TEACHERS’ MANAGEMENT STRATEGIES ON LEARNERS WITH
ASTHMA AND THEIR INFLUENCE ON ACADEMIC PERFORMANCE IN
PUBLIC PRIMARY SCHOOLS IN RUIRU SUB-COUNTY, KENYA

BY

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OF MASTER OF EDUCATION (SPECIAL NEEDS EDUCATION) IN THE
SCHOOL OF EDUCATION KENYATTA UNIVERSITY

MARCH, 2016
DECLARATION

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

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DEDICATION

I dedicate this work to the Almighty God for His guidance and provision of good health all throughout this study. Special dedication to my loving husband, Denvas Nyamari, My children Miriam Kwamboka, Nixon Gekonde, Wayne Bahati and Maison Nyamari for their perseverance, patience and understanding for the time I was undertaking the study.
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Among the many people who assisted me typeset and print this work I recognize the spirited girl, Eunice Acher, for her determination and punctuality in her computer expertise, which saw this thesis completed in good time. In addition, I recognize the hardworking Leonard Omwenga and Jeff Kanyumba for effortlessly editing and proof-reading the work.

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<tr>
<td>ALA</td>
<td>American Lung Association</td>
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<tr>
<td>ANOVA</td>
<td>Analysis of Variance</td>
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<td>CDC</td>
<td>Center for Condition Control</td>
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<td>EARC</td>
<td>Educational Assessment Resource Centre</td>
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<td>ISAAC</td>
<td>International Study of Asthma and Allergies in Childhood</td>
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<td>KU</td>
<td>Kenyatta University</td>
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<tr>
<td>NAEP</td>
<td>National Asthma Education Program</td>
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<td>NCHS</td>
<td>National Center of Health Sciences</td>
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<tr>
<td>OHI</td>
<td>Other Health Impairments</td>
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<td>PH</td>
<td>Physically Handicapped</td>
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<tr>
<td>RDDLCDC</td>
<td>Respiratory Conditions Division Laboratory Centre for Condition Control</td>
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<td>SCT</td>
<td>Social Cognitive Theory</td>
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<td>UK</td>
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ABSTRACT

The purpose of this study was to evaluate the teachers’ management strategies on learners with asthma and their influence on academic performance in public primary schools in Ruiru Sub-County, Kenya. The specific objectives of the study were to: find out the number of learners suffering from asthma; investigate the extent to which asthma influences the learner’s academic performance; establish the extent to which asthma affects learners’ psychological functioning; investigate how asthma influences the learners’ school experiences; and assess teacher’s intervention strategies used to manage learners with asthma in schools in Ruiru Sub-County, Kiambu County. The study adopted descriptive survey. The target population in this study was class 4 to 7 learners at public primary schools located within Ruiru Sub-County, Kiambu County, Kenya. The study targeted a total of 1246 respondents who comprised of 567 learners from class 7 to 4 and their parents, 104 class teachers and 8 head teachers from 8 public primary schools. For the purpose of the study the researcher used purposive sampling to select 3 public primary schools within Ruiru town and along Thika Super Highway. Purposive sampling was used to select 3 boys and 2 girls from each class hence a total of 12 boys and 8 girls were selected from each school translating to a total of 60 learner-respondents. Purposive sampling procedure was also used to select 60 parents of the learners, 3 head teachers and 4 class teachers from each school. The sample size was made up of 135 participants. Questionnaires were used to collect information from class teachers and parents. Structured interviews and focused group discussion were used in collecting information from the head teacher and learners respectively. Quantitative data collected on distribution of incidences of asthma amongst learners in different age levels were coded and analyzed with the aid of Statistical Package for Social Sciences. Quantitative analysis was done using descriptive statistics such as frequency and percentages. Qualitative analysis was done by organizing variables into themes. In addition, bar-graphs, frequency tables and percentages were used to present the analyzed data. The findings of the study revealed that there was a significant negative effect between asthma and academic performance. The study concluded that learners with asthma face various challenges, and teachers do not handle asthmatic learners in a special way. The study recommended that teachers should be given opportunities to attend training workshops and seminars in order to enhance their skills; and school community should be sensitized through the Ministry of Education and Ministry of Public Health on the preventive strategies of asthma and its management.
CHAPTER ONE
INTRODUCTION

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

1.1 Background to the Study
Asthma is a serious chronic illness/condition under the category of physical disability which is under other health impairments (OHI). People of all ages in countries throughout the world are affected by this chronic airway disorder that can be severe and sometimes fatal. The prevalence of asthma is a significant burden, not only in terms of healthcare costs but also in affecting the whole personality (physical and emotional wellbeing) of a person especially for learners (Abramson, 2001).

Asthma as a health disability is not often thought of as causing educational problems, it does have a number of negative effects on learners’ school experiences (Forbis, Huffman & Taylor, 2006). In 2002, asthma caused learners aged 5-17 to miss a total of 14.7 million school days per year (Forbis et al., 2006). According to studies conducted by Vaugh, Bos and Schumm (2007) in US, individual learner with asthma misses 14.69 school days per year. Similarly, studies conducted in California report that around 136,000 adolescents who experience asthma symptoms missed one or more days of school per month. Those who experienced symptoms more frequently (more than once a month) had higher rates of school absenteeism (CHIS, 2001).
Further, the study reports that nearly 158,000 younger learners between ages (5-11) limited their physical activities because of their asthmatic condition (CHIS, 2001).

Teachers play a very significant role of identifying the child with early symptoms of poor asthma management. If asthma is properly managed, learners will be able to fully participate in school. Learners who have asthma engage in limited physical activities because of their condition. However, when this condition is totally controlled, learners can participate in physical activity. For this reason, there are a number of teaching strategies teachers can make use of when it comes to handling learners with asthma.

To start with, there is need for appropriate school health services to ensure the learners with asthma take their medicines and learn how to use them appropriately. This is a responsibility of the teacher. It is good that they educate these learners on how to use medication. This will help in keeping the learners healthy hence a conducive environment for learning. Schools should come up with asthma education for learners with asthma and awareness programs for schools staff, learners, families and parents. In addition, they should put in place management and support systems for asthma learners. Another teaching strategy that can be adopted is that of ensuring the teaching environment is clean to reduce asthma triggers. If teachers can take the responsibility of ensuring that the environment is safe and healthy, learners with asthma will be able to learn smoothly. Another strategy is the school to ensure safe and enjoyable physical education and activities specifically designed for learners with asthma (Heart, 1995).
Bray (2004), found that enhancing subjective wellbeing in individuals with asthma are also at increased risk for decreased school performance, emotional and behavioral deficits. On the other hand, Celano and Geller (1993) suggest that poor management and control of the condition together with psychological problems are factors which may contribute to poor performance at school.

Rona, Chinn and Burney (1995), report that the number of learners experiencing attacks of asthma is increasing. In the United Kingdom (UK), nationwide surveys have reported that one in seven learners aged 2-15 years may currently require treatment for asthma (National Asthma Campaign, 1999). Asthma is the most common chronic illness/condition of childhood and is also the fourth leading cause of disability in learners in the United States (US) (CDC, 1995).

In Canada, the 1995-1996 student Lung Health Survey, conducted in nine health units Sub-Counties across the country revealed that over 13% of learners surveyed (aged 5-19) had asthma (RDDLCDC, 1998). Studies by Asher, Keil, Anderson, Beasley, Crane, Martinez, Mitchell, Pearcees, Sibbald, Stewart, Stracham, Wetland, and Williams, (1995), indicate a world-wide increase in the prevalence of the condition. Absence from school has been documented as an adverse consequences of asthma in studies conducted in India, Australia, United States and the United Kingdom (Mahapatra, 1993).

The prevalence of asthma in Nigeria is 10.7% in learners. Asthma constitutes a major functional disability on its sufferers. It affects the psychological, physical and social well-being of the patient (Iran, et al., 2010). According to Iran et
al(2010), asthma affects all age groups. For unknown reasons boys are more affected than girls. The study further alludes, inadequate attention given to the management of asthma and ways of improving the treatment are significant factors for the increased asthma burden. International Study of Asthma and Allergies in Childhood (ISAAC), reports a high prevalence of asthma in school learners in low-income countries; for example, in Mozambique the prevalence of current asthma is 13.3% in school learners aged 6-7 years, the prevalence of asthma in 4-year-old learners in Tanzania is 14%. According to Ostergard, Nantanda, Tumwine, Aabenhus (2012), childhood asthma in low income countries is an invisible killer.

Studies conducted by Esamai and Nyandiko (2002), on prevalence of asthma, allergic rhinitis and dermatitis in primary school learners in UasinGishuSub-County, Kenya, found there was significant increase in the prevalence of asthma from 10.4%-13.8%. The Kenya government has improved health facilities so as to cater for health of its citizens, more so health of school age learners. Despite such efforts asthma rates among learners continue to rise and schools have limited access to asthma medications especially in Kiambu County. Learners spend much of their time during the day in school setting; therefore, teachers are faced with the responsibility of managing learners with asthma and therefore need to know how a chronic illness such as asthma can affect learners’ performance and the development of a whole person. In Ruiru Sub-County clinical experience indicates that asthma is a common reason for health resource utilization (WHO, 2014). There are also quite a number of industries that give toxic emissions which include Devki Steel Mills, Super Foam, Spinners & Spinners Garment Factory, Bidco, Clay-works, Brookside and Ruiru Feeds. In
addition, emissions from burning tyres, charcoal and firewood and other municipality sources like open burning of waste have made learners in this locality susceptible to asthma attacks. Moreover, there is no data on the burden of asthma that is routinely managed in the health care system and schools. It is with this concern that the researcher conducted this study.

1.2 Statement of the Problem
Globally, the number of cases of asthma among school-aged learners has increased dramatically over the past years. Nearly one in thirteen school-aged learners suffer from asthma which is the leading cause of school absenteeism. In addition, childhood asthma accounts for an estimated 10 million lost schools days annually (ALA, 2011). Prolonged absences from school may compromise the academic achievement of a child alongside having serious impact on the child’s physical and emotional well-being. For some learners the illness can impose restrictions on their activities particularly Physical Educational and extra-curricular activities (Lenney, Well and O’ Nell, 1994). To make matters worse, according to Bockaerts and Roder (1999) chronic asthma leads to low levels of self-concept and self-esteem in asthmatic learners.

Asthma has important individual consequences. Uncontrolled asthma results on recurrent or persistent symptoms that impair quality of life, reduce self-esteem, reduce social interaction, increase psychological trauma and occasionally leads to fatal outcome. The economic costs which include direct cost from health resource utilization (medical consultations, drugs and hospitalization) indirect cost include absenteeism from school and premature death (Abramson, 2001). The Kenya
government has set up various teachers training colleges like Kenyatta University and Muranga teachers training College to equip the potential teachers with relevant knowledge and skills to handle learners with asthma in primary schools. Special education involves procedures and arrangement by which physically disabled, mentally retarded, psychologically challenged, gifted and talented children are educated either in a segregated for mainstream school system to meet their developmental and educational needs.

Despite the efforts of the government, religious bodies, NGO’s and individuals towards the education of psychologically challenged through inclusion education, learners with asthma still perform poorly as a result of low school attendance and participation in most special institutions in Kenya. This means that the academic performance of asthmatic learners is not at par with other learners (Ait-Khaled et al., 2007). In Kiambu County, most schools focus more on visible disabilities at the expense of invisible health condition like asthma (WHO, 2014). This is something that has made life hard for learners with this chronic illness. Unlike in most schools where learners with physical disabilities have been identified and benefited from special teaching strategies, the plight of learners with asthma is still in the dark. This study therefore investigated teachers’ management strategies and their influence on the academic performance of the learners in public primary schools in Ruiru Sub-County.

1.2.1 Purpose of the Study
The study evaluated teachers’ management strategies on learners with asthma and their influence on academic performance in public primary schools in Ruiru Sub-County, Kenya
1.3 Objectives of the Study

The objectives sought to:

i) Find out the number of learners suffering from asthma in public primary schools in Ruiru Sub-County, Kiambu County.

ii) Investigate the extent to which asthma influences the learner’s academic performance in Ruiru Sub-County, Kiambu County.

iii) Establish the extent to which asthma affects learners’ psychological functioning in Ruiru Sub-County, Kiambu County.

iv) Investigate how asthma influences the learners’ school experiences in Ruiru Sub-County, Kiambu County.

v) Assess teacher’s intervention strategies used to manage learners with asthma in schools in Ruiru Sub-County, Kiambu County.

1.4 Research Questions

The research questions for the study were:

i) How many learners are affected by Asthma in the school?

ii) To what extent does asthma influence the learner’s academic performance in Ruiru Sub-County, Kiambu County?

iii) To what extent does asthma affect learner’s psychological functioning in Ruiru Sub-County, Kiambu County?

iv) How does asthma influence learners’ school experiences in Ruiru Sub-County, Kiambu County?

v) How are asthmatic learners managed in schools in Ruiru Sub-County, Kiambu County?
1.5 Significance of the Study
This study gathered information that may be used to come up with favorable teaching policies to be adopted in order to facilitate delivery of education services to learners suffering from asthma. It may also help schools, parents and teachers to understand preventive strategies that can be used to curb asthma attacks amongst schools age learners. This may lead to improved school attendance, hence good academic performance among asthmatic learners.

The findings of this study may inform learners based on awareness of their psychological conditions. This may enable them develop self-management skills in case they notice asthma symptoms in them. The findings may also provide useful information to parents that may enable them establish effective measures and control of asthma on the children who experience the health condition. This may assist to eradicate those external factors that might trigger asthmatic conditions.

1.6 Limitations of the Study
The study dealt with learners with asthma, thus the results of the study were not applicable to persons with Other Health Impairments (OHI). The study was limited to investigation of strategies teachers used to manage asthmatic school age learners (5-17 years) within Public primary schools.

1.6.1 Delimitations of the Study
Despite the fact that many schools were exposed to various agents causing asthma such as industries in Ruiru, the study was confined to public primary schools in Ruiru Sub-County of Kiambu County, Kenya. The schools had similar characteristics to other schools and hence the findings were generalized. The survey instruments involved few selected learners and might have not been all inclusive since only a few
were selected. Additionally, the conclusions based on the results of this study depended on the views expressed by these learners.

1.7 Assumptions of the Study
The study had the following assumptions:

i) There was a good number of children with asthma in the school settings

ii) Learners with asthma faced various emotional challenges

iii) Learners with asthma were academically affected

iv) Teachers used certain intervention strategies to manage learners with asthma in primary schools

1.8 Theoretical and Conceptual Framework
For this study, the theoretical and conceptual framework was based on the Social Cognitive Theory (SCT).

1.8.1 Theoretical Framework
The study was guided by the Social Cognitive Theory (SCT) which was developed by Bandura (1997). The theory states that learning occurs in a social context and individuals’ behaviour is acquired through interaction with the environment. The SCT was preferred for the study because it explains how people acquire and maintain certain behavioral patterns, while also providing the basis for intervention strategies. Evaluating behavioral changes depend on factors such as environment, people and behavior. SCT provides a framework for designing, implementing and evaluating programs. The social and physical environment is one of the factors that can affect a persons’ behavior. Social environment include, friends and colleagues. The physical
environment includes the size of rooms, room temperature or the availability of certain foods. The environment and situation provide the framework for understanding behavior (Parraga, 1990). The situation refers to the cognitive or mental representation of the environments that may affect a person’s behavior. Asthmatic learners placed in an environment that does not adequately cater for their needs may perform poorly.

The SCT had implications for the study; teachers and parents ought to teach appropriate behaviors to asthmatic learners. Learners need to believe that they are capable of learning and controlling asthmatic attacks. This is possible through teachers developing sense of self sufficiency by having learners build self confidence in the management of asthma attacks. Self-regulation techniques provide an effective method for improving the learner’s behavior. Thus Banduras’ social cognitive theory was ideal to the study as it deals with people, behavior and environment. Management of asthma involves changing the environment and behavior patterns among learners with asthma and improving social relationships and co-ordination between the school and stakeholders.
1.8.2 Conceptual Framework
The study was guided by the following conceptual model derived from the theoretical framework.

### Independent Variables
- Number of learners with asthma
- Learners’ school experience
- Intervention strategies

### Pre-conditions for academic performance
- Exposures to asthma triggers
- Level of self-esteem
- Asthma management behaviors amongst learners and teachers

### Intervening Variables
- Institutional policies on asthma management practices
- Strong relationships between learners and teachers
- Appropriate asthma management practices and skills
- Maintenance of clean environments

### Dependent variable
Learners’ academic performance

Figure 1.1 Conceptual Model of Self-Efficacy

**Source**: Adopted from Pajares (2002): Model of Self-efficacy.

Figure 1.1 shows the relationship between independent and dependent variables. When such variables as number of learners with asthma, learners’ school experience, intervention strategies are kept constant, there would be improvement of behaviours...
related to asthma management amongst learners and reduce exposures to asthma triggers. Eventually, learners would be able to manage themselves and this boosts their self-esteem and reduces absenteeism. This would be facilitated through: institutional policies on asthma management practices; strong relationships between learners and teachers; appropriate asthma management practices and skills; and maintenance of clean environments. Strengthened relationships and networks between asthmatic learners and teachers enable teachers to deal with the learners in a particular way to avoid triggering the symptoms of asthma. Training learners on symptoms ensured increased awareness of asthma effects among learners, families and schools. In the long run there would be improved academic outcomes, better psychological functioning and increased level of school attendance among the learners with asthma.
1.9 Operational Definition of Terms

**Airway Inflammation:** Airway inflammation is associated with airway hyperresponsiveness, airflow limitation and respiratory symptoms.

**Assessment:** It is the process of gathering information from multiple and diverse sources about an individual.

**Asthma Exacerbations:** These are progressive worsening of asthma symptoms.

**Asthma Management:** It is a way of avoiding exposure to triggers (allergens and irritants that make asthma worse) and treatment to reduce hospitalization for and deaths caused by asthma.

**Asthma Triggers:** These are allergy causing substances such as dust cigarette smoke and fumes from paints.

**Asthma:** It is a chronic inflammatory condition of the airways in which many cells and cellular elements play a role.

**Corticosteroids:** This is a type of medication commonly prescribed to treat asthma.

**Identification:** This is the attribution to oneself consciously or unconsciously of the characters of another person or group of persons.

**Low Income Families:** These are those families that cannot afford basic needs per capita income.

**Prevalence:** It is the percentage of a population with a conditions, disorder or abnormality.

**Strategies:** These are methods used by teachers to manage asthmatic learners.
CHAPTER TWO

REVIEW OF RELATED LITERATURE

2.0 Introduction
This study aimed at evaluating teachers’ management strategies on learners with asthma and their influence on academic performance in Public primary schools in Ruiru Sub-County, Kenya. The chapter covers a review of related literature on asthma. The literature review focuses on objectives of the study under the following sub-headings: prevalence and risk factors of asthma, effects of asthma on academic achievement, effects of asthma on psychological functioning, effects of asthma on learners’ school experiences and management of asthma in the school.

2.1 Prevalence and Risk Factors of Asthma
Asthma is a chronic condition that attacks many learners. According to the National Centre of Health Sciences (NCHS, 2006), 9.4% of learners ages (0-17) living in US in 2006 had asthma. A cross-sectional comparative study conducted on asthmatic primary school learners in three areas in Kuala Lumpur and Selangor in Malaysia, which was studying the relationship between air pollutants and frequency of asthmatic attacks reveal that there is a significant association between the prevalence of respiratory system symptoms with locations found (Junaidah et al., 2010). For instance, urban learners have more respiratory symptoms such as difficulty in breathing, chest tightness and wheezing than their rural counterparts, thus, urban industrial asthmatic learners are at greater risk of getting more frequent asthmatic
attacks due to allergy and high level of air pollutants in form of chemical and gases (WHO, 2010).

Studies conducted by Al-Kubaisy and Al-Thamari (2005) in Baghdad and Iraq, on risk factors for asthma among primary school learners age 6-12 years found crowding, low parental education, low birth weight in family history of asthma and smoking as significant risk factors for asthma development among primary school learners. They concluded that efforts must be concentrated for hygienic environment, good antennal care and quitting smoking habits in order to overcome this health problem.

In the United Kingdom, according to the Nation Wide Survey, prevalence of asthma is higher in boys compared to girls (1.3:1) (Joint Health Survey Unit 1998). In a class of 30 at least 4-6 learners with or without a diagnosis of asthma may have asthma-related problems. Many schools work towards becoming a health school by focusing first on a particular health-related behavior such as diet, exercise or on drug use. Studies have shown where a school adopts these approaches to promoting the health and wellbeing of learners’ achievement is higher and frequency of health risk behavior is reduced (Durlak, 1995; St. Leger, 1999).

A study conducted in Alexandria by Tayel, Dabbous, Altia and Ayoub (1995), to find out the level of knowledge about asthma among primary school teachers, revealed that teachers had limited knowledge about asthma in learners. Most of them believed in the importance of involvement in sports for the asthmatic learners. About 11% of teachers did not permit an asthmatic child to keep his/her medicine with him/her during school hours. A significant difference in the level of knowledge about asthma
was found between teachers who had received instructions and those who did not. The study recommends that instructions about asthma should be given to all primary school teachers during their training course.

Studies from Zimbabwe demonstrate that urban living and higher material standards of living appeared to be associated with a higher prevalence of reversible airways obstruction in learners (Keeley, Neill, and Gallivan 1991). This could in part be due to better access, health care and increased diagnosis rates, but also represents a true increase in the prevalence of asthma-related symptoms. The above finding is supported by Odhiambo, Ng’ang’a, Mungai, Gicheha and Nyamweya (1998) who conducted a study on urban-rural differences in selected public primary schools in Nairobi (urban) and Murang’a Sub-County (rural) assessing the prevalence of symptom makers of asthma. Odhiambo et al., (1998), report high prevalence rate of asthma in urban areas compared to rural areas i.e. 14.7% - 10.3%.

Curtis, Rea, Fenyers and Pan (2006), indicate that different compositions of air pollutants can lead to a diversity of effects on human health. WHO (2010) reports that, air pollution remains a serious problem in cities throughout the world, particularly in the developing countries. Cities and urban centres have the concentration of air pollutants which is a risk to learners due to the immaturity of their respiratory system.

According to Esamai and Nyandiko, (2002), the rate of Asthma in Kenya is lower standing at 10-30%. This rate is lower as compared to developed countries like Australia which have 40-70%. Those learners who are suffering from this condition
experience uneasiness when undertaking activities like delivering speech or when they are sleeping. There are prevalence variations that have been observed between developed and developing countries. Equally, these differences have been observed between rural and urban populations when it comes to asthma prevalence. This is a true reflection of the Kenyan case. These researchers have gone ahead to show that according to the 1995 ISAAC study, prevalence rates are high in urban areas as compared to rural areas. This is a clear indication that environmental and dietary factors are etiological risks among other reasons for this prevalence rates. From this, it can be argued that the higher prevalence rates in urban settings are due to environmental pollution.

The implication of a high prevalence rate of asthma is that schools admit learners who are asthmatic. Majority of studies in the literature that was reviewed reveal that asthma is more prevalent in urban centers than rural areas because of exposure to asthmatic-causing agents such as pollutants from industries. However, this varies from one place to another with respect to how these external factors of exposure are managed. Therefore this study sought to find out the number of learners suffering from asthma in public primary schools in Ruiru Sub-County so as to establish the level of asthmatic risks among school-going children in the region.

### 2.2 Effects of Asthma on Academic Achievement

Asthma has many effects on academic achievement of the learners. A study conducted by Naude and Pretorius (2003), in South African primary schools, on the cognitive and psychosocial effects of asthma medication on primary school learners, reported that the learners with asthma were more likely than other learners to have
concentration deficits and be inattentive. In addition, the learners with asthma demonstrated some characteristics such as; impaired short-term memory, poor time management, sudden mood changes, symptoms associated with allergic-tension-fatigue syndrome and functional impairment of academic and psychosocial functioning.

Naude and Pretorius (2003) further found that the side effects of asthma medications led to absenteeism among learners with asthma than those learners without asthma. It is evident that asthma causes a number of negative school related outcomes. Asthma impacts school performances of learners through learners sleeping patterns. Learners with asthma often experience disturbances of sleep due to increased night time coughing and a feeling of breathlessness. This sleeping difficulty leads to learners becoming passive and tired in the classroom, resulting in poor listening skills (Celano & Gellar, 1993). Teachers should be aware of sleeping difficulties that the learners with asthma often experience to be able to understand their unique needs. A study carried out in South Africa by Naude and Pretorius (2003) investigating the effects of asthma medication on the cognitive and psychosocial functioning of primary school learners with asthma who were being treated with corticosteroids, reported impaired short-term memory, poor time management, decreased psychomotor functioning, change in moods and fatigue amongst learners. This study sought to assess which intervention strategies teachers used in managing learners with asthma.

Fowler, Davenport and Garg (1992) found school performance may be mediated by socioeconomic status. Learners with asthma who came from families with high
income were likely to perform better in academics than their counterparts from families with low income, who had the same condition. Learners from low income families had a risk of grade failure that was twice as high as learners without asthma in same income group (Fowler et al., 1992). These findings were supported by the studies conducted in Mexico, the United States, the United Kingdom, Germany and Australia which indicate that low-income and minority populations experience substantially higher prevalence’s of asthma and higher rates of asthma mortality (Weiss, Gergen, Hodgson, 1992).

Fowler et al., (1992), further report that learners with asthma had a 1.7 times greater risk of being diagnosed with a learning disability compared to learners without asthma. In addition, health status of learners with asthma was an important predictor of learning disability than learners reporting excellent health (Fowler et al., 1992). Some of the reasons of increased risk of learning disabilities suggested by Fowler et al., (1992) include; learners with asthma are more prone to absenteeism thus affecting their academic performance.

The studies presented in the literature indicate that there is a relationship between asthma and academic achievement but failed to directly measure the relationship between asthma and academic achievement among learners with asthma. Hence this study seeks to investigate the extent to which asthma influences learner’s academic performance in Ruiru Sub-County, Kiambu County.

2.3 Influence of Asthma on Psychological Functioning
Bray Kehle, Peck, Thodore and Zhoul (2004), reported that asthma symptoms tend to get worse under stress. They recommend school psychologists to treat learners with
asthma; particularly those whose asthmatic attack are triggered by psychological events. Other studies have found negative effects of asthma medication on learners. For instance, Brown, Sherwood, Khan and Nstek (1999) who studied the effects of corticosteroids, found that corticosteroids increase risk for developing psychiatric symptoms such as depression and psychosis (hallucinations).

According to Jackson (2009), asthma is considered a condition in which psychological distress exerts a negative impact on the patient. From epidemiological studies that have been carried out, anxiety disorders and depression are higher in patients of asthma. This is a clear indication that asthma can affect the psychological functioning of an individual. Alterations in the autonomic nervous system, stress axis, and immune system are what can lead to an association between asthma and psychological functioning. For this reason, there is a need to treat psychological distress to optimize symptom control in learners with asthma.

Schools are faced with a number of barriers for effective care of asthma in schools. A study by Forbiset al., (2006) on barriers of asthma management at Dayton public schools revealed four categories of barriers. The first category of barriers included school related issues, including lack of medication at school, nurses’ inability to contact parents, a need for asthma education for staff, learners experiencing peer pressure to perform in physical education class and the school’s lack of proper medical equipment. The second category reported by nurses included; lack of parental education about asthma and failure of parents to return medication forms and failure of parents to pick up their learners after asthma attack.
Forbis et al., (2006) reported a third category of barriers which are related to medical issues. The concerns under this include; not having asthma management plans in schools, learners not having second inhalers at school and not having primary care provider. The last category of barriers reported as environmental in nature and include; leaky roofs, old carpets, mold, pet in classrooms, improper cleaning and strong smells.

The literature presented several studies that only show the effects of asthma on the general emotional functioning of children but not psychological functioning in the school setting. Thus this study sought to establish the extent to which asthma affect learner’s psychological functioning of learners with asthma in public primary schools in RuiruSub-County, Kiambu County.

2.4 Influence of Asthma on Learners’ School Experiences
Asthma influences school experiences. Studies conducted by Ayala, Miller, Zagami, Riddle, Willisis, King (2006), found that the learners were reluctant to report the asthma attacks while at school. The reluctance to report attacks came from the fact that many learners had been accused by teachers and coaches of faking asthma attacks so they could be excused from work or sports. This finding indicates strongly that teachers and the entire school personnel ought to be trained in identifying asthma symptoms so that they can understand the severity of the condition amongst learners.

In support for Ayala et al (2006) findings, Bevis and Taylor (1992), report that the level of knowledge and training for school staff is low.

Ayala et al.,(2006), who conducted studies with specific focus groups of learners in sixth, seventh and eighth grades found from learners across these grades reasons why
youth are poor managers of asthma. Learners stated that asthma control is “time-consuming” and “annoying” (Ayala et al., 2006). In addition, the study found that there were differences between the views of sixth grade, seventh and eighth grades. Sixth grade learners reported being scared about the asthma attack and did not like being teased by their peers. Seventh and eighth grade learners stated that asthma management was not needed because they had “outgrown” their asthma (Ayala et al., 2006). Learners reported a number of reasons why they did not take their asthma medication. Some of the reasons they gave were: Medication had a bad taste, it was complicated to use and was costly. The findings on cost of medication agree with those of University of Michigan (1999), which reported that the estimated healthcare costs of asthma in 1996 were 14 billion dollars, which is quite high. Thus, families may have limited funds for effective asthma management. Peer relationships were also mentioned by the learners with asthma (Ayala et al, 2006). For instance, some learners reported that they did not like turning down offers to play basketball when the pollen counts were high. Other learners reported that they would do things that their friends were doing even if they knew it would cause an asthma attack (Ayala et al., 2006).

The literature reviewed shows that asthma has an impact on the learner’s school experience, however, some studies found that asthmatic conditions could be faked by learners to boycott taking part in some activities. Therefore, it was not clear whether the comprehensive health condition influence the learners’ school experiences in learning institutions. Thus the current study investigated how asthma influences the learners’ school experiences in public primary schools, RuiruSub-County, Kiambu County.
2.5 Management of Asthma

Because asthma has the ability to create various academic, psychological and experiential problems, schools need to have interventions for identification and management of asthmatic learners. According to the National Asthma Education Program (NAEP) (1995) in the US, effective management of asthma at school can help to (a) promote a supportive learning environment for learners with asthma (b) reduce absences (c) provide the necessary support in the event of an emergency.

Written emotional expression is one psychological intervention that has been used in the management of Asthma. This is a therapeutic technique that requires individuals to write about their stressful or their traumatic experiences (Symth, 1996). Symth (1996), who studied on written emotional expression, found out that adults with asthma who are assigned to write about their stressful and traumatic experiences showed significant improvement on their lung function as compared to a control group who are assigned to write about neutral events. This technique may have the ability to help school learners with asthma to deal with their stressful life experiences while also increasing their lung function. Relaxation using biofeedback techniques also reduce asthma symptomology (Bray et al., 2004). Learners with asthma may be helped by being taught and guided through relaxation technique as a therapy during asthma attacks. Asthmatic learners may need to be treated not only with medication but also with psychological interventions as well.

Fillmore et al., (1997) reported a problem that the number of learners carrying their own inhalers to school is lower than it might be reasonably expected. Also, Carruthers et al., (1995) noted that school records on the number of learners in school
or in class who may have asthma are often incomplete. Matthew (2009) conducted a study on distribution and seasonality recommended that asthmatic patients should avoid exposure to asthma triggers (allergens and irritants that make their asthma worse). He further argues, by doing these, asthma symptoms and attacks can be prevented and medications reduced. When patients reduce exposure to tobacco, smoke and indoor allergens, particularly domestic dust, mites, they also help other members of their family. The initial development of asthma, especially in infants may be prevented.

On another note, Abramson (2001), reports that self-treatment by patients of asthma may decrease hospitalization and deaths caused by asthma. Abramson (2001), further argues that there should be a written action plan and peak flow meters for checking regularly inhaler technique and compliance, patients should know when and how to increase their medication and when to seek medical assistance. The literature reviewed reveal that management strategies are crucial in the management of asthmatic learners. However, the studies only proposed the interventions that ought to be taken rather than considering the strategies that have been practiced on ground to manage learners with asthma in schools. Hence, the study sought to assess the teachers’ management strategies on learners with asthma and their in public primary schools in RuiruSub-County, KiambuCounty, Kenya.

2.6 Summary
Majority of studies in the literature review reveal that asthma is more prevalent in urban centers than rural areas because of exposure to asthmatic-causing agents such as pollutants from industries. However, this varies from one place to another with
respect to how these external factors of exposure are managed. Therefore this study sought to find out the number of learners suffering from asthma in public primary schools in Ruiru Sub-County so as to establish the level of asthmatic risks among school-going children in the region.

The studies presented in the literature indicate that there is a relationship between asthma and academic achievement but failed to directly measure the relationship between asthma and academic achievement among learners with asthma. Hence this study seeks to investigate the extent to which asthma influences the learner’s academic performance in Ruiru Sub-County, Kiambu County.

The literature presented several studies that only show the effects of asthma on the general emotional functioning of children but not psychological functioning in the school setting. Thus this study sought to establish the extent to which asthma affect learner’s psychological functioning of learners with asthma in Ruiru Sub-County, Kiambu County.

The literature reviewed reveal that management strategies are crucial in the management of asthmatic learners. However, the studies only proposed the interventions that ought to be taken rather than considering the strategies that have been practiced on ground to manage learners with asthma in schools. Hence, the study sought to assess teacher’s intervention strategies used to manage learners with asthma in public primary schools in Ruiru Sub-County, Kiambu County.
CHAPTER THREE
RESEARCH DESIGN AND METHODOLOGY

3.0 Introduction
This study aimed at investigating teachers’ management strategies on learners with asthma and their influence on academic performance in public primary schools in Ruiru Sub-County, Kenya. The chapter presents research designs, variables, location of the study, target population, sampling techniques and sample size, research instruments, pilot study, validity, reliability, data collection techniques, data analysis and finally logistical and ethical issues.

3.1 Research Design
The study adopted descriptive survey research design. This approach was appropriate because it was concerned with conditions of relationships that exist, practices that prevail, beliefs, points of view or attitudes that are being felt or trends that are developing (Best & Kahn, 2000). This method assisted the researcher to get in-depth information of learners suffering from asthma through describing all the aspects of the attack. This led to testable assumptions and allowed the researcher to study the phenomena of asthma and how teachers handled learners suffering from it (Jackson, 2009). Descriptive surveys allow the collection of large amounts of data from a large population in a highly economical way (Orodho, 2008).
3.1.1 Variables
The study deployed three types of variables: independent, intervening and dependent variables. The independent variables in the study included the number of learners with asthma, learners’ school experience and intervention strategies. The intervening variables in the study included: exposures to asthma triggers; level of self-esteem; and asthma management behaviors amongst learners and teachers. The dependent variable was learners’ academic performance.

3.2 Location of the Study
The study was conducted in public primary schools located in RuiruSub-County, Kiambu County, Kenya. RuiruSub-County is located at approximate distance of 28.2km from Nairobi City Centre via Thika Super Highway. The town covers an area of 292km² and its population stands at 238,900. It is also an industrial town with several major factories including Devki Steel Mills, Super Foam, Spinners & Spinners Garment Factory, Bidco, Clay-works, Brookside and Ruiru Feeds. In most cases, from the months of May through early September the temperatures are low, causing a serious challenge to the asthmatic learners as the cold environment aggravates the asthma attacks. The emissions of pollutants from the industries may pose a big threat to learners with asthma. This is caused by smoke and dust emitted from the industries. In addition, Ruiru is located alongside Thika super highway making it exposed to pollution from thousands of vehicles that ply here on a daily basis. It is out of all these considerations that the researcher chose to carry out the study in this location.
3.3 Target Population
The target population in this study was class 4 to 7 learners from public primary schools located within Ruiru Sub-County, Kiambu County, Kenya. Learners from class 4 to 7 were considered because they were better informed and could tell more on their health conditions. The study targeted 567 learners from class 4-7 and their parents, 104 class teachers and 8 head teachers in 8 public primary schools in Ruiru Sub-County.

3.4 Sampling Technique and Sample Size
3.4.1 Sampling Technique
For the purpose of the study the researcher employed purposive sampling procedure to select 3 public primary schools in Ruiru-Sub-County which are located within Ruiru town and along Thika Super-highway. This technique was appropriate since it enabled the researcher to investigate a phenomenon of asthma condition which was triggered due to the presence of pollutants from the industries and motor engines. Each school was sub-divided into 4 classes (class 4-7). Purposive sampling was used to select 3 boys and 2 girls from each class hence a total of 12 boys and 8 girls were selected from each school translating to a total of 60 learner-respondents. This sampling strategy helped the researcher to compare the aspects of asthma between the male and female learners, as well as made more valid inference from the sample of the population. Purposive sampling procedure was also used to select 60 parents of the learners, 3 head teachers and 4 class teachers from each school. The purposive procedure was used because parents, head teachers and class teachers were considered to understand better the conditions of learners.
3.4.2 Sample Size
The sample was drawn from classes 4-7 in 3 public primary schools because they were better informed and could tell more on their health conditions. It consisted of 1 teacher per class totaling to 12 teachers, 20 learners selected per school totaling to 60 learners and 60 parents sampled. In addition, the 3 head teachers of the school were included in the study. The sample size was therefore made up of 135 participants who represented 10.8% of the target population. For a big population, a minimum of 10% of the population is recommended to be taken as a sample (Cohen, Manion, & Marrision, 2007). The sample taken was assumed to be adequate to make generalization on the actual population size.

Table 3.1 Target Population and Sample Size

<table>
<thead>
<tr>
<th>Population of study</th>
<th>Target population</th>
<th>Sample size</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Learners</td>
<td>567</td>
<td>60</td>
<td>44.4</td>
</tr>
<tr>
<td>Parents /guardian</td>
<td>567</td>
<td>60</td>
<td>44.4</td>
</tr>
<tr>
<td>Class Teachers</td>
<td>104</td>
<td>12</td>
<td>8.9</td>
</tr>
<tr>
<td>Head teacher</td>
<td>8</td>
<td>3</td>
<td>2.3</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>1246</strong></td>
<td><strong>135</strong></td>
<td><strong>100</strong></td>
</tr>
</tbody>
</table>
3.5 Research Instruments
Questionnaires were used to collect information from class teachers and parents. Structured interviews were used in collecting information from the head teacher. The interview schedule was made of 13 items which provided rich information addressing the research questions. On the other hand, focused group discussions were used to collect information from asthmatic learners. During these discussions, the researcher led the group using interview schedule guides where learners answered questions asked by the researcher. This method was preferred as it helped cut down on the time spent to collect data. It also gave the researcher authority to fully control the research. On top of this, it was very helpful as it saw the asthmatic learners interact and encourage each other. In case any parents were unable to read and write, prior arrangements were made for providing an interpreter or translator. The items in the instruments were formulated by the researcher. Questionnaire for class teachers had 10 items and that of parents 11 items. The one for the head teacher had 16 items. Questionnaires that were used by the learners during the focus group discussion had 20 items. Section 1 of the items catered for demographic information; section 2 tackled identification of asthmatic learners while section 3 evaluated the management of asthma among learners.

3.6 Pilot Study
Piloting of research instruments helped in eliminating misunderstanding and ambiguities in the items (Kothari, 2005). The clarity of questions, appropriateness, relevance and comprehensiveness was checked through piloting the study. The researcher piloted the instruments in two public primary schools in Nairobi County (Kenyatta University primary and Githurai primary). These two schools are situated
along the Thika super highway and had similar characteristics as the sampled schools since they were also exposed to pollutants that act as agents to asthmatic conditions. Piloting from the two different schools helped to enhance validity and reliability of the research instruments. Two (2) head teachers, 2 class teachers, 4 learners with asthma and their parents participated in the pilot study making a total of 12 participants. The pilot study took duration of two weeks, on the first two consecutive days of the first week; the researcher visited the two schools respectively and administered questionnaires to teachers and parents. The researcher then conducted interviews with the head teachers and scheduled a focused group discussion with learners in their respective schools. Afterwards, the filled questionnaires were collected from the teachers and parents. The same process was employed on the second week which involved administering similar tools to the same group of respondents. Respondents used in pilot study were not included in the main study.

3.6.1 Validity
To ensure validity of the instruments, the researcher established whether the variables under study were reflected in the items in the instrument. An expert opinion was also sought from the supervisors. Each item was examined in terms of its relevance to the variables under study and the research objectives. Necessary adjustments were made to the items to ensure they solicited the needed information.

3.6.2 Reliability
Reliability involves giving the same test on two separate occasions and studying the correlation between the results from the two testing (Orodho, 2008). Reliability of the questionnaire for this study was established using the test-retest method. The
questionnaires were administered to the subjects selected for piloting who did not participate in the main study. The responses from the questions were analyzed manually. After two weeks, the questions were given to the same respondents and the answers scored manually. Comparison of the answers obtained from both occasions was done by calculating the correlation coefficient the Pearson Product Moment correlation coefficient formula and a value of 0.75 was obtained which was enough to judge the reliability of instruments (Orodho, 2008).

3.7 Data Collection Procedures
The researcher obtained an authorization letter from the Ethics Review Committee after which she sought an introduction letter through the graduate school of Kenyatta University. Subsequently, the researcher sought for a permit from the National Commission for Science, Technology and Innovation (NACOSTI). Afterwards an authority from the County Educational Director of Ruiru Sub-County was obtained. The researcher then visited the school under study, a week before the initial date of data collection for the purpose of introduction, familiarization and setting dates for the data collection. This enabled the researcher to establish a rapport with learners, teachers and the parents. During the second week, two trained research assistants were employed to administer questionnaires to teachers and parents. Meanwhile, the researcher administered the interview guide to the head-teacher and focused group discussions for learners.

3.8 Data Analysis
Quantitative data collected on distribution of incidences of asthma amongst learners in different age levels were coded and analyzed with the aid of Statistical Package for
Social Sciences. Quantitative analysis was done using descriptive statistics such as frequency and percentages. Qualitative analysis was done by organizing variables into themes. In addition, pie charts, frequency tables and percentages were used to the analyzed data.

The raw data from the respondents was organized systematically, by eliminating unusable data, interpretation of ambiguous answers and identifying and correcting errors. According to Kombo and Tromp (2006), qualitative data were categorized into related topics, major themes identified and summary report developed using the major themes and associations between them.

3.9 Logistical and Ethical Considerations

Research permit was sought from the National Council for Science and Technology through an introduction letter from the Graduate School and Ethics Review Committee, Kenyatta University, before data collection. The researcher took the authorization letters to the County Director of education Kiambu County and a copy to the headteacher of Public primary schools. Because asthma is a health condition, the researcher sought consent from all the respondents. In order to ensure they gave information, the researcher assured them of confidentiality and anonymity of all information gathered. To access confidential medical records, the researcher described measures of meeting confidentiality obligations to relevant authorities and explained any reasonably foreseeable disclosure requirement. This helped him/her to gather information for the purpose of this study.
CHAPTER FOUR

PRESENTATION OF FINDINGS, INTERPRETATION AND DISCUSSION

4.0 Introduction
This chapter presents findings in two sections: section one on demographic information; and section two covers the descriptive statistics focusing on the objectives of the study. The findings were also discussed and interpreted. The objectives of the study sought to:

i) Find out the number of learners suffering from asthma in public primary schools in Ruiru Sub-County, Kiambu County.

ii) Investigate the extent to which asthma influences the learner’s academic performance in Ruiru Sub-County, Kiambu County.

iii) Establish the extent to which asthma affects learners’ psychological functioning in Ruiru Sub-County, Kiambu County.

iv) Investigate how asthma influences the learners’ school experiences in Ruiru Sub-County, Kiambu County.

v) Assess teacher’s intervention strategies used to manage learners with asthma in schools in Ruiru Sub-County, Kiambu County.
SECTION ONE: DEMOGRAPHIC INFORMATION

4.1 Response Return Rate
The study found a response return-rate of 100% as all questionnaires were filled by the respondents. The study included 3 public primary schools (Thome, Ruiru and St. George’s public primary schools) in Ruiru Sub-County, Kiambu County, Kenya.

4.2 Background Information
The background information sought to establish age, training of teachers on special need education and gender of respondents.

4.2.1 Age ranges of the Participants in the Sample
Parents were asked to tick the age category appropriate to them (see table 4.1 below). The findings of the study indicated that 35% were in the 31-40 years age bracket, 26.67% were in the 41-50 years bracket, 21.67% of the respondents were over 51 years, while 16.67% were in the age bracket of 21-30 years.

Table 4.1 Number and Percentage of Parents’ Age

<table>
<thead>
<tr>
<th>Age bracket (years)</th>
<th>Number of parents</th>
<th>Percentage (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>21-30 years</td>
<td>10</td>
<td>16.67</td>
</tr>
<tr>
<td>31-40 years</td>
<td>21</td>
<td>35.0</td>
</tr>
<tr>
<td>41-50 years</td>
<td>16</td>
<td>26.67</td>
</tr>
<tr>
<td>Over 51 years</td>
<td>13</td>
<td>21.67</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>60</strong></td>
<td><strong>100</strong></td>
</tr>
</tbody>
</table>

4.2.2 Training of Teachers on Special Needs Education
Out of the 12 teachers who filled the questionnaires, only 3 had undergone special needs education training. The figure below shows the results of the findings.
Figure 4.1 Percentage of trained and untrained teachers on special needs education

It came out that teachers have not got skills of handling asthmatic learners since only 25% were trained. This is a clear indication of how neglected the asthmatic learners are. The fact that the teachers have not taken an initiative to have the necessary skills needed to handle asthma learners shows how schools are not aware of the effects of this health condition on learner’s academic achievement. Most of the teachers noted that it was not a common problem hence they took the importance of training for granted. However, this is not the case as asthma is rampant in most schools. From the study, there were a number of learners who reported to have experienced the symptoms of asthma. On the other hand, those who did not report this to their parents were also many. This was the reason why the teachers did not feel the weight of this health condition to take necessary measures. Another possible explanation why teachers are not trained to handle asthma learners is lack of enough resources. The schools located in Ruiru town where most people are low income earners. This can
imply that the teachers do not have enough money to spare in order to get trained on best ways to handle learners who are affected by asthma.

4.2.3 Analysis of Learners by Gender
Out of the 60 learners who participated in the study, 36 were male and 24 were female. This means that 60% of the learners were male while 40% were female.

![Pie chart showing 60% female and 40% male learners]

**Figure 4.2 Percentage of gender of learners**
From this study it comes out clear that majority (60%) of learners who participated in the study were males, while the females were represented by 40%, an indication that the gap between the genders was wide. Thus, a big number of male learners were exposed to asthma risks since girls tend to outgrow the risk factors of asthma than boys. According to the Nation Wide Survey, prevalence of asthma is higher in boys compared to girls (1.3:1) (Joint Health Survey Unit 1998). It is good to note that in small children, boys with asthma will be more than girls. As they grow, the boys get exposed to the risk factors hence aggravating their chances of having asthma as compared to girls.
SECTION TWO

Covers the descriptive statistics based on the objectives of study.

4.3 Prevalence of Asthma among Learners in Public Primary School

This is the first objective of the study and it sought to establish prevalence of asthma among learners in public primary schools. The findings were achieved through questions rendered to respondents and there feedback recorded as presented below

4.3.1 Availability of Nurses at School

The head and teachers were asked if they had a school nurse at their school to attend to learners with asthma and they suggested they did not have a school nurse. The researcher asked the head teacher to indicate who attend to learners with asthma and their feedback was recorded analyzed and presented a shown below

<table>
<thead>
<tr>
<th>Attendant</th>
<th>Frequency</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Head teacher</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Class teacher</td>
<td>60</td>
<td>100</td>
</tr>
<tr>
<td>School nurse</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>60</strong></td>
<td><strong>100%</strong></td>
</tr>
</tbody>
</table>

Source: Researcher (2015)

From the results in the Table 4.2, the study indicates that the respondents wholesomely suggested that learners with asthmatic conditions were attended to by class teachers. This is a clear indication there was no treatment and management of students with the condition. The learners indicated that they received help from their class teachers when they are under asthmatic attack. Lastly, the study established that staff training was not a component of asthma management interventions strategy.
4.3.2 Child Asthmatic Symptoms

Parents were asked to indicate if they had observed asthmatic symptoms amongst their children’s and their results were recorded and analyzed as shown in the Figure 4.3 below.

![Figure 4.3: Asthma Symptoms](image)

<table>
<thead>
<tr>
<th>Number of Children with Asthma Symptoms</th>
<th>Frequency</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Wheezing</td>
<td>17</td>
<td>28.3%</td>
</tr>
<tr>
<td>Cough</td>
<td>24</td>
<td>40%</td>
</tr>
<tr>
<td>Diagonosed of asthma</td>
<td>19</td>
<td>31.7%</td>
</tr>
</tbody>
</table>

From the results in Figure 4.3 above, the study indicates that majority of children’s experienced cough at night as confirmed by 24 (40%) of the respondents who were their parents. The study also found out that 19 (31.7%) of the respondents reported that their children were diagnosed of asthma and lastly 17 (28.3%) of the respondents suggested that their children had wheezing at night. From the findings it was evident that children’s are suffering from asthma condition.

From the questionnaires filled by parents, all parents said yes when it came to whether their child experienced breathing problems, symptoms of wheezing, and trouble of coughing. This was a clear indication that wheezing, coughing and breathing problems are the main symptoms of asthma. This outcome is supported by research.
done by the World Health Organization (2010) which showed that urban learners have more respiratory symptoms such as difficulty in breathing, chest tightness and wheezing. This study further showed that urban industrial asthmatic learners are at greater risk of getting more frequent asthmatic attacks due to allergy and high level of air pollutants in form of chemical and gases (WHO, 2010).

4.3.3 Asthmatic Learners in School

The teachers were asked to indicate if they had asthmatic learners in their schools, and they uniformly (100%) agreed to that. Both parents and teachers were also asked to indicate if they revealed their learners health condition at the admission date. Table 4.3 shows the results:

<table>
<thead>
<tr>
<th>Response</th>
<th>Parents/guardians</th>
<th>Teachers</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Frequency</td>
<td>Percentage</td>
</tr>
<tr>
<td>Yes</td>
<td>45</td>
<td>75</td>
</tr>
<tr>
<td>No</td>
<td>15</td>
<td>25</td>
</tr>
<tr>
<td>Total</td>
<td>60</td>
<td>100</td>
</tr>
</tbody>
</table>

From the study findings the results indicate that, majority 45(75%) of parents/guardians indicated that information about learners’ health condition was declared at the admission date, however, 15(25%) denied the statement. Similarly, majority 9(75%) of teachers suggested that information on asthmatic learners was revealed to the school on admission date whereas 3(25%) of the respondents suggested that information on asthmatic learners was not revealed to the school on
admission date. When asked to elaborate the reason for that, the guardian suggested the fear of stigmatization among other students and teachers in the school while the teacher indicated it is due to ignorance among the parents/guardians of the learners. The findings are supported by the findings of the study by Forbis, et al (2006) who reported that second category of barriers included; lack of parental education about asthma and failure of parents to return medication forms and failure of parents to pick up the learners after asthma attack.

The findings from the focused group for learners indicated that most parents did not take their children to hospital, because they were unable to afford asthma drugs and had never taught their children on how to manage asthma attacks. From this revelation, it can be argued that most parents of asthma learners were not aware of the dangers of asthma. The fact that most of them had never taken their children to hospitals could be explained in two ways: one, they did not have money bearing in mind that the schools were located in an area where residents get low income. Two, these parents might be uninformed not knowing the effects of asthma.

4.3.4 Number of Asthmatic Learners According to Age Bracket

The results in the Table 4.1 show the total sum of asthmatic learners who were grouped according to their age brackets.
Table 4.4 Number of Asthmatic Learners According to Age Bracket

<table>
<thead>
<tr>
<th>Age bracket</th>
<th>Severe/moderate asthma</th>
<th>No signs of asthma</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Freq</td>
<td>%</td>
</tr>
<tr>
<td>8-10 years</td>
<td>23</td>
<td>38.3</td>
</tr>
<tr>
<td>11-14 years</td>
<td>16</td>
<td>26.7</td>
</tr>
<tr>
<td>Over 14 years</td>
<td>7</td>
<td>11.7</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>46</strong></td>
<td><strong>76.7</strong></td>
</tr>
</tbody>
</table>

From the results in the Table 4.4, the study indicates that majority 23(38.3%) of learners with asthmatic condition were in the age bracket of (8-10 years) of age, followed by 16 (26.7%) who were in the age bracket of (11-14 years) and lastly 7 (11.7%) were over 14 years of age. This implies that children at tender age were more prone to asthma risks than their older colleagues. It is clear that age is a crucial factor when it comes to display of asthma symptoms among learners. The asthmatic risk related to age also implies that as the children mature, they become aware of themselves. They are now able to know that they are suffering from the disease and try to avoid exposing themselves to the risk factors. With time, the right diagnosis is done and the right medication administered. That is, as children grow, their immune systems keep developing and this gives them an upper hand with regard to asthma attacks. This is a clear explanation as to why there are less asthma attacks among learners of an advanced age as compared to the younger ones. These findings are supported by the findings in the study conducted by Al-Kubaisy and Al-
Thamari(2005) who report that there is high prevalence of asthma in school learners aged 6-7 years. The study also found that crowding, low parental education, low birth weight in family history of asthma and smoking as significant risk factors for asthma development among primary school learners.

Parents/guardians were asked to indicate if their children have experienced breathing problems for the last six months and their response recorded as shown in the table 4.5 below.

<table>
<thead>
<tr>
<th>Frequencies</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes</td>
<td>35</td>
</tr>
<tr>
<td>No</td>
<td>25</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>60</strong></td>
</tr>
</tbody>
</table>

The findings in Table 4.5 show that majority 35(58%) of the parents/guardian children’s have experienced breathing problems in the last six months whereas a minor 25(42%) of the parents /guardians indicate that their children’s have not experienced breathing problems. This indicates that the likelihood of the children to get asthmatic attacks was high. According to WHO (2010), urban learners have more respiratory symptoms such as difficulty in breathing, chest tightness and wheezing that learners in rural areas thus, urban industrial asthmatic learners are at greater risk of getting more frequent asthmatic attacks due to allergy and high level of air pollutants in form of chemical and gases.
4.4 Effects of Asthma on Learners’ Academic Performance

This is the second objective of the study which sought to establish effects of asthma on academic performance, teacher-learner interaction and participation of learners in various activities at school. The findings were recorded, analyzed and presented as shown below in Figure 4.5.

4.4.1 School Days Lost as a Result of Asthmatic Conditions

Teachers were asked to indicate the number of school days lost as results of asthmatic conditions of learners and the results were analyzed and presented as shown below in the Figure 4.4

![Number of school days lost due to asthma conditions](image)

**Figure 4.4 Number of school days lost due to learner’s asthmatic condition**

The results in the Figure 4.4 above indicate that, majority (50%) of teachers indicated that learners with asthmatic condition missed school days between 1-5 days in a month and were seconded by 25% who suggested that they missed 6-10 days in a month and lastly 25% indicated 11-15 days in a month. In turn this has a great effect on students/teacher relationship as they have no time to bond and create good relationship results to low academic achievement among learners. These findings
agree with the findings of Naude and Pretorius (2003) who found that the side effects of asthma medications led to absenteeism among learners with asthma than those learners without asthma. It was evident that asthma impacts school performances of learners through learners sleeping patterns. According to Celano & Gellar (1993), learners with asthma often experience disturbances of sleep due to increased night time coughing and a feeling of breathlessness. This sleeping difficulty leads to learners becoming passive and tired in the classroom, resulting in poor listening skills. Hence learners with asthma can absent themselves from schools to compensate the sleep during the day time.

4.5 The Psychological Effects of Asthma on Learners
This is the third objective to the study and it sought to establish psychological effects of asthma on learners with the condition. The results were summarized in Table 4.6.

<table>
<thead>
<tr>
<th>Psychological effects of asthma</th>
<th>Yes</th>
<th>No</th>
</tr>
</thead>
<tbody>
<tr>
<td>Oversleeping</td>
<td>14</td>
<td>46</td>
</tr>
<tr>
<td></td>
<td>23.3%</td>
<td>77.7%</td>
</tr>
<tr>
<td>Depression</td>
<td>48</td>
<td>12</td>
</tr>
<tr>
<td></td>
<td>80%</td>
<td>20%</td>
</tr>
<tr>
<td>Hallucinations</td>
<td>42</td>
<td>18</td>
</tr>
<tr>
<td></td>
<td>70%</td>
<td>30%</td>
</tr>
<tr>
<td>Anxiety disorders</td>
<td>52</td>
<td>8</td>
</tr>
<tr>
<td></td>
<td>86.7%</td>
<td>13.3%</td>
</tr>
</tbody>
</table>

The study found out that majority of learners with the asthmatic condition is prone to great feeling of anxiety (86.7%), depression (80%) and hallucinations (70%). In addition, 23.3% were reported to be oversleeping. These psychological effects greatly
interfered with their classroom concentrations hence poor performances. This indicated that learners were not having second inhalers at school and not having primary care provider. These findings are supported by studies of Brown et al (1999) who studied the effects of corticosteroids, found that corticosteroids increase risk for developing psychiatric symptoms such as depression and psychosis (hallucinations).

In support to these findings, Jackson (2009) argues that asthma is considered a condition in which psychological distress exerts a negative impact on the patient. From epidemiological studies that have been carried out, anxiety disorders and depression are higher in patients of asthma. This is a clear indication that asthma can affect the psychological functioning of an individual.

### 4.6 Influence of Asthma on the Learners’ School Experiences.

This is the fourth objective of the study which sought to establish influence of asthmatic condition on learner’s school experience. The learners were asked various questions in line with the objective and their feedback was recorded analyzed and presented as show below in table 4.7

<table>
<thead>
<tr>
<th>Questions asked to learners</th>
<th>Yes</th>
<th>Percentage</th>
<th>No</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Do you participate in Physical Education or sports at school</td>
<td>10</td>
<td>17.7%</td>
<td>50</td>
<td>83.3%</td>
</tr>
<tr>
<td>Teacher forces you to participate in physical education</td>
<td>48</td>
<td>80%</td>
<td>12</td>
<td>20%</td>
</tr>
<tr>
<td>Do you experience any difficulties when you participate in PE or sports</td>
<td>38</td>
<td>63.3%</td>
<td>22</td>
<td>36.7%</td>
</tr>
<tr>
<td>Does asthma affect your academic efforts</td>
<td>52</td>
<td>87.7%</td>
<td>8</td>
<td>13.3%</td>
</tr>
</tbody>
</table>
The results in the finding above indicate majority 52 (87.7%) of the learners’ academic efforts are jeopardized by the asthmatic conditions. The study also established that teachers forced learners with asthmatic condition to participate in Physical Education as reported by 48 (80%) of the respondents. In addition 38 (63.3%) of the learners reported that they experienced difficulties in participating in PE or sports and lastly the study established that only 10 (17.7%) of the learners with asthmatic condition participated in physical education or sports at school. This implies that asthmatic condition among learners was the major barrier to participating in school activities. However, it is evident that majority of teachers were not informed of the health condition so the learners since they forced them to participate in sports in one way or another. A study conducted in Alexandria by Tayel et al (1995) revealed that teachers had limited knowledge about asthma in learners and a significant difference in the level of knowledge about asthma was found between teachers who had received instructions and those who did not. As well, Riddle et al (2006) found that the learners were reluctant to report the asthma attacks while at school. The reluctance to report attacks came from the fact that many learners had been accused by teachers and coaches of faking asthma attacks so they could be excused from work or sports. This finding indicates strongly that teachers and the entire school personnel ought to be trained in asthma symptoms so that they come to understand the severity of the condition amongst learners.
4.7 Strategies used to manage asthmatic learners in the school.
This is the fifth and last objective of the study and it sought to establish intervention strategies used to manage asthmatic learners in the school teacher were subjected to various questions in line with the research objective and the results were recorded, analyzed and presented as follows;

4.7.1 Policy and Measure to Manage Asthmatic Learners in Schools
The respondents were asked to indicate if there were any policies put in place to mitigate asthmatic conditions in their schools and they suggested that there were no policies so far but only few measures that are meant to provide first aid information to teacher and learners. The results were recorded, analyzed and presented as shown below.

Table 4.8 Measure to Mitigate Asthma among Learners as Reported by Teachers

<table>
<thead>
<tr>
<th>Measures taken</th>
<th>Frequency</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Training of teachers on 1st aid methods.</td>
<td>9</td>
<td>75%</td>
</tr>
<tr>
<td>Educating of parents on how to help their children’s with such conditions</td>
<td>5</td>
<td>41.7%</td>
</tr>
<tr>
<td>Guiding of learners with such condition on what to do when they see symptoms</td>
<td>6</td>
<td>50%</td>
</tr>
</tbody>
</table>

From the results in the Table 4.8 above the study indicate that majority (75%) of the respondents agrees that there is training of teachers on first aid methods as a way of intervening with learners who have asthma condition. The study also established that Guiding of learners with such condition on what to do when they saw symptoms was
also taking place which was confirmed by 50% of the respondents which is a lower indication, meaning very little efforts are being made towards that. Lastly there were little efforts made in educating of parents on how to help their children’s with such conditions as this was confirmed by 41.7% of the respondents.

From the study, the head teacher also noted that the school has no school nurse to attend to asthmatic learners. Instead teachers were the ones who attended to these children. This was what made the situation worse. The fact that in this school only 1 teacher of the four interviewed was trained raised the question on how ready schools were ready to handle asthmatic learners. Surprisingly, untrained teachers attended to the learners with asthma in the school under study. This left many wondering if Kenyan schools were well equipped to deal with learners with special needs. These teachers did not have the right skills to handle the affected learners, something that could make the situation worse. Some of these teachers might not even be aware that the learners were suffering from asthma and the right thing to do to help.

Another thing that was noted was lack of management of asthma as a component of staff development training sessions. This clearly indicated that schools had not put emphasis on caring for the needs of asthmatic learners. Most of the schools assumed that this was a small issue and this was the reason why they had not factored it in their programs. Maybe the school management thought that asthma was a small problem that could not be given much consideration.

It is evident that education and training in asthma management is an essential component at schools towards reducing the frequent risks of asthmatic attacks among learners, however, teachers were inadequately trained. This was emphasized by the
National Asthma Education Program (NAEP) (1995) in the US, who stated that effective management of asthma at school can help to promote a supportive learning environment for learners with asthma and provide the necessary support in the event of an emergency. Finally, the interventions to asthma management proposed by various researchers (Symth, 1996; Bray et al., 2004; Matthew, 2009; Abramson, 2001) were not utilized by teachers since they were not well informed.
CHAPTER FIVE

SUMMARY OF FINDINGS, CONCLUSIONS AND RECOMMENDATIONS

5.0 Introduction
This study aimed at evaluating teachers’ management strategies on leaners with asthma and their influence on academic performance in Public primary schools in Ruiru Sub-County, Kenya. This chapter covers a summary of findings in regard to the objectives of the research, draw conclusions from the study and then give recommendations on the areas that need further research.

5.1 Summary of Findings
The findings were summarized based on the research objectives.

5.1.1 Prevalence of Asthma among Learners
This was the first objective of the study which sought to establish prevalence of asthma among learners in Public primary schools. The findings of the study indicated that majority of children experienced cough at night, this was confirmed by 24(53%) of the respondents who were their parents. The study also found out that 19 (31.7%) of the parents reported that their children were diagnosed of asthma as and lastly 17(28.3%) of the respondents suggested that their children had wheezing at night.

From the findings it’s evident that children’s are suffering from asthma condition. The findings form the focused group for learners indicated that most parents did not take their children to hospital, because they were unable to afford asthma drugs and had never taught their children on how to manage asthma attacks.

Based on the analysis of number of learners who suffered from asthma with respect to their ages, the study indicated that majority 23(38.3%) of learners with asthmatic condition were in the age bracket of (8-10 years) of age, followed by 16(26.7%) who
were in the age bracket of (11-14 years) and lastly 7 (11.7%) was over 14 years of age.

Majority of the parents also indicated that their children’s had experienced breathing problems in the last six months. This indicates that the likelihood of the children to get asthmatic attacks was high.

5.1.2 Effects of Asthma on Learners’ Academic Performance
This was the second objective of the study which sought to establish effects of asthma on academic performance. The findings revealed that majority (50%) of teachers indicated that learners with asthmatic condition missed school days between 1-5 days in a month and were seconded by 25% who suggested that they missed 6-10 days in a month and lastly 25% indicated 11-15 days in a month. In turn, this had a great effect on students/teacher relationship as they have no time to bond and creates good relationship results to low academic achievement among learners.

5.1.3 The Psychological Effects of Asthma on Learners
The third objective to the study sought to establish psychological effects of asthma on learners with the condition. The study found out that majority of learners with the condition are prone to great feelings of anxiety (86.7%), depression (80%) and hallucinations (70%). In addition, 22% were reported to be oversleeping. These psychological effects greatly interfered with their classroom concentrations hence poor performances.

5.1.4 Asthma Influences the Learners’ School Experiences
The fourth objective of the study sought to establish influence of asthmatic condition on learner’s school experience. The findings indicated that majority 52(87.7%) of the learners’ academic efforts were jeopardized by the asthmatic conditions. The study
also established that teachers forced learners with asthmatic condition to participate in Physical Education as reported by 48 (80%) of the respondents. In addition 38 (63.3%) of the learners reported that they experienced difficulties in participating in PE or sports and lastly the study established that only 10 (17.7%) of the learners with asthmatic condition participated in physical education or sports at school. This implies that asthmatic condition among learners was the major barrier to participating in school activities.

5.1.5 Strategies used to manage Asthmatic Learners in the School.
The last objective of the study sought to establish intervention strategies used to manage asthmatic learners in the school. The findings revealed that majority (75%) of the respondents agreed that there was training of teachers on first aid methods as a way of intervening with learners who had asthma condition. However, there were little efforts made in educating of parents on how to help their children’s with such conditions. The head teacher also noted that the school had no school nurse to attend to asthmatic learners. Instead teachers were the ones who attended to these children. These teachers did not have the right skills to handle the affected learners, something that could make the situation worse. Some of these teachers might not even be aware that the learners were suffering from asthma and the right thing to do to help. Maybe the school management thought that asthma was a small problem that could not be given much consideration. It was evident that education and training in asthma management is an essential component at schools towards reducing the frequent risks of asthmatic attacks among learners, however, teachers were inadequately trained.
5.2 Conclusion
It is evident from the findings that majority of learners are at higher risk to asthma attacks due to their tender age and exposure to environment which is highly polluted. This study therefore concludes that learning institutions should be constructed in areas where the exposures to asthmatic-causing agents such as pollutants from industries are minimal. There are several psychological effects that come as a result of asthma and these greatly interfere with the classroom concentrations among learners with asthma. Asthmatic condition among learners is also a major barrier to participating in school activities such as sports, athletics, and school trips. Hence, this prevents the learners to fully participate in all-round learning activities which are important to their intellectual development. It is evident that education and training in asthma management is a critical component at schools towards reducing the frequent risks of asthmatic attacks among learners. However, teachers still lack relevant skills and strategies to manage the asthmatic condition among learners. Finally, the study concludes that there is a strong negative relationship between asthma and academic performance of learners.
5.3 Recommendations

Based on the findings and conclusions, the following were recommended:

5.3.1 School Administration

The findings revealed that majority (75%) of teachers had undergone no training hence it was a clear indication that asthmatic learners were neglected. Heads of schools should give teachers opportunities to attend training workshops and seminars in order to enhance their skills to impart to children with physical disabilities.

The administrators, head teachers and teachers should enlighten learners with asthma on the value and importance to take precautions on the asthma triggers and proper use of their medication.

5.3.2 Ministry of Education

The results in the finding indicated that learners with asthmatic condition do not participate in physical education or sports at school probably because the learning conditions were not friendly. Hence the ministry of public health and medical services should ensure that medical services are provided to learners with Other Health Impairments (OHI) are executed by qualified personnel like nurses.

The study found out that learners with the asthmatic condition are prone to hallucinations and a great feeling of anxiety and these psychological effects greatly interfered with their classroom concentrations hence poor performances. Therefore the Ministry of Education in conjunction with the Ministry of Health should establish a Psychological Counseling Centre in schools to help asthmatic learners since they need both psychological and medical treatment.
Another recommendation would be that teacher training institutions need to offer a short course or have a unit that deals with special needs education so that by the time the pre service teachers’ graduate, they are acquainted with this subject. An in service course should be organized for those already in the teaching profession.

5.3.3 School Community
It was evident from the findings that most parents did not take their children to hospital, because they were unable to afford asthma drugs and had never taught their children on how to manage asthma attacks. Hence the school community should be sensitized through the Ministry of Education and Ministry of Public Health on the preventive strategies of asthma and its management.

5.4 Suggestions for Further Research
Here are some of the areas that are viable for further research:

i. The study was limited to Ruiru Sub-County hence a similar study should be done in the whole Kiambu County in order to establish a comprehensible results that can be generalized in all schools exposed to asthma triggers. This will also help other researchers to compare the prevalence of asthma with respect to different set-ups.

ii. This study only focused on teachers’ management strategies despite the notion that parents also play a vital role in asthma control. Hence a similar study should be conducted to establish the influence of parent’s management strategies on the academic achievement among learners with asthma.
REFERENCES


**APPENDICES**

**APPENDIX A: INFORMED CONSENT**

My name is Doris Nyaburi Machaka. I am a Master student from Kenyatta University. I am conducting a study on “Teachers’ management strategies on leaners with asthma and their influence on academic performance in public primary schools in Ruiru Sub-County, Kenya”. The information may be used by the teachers who may gain an understanding on how to manage asthmatic learners.
**Procedures to be followed**

Participation in this study will require that I interview learners with asthma and request the teachers on how they manage these learners. I will purposively select the head teacher, class teachers, learners and their parents to participate in this study.

You have the right to refuse participation in this study. You will get the same treatment during learning whether you agree to join the study or not and your decision will not change the treatment you will receive from the researcher.

**Discomfort and risk**

The answering of the questionnaires and interview schedules may be embarrassing or make you uncomfortable. If this happens, you may only choose what to answer. You may also speak out on how you feel about the interviews and questionnaires.

**Benefits**

If you participate in this study you will help us to gather information that will be used to come up with favorable teaching policies to be adopted in order to facilitate delivery of education services to learners suffering from asthma. It will also help schools, parents and teachers to understand preventive strategies that can be used to curb asthma attacks amongst schools age learners. This may lead to improved school attendance, hence good academic performance among asthmatic learners.

**Confidentiality**

The identification will be conducted in a private setting within the school. Your name will not be recorded on the questionnaires or interview schedules. The identification tools interview schedules will be kept locked for safe keeping. Everything will be kept private.

**Contact information**
(i) If you have any questions you may contact Dr. Franciscah I. Wamocho – 0713844459 or Dr. Cleniece G. Owino – 0722329835 or the Kenyatta University ethical review committee secretariat on kuerc@ku.ac.ke.

**Participant’s statement**
The above information regarding my participation in the study is clear to me. I have been given a chance to ask questions and my questions have been answered to my satisfaction. My participation in this study is entirely my choice. I understand that my records will be kept private and that I can choose not to participate. I understand that I will still get the same treatment whether I decide to participate or not and my decision will not change the learning services I get from my teachers.

**Name of participant ……………………………**

Signature or thumbprint  Date

**Investigator’s statement**
I, the undersigned, have explained to the head teacher, class teachers, parents and learners in a language they understand, the procedures to be followed in the study and the risks and benefits involved.

Name of interviewer …………………………………………………

Interviewer signature  Date

**FOR UNDERAGE PARTICIPANTS**

**Guardian’s statement**
The above information regarding participation of ……………………………………… in the study is clear to me. I have been given a chance to ask questions and my questions have been answered to my satisfaction. I understand that the records will be kept private and that my ………………………………… Choose not to participate. I understand that he/she will still get the same treatment in learning whether he/she decides to participate in the study or not.
Name of guardian ……………………………

__________________________________________

Signature or thumbprint  Date

ASSENT FOR UNDERAGE

Underage Statement
The above information regarding my participation in the study is clear to me. I have been given a chance to ask questions and my questions have been answered to my satisfaction. My participation in this study is entirely my choice. I understand that my records will be kept private and that I can choose not to participate. I understand that I will still get the same treatment whether I decide to participate or not and my decision will not change the learning services I get from my teachers.

Name of underage…………………………

__________________________________________

Signature or thumbprint  Date

Investigator’s statement
I, the undersigned, have explained to the pupils in a language they understand, the procedures to be followed in the study and the risks and benefits involved.

Name of interviewer ……………………………

__________________________________________

Interviewer signature  Date
APPENDIX B: QUESTIONNAIRE FOR THE PARENT

1. How old are you? Tick as appropriate.
   - 21-30 yrs
   - 31-40 yrs
   - 41-50 yrs
   - Over 51 yrs

2. In which school is your child learning?
   ______________________________________
3. In which class is your child?_______________________________________________

4. How old is your child? Tick as appropriate.
   5-7 yrs   
   8-10 yrs  
   11-13 yrs 
   Over 14 yrs

5. Indicate if your child is a male or female. Male ( ) Female ( ).

Section B: General Questions on Identification and Management Asthmatic Learners?

6. Has your child shown symptoms of wheezing? Tick as appropriate.
   Yes ( ) No ( ).

7. Does your child have troublesome cough at night? Yes ( ) No ( ).

8. Has your child ever visited hospital and has been diagnosed of asthma?
   Yes ( ) No ( ).

9. Do you afford asthma drugs? Yes ( ) No ( ).

10. What are some of effects caused by asthma on your child? Please explain briefly.
    ______________________________________________________________________
    ______________________________________________________________________
    ______________________________________________________________________
    ______________________________________________________________________

11. Have you taught your asthmatic child how to manage Asthma attacks?
b) If yes, explain briefly

____________________________________________________________________
____________________________________________________________________
____________________________________________________________________

APPENDIX C: QUESTIONNAIRE FOR THE CLASS TEACHERS

Section A: Background Information

1. Have you trained as a Special Needs Education teacher?
   Yes [ ] No [ ] Tick as appropriate

2. How many boys or girls? [ ] Boys [ ] Girls

3. Do learners report asthmatic attacks to you in school/class?
   Yes [ ] No [ ]

4. How many asthmatic learners fall in each age group?
5-7 yrs □ over 14 yrs □
8-10 yrs □

5. Do parents report cases of asthmatic learners when admission is done?
   Yes □ No □

6. How many school days are lost by learners due to asthma related symptoms?
   None ( ) 1-5 days ( ) 6-10 days ( ) 11-15 days ( ) Over 25 days ( )

Section C: Management Strategies

7. Who attends to learners with asthma in case of asthma attacks in school?
   Head teacher □
   Class teacher □
   School nurse □

8. Is asthma management a component of staff development training sessions?
   Yes □ No □

9. Do you have a school nurse? Yes □ No □

10. If yes, in (11) above, does the school nurse assist in attending learners attacked by asthma? Yes □ No □

APPENDIX D: INTERVIEW SCHEDULE GUIDE FOR THE HEADTEACHER

Section A: Background Information

1. How many learners do you have your have in your school?
2. How many are of either gender?
3. How many teachers do you have in your school?

Section B: Information on Identification of Asthmatic Learners

4. Do you have learners with asthma in your school?
5. How many asthmatic learners fall in each category?

- 5-7 yrs
- 8-10 yrs
- 11-13 yrs
- Over 14 yrs

6. Do parents disclose that their children have asthma during admission?

**Section C: Management Strategies**

7. Do you have a school nurse?

8. Who attends to learners with asthma in case of an attack in school? Is it the head teacher, teachers or the school nurse?

9. Is management of asthma a component of staff development training sessions?

10. If yes, in (11) above, does the school nurse assist in attending learners attacked by asthma?

11. Do you have a school policy relating to asthma management in your school?

12. How often do you educate teachers, learners and parents about asthma?

- Very often
- Often
- Rare
- Very often

13. What measures have you put in place to ensure the environment is clean and safe for asthmatic learners?
APPENDIX E: FOCUSED GROUP STUDY FOR LEARNERS

Section A: Background Information

1. Gender: Girl ( ) Boy ( ).
2. How old are you?
3. In which class are you?

Section B: Information on Identification of Asthmatic Learners

4. Have you experienced breathing problems in the past?
5. If ‘yes’ how regular has that occurred?
6. Have you had symptoms of wheezing?

7. Have you experienced a troublesome cough at night?

**Section C: Information on Management**

8. Are you currently on any medication relating to above signs?

9. How often do you take medicine?

10. Does your class teacher know that you are on medication?

11. Do you receive any assistance from your class teacher when you experience asthma attack?

12. Do you receive any guidance from your class teacher on how to go about asthma attacks?

13. What do you do when you experience some symptoms of asthma attacks?

14. Are you assisted by your parent/guardian at home when you experience asthma attacks?

15. If yes, explain briefly the assistance given.

**Section D: General Questions**

16. Do you participate in Physical Education or sports at school?

17. Do you participate willingly or you are forced by the teacher?

18. Do you experience any difficulties when you participate in PE or sports?

19. Does asthma affect your academic efforts?

20. Explain briefly how you are affected?
APPENDIX F: AUTHORIZATION LETTER (KU-GRADUATE SCHOOL)

KENYATTA UNIVERSITY
GRADUATE SCHOOL

E-mail: dean-graduate@ku.ac.ke
Website: www.ku.ac.ke
OUR REP: E55/22736/11

P.O. Box 43844, 00100
NAIROBI, KENYA
Tel. 8710801 Ext. 57530
DATE: 7th July, 2014

The Principal Secretary,
Higher Education, Science & Technology,
P.O. Box 30040,
NAIROBI

Dear Sir/Madam,

RE: RESEARCH AUTHORIZATION FOR MS DORIS N. MACHAKA REG. NO. E55/22736/11

I write to introduce Ms. Machaka who is a Postgraduate Student of this University. She is registered for M.Ed. Degree programme in the Department of Special Needs Education in the School of Education.

Ms. Machaka intends to conduct research for a proposal entitled, “Investigation of Strategies Teachers use to Manage Asthmatic Learners. A Case of Thome Primary School, Ruiru District, Kiambu County, Kenya

Any assistance given will be highly appreciated.

Yours faithfully,

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

JK/cao

Committed to Creativity, Excellence & Self-Reliance
APPENDIX G: AUTHORIZATION LETTER (KU-ETHICS REVIEW COMMITTEE)

KENYATTA UNIVERSITY
ETHICS REVIEW COMMITTEE

Email: chairman.kuerc@kau.ac.ke
secretary.kuerc@kau.ac.ke
kenyacucc@gmail.com
Website: www.ku.ac.ke

P. O. Box 45844 - 00100 Nairobi
Tel: 8710801/12
Fax: 871242/8711578

Date: 4th November, 2014

Our Ref: KU/R/COMM/01/380

Doris Nyaburi Machaka
Kenya University,
P.O Box 45844, Nairobi.

Dear Nyaburi,

RE: APPLICATION NUMBER KUK/257/I 213: "INVESTIGATION OF STRATEGIES TEACHERS USE TO MANAGE ASTHMATIC LEARNERS, A CASE OF THEME PRIMARY SCHOOL, RUIRU DISTRICT, KIAMBU COUNTY, KENYA" - VERSION 2

1. IDENTIFICATION OF PROTOCOL

The application before the committee is with a research topic "Investigation of strategies teachers use to manage Asthmatic Learners, A case of Thome Primary School, Ruiru District, Kiambu County, Kenya" version 2 received on 4th November, 2014.

2. APPLICANT:
Doris Nyaburi Machaka, Department of Special Needs Education.

3. STUDY SITE:
Ruiru District, Kiambu County, Kenya

4. DECISION

The committee has considered the research protocol in accordance with the Kenyatta University Research Policy (section 7.2.1.3) and the Kenyatta University Ethics Review Committee Guidelines AND APPROVED that the research may proceed for a period of ONE year from 4th November, 2014.

5. ADVICE/CONDITIONS
i. Progress reports are submitted to the KU-ERC every six months and a full report is submitted at the end of the study.
ii. Serious and unexpected adverse events related to the conduct of the study are reported to this board immediately they occur.
iii. Notify the Kenyatta University Ethics Committee of any amendments to the protocol.
iv. Submit an electronic copy of the protocol to KUERC.

When replying, kindly quote the application number above.

If you accept the decision reached and advice and conditions given please sign in the space provided below and return to Nicholas Gikonyo, copy of the letter.

FIR: NICHOLAS K. GIKONYO
CHAIRMAN ETHICS REVIEW COMMITTEE

I, [SIGNED NAME], hereby accept the advice given and will fulfill the conditions therein.

Signature: [Signature]
Dated this day of...[Date], 2014.

cc: Vice-Chancellor
APPENDIX H: AUTHORIZATION LETTER (NACOSTI)

NATIONAL COMMISSION FOR SCIENCE, TECHNOLOGY AND INNOVATION

9th Floor, Uhuru House
Uhuru Highway
P.O. Box 30633-00100
Nairobi, Kenya

When replying please quote

Ref: No.

NACOSTI/P/15/2899/4489

Doris Nyaburi Machaka
Kenyatta University
P.O. Box 43844-00100
Nairobi.

RE: RESEARCH AUTHORIZATION

Date: 16th January, 2015

Following your application for authority to carry out research on “Investigation of strategies teachers use to manage asthmatic learners: A case of Thome Primary School, Rutru District, Kiambu County, Kenya,” I am pleased to inform you that you have been authorized to undertake research in Kiambu County for a period ending 31st December, 2015.

You are advised to report the County Commissioner and the County Director of Education, Kiambu County before embarking on the research project.

On completion of the research, you are required to submit two hard copies and one soft copy in pdf of the research report/thesis to our office.

Said Hussein
For: Director-General/CEO

Copy to:
The County Commissioner
Kiambu County.
The County Director of Education
Kiambu County.

APPENDIX I: RESEARCH PERMIT (NACOSTI)

THIS IS TO CERTIFY THAT MS. DORIS NYABURI MACHAKA, of KENYATTA UNIVERSITY, 44486-100, nairobi, has been permitted to conduct research in KIAMBU COUNTY on the topic: INVESTIGATION OF STRATEGIES TEACHERS USE TO MANAGE ASTHMATIC LEARNERS: A CASE OF THOMAS PRIMARY SCHOOL, RURIU DISTRICT, KIAMBU COUNTY, KENYA for the period ending 31st December, 2015.

Applicant's Signature

Secretary
National Commission for Science, Technology and Innovation

Serial No. A 4009

Condition: see back page

National Commission for Science, Technology and Innovation
KENYATTA UNIVERSITY
GRADUATE SCHOOL
CERTIFICATION OF CORRECTION OF THESIS

NB: This certificate of Correction should be forwarded to the Dean,
Graduate School for clearance before Thesis can be hard bound.

PART I: RELEVANT DETAILS ON THE THESIS

Department: SPECIAL NEEDS
School: EDUCATION
Degree Title: MASTERS
Candidates' Name: DORI NYABURI WACHA-KA
Registration No.: E56/23756/2011 Signature: NYABURI
Date of Oral Defence: 2/12/15
Title of Thesis: TEACHERS’ MANAGEMENT STRATEGIES ON LEARNERS WITH ASTHMA... AND THEIR INFLUENCE ON ACADEMIC PERFORMANCE IN PUBLIC PRIMARY SCHOOLS IN BUKAVU SUB-COUNTY, KENYA.

PART II: DECLARATION BY SUPERVISOR(S) OVERSEEING CORRECTIONS

I / we, the undersigned Supervisor(s) of Corrections do hereby confirm that I / we have closely looked at the corrections as instructed by the candidate's Board of Examiners and I / we do hereby certify that ALL the corrections have been effected as agreed.

NAME: DR. F. WANDERU SIGN: DATE: 4/4/16
(CORRECTIONS SUPERVISOR I)

(CORRECTIONS SUPERVISOR II)

(CORRECTIONS SUPERVISOR III)

PART III: CONFIRMATION BY DEAN OF THE SCHOOL

Confirmed that the Supervisor(s) appointed to oversee the correction of the Thesis were instructed by the Board of Examiners.

DEAN, GRADUATE SCHOOL

OFFICE OF THE DEAN
SCHOOL OF EDUCATION

PART IV: AUTHORITY FOR FINAL BINDING OF THESIS

Authority for final binding of thesis is hereby granted.

DEAN, GRADUATE SCHOOL