

Research Topic: Assessment of Recreational Physical Activity amongst Female Learners Attending Kagiso High School

Number and type of schools: 5 Secondary Schools
District/s: Gauteng West

Re: Approval in Respect of Request to Conduct Research

This letter serves to indicate that approval is hereby granted to the above-mentioned researcher to proceed with research in respect of the study indicated above. The onus rests with the researcher to negotiate appropriate and relevant time schedules with the school/s and/or offices involved to conduct the research. A separate copy of this letter must be presented to both the School (both Principal and SGB) and the District Senior Manager confirming that permission has been granted for the research to be conducted.

Permission has been granted to proceed with the above study subject to the conditions listed below being met and may be withdrawn should these conditions be flouted:

1. The District Senior Manager(s) concerned must be presented with a copy of this letter that would indicate that you have been granted permission from the Gauteng Department of Education to conduct the research study.
2. The District Senior Manager(s) must be approached separately, and in writing, for permission to involve District Officials in the project.
3. A copy of this letter must be forwarded to the school principal and the chairman of the School Governing Body (SGB) that would indicate that you have been granted permission from the Gauteng Department of Education to conduct the research study.

Office of the Senior Manager – Strategic Policy Development, Management & Research Coordination
Room 904, 1 J. Commissioner Street, Johannesburg, 2001 P.O. Box 7/10, Johannesburg, 2000
Tel: (011) 355-0415 Fax: (011) 355-0512 Email: SallyR@ed.gov.za Cell: 083 310 1910
4. A letter/document that outlines the purpose of the research and the anticipated outcomes of such research must be made available to the principal/s, SGB/s and District Senior Manager/s of the school/s and district/s concerned, respectively.

5. Kindly obtain the goodwill and co-operation of all the GDE official/s, principal/s, chairperson/s of the SGB/s, teacher/s and learner/s involved. Persons who offer their cooperation will not receive additional remuneration from the Department while those that prefer not to participate will not be penalised in any way.

6. You may only conduct your research after school hours so that the normal school programme is not interrupted. The Principal (if at a school) and/or Senior Manager (if at an office) must be consulted about an appropriate time when you may carry out your research at the sites that they manage.

7. You may commence your research from the second week of February and must conclude your programme before the beginning of the last quarter of the academic year.

8. It is the researcher's responsibility to obtain written parental consent of all learners that are expected to participate in the study.

9. The researcher is responsible for supplying and utilising their own research resources such as stationery, photocopies, transport, faxes and telephones and should not depend on the goodwill of the institutions and/or the offices visited for supplying such resources.

10. The names of the GDE official/s, schools, principals, parents, teachers and learners that participate in the study may not appear in the research report without the written consent of each of these individuals and/or organisations.

11. On completion of the study, the researcher must supply the Senior Manager Strategic Policy Development, Management & Research Coordination with a bound copy of the final approved research report.

12. The researcher may be expected to provide a short presentation on the findings of his/her research to both GDE official/s and the schools concerned.

13. Should the researcher have been involved with research at a school and/or district level, the District Senior Manager must also be supplied with a brief summary of the research findings.

The Department wishes you well in this important undertaking and looks forward to examining the findings of your research study.

Kind regards,

Sally Rowley, Senior Manager

The contents of this letter has been read and understood by the researcher.

Signature of Researcher: [Signature]

Date: 14/09/2002