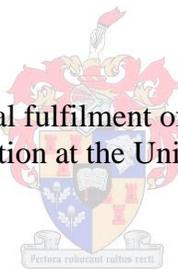


Exploring the status of the School Health and Nutrition Programme in
Government-Administered Schools in Lusaka District, Zambia

by
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Thesis presented in partial fulfilment of the requirements for the
degree Master of Nutrition at the University of Stellenbosch



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DECLARATION

By submitting this thesis electronically, I declare that the entirety of the work contained therein is my own, original work, that I am the sole author thereof (save to the extent explicitly otherwise stated), that reproduction and publication thereof by Stellenbosch University will not infringe any third party rights and that I have not previously in its entirety or in part submitted it for obtaining any qualification.

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Date: December 2016

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CONTRIBUTIONS BY PRINCIPAL RESEARCHER, STATISTICIAN AND SUPERVISORS

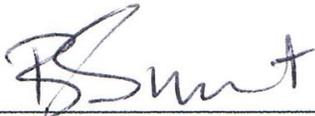
The principal researcher (Mulenga C. Napanje) developed the idea and the study protocol. The principal researcher also planned the study, undertook data collection, captured the data for analysis, analysed the data, interpreted the data and drafted the thesis. The Supervisor, Dr Lisanne du Plessis and the Co-supervisor, Mrs Maritha Marais provided input at all stages and revised the protocol and thesis.

Date: 27 July 2016

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ABSTRACT

Introduction: School Health and Nutrition (SHN) programmes are implemented in schools with the objective to improve school children's health and nutritional status. Ensuring the good health of school children leads to reduced absenteeism, improved classroom performance and reduced early school dropout rates. Currently the status of implementation of the SHN programme in schools in Zambia is not known.

Aim: To explore the implementation of the School Health and Nutrition (SHN) programme in government-administered schools in Lusaka District in Zambia, from the SHN coordinators' perspective.

Methodology: A descriptive, cross sectional study design was used. The study population was the SHN programme coordinators (N=40) in government-administered primary schools in Lusaka District. Forty primary schools in Lusaka District were grouped into two strata, urban (n=16) and peri-urban (n=24) using probability proportion to size sampling. A self-administered questionnaire, based on the SHN programme in Zambia, was used as data-collection tool. Quantitative data analysis was done using Microsoft Excel and Stata. Qualitative data obtained from open-ended questions was analysed using content analysis and identifying major themes.

Results: The study revealed that the majority of the participants (n= 25) received initial SHN programme training from the Ministry of Education (MOE) for one week, between 2004 and 2009. Twenty three schools (57.5%) indicated that they were not implementing the SHN programme. A comparison done on SHN implementation between urban and peri-urban schools, showed no significant difference ($p=0.601$). The SHN activities implemented in the schools resort under the domain of health and nutrition related activities. The schools also implement health and nutrition education, SHN record keeping and life skills activities, but none of the schools mentioned offering guidance and counselling services. The schools reported not receiving enough funds and materials from the MOE and a lack of consistency in following up on the implementation of the programme in the schools by the MOE as the main challenges and reasons for non-implementation of the SHN programme. There have been some positive

outcomes from the programme, which include improvement in attendance and the pass rate of the school children. A reduction in the number of children suffering from ailments like diarrhoea and bilharzia were also reported.

Conclusion: The findings of this study indicate that there are a large number of schools not implementing the SHN programme. The schools implementing the SHN programme are not implementing all the required activities mainly due to lack of funds and resources. The MOE should re-evaluate the SHN programme and ensure that all schools in Lusaka District are implementing the programme with all its activities, especially since positive results were observed when the programme is active.

OPSOMMING

Inleiding: Skool Gesondheid en Voeding (SGV) programme word in skole geïmplementeer met die doel om die gesondheid en voedingstatus van skoolkinders te verbeter. Deur die goeie gesondheid van skoolkinders te verseker, is die resultaat verminderde afwesigheid, verbeterde klaskamer prestasie sowel as verminderde vroeë skool uitsak syfers. Tans is die status van die implementering van die SGV program in Zambiese skole onbekend.

Doel: Om die implementering van die Skool Gesondheid en Voeding program (SGV) in regering geadministreerde skole in die Lusaka-distrik in Zambië te ondersoek, vanuit die oogpunt van die SGV koördineerders.

Metode: 'n Beskrywende, deursnit studie ontwerp is gebruik. Die studie bevolking was die SGV program koördineerders (N=40) in regering geadministreerde laerskole in die Lusaka-distrik. Veertig laerskole in die Lusaka-distrik is onderverdeel in twee groepe, naamlik stedelike (n=16) en buitestedelike (n=24) skole met behulp van 'n waarskynlikheid verhouding tot die grootte van die studie monster. 'n Self-geadministreerde vraelys, gebaseer op die SGV program in Zambië, is gebruik as data-insamelings hulpmiddel. Kwantitatiewe data-ontleding is gedoen met behulp van Microsoft Excel en Stata. Kwalitatiewe data is verkry deur middel van oop vrae wat ontleed is met behulp van inhoudsontleding en die identifisering van belangrike temas.

Resultate: Die studie het getoon dat die meerderheid van die deelnemers (n=25) het met die aanvang van die SGV program, opleiding van die Ministerie van Onderwys (MvO) ontvang vir 'n week, tussen 2004 en 2009. Drie-en-twintig skole (57.5%) het aangedui dat hulle nie die SGV program implementeer nie. 'n Vergelyking wat gedoen is tussen stedelike en buitestedelike skole in terme van die implementering van SGV, het geen beduidende verskil getoon nie ($p = 0,601$). Die SGV aktiwiteite wat in die skole geïmplementeer word val onder die domein van gesondheid en voedingsverwante aktiwiteite. Die skole implementeer ook gesondheids- en voedings opvoeding, SGV rekordhouding sowel as lewensvaardigheidsaktiwiteite, maar geen van die skole het genoem dat hulle voorligting en beradingsdienste implementeer nie.

Die skole het gerapporteer dat 'n tekort aan fondse en materiaal vanaf die MvO, sowel as 'n gebrek aan konsekwentheid in die monitering deur die MvO op die implementering van die program in die skole, die belangrikste uitdagings en redes vir nie-implementering van die SGV program is. Daar is wel positiewe uitkomstes van die program gerapporteer, wat 'n verbetering in skoolbywoning en die slaagsyfer van die skoolkinders insluit. 'n Afname in die aantal kinders wat ly aan siektes soos diarree en bilharzia is ook gerapporteer.

Gevolgtrekking: Die bevindinge van hierdie studie dui daarop dat 'n groot aantal skole nie die SGV program implementeer nie. Die skole wat wel die SGV program implementeer, implementeer nie al die nodige aktiwiteite nie hoofsaaklik te wyte aan 'n gebrek aan fondse en hulpbronne. Die MvO moet die SGV program herevalueer en verseker dat alle skole in die Lusaka-distrik die program met al sy aktiwiteite implementeer, veral omdat positiewe resultate waargeneem word wanneer die program aktief is.

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ACRONYMNS/ABBREVIATIONS

AIDS	Acquired Immune Deficiency Syndrome
CHANGES	Community Health and Nutrition Gender and Educational Support
DEBS	District Education Board Secretary
DHMT	District Health Management Team
DTP	Diphtheria Tetanus and Pertussis
FAO	Food and Agriculture Organisation
HGSF	Home Grown School Feeding
HIV	Human Immunodeficiency Virus
IUHE	International Union for Health Education
MCDMCH	Ministry of Community Development Mother and Child Health
MCDSS	Ministry of Community Development and Social Services
MDG's	Millennium Development Goals
MOA	Ministry of Agriculture
MOE	Ministry of Education
MOH	Ministry of Health
SDG'S	Sustainable Development Goals
SHN	School Health and Nutrition
UNICEF	United Nations Children's Emergency Fund
UN	United Nations
UNESCO	United Nations Education Scientific and Cultural Organization
WASH	Water Sanitation and Hygiene
WFP	World Food Programme
WHO	World Health Organisation
ZDHS	Zambia Demographic and Health Survey

CHAPTER 1: INTRODUCTION AND LITERATURE REVIEW

1.1 INTRODUCTION

School Health and Nutrition (SHN) programmes are programmes implemented in schools with the aim of improving the school children's health and nutrition status, cognitive ability and alleviate short-term hunger. These programmes are a combination of various health and nutrition related activities or interventions which lead to various outcomes including reduced school absenteeism, improved classroom performance and reduced early dropout of school children.^{1,2,3}

It is not a new concept, since SHN programmes have been in existence for an extended period of time, though in some parts of the world the programme activities have declined over time in terms of quality and delivery. However, these programmes are being resuscitated, especially since many countries were initially seeking to address the Millennium Development Goals (MDGs) of universal basic education, gender equality in education access, education for all as well as reduction of hunger by the year 2015.⁴ Now a new set of goals have been developed, namely the Sustainable Development Goals (SDG's). The aim of these goals is to build on the progress of the MDG's and to address their short comings.^{5,6} The SDG's addressing education, includes SDG 4, which relates to quality education. The goal entails ensuring inclusive and equitable, quality education and promoting lifelong learning opportunities for all. If this is to be achieved, it is essential to ensure that the poorest children who suffer the most from malnutrition and ill health are able to attend, stay in school and learn while they are there.²

A World Health Organisation (WHO) concept, the Health Promoting Schools (HPS) initiative,^{7,8} is based on actions called for in both the Ottawa Charter for Health Promotion and the Jakarta Declaration for Promoting Health. This initiative aims to improve the health of school personnel, families and community members as well as school children. In 1995, WHO began to foster the concept of HPS on a global level, through its Global School Health Programme (GSHP). The GSHP strives to increase international, national and local capacity for the development of HPS. In Zambia the HPS concept is embedded in the School Health and Nutrition programme. This programme has been in existence since independence (1964),⁹ but unfortunately there are challenges in terms of its continuation. It seems as if there are periods when the SHN

programmes are highly funded and implemented and then there are periods when schools stop implementing the activities.

This study aimed at exploring the implementation of the School Health and Nutrition (SHN) programme in government-administered schools in Lusaka district in Zambia, from the SHN coordinators perspective. The study was conducted in schools where the SHN programme is implemented. This study determined the current state of SHN implementation in the schools and the information generated will be relevant to the Ministry of Education (MOE), who is the custodian of the programme. The study also provided information about the positive outcomes observed in the schools since implementing the SHN programme as well as the challenges faced. As for the schools not implementing the programme, this study provided information as to why the programme was not active.

1.2 LITERATURE REVIEW

1.2.1 A short history of School Health and Nutrition Programmes

School Health and Nutrition programme is not a new concept and these programmes have continued to evolve with time in terms of activities implemented, delivered and evaluated. They can be traced back to 1950 when the WHO established an Expert Committee on School Health Services whose purpose was to advocate for the development of more inclusive curriculum programmes in health, teaching and learning methods.^{10,11,12} In the early 1960s a number of conferences and meetings were held between WHO and the United Nations Education Scientific and Cultural Organization (UNESCO) to determine how school health could be improved. A publication was released in 1966 which was one of the first international documents to address the planning and implementation of school health programmes.^{3,10,12} The Ottawa Charter for Health Promotion (1986) was another major milestone in shaping the direction of the promotion of health in schools. It provided an easily understood framework for the emerging settings approach, where the settings of schools, worksites and cities became the vehicles through which better health was actioned.¹³

The WHO further introduced the School Health Initiative. This initiative was established by the Health Education and Health Promotion Unit of the Division of Health Promotion, Education and Communication of the WHO at its Geneva Headquarters in 1995. The initiative was designed to improve the health of students, school personnel, families and other members of the community through schools.¹⁴ A WHO Expert Committee on Comprehensive School Health Education and Promotion met in 1995 to examine the status of school health and they commissioned 34 feeder papers on various aspects of school health. Information from these feeder papers was synthesized into three background papers: 1) the status of school health, 2) barriers and strategies to improve school health programmes and 3) research to improve implementation and effectiveness of school health.^{3,15,16} These are some of the actions that set the scene for and established the frameworks of the School Health and Nutrition programme. In 1995, the WHO also began to foster the concept of Health Promoting Schools (HPS) on a global level, through its Global School Health Programme (GSHP). The GSHP strives to increase international, national and local capacity for the development of HPS. A HPS is defined as: “a school that is constantly strengthening its own capacity as a healthy setting for living, learning and working”.¹⁴

1.2.2 School health and nutrition interventions

School Health and Nutrition programmes have been structured in different ways around the world but the principles are similar. The interventions vary according to the context of society. Some of the aspects or components of SHN include, but are not limited to, school feeding programmes, school gardening, de-worming, micronutrient supplementation and vaccinations. Record keeping, capacity building, counselling, physical education and activity, health screening, referral systems, first aid, health and nutrition education and maintaining a healthy school environment are also among the main activities or interventions that resort under SHN.^{2,3,17,18}

School feeding programme

School feeding programmes are an important intervention under SHN. It is rolled out in two ways: “in-school feeding” and “take-home rations”. With in-school feeding school children are

given snacks or meals at school while take-home rations happen when children are given rations, like a bag of mealie meal, at specified times to take home. Some schools offer one or the other while others offer both, especially for vulnerable school children e.g. girls and children affected by HIV/AIDS. According to surveys done in 2015, about 66 million children of primary school age attended classes whilst hungry across the developing world, with 23 million in Africa alone.¹⁹ The same surveys also revealed that about 3.1 million child deaths or 45% of child related deaths happen as a result of under nutrition.¹⁹ School feeding programmes alleviate short term hunger of school children and improve their nutritional status which in turn can eventually improve their school enrolment and attendance rates.²⁰

The World Food Programme (WFP) is the largest humanitarian provider of school meals worldwide. Currently it provides school meals to more than 20 million children every year.²⁰ The 2013 WFP report on prevalence of school feeding stated that almost every country in the world indicated the desire to have a school feeding programme. It was also stated that school feeding programmes provide the largest safety nets for school aged children in the world.²⁰ The report revealed that school feeding programmes are least prevalent in countries where they are needed the most. In high- and upper-middle income countries^a, almost all children have access to food through schools and the most vulnerable children are entitled to subsidized or free meals. However, in low- and middle-income^b countries the feeding programmes are only available to some children in certain geographical areas chosen according to vulnerability factors. The information from the survey report also showed that almost all countries provide school feeding programmes to primary school children and very few also cover secondary school children.²⁰ The report stated that 49 % of primary school children in lower middle-income countries have access to school feeding programmes while in low-income countries about 18 % of school children have access to school feeding programmes. Despite the low figure in low-income countries, Burkina Faso, Haiti and Liberia all have primary school children enrolled in the school feeding programme.²⁰ Zambia was one of the countries that were included in the survey and the report showed that in 2013 about 70 % of school attending children in rural areas were

^a According to world bank classification upper middle-income economies are those with a Gross National Income (GNI) per capita between \$4,036 and \$12,475 (eg Brazil, China, Namibia, South Africa etc.) and high-income economies are those with a GNI per capita of \$12,476 or more (eg. UK, USA, Australia, Spain, etc.).²¹

^b lower middle-income economies are those with a GNI per capita between \$1,026 and \$4,035 (eg Zambia, Indonesia, Armenia, etc.).²¹

beneficiaries of the national school feeding programme. The largest school feeding programmes were reported to be in India, where 114 million children were receiving nutritional aid from the programme followed by Brazil with 47 million, the United States with 45 million, and China with 2 million. It is estimated that at least 43 countries had more than 1 million children benefitting from the school feeding programme.²⁰ School feeding programmes usually provide breakfast for many children. Studies have shown that missing of breakfast has detrimental effects on children's cognition whereas studies of providing breakfast have shown benefits, particularly in malnourished children.²²

Home Grown School Feeding (HGSF)

Another intervention that resort under SHN is Home Grown School Feeding (HGSF).^{3, 17} This is where the schools grow their own food to feed the children or the food is bought from small scale farmers within the community.^{23,24} Initially most of the food for the feeding programme would be out-sourced, especially if the programme is supported by partners such as the WFP, but these partnering organisations now encourage the use of local foods for the feeding programme.²³ Such programmes bring about involvement and empowerment of the community since it provides the small scale farmers with a market for their produce and they can be encouraged to produce larger quantities.²⁵ The HGSF programme also makes the feeding programme more cost-effective, since buying locally is cheaper than importing foodstuff.²⁵

Health and nutrition education

Health and nutrition education is considered an intervention that involves educating the school children on issues of healthy eating, exercise, preparation of healthy meals and on factors that affect their health, for example, alcohol abuse and smoking.²⁶ Positive changes in knowledge on nutrition and behaviour among school children have been observed due to nutrition education.^{27,28} In the long run, health and nutrition education can help in improving maternal health and reducing child mortality. This can happen when an educated girl child grows up and is enabled to take better care of her child than a girl who was not educated. School health education on good nutrition is also a means of informing families and other community members about ways of promoting wellbeing and prevention of malnutrition.²⁹ According to the WHO, worldwide 5% of all deaths of young people between the ages of 15 and 29 are attributable to the

use of alcohol in some countries, up to 60 % of all new HIV infections occur among 15-24 year olds.³⁰ These health problems can be prevented or significantly reduced with an effective health education programme.

De-worming

De-worming is also included as an intervention of the SHN programme.¹⁸ According to the WHO, more than 1.5 billion people worldwide are infected with soil-transmitted helminth infections.³¹ Infections are widely distributed in tropical and subtropical areas, with the greatest numbers occurring in sub-Saharan Africa, the Americas, China and East Asia.³¹ Over 270 million preschool-age children and over 600 million school-age children live in areas where these parasites are intensively transmitted, and are in need of treatment and preventive interventions.³¹ Worms, or helminths, are known to cause blood loss through the gut which can eventually lead to anaemia.³² Some studies also indicate that helminth infections can impair the mental development and educational achievements of children.^{33,34} Impaired mental development can be related to the role iron plays in brain development seeing that iron is one of the nutrients lost through blood loss.³⁴ Apart from the loss of iron and protein, a helminth infection also leads to other effects like an increase in the malabsorption of nutrients as roundworms compete for vitamin A in the intestine.³⁵ Some parasites cause the loss of appetite which leads to reduction in nutritional intake and physical fitness, some even cause diarrhoea and dysentery.^{34,35} Helminth infected children are physically, nutritionally and cognitively impaired and therefore their educational performance and school attendance is affected.³¹

Micronutrient supplementation

Micronutrient deficiencies have a negative impact on children's ability to perform well in school. The most common supplements given to school children are vitamin A, iron and iodine.^{17, 18} Vitamin A is an essential nutrient required for the normal functioning of the visual system and maintenance of cell function for growth, red blood cell production, improved immunity and reproduction.³⁶ This micronutrient cannot be synthesised by the body therefore it has to be obtained through dietary intake or supplementation.³⁶ An estimated 250 million preschool children are vitamin A deficient and deficiency of this vitamin causes severe visual impairment and blindness in children.¹⁹ It significantly increases the risk of severe illness and even death

from common childhood infections such as diarrhoeal disease and measles.³⁷ Vitamin A supplementation is known to improve cognitive function and short term memory in school children and reduce absenteeism caused by diarrhoea and respiratory infections.^{2,38}

Iron deficiency is a major challenge among children; one of the causes being inadequate diet and infection, particularly those caused by hookworm and malaria. About 40% of school-age children in developing countries are estimated to suffer from iron deficiency anaemia.¹⁹ Children with iron deficiency tend to perform worse in school and are less likely to attend school. Iron supplementation helps with overcoming these challenges.^{39,40} Another common micronutrient deficiency is iodine. About 60 million school children are affected by iodine deficiency worldwide and it is known that iodine deficiency reduces cognitive abilities and leads to poor performance in school.² The best way to overcome iodine deficiency is by encouraging the school children to consume iodated salt.⁴¹ A study done by Amarra et al. on Filipino school children showed that those children who consumed iodized salt showed a higher mental performance than those who did not.⁴¹

Physical education

Physical activity or education is also implemented under SHN as an intervention. This programme helps in dealing with nutrition disorders, especially, overweight and obesity, a problem of growing concern faced by school children.⁴² Obesity has been described as one of the most serious public health challenges of the 21st century at a global level, since its prevalence has increased at alarming rates.⁴² This problem, which was thought to only affect affluent countries, is now also affecting middle- and low-income countries.^{43,44} Surveys show that the prevalence of obesity in children globally increased by 47.1% between 1980 and 2013 and in 2013 the number of overweight and obese children under the age of five was estimated to be over 42 million. In addition, 92 million preschool children are estimated to be at risk of being overweight.⁴⁴ The estimated prevalence of childhood overweight and obesity in Africa in 2010 was 8.5% and is expected to reach 12.7% in 2020.^{43,44,45}

Overweight and obese children are likely to remain overweight and obese in adulthood. Therefore they are at risk of developing health conditions e.g. cardiovascular disease, diabetes,

strokes and several types of cancers later on in life.^{46,47} Overweight and obese children are also at risk of facing discrimination and have also shown to underperform in school and have poor academic achievements.^{48,49,50} Overweight and obesity develops as a result of less physical activity and poor nutrition, therefore one of the interventions for this health problem is increased physical activity.^{52,53} A study done by Shenting Lin et al. with reference to effectiveness of a school based physical activity intervention on obesity in school children showed that physical activity intervention was effective in decreasing levels of BMI, skinfold thickness and fasting glucose in school children.⁵⁴

Health examinations or screening

Frequent health examinations or screening of children is another important SHN related intervention provided in schools.^{17,18} It is one way of detecting disease and promoting health.⁵⁵ Teachers are trained to conduct basic check-ups so that they can assist with noticing early warning signs and also with identifying children who need help. Major medical check-ups are the responsibility of health workers or school nurses.^{2,3} Some of the ailments they may look for include signs of malnutrition, micronutrient deficiencies, hearing, speech and vision problems and whether children have undergone immunizations.^{2,3}

Healthy school environment

Maintaining a healthy school environment is also a component of SHN and some of the requirements involve ensuring that there is availability of safe drinking water in the school, functioning toilets, as well as functional hand washing facilities.^{17,18,56} Many schools in developing countries have poor water and sanitation conditions and this contributes to related diseases in school children which can affect their school attendance.^{18,57,58} The schools also have to ensure that there is enough waste disposal sites in order to keep the school clean. Some schools promote a healthy school environment by also having policies on the type of food products to be sold in the school tuck shops.^{59,60} These interventions have been shown to have a positive impact on the learners' health and nutritional status.⁶¹ Therefore, if schools encourage the purchase of more water, milk drinks, fruit and vegetable products rather than high energy, low nutrient foods (e.g. French fries, biscuits and sweetened drinks) the healthy alternatives can contribute to a reduction in the prevalence of obesity and other related ailments among school

children.⁶² Additionally the schools are supposed to keep health records providing pertinent information on the programme and use it as a tool for evaluating the SHN programme.^{2,3,17,18}

If these activities and interventions are planned and conducted appropriately, they can contribute to reaching the SDG's related to hunger, poverty, health and well-being, quality education and water and sanitation.⁵ Unfortunately some countries do have challenges in terms of implementing this programme, which may include the lack of political will or the stakeholders not fully appreciating or understanding the importance of the programme, though this can be overcome by sensitization around the benefits of SHN programmes. Funds are also a challenge which has led to some developing countries relying heavily on foreign aid and management, but this subjects the programme to fluctuations, and often conditional support.

1.2.3 Schools as settings for conducting health and nutrition interventions

Schools are natural learning and development settings, suitable to conduct health and nutritional intervention since they mirror social contexts in which life styles are developed.⁶³ In schools a large population of children can be reached, over a number of years and on a regular basis.^{63,64} School children are also reached at influential stages in their lives when lifelong health and nutrition patterns are formed.³ Schools also provide an opportunity to practice healthy eating and food safety through the school feeding programme and the sale of food on school premises.^{3,64,65} Schools can also be used as a medium for introducing information on nutrition and technologies to the community, since school children normally share what they learn from school with their families. In this way the broader school personnel and community members can be reached.³

It is cost effective to conduct health and nutrition interventions in schools, since the school is already equipped with skilled personnel to conduct such interventions.^{2,66} Evidence show that low income countries have more schools and teachers than health centres and nurses which makes this system more cost effective for conducting SHN interventions in schools.² A school is also one location where a large population of children with various conditions that affect their wellbeing and school performance can be found. They may include children infected with HIV and AIDS, children with ailments like malaria, malnutrition, micronutrient deficiency and helminth infection, among others.^{2,3} The school setting is also convenient to conduct peer

education since most of the young people share experiences and are likely to influence one another positively or negatively.^{67,68}

1.2.4 Examples of SHN programmes and related activities in various countries

School Health Programmes have been entrenched in most education systems in developed and developing countries. A few examples of developing countries with SHN related activities or programmes will be discussed in this section.

In Gambia, a programme has been introduced in schools where children are treated for malaria with chemoprophylaxis. The outcome has been that children remain in school longer.^{69,70} Iran has a National Integrated School Health Screening Programme aimed at identifying children who have early signs of health problems. For example, during 2007 to 2008, the screening of 3.1 million learners revealed that 12.48% experienced weight disorders, 4.77% had visual disorders, 3.95% presented with head lice, 2.24% showed behavioural disorders, and 0.6% had hearing disorders.⁷¹

The government of Singapore instituted the “Championing Efforts Resulting in Improved School Health” (CHERISH) award which gives recognition to and encourage schools to establish comprehensive health promotion programmes for learners and staff through fostering of good physical, social and emotional health for optimal learning.⁷¹

In 2003 the Philippine government introduced the ‘Fit for School’ programme. The interventions at school level included: daily supervised hand washing with soap prior to breaks, daily supervised tooth brushing with fluoride toothpaste and biannual de-worming of all children. The costs were apparently comparatively low but benefits were high.⁷¹ Selected evaluations of the programme confirmed that infectious diseases including diarrhoea and respiratory infections were reduced to 30 from 50%. The progression of dental cavities among school children reduced to 40 from 50% and the prevalence of helminth infections decreased by 80% . The number of children with below-normal height and weight were reduced by 20% and school attendance rose from 20 to 25%.⁷¹

India has strong policies and legal frameworks that have made the provision of a cooked school meal an entitlement of every school child in the country since 2001. This programme’s budget is

included in their state and national budgets.⁷² They also have an iron supplementation programme for preschool children that have reportedly resulted in an increase of 5.8% in the enrolment rate of preschool learners.^{2,72} Western Kenya has a deworming treatment programme, which have reportedly improved the primary school participation by 9.3%, with an estimated 0.14 additional years of education per pupil treated.²

In South Africa, the National School Nutrition Programme (NSNP) has been in existence since 1994. The activities under the programme include school feeding, nutrition education and establishment and maintenance of school gardens. An evaluation done by the South African Department of Basic Education in 2013/14 indicated that about 9 million school children received school meals (consisting of a protein dish, a starch and a fresh vegetable) in all the 9 provinces.^{73,74}

The Malawian government launched their school health and nutrition programme in 2007, and in 2009 they launched the 2009-2018 SHN strategic plan. Their SHN package includes: productive school environment; disease prevention; eating healthily; information education and communication; water; disease treatment; sanitation and hygiene; institutional capacity development, and monitoring and evaluation.⁷⁵

A number of countries, including Nigeria, Kenya, Ghana and Mali are implementing the Home Grown School Feeding programme (HGSP).^{23,71} HGSP is a cost effective school feeding programme which uses food that is produced and purchased within the country or locally grown by smallholder farmers.⁷⁶ In Asia, a number of other countries, including Sri Lanka, Bangladesh, Thailand and Malaysia are implementing some components of the School Health Programme.⁷¹ Sri Lankan school health services have been in existence since 1918. Though the health promoting school programme was only introduced in 2007, most of the schools are involved in the programme, with the exception of a small number of private and international schools.⁷¹ In Bangladesh, the subjects of health and hygiene, common disease prevention, Maternal and Child Health (MCH) and Family Planning (FP) and environmental health issues are taught in elementary and secondary schools.⁷¹ Their Bureau of Health Education also provides health education in primary and secondary schools by conducting training for school teachers and community leaders.⁷¹ In Thailand, school health is a national agenda point. The national committee established a national plan and assigned cooperating agencies to implement activities

funded by the government budget. Currently, the majority of schools are participating in the school health programme with activities included in the school curriculum.⁷¹

1.2.5 Economic and long term benefits of school health and nutrition programmes

Apart from improving school retention of school children, there are other long term benefits associated with school health and nutrition interventions. Three pillars that form the basis of a thriving nation have been described to include health, nutrition and education.⁷⁷ A properly implemented school health and nutrition programme touches upon these three pillars. These three factors are dependent on each other; good nutrition is the basis for good health and both help in making education effective.⁷⁷ The WFP states that school feeding has the potential to spur significant economic development outcomes when integrated with other school-based health and nutrition activities, environment, water and sanitation interventions.⁷⁷

School health and nutrition interventions have been shown to result in improved cognitive functioning and intelligence quotient (IQ) in adulthood. This benefit eventually leads to increased productivity and higher wages.⁷⁸ Since income level is considered one of the social determinants of health, the increase in wages or income will lead to improved health and an adequate diet.² It is also evident that most of the diseases that occur in adulthood are as a result of eating habits that were adopted during childhood. These diseases of lifestyle can be averted by early interventions in the form of school-based health and nutrition education.⁷⁸

SHN programmes also have the potential to bring about equity in education in that children from low income families can be helped to attain education.² This can contribute to reducing the knowledge gap between children from high and lower socio-economic groups which could lead to equitable job opportunities later in life.^{2,78} Interventions like the HGSF help farmers and producers by generating a structured and predictable demand for their products, thereby building economic growth.²³ With increased market access, farmers can increase their income base and participate more in the wider social and economic sectors of the economy. This builds the local economies and directly impacts on poverty levels.^{28,79} Nutrition education, one of the interventions under SHN, plays a vital role in promoting food security, by providing school

children and ultimately their families with knowledge, skills and motivation to make wise dietary and lifestyle choices.¹¹ It also helps teach families how to utilise their local foods.^{2,11}

1.2.6 Development and overview of the School Health and Nutrition programmes in Zambia

In Zambia, SHN programmes have been in existence since 1964, when the Ministry of Health (MOH) provided services like physical examination, referral and treatment of ailments, inspection of immunizations scars and micronutrient supplementation to school children.⁹ In addition, the MOH had an office of the school health specialist within the Maternal and Child health department. Every hospital and health centre were obliged to provide school health services in their respective catchment areas and those schools that lay outside catchment areas of health institutions were serviced by mobile teams.⁹ In 1985 the MOE introduced a “child-to-child” programme which acted as a tool to provide health information to school going children and in turn they channelled the information to the community.⁹ The MOE also introduced production units in schools which helped children learn about food production and benefit from the food they produced.⁹ Other activities which were implemented in schools included regular checks of sanitation and children’s personal hygiene by teachers. Unfortunately these programmes were not effectively implemented in most schools.⁹ Since then there have been a number of research and projects on SHN being conducted by various organisations. Among these is an on-going research study by the Food and Agriculture Organisation (FAO) of the United Nations (UN) that began in 2001.⁸⁰ The aim of this project was to assist the Zambian MOE in developing a nutrition education programme for basic schools. The objectives of the project were to contribute to improving the health and nutritional status of Zambian school children aged 7-13 years and to also improve the quality of education. They also wanted to determine whether and to what extent nutrition and health education in schools in developing countries could contribute directly to improving the health and nutrition behaviours of children and in the long term to the health of the population as a whole. This was to be achieved by integrating food and nutrition topics into primary school curricula, developing appropriate teaching and learning materials at grades two, four and six and developing an in-service training programme for education officials and primary school teachers.⁸⁰

The findings so far indicate that a gain in awareness, knowledge and behaviour can be achieved among school children and their families through an actively implemented classroom programme backed by teacher training and parent involvement, even in the absence of school based nutrition and health services.⁸⁰ It also indicated that to make such a project effective and cost effective there is a need for more specific skills-based training of curriculum developers, teachers and school head teachers (school principals).⁸⁰

The WFP, with Project Concern International (PCI) as the implementing partner, also introduced a project in 2003 that provided food assistance to community schools in Lusaka District.⁸¹ This programme continued until 2007 and the services provided included “wet feeding” and “dry rations”. “Wet feeding” involved provision of one cooked meal a day consisting of a high protein supplement (HEPS) and vegetable oil, while “dry rations” included provision of a 50kg bag of grain to children identified as vulnerable. The other service was the school-based agriculture project with the aim to enable the school to produce or access resources to manage their own school feeding programmes by selling or using the produce from the garden. The outcome of this programme was that school enrolment and attendance rates increased by 26.6% and 40% respectively.⁸¹

Another SHN related project was the Zambia Bilharzia programme.⁸² The implementers of this programme were the MOH and MOE in partnership with WHO, WFP, CHANGES-USAID, UNICEF, World Vision and partners from Schistosomiasis Control Initiative^c. The aim was to treat at least 75% of school age children in areas where Schistosomiasis is a serious threat to public health and to also improve access to deworming drugs at local facilities. At this point the MOE also recommended that Schistosomiasis treatment should be made available to primary schools in the country and deworming drugs should also be made available to the school children annually. It was intended to be done in conjunction with other programmes like prevention of measles and vitamin A supplementation.⁸² This government run programme begun in 2005 and was meant to run for three years. There were plans to extend the programme through new

^c Schistosomiasis Control Initiative is an organisation that works with governments in sub-Saharan Africa to create or scale up programs that treat Schistosomiasis and soil-transmitted helminthiasis (STH).⁸²

funders but the government was also supposed to continue the programme for at least the following five years.⁸²

Even though SHN programmes have existed in Zambia since 1964, in the last two decades, SHN services in the schools declined in terms of accessibility, availability and quality. School children were rarely physically examined, treated or referred to health centres.⁹ Food supplementation ceased in the early 1970s due partly because of an insufficient understanding and appreciation of the role that health and nutrition contributes to learning achievements of school children. Some of the reasons that lead to the decline of the SHN services in Zambia also included the misconception that SHN was the responsibility of the MOH alone rather than being regarded as a multi-sectoral development issue.⁹ Other factors included institutional structural changes with personnel shortages and resource shortfalls, lack of continuation when funders pulled out, mainly because the government could not provide or did not have enough funds for continuation of the programme.⁹

With increasing numbers of children suffering from malnutrition, malaria, micronutrient deficiency and worm infestation, the MOE recognised the need to have SHN programmes as a national priority. In 2001, the MOE and MOH signed a letter of understanding in which they stated the aim of reviving the SHN programme in Zambia.^{83,84} The letter stated the intention to implement the Basic Education Sub-Sector Investment Programme (BESSIP) as a national education programme. The main objectives of this programme were to increase school enrolment and improve learning achievements. The BESSIP had seven components and one of them was focussed on reviving the SHN programme in the schools across the country.^{83,84} The Community Health and Nutrition Gender and Educational Support (CHANGES), a USAID funded programme, also came on board to help revive the programme. Various health and nutrition related activities or interventions were formulated and piloted in one of the provinces (Eastern Province) of Zambia from 2001 to 2003.⁸⁵ The pilot programme included a longitudinal biomedical and cognitive research on a sample of pupils in 80 schools in Chadiza and Chipata districts of Eastern province. Concurrently, the CHANGES program conducted a number of other activities like sensitizing communities, government officials, teachers and stakeholders on the SHN testing and treatment, establishing coordination committees, training of over 400

teachers and 60 health workers on accessing school children's health conditions, drug and micronutrient administration. They also developed manuals, tools and monitoring instruments, engaged in HIV/AIDS prevention activities and conducted operations research on counselling methods.⁸⁵ In 2004, the MOE with the help of CHANGES, began working on the National School Health and Nutrition policy for the country. However, due to a change of government in 2011, the policy has since been put on hold and is still in its final draft form. The CHANGES programme came to an end in 2005, but the MOE continued with the programme and introduced the activities to all government-administered schools in the country.^{9,83,84}

In 2006, USAID introduced phase two of the CHANGES programme and called it CHANGES2.⁸⁴ During this period a document called the "School Health and Nutrition Teacher's Guide" was developed collaboratively by various ministries [MOE, MOH, Ministry of Community Development and Social Services (MCDSS)]. The SHN teacher's guide provided guidelines on how and which activities to implement under the SHN programme.⁸⁴ In 2008, the MOE developed another document called "Guidelines for implementation of School Health and Nutrition Programme Activities". These guidelines were developed to help educate providers and other implementers to understand and use the school health and nutrition strategies to address and promote the health and nutritional status of school children.⁸³ The "School Health and Nutrition Teacher's Guide" document was specifically intended for the teachers in charge of SHN in the schools (SHN coordinators) and it was more detailed in describing the specific activities while the "Guidelines for implementation of School Health and Nutrition Programme Activities" document was a summary of all the activities that should be implemented under the SHN programme.^{83,84}

Having a SHN programme in place in all government schools was made mandatory from 2000 and each school was required to have a SHN coordinator who is in charge of the programme at school level.⁸³ The programme was offered only to primary schools (grade 1 to 7) for the Zambian curriculum and those schools which go up to lower secondary also included the grade eight and nine.⁸⁴

The document on guidelines for implementing SHN programme activities included a strategic plan on how to go about implementing the SHN programme.⁸³ It stated that schools need to first conduct a situation analysis of the health and nutrition concerns of their schools. This meant looking into the health and welfare of the children, school environment, health services, food security, safety of the school and social cultural activities as they relate to SHN. Hereafter a SHN committee should be formed. This committee had to identify the health and nutrition concerns of the school, mobilize the community and resources, followed by formulation of an action plan including mobilization of resources. The schools should then establish their own monitoring and evaluation procedures, though the district would also carry out annual audits. A standard reporting format was provided, that schools were supposed to use when transmitting information to the district or provincial education office.⁸³

The MOE guidelines on implementation of school health and nutrition programme document contain various activities or interventions that the schools needed to implement. These were grouped into seven domains, namely: health, nutrition, health and nutrition education, health and nutrition records, life skills, guidance and counselling services.^{83,84} All these interventions have been put in place so as to improve the nutrition and health status of the school children in Zambian schools. It is foreseen that this will help children attend school regularly and improve their school performance. These children could then grow to be well educated and healthy children with a better cognitive functioning and intelligence quotient, which is one of the necessary factors in improving the economy of the country.

1.2.7 Motivation for the study

Ensuring the good health of children begins in utero and continues through early childhood. This means a sequence of programmes need to be in place that promote maternal and reproductive health, management of childhood illness and early childhood care and development.² SHN programmes include some of the interventions that have been put in place to ensure early childhood care and development in order to promote positive outcomes.² Zambia is a developing country that is still faced with the challenge of high levels of under nutrition, micronutrient deficiencies and worm infestation levels. Water and sanitation in the country is still a challenge, therefore SHN interventions are a requirement.^{17,56,84} The MOE in Zambia, with the help of other

partners, have put in place guidelines on how to implement the SHN programme and key activities (mentioned in the previous section). Unfortunately, there are indications of discontinuation of this programme and currently there is no information on the extent of SHN implementation in the schools. It was therefore important to explore the SHN programme from the perspective of the SHN coordinators in the schools, since they are ultimately the implementers of the programme.

The aim of this research was to explore the SHN programme from the perspective of school teachers or the SHN coordinators. The government provided guidelines on the activities to be undertaken during the implementation of the SHN programme, but each school was also required to design an action plan and ways of mobilizing resources, since every school may be faced with different challenges.^{83,84} Therefore it was deemed important to determine the similarity of these activities and their adherence to the guidelines provided by the MOE. The study also explored the challenges faced by the schools as well as success stories in implementing this programme.

The findings of this study will be relevant to the MOE as it will help to assess at what stage they are at in terms of implementing the SHN programme in Lusaka District and also to ascertain whether what is being implemented is in line with the guidelines provided. It will also make the MOE aware of some of the common challenges faced by the schools in implementing the programme as well as possible positive outcomes of the programme.

CHAPTER 2: METHODS AND MATERIALS

2.1 RESEARCH QUESTION

What is the current status of the School Health and Nutrition programme in government-administered schools in Lusaka District, Zambia?

2.2 STUDY AIM AND OBJECTIVES

2.2.1 Aim

To explore the implementation of the School Health and Nutrition (SHN) programme in government-administered schools in Lusaka district in Zambia, from the SHN coordinators' perspective.

2.2.2 Primary Objectives

- To determine the SHN coordinators' understanding of the SHN programme.
- To determine the SHN coordinators' understanding of their role in promoting and implementing the SHN programme.
- To determine the main activities implemented under the SHN programme in the different schools.
- To determine if the implemented activities under the SHN programme are in line with the guidelines from the Ministry of Education (MOE).
- To determine the challenges faced by the schools as well as positive results in implementing the SHN Programme.

2.2.3 Secondary Objective

- To compare SHN implementation between urban and peri-urban schools

2.3 STUDY TYPE

A descriptive, cross sectional study design was used.

2.4 STUDY POPULATION

The study population consisted of the SHN programme coordinators in government-administered schools in Lusaka district. The SHN coordinators are the teachers who are in charge of the administrative and logistic aspects of the SHN programme in the schools. Only primary schools were considered for this study since the programme is currently being offered only to primary school children.

There are 120 government associated schools in Lusaka district. One hundred and eight (108) schools are entirely government-administered, of which 84 are primary schools (grade 1-7) and a few of these also have two secondary classes (grade 8 and 9 only) and 24 strictly offer secondary classes (from grade 8-12). The remaining 12 schools receive some funds from government but are run by other organisations like churches, and they follow their own administration; hence SHN is not mandatory for these schools.

Currently the SHN programme is only implemented in primary schools therefore the study population was 84 schools and each school has one SHN programme coordinator. Out of the 84 schools, 50 are in the peri-urban area while 34 are in the urban area of Lusaka district. In Zambia, urban and peri-urban areas are both found within the city. The formal settlements are referred to as “urban” and the informal settlements are referred to as “peri-urban”. In order to reach a good representation of the total number of schools, a sample of 40 schools was decided upon. This sample size was also logistically feasible when considering the financial impact and operational planning of the research study.

Since each school has one SHN coordinator, it meant there were 40 potential SHN coordinators participating in this study. Stratified sampling was used to obtain the sample. The 84 schools were first divided into two strata: urban and peri-urban, thus including schools situated in urban and peri-urban areas of Lusaka district. Sampling within the strata was then done using probability proportional to size sampling to come up with the sample of 40 SHN coordinators. Probability proportional to size sampling is a method of sampling that takes the varying size of each item within the population into account when selecting the sample.^{35, 36} In this case there are

more schools in the peri-urban areas than the urban area, hence the use of probability proportional to size sampling. Figure 1 shows a diagrammatic presentation of the sample selection steps.

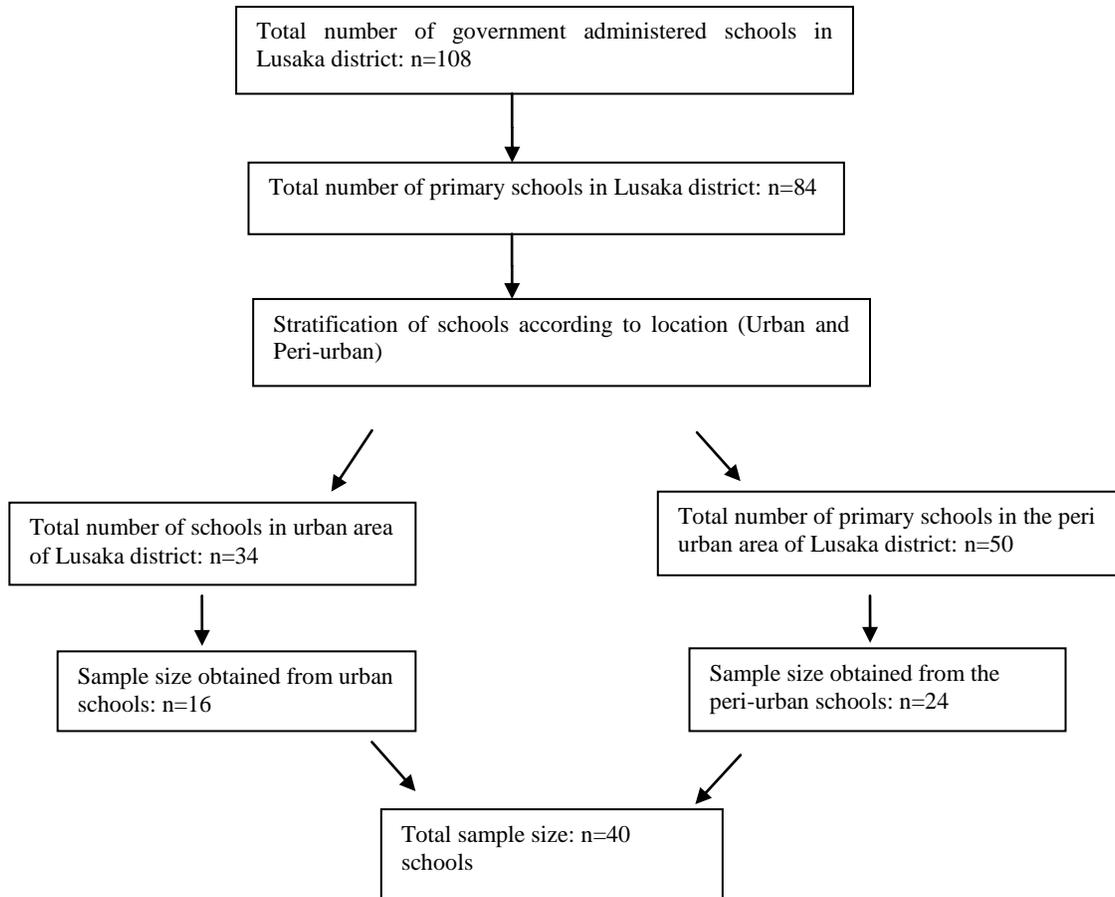


Figure 1: Diagrammatic representation of sample size selection of government-administered schools in Lusaka district

2.5 INCLUSION AND EXCLUSION CRITERIA

2.5.1 Inclusion

Primary schools administered by government and those within Lusaka district were eligible to be included in the study and SHN coordinators at the participating schools were included as participants in this study provided consent was given.

2.5.2 Exclusion

Schools not administered by government were not included in the study. These comprise community schools, government grant funded schools, privately owned schools and schools outside Lusaka district.

2.6 METHOD OF DATA COLLECTION

Both quantitative and qualitative data was collected by means of a self-administered questionnaire.

2.6.1 Measuring instruments

The researcher developed a questionnaire (Addendum 1) based on the SHN programme in Zambia, as documented in the guidelines from the MOE. It was decided to use a questionnaire since it could accommodate both open and closed ended questions. The information included in the questionnaire was the school code and the questions. The same questionnaire was used for both the urban and peri-urban schools. It contained 29 questions with a combination of open- and closed-ended questions. It was a self-administered questionnaire and contained SHN programme related questions that were in line with the research objectives. The closed ended questions included questions on the participants' qualifications, work experience, when they received SHN training and the existence of the SHN Programme in the school while the open ended questions included questions about the activities implemented under this programme, the coordinators' understanding of SHN and their role within the SHN as well as the training received by the SHN

coordinators. There were also questions on the positive outcomes observed since the introduction of the SHN programme in the schools as well as the challenges they are facing in implementing the programme. Open-ended questions were carefully worded in order not to yield yes and no answers. The wording of the questions required comprehensive answering to enable the researcher to perform content analysis on the data gathered from the answers (Refer to section 2.6.4). The open ended questions were included in order to avoid leading questions especially since it was stated in the guidelines that the schools can include interventions that are familiar to their schools.

2.6.2 Face and content validity of the measuring instrument

Face validity refers to the extent to which the measure or question makes sense to those knowledgeable about the subject or familiar with the language and culture of participants⁸⁶ while content validity requires that the measure accounts for all the elements of the variable or concept being investigated.⁸⁶

The questionnaire was subjected to face and content validity to determine if the questions made sense and if it accounted for all the intended objectives. Three experts in School Health and Nutrition from the MOE in Zambia were approached to assess the face and content validity of the questionnaire. A letter requesting them to assess the face and content validity of the questionnaire was presented to them (Addendum 2) as well as a summary of the protocol. They were also presented with a hard copy of a questionnaire on which they could insert their comments. The questionnaire was adjusted according to feedback received while carefully considering the input against the study aim and objectives. The only addition was a question on what role the learners played in the SHN programme implementation.

2.6.3 Preparation for the study and Pilot study

Study preparation

This study began by obtaining ethics approval from Stellenbosch University's Health Research Ethics Committee (Addendum 3, Ref nr S14/10/251). A letter (Addendum 4) was then presented to the MOE to obtain authorisation to conduct the research in the schools. Once the approval was granted (Addendum 5), the researcher conducted the pilot study. Despite obtaining authorization from the MOE, which is the governing body for all the schools, participation by the schools was voluntary. The schools that agreed to participate had to provide their consent by signing the consent form.

Pilot study

A pilot study was conducted at two schools selected from the study sample. One was from an urban and the other from a peri-urban area. The aim of the pilot study was to determine if the questions were clear to the participants and if the answers provided were adequate to answer the specific objectives. It also gave an indication of the overall process and time frame in terms of data collection (filling in the questionnaire) and analysis. There were no additional changes made to the questionnaire after the pilot study.

2.6.4 Methodology

At the schools, the researcher presented the letter of authorisation granted by the MOE to the school head teacher or deputy head teacher who would then give the go ahead to conduct the study at the particular school. The school head teacher or deputy head teacher would also direct the researcher to the SHN coordinator. An appointment was made in an event that the coordinator was not on the school premises at the time the researcher arrived. The researcher could not call the school beforehand because the telephone details could only be accessed from the schools. If the school had no SHN coordinator, it was evident that the school did not have an operational SHN programme and the head teacher or deputy head teacher was asked to fill in the questionnaire instead.

When formulating the questionnaire it was assumed that every school would have the SHN coordinator who would fill in the questionnaire. Unfortunately during data collection it was observed that a large number of schools did not have SHN coordinators. The pilot study did not reveal this either because both schools that were sampled had SHN coordinators. Therefore, it was decided to include the head teacher and deputy head teachers so that they could provide more information on why the programme was not available in their school.

The respondents, who were either the coordinator, head teacher or deputy head teacher, were given time to go through the consent form (Addendum 6), and to provide their informed consent to participate in the study before filling in the questionnaire. If anything was unclear the researcher was available to explain any uncertainties. Once the participant gave consent by signing the consent form in duplicate (a copy was kept by the participant and the other by the researcher), they went ahead and filled out the questionnaire. Upon completion of the questionnaire the researcher went through the questionnaire to ensure that it was filled in completely. If a question was not filled in completely or skipped, the researcher would request the participants to answer that particular question. It took less than 30 minutes for the participants to complete the questionnaire.

The questionnaires were completed in a room which was otherwise not occupied and only the respondent and the researcher were present. The completed questionnaires were placed in a sealed envelope until data capturing. This procedure of collecting data was done from July 20th 2015 to 2nd August 2015.

2.6.5 Ethics and legal aspects

The protocol was submitted to the Health Research Ethics Committee of the Faculty of Medicine and Health Sciences, Stellenbosch University for evaluation and approval (Ref nr S14/10/251; Addendum 3). Subsequently, authorisation to conduct the research was also obtained from the Ministry of Education in Zambia (Addendum 5). Even though authorisation was obtained from the MOE, the schools were notified that participation was optional. Those who agreed to participate were asked to provide consent.

A written informed consent form (Addendum 6) was completed in duplicate by the participants. The consent form was in English since the research involved teachers who were able to communicate in English. The purpose of the research as well as the importance of obtaining informed consent was explained to the participants. Only one school refused to participate and their decision was respected. Confidentiality was maintained by ensuring that the participant filled in the questionnaire in private. Only the researcher as well as research supervisors had access to the information. The completed questionnaires were also placed in a sealed envelope immediately after completion and separated from the consent forms. After data capturing, the questionnaires were stored in a sealed envelope and will be kept for a minimum of two years where after they will be discarded.

Anonymity was exercised by ensuring that no names of either a school or the SHN coordinators appeared on the questionnaire. Names will also not be used in future reports or publications. The findings are reported in totality and not per participant. The participants were informed that they were free to withdraw from the research if they felt they did not want to continue.

Furthermore, participants were informed that the information obtained may be used in scientific publications and presentations and that the MOE will also have access to the final report that will be generated from this information. A presentation on the research findings will also be arranged for the participants, MOE and other interested parties. This is, however, dependent on whether the ministry will grant permission for the presentation, since the personnel mentioned above will have to take leave from their work for that day and they may request allowances. If the presentation is not allowed to the stipulated parties, a report will be sent to all involved.

2.7 DATA ANALYSIS

Double capturing of quantitative data was done by the researcher to ensure accuracy. This was done soon after completion of the questionnaires by the participants. Data capturing and analysis was performed by the researcher and Microsoft Excel was used for data entry and storage. Descriptive statistics like column charts were used to present the quantitative data. Further analysis of the data was done by the researcher to investigate any possible differences between

SHN implementation in the urban and peri-urban schools using Stata (the chi-square t test statistical test was used and a statistical significant level of 0.05).

The answers provided by open-ended questions were treated as qualitative data. This data was captured verbatim in a Word document and the researcher performed quality checks on the data by re-reading and comparing the word document with the questionnaires several times, to ensure that all the information was captured accurately. The data was subjected to manual content analysis, following the inductive approach to content analysis.⁸⁷ Segments of text were highlighted and code headings were assigned to aid reporting. The researcher then established codes after careful reading and re-reading of the text. Main themes were then established around the key concepts explored in the questionnaire. Establishment of some main themes was guided by the wording of the questions asked in the questionnaire, since the questions already provided a thematic context.

CHAPTER 3: RESULTS

3.1 BACKGROUND CHARACTERISTICS OF PARTICIPANTS

The study sample included 40 government-administered schools in Lusaka district in Zambia; 16 from the schools in an urban area and 24 from the schools in a peri-urban area. One of the schools from the peri-urban area refused to participate, hence in order to maintain the sample size of 40, another school was sampled from the peri-urban strata. Table 1 shows the demographic characteristics of the study participants who filled in the questionnaire. The participants were mostly female (n=28; 70%) and were older than 30 years. The majority had either obtained a diploma (n=17; 42.5%) or a degree (n=15; 37.5%) with less than five (n=12; 30%) or between 5 and 10 years (n=22; 55%) of experience as a teacher.

Table 1: Demographic characteristics of the participants (N=40) in the study of exploring the status of the School Health and Nutrition Programme in Government administered primary Schools in Lusaka district, Zambia.

Demographic Characteristics	Frequency (N=40)	Percent
<i>Gender</i>		
<i>Female</i>	28	70
<i>Male</i>	12	30
<i>Age (in years)</i>		
<i>20-30</i>	1	2.5
<i>31-40</i>	22	55
<i>41-50</i>	17	42.5
<i>Education Status</i>		
<i>Degree</i>	15	37.5
<i>Diploma</i>	17	42.5
<i>Certificate</i>	8	20
<i>Teaching Experience (in years)</i>		
<i>Below 5</i>	12	30
<i>5-10</i>	22	55
<i>Above 10</i>	6	15

The questionnaire made no provision for the participants to indicate whether they were a SHN coordinator, head teacher or deputy head teacher, therefore comments of the participants were thus reported as a whole and not per the three mentioned categories.

3.2 SCHOOL HEALTH AND NUTRITION COORDINATORS' UNDERSTANDING OF THE SCHOOL HEALTH NUTRITION PROGRAMME, AND THEIR ROLE IN PROMOTING AND IMPLEMENTING THE PROGRAMME

3.2.1 Training provided to coordinators relevant to the School Health Programme

Sixty two percent (n=25) of the participants had received initial SHN programme training from the MOE. This is a training which every SHN coordinator undergoes before they are appointed as one and they are only required to receive it this training once. The training sessions were offered between 2004 and 2009 with the majority of training taking place between 2005 and 2008. After 2008, the number of participants receiving training dropped and none of the participants received SHN training from the MOE after 2009 (Figure 2).

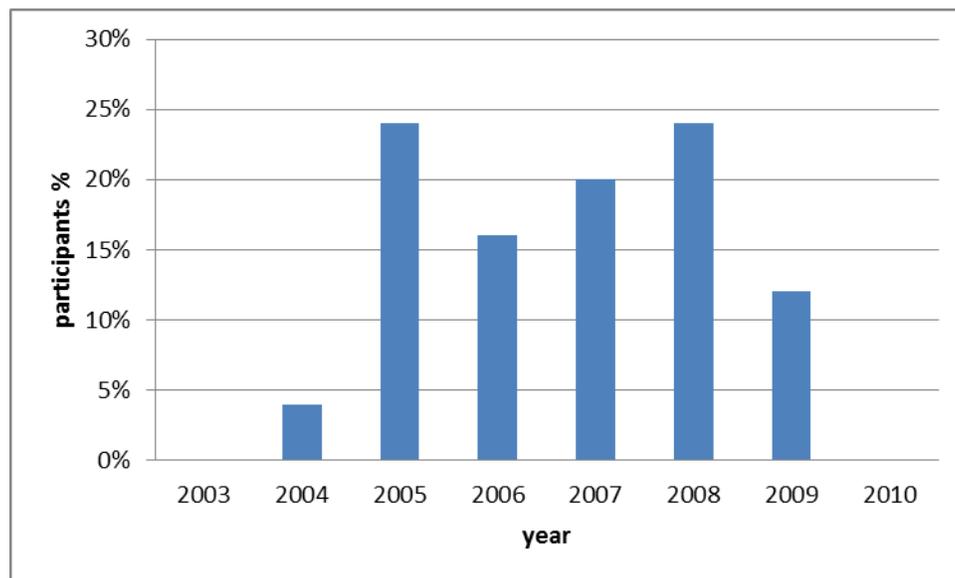


Figure 2: Year the participants (n=25) received training in the School Health and Nutrition programme from the Ministry of Education

The duration of the training was between one day and a week in 16% (n=4) and 84% (n=21) of cases respectively. The SHN coordinators received training on various interventions as listed in table 2.

Table 2: Training received by the SHN coordinators from the Ministry of Education as reported by study participants (n= 25)

Main activity (Domain)	Specific activity
Health	<ul style="list-style-type: none"> • How to identify vulnerable school children (e.g. children infected with HIV/AIDS, malnourished or living in extreme poverty) and provide them with the necessary help they needed (e.g. food, school uniforms and sometimes shelter) • The importance and skills to conduct deworming and how to identify and treat a child with bilharzia (though these activities can only be carried out under the supervision of a health care professional) • Drug / supplements management and administration specifically for pain killers, Vitamin A and iron (ferrous sulphate) supplements, as well as deworming (Albendazole and Praziquantel) medications • The importance and need to keep the school environment clean and safe • How to make a health policy • How to conduct physical examination or basic health check-up on pupils
Nutrition	<ul style="list-style-type: none"> • How to manage a school feeding programme • They were advised to be creative and come up with ventures that can help in raising finances and obtaining food for the feeding programme, like introducing school gardening and planting of

	orchards on the school grounds
Record keeping	<ul style="list-style-type: none"> How to complete relevant administration (such as filling in a SHN form) for the mentioned intervention activities
Health education	<ul style="list-style-type: none"> how to give health talks

As detailed in Table 3, the SHN coordinators (45%; n=18) also stated that they had received training from other ministries, apart from the MOE, like the Ministry of Health (through the clinics), the District Health Management Team and the Ministry of Agriculture.

Table 3: Source, duration and topics of training provided to School Health and Nutrition coordinators by other partnering organisations as reported by study participants (n= 18)

Source of Training	Duration	Topics
Colgate Palmolive LTD (commercial business organisation)	One day	<ul style="list-style-type: none"> How to clean the teeth and the type of tooth brush to use and how to use it correctly Structure of the tooth and the dental formula for the young and elderly people How to suppress bad breath How to take care of milk- and permanent teeth The advantages of using Colgate toothpaste Food important for maintaining healthy teeth and the different types of diseases that attack the teeth
JICA (international government organisation)	A week (5 days)	<ul style="list-style-type: none"> Oral health School health management, data collection and record keeping Treatment of minor ailments Basic use of the first aid box Basics on nutrition and micronutrient supplementation of children, The importance and practice of daily evaluation of school children's health Basic knowledge on worm infestation and immunizations Prevention and treatment of diarrhoea and bilharzia diseases How to formulate a SHN action plan
Ministry of Health (MOH) (Lusaka District Health Management Team - LDHMT)	One day	<ul style="list-style-type: none"> How to administer deworming and bilharzia medications and the benefits of cancer vaccinations (Human papilloma virus (HPV))

CHANGES (USAID Funded programme).	A week (5 days)	<ul style="list-style-type: none"> • Oral health • How to conduct the SHN programme and the different activities to implement under the programme • How to conduct a school feeding programme • How to identify and assist the vulnerable children
Ministry of Agriculture (MOA)	3 days	<ul style="list-style-type: none"> • Basic knowledge on public health nutrition, community nutrition and principles of human nutrition • Nutrition education and health promotion
Unilever (commercial business organisation)	One day	<ul style="list-style-type: none"> • Hand washing and personal hygiene

The partner organisations that provided the training included Colgate Palmolive Limited Company, Unilever and Japan International Cooperation Agency (JICA). Colgate Palmolive was listed as conducting the majority of the training, but most of the participants indicated that it was mainly a way of marketing their products. The training offered by the partner organizations were in line with the recommendations/guidelines formulated by the MOE. According to the coordinator of the SHN programme at the MOE, before training was conducted, the organisation has to get authorisation from the MOE and are required to state what exactly would be included in the training. This study revealed that the organizations mainly offered training in the domain of health, nutrition, record keeping and health and nutrition education (Table 3).

3.2.2 Participants' understanding of the SHN programme

Participants provided various descriptions of their understanding of the SHN programme. The most prominent descriptions were related to SHN being a programme put in place in schools in order to improve the health and well-being of school children, teachers and the community at large. Participants further indicated that it is a programme which was embarked upon by the MOE, to improve on the academic performance of children in schools because it was observed by the MOE that the children's academic performance had greatly declined due to poor health. Some stated a combination of the descriptions above, in that it is a programme which does not only intend to improve on the academic performance but also the health status of the school children through its components or activities. One participant stated the following:

“It is a programme that helps in bettering the lives of school children. It involves school feeding, health education and physical activity.”

Another participant explained that:

“This is a programme that encourages pupils to live in a healthy environment and to look after their bodies well. It ensures that pupils have healthy bodies by eating the right kinds of foods and free from diseases such as bilharzia, anaemia and worms in order for them to participate fully in school activities. A healthy mind will produce good results.”

The other participants indicated that SHN is a programme that was introduced by the MOE with the aim of improving the school enrolment and attendance by helping children, especially the most vulnerable, to attain good health. It was indicated that this can be achieved through activities like the school feeding programme (providing children with foods like soya porridge or nshima^d and beans), deworming and educating the school children on their health and well-being. It is evident from these descriptions that the SHN coordinators were aware of what SHN and its intended purpose was.

In order to ascertain the participants’ understanding of the importance of having an active SHN programme in the school, the participants were asked to explain how they viewed the intended or potential outcomes of the programme. They indicated that the SHN programme leads to an improvement in the health of school children, especially those who are undernourished and have various ailments, which in turn leads to an improvement in their academic performance and reduction in absenteeism from school. It was evident to participants that a healthy and well-nourished child would attend school regularly, pay more attention in class and hence perform better than one who is sick or malnourished. They stated that through the SHN programme the children’s health problems were attended to, and as a result, the health of pupils improves and they do not fall sick as often. Those children that came from poor homes are fed, which

^d Zambian meal made from finely ground maize.

motivates them to attend school regularly. They also indicated that the availability of nutrition programmes was important to the growth and development of the school children.

One participant highlighted the following:

“SHN programme helps the school to have children who will concentrate in class, it also helps where absenteeism is concerned because most of them will report to school knowing that they will be given food.”

The participants asserted that the SHN programme helped in giving guidance to the school children on how they should look after the environment and surroundings. It was felt that it is important to have the SHN programme because school children are trained and educated on various life skills which can help them to improve their lifestyles and also to be self-reliant later on in life.

The participants further expressed that, since the introduction of the programme, they observed that there was a reduction in the number of cases of worm infestation, bilharzia and diarrheal diseases among the school children, as explained by a participant:

“SHN programme helps to provide health education on life skills hence improving the life styles of many Zambians through their school going children. School children are no longer having worms, bilharzia or diarrhoea. Vitamin A supplementation is also provided which is a very vital programme. A healthy child learns better than a sick child who is ever absent due to poor health.”

Among other benefits of having an active SHN programme, the participants wrote that administration of supplements and vaccines was made easier since a large group of children can be reached in one setting and in a short period of time. Children with health problems are also easily identified.

3.2.3 Key role players and their role in the implementation of the SHN programme

The participants indicated that the MOH and MOE are the main key role players in the implementation of SHN. Table 4 contains a detailed description of the key role players and their respective roles. The District Education Board Service (DEBS) under the MOE and the Lusaka District Health Management Team (LDHMT) under the MOH were highlighted as responsible for planning and ensuring the implementation of the programme. The participants stated that these teams were the link between the schools and the two ministries.

Table 4: Key role players in the implementation of School Health and Nutrition programme in schools and their roles as reported by study participants.

Key role players	Roles
Ministry of Education: District Education Board Secretary (DEBS)	<ul style="list-style-type: none"> To provide the schools with funds and resources (SHN guidelines and health books) for the smooth running of the SHN programme. To provide SHN training to teachers. To provide the necessary equipment to be used in the preparation of food and gardening making sure that School Health and Nutrition programme is being implemented in the individual schools
Ministry of Health: Lusaka District Health Management Team (LDHMT, clinics)	<ul style="list-style-type: none"> To provide the necessary drugs (i.e. deworming tablets, drugs for minor ailments) and conduct regular health check-ups on the children. To see to it that deworming, vaccinations and immunisation programmes are delivered in schools and the right dosages is given to the target group. They provide soya powder (HEPS) so that porridge is prepared and given to the most vulnerable children in schools.
Schools (Teachers)	<ul style="list-style-type: none"> To sensitise the children with regards to SHN and administer some important drugs To combat certain minor ailments that affect children.

Furthermore, the participants added that the schools themselves also had a role to play, since they are the ones to ensure that the SHN programme is implemented in the schools. They have the responsibility of lobbying for funds and resources from the relevant ministries and other organizations that partner with them.

Other than the highlighted key role players, the participants stated that children also played an important role. They stated that the children understood that their role was to willingly take part

in these activities because it is for their own well-being and also to transfer or share the information they gain from the programme with their families (child-to-child or child-to-parent health promotion principle). The children also helped with gardening and maintaining a healthy school environment by keeping it clean and safe.

3.3 EXISTENCE OF THE SCHOOL HEALTH AND NUTRITION PROGRAMME IN THE SCHOOLS AND THE ACTIVITIES IMPLEMENTED UNDER THIS PROGRAMME

3.3.1 Existence of the school health and nutrition programme in the schools

The results show that over half of the responding schools did not have a School Health and Nutrition programme in place as only 42.5% (n=17) of the 40 schools sampled were implementing the SHN programme at the time of the research.

Further investigations were done to explore the implementation of SHN in schools located in the urban and peri-urban areas. Figure 3 shows the variation in SHN implementation between the schools in the urban and peri-urban areas of Lusaka district. There were more schools located in the peri-urban area (45.8%; n=11) that were implementing the SHN programme compared to the schools in the urban area (37.5%; n=6). Of concern is the large number of schools located in both the peri-urban area (n=13; 54.3%) and urban area (n=10; 62.5%) not implementing the SHN programme. It is important to note that the differences in population size of the two areas were taken into consideration when the sample was calculated. The difference in SHN implementation between the urban and peri-urban was not statistically significant ($p = 0.601$).

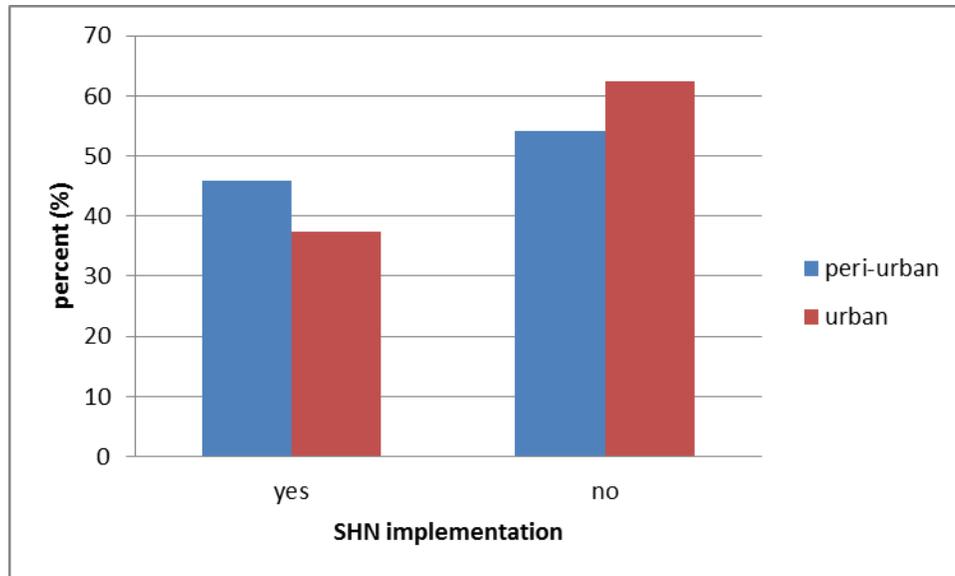


Figure 3: Comparison of the implementation of the School Health and Nutrition Programme in schools in the urban (n= 16) and peri-urban (n= 24) areas

The main reason indicated by the participants for the absence of the SHN programme in some primary schools, was lack of funds and resources available for the implementation of the programme. Primary schools have a free education system therefore they were unable to raise money within the school and the participants felt that it was the responsibility of the MOE to provide the funds and resources required for the implementation of the programme

The participants explained that when the programme was introduced, the school used to receive enough funds and materials, because the programme was funded by a USAID organisation called Community Health and Nutrition, Gender Education Support (CHANGES). However, since the CHANGES project came to an end (2006), the SHN programme started to deteriorate and finally collapsed. This was mainly because the funds made available by the MOE were insufficient and they were unable to provide for the SHN activities.

The situation was exacerbated by the lack of training of SHN coordinators (as reported earlier) and the fact that the MOE was inconsistent in terms of supervising the schools to ensure that the programme is running. This means that if a teacher in charge of SHN is transferred, that particular school remains without a SHN coordinator, because, as one participant explained:

“The SHN coordinator was transferred and the new one hasn't been appointed or trained.”

Furthermore, the SHN programme is not available to all class grades. The majority of participants indicated that the SHN programme targeted grades one to seven (64.7%; n=11) and 5.9% (n=1) of the schools only focused on grades one to four. In other schools, apart from focusing on grades one to seven, they also included the grade eight and nine (29%; n=5) children in the SHN programme.

One of the requirements for an active SHN programme is having a SHN committee, a small group of individuals who assist the SHN coordinator in running the SHN programme at school level. The committee can include the head teacher, teachers, school children's representatives and a few members of the surrounding community and health centres. Others also include their ward chairman or councillors. According to the participants in schools with an active SHN programme (42.5%; n=17), 71% (n=12) indicated having a SHN committee.

3.3.2 Activities implemented under the School Health and Nutrition programme in the schools

Table 5 shows the various activities implemented according to various domains specified in the SHN programme for those schools (n=17) which indicated that they had the programme running. The majority of activities were in the domain of health, with 82.4% (n=14) of the schools implementing various health-focused activities, 70.6% (n=12) of the schools implementing nutrition focused activities and 35.3% (n=6) of the schools conducting health and nutrition education activities. Only 5.9% (n=1) of the schools indicated that they also conducted life skills training as part of the SHN programme, even though the new subject syllabus included life skills training, which is supposed to be taught in all primary schools.

Table 5: Reported activities implemented under the School Health and Nutrition programme in participating schools (n=17)

Main activity (domain)	Specific activities	Specific activities recommended according to the SHN guideline document
Health	<ul style="list-style-type: none"> • Sensitising the school children on good health habits, cleanliness and oral health • The children receive lessons on growth and development in terms of sexuality and reproduction • Children are taught on the risks of initiating sex at an early age e.g. teenage pregnancies, STI's and HIV/AIDS • The schools in conjunction with health personnel conduct activities like deworming, bilharzia treatment, vitamin A and iron supplementation • Children are vaccinated against measles, some type of cancers and other vaccinations recommended by MOH • Drug administration for minor ailments are conducted by teachers • Physical check-ups are conducted on the children very occasionally by teachers and occasionally by health personnel • School children educated each other on health related issues through drama, poetry songs and dance • Inspection of the school surroundings by teachers on duty on a daily basis and ensuring that the toilets and premises are kept clean and conducive for learning 	<p>Vaccination</p> <ul style="list-style-type: none"> • During grade one enrolment, check under five clinic cards for vaccination received and ensure that all children entering grade one receive T.T, measles and other vaccines recommended by MOH • vaccinate all girls above 15 years with t.t and sensitize them on the importance of getting a total of five T.T vaccinations in their reproductive life • Arrange for vaccination of all transfer learners for vaccinations they have not received <p>Physical examination</p> <ul style="list-style-type: none"> • Class teachers are required to carry out a basic (head to toe) physical examination of all the learners before they enter the class room to ascertain their personal hygiene and their health status • The school shall arrange for a health worker to screen the learners at least once a year <p>Treatment and referrals</p> <ul style="list-style-type: none"> • Schools need to have a sick bay • Ensure that basic medicine to treat minor illness are available and teachers are trained in their use to ensure well equipped first aid kit is available • Refer learners to the nearest health care if the condition is serious and if it does not improve after basic treatment • Refer learners with medical formalities which need specialised care • Liaise with parent on health condition their children are experiencing collaborate with health personal, local authority and community in case of major health conditions/ out breaks affecting learners • Encourage parents to put their children on health scheme • Deworm all children at least once a year • Treat children with bilharzia • Ensure trained teachers administer drugs under supervision of a health personal. • To assist and provide psychosocial support to children and parents of children with chronic disease. <p>Environmental health and sanitation</p> <ul style="list-style-type: none"> • Regular supply of safe clean water • Ensuring that Classroom are clean, safe and

Main activity (domain)	Specific activities	Specific activities recommended according to the SHN guideline document
		<p>not over crowded</p> <ul style="list-style-type: none"> • Ensure there are adequate and clean sanitary and hand washing facility that are gender friendly and well sited • Good adequate refusal disposal system • Structures need to be safe for habitation and use • Regular inspection of surrounding, structures, and facilities, and regular maintenance • Collaborate with health personal for guidance on environment sexual health issues and sanitation • Ensure accessible classroom and facilities for children with special education needs • Collaborate with community in maintenance of the school facilities • Guarding against source of pollution <p>Health promotion</p> <ul style="list-style-type: none"> • Ensuring the participation of the community in all health promoting activities • Provision of health promoting information to the community through appropriate committees and outreach activities • Leaners interact with the community to share health issues <p>Assist and manage children with various ailments that include</p> <ul style="list-style-type: none"> • Communicable diseases (T.B, dysentery, cholera, food poisoning, lice, HIV/AIDS , malaria and some skin diseases • Non- communicable disease (substance abuse and chronic diseases such as diabetes, sickle cell anaemia, epilepsy and heart diseases. <p>Safety and emergencies</p> <ul style="list-style-type: none"> • School community need to be trained on how to prevent accidents • School communities need to be knowledgeable about how to handle emergencies • The school should be made as safe as possible with appropriate well labelled exit emergencies • School need to have safety rules formulated and enforced <p>Sexual and reproductive health</p> <ul style="list-style-type: none"> • Teacher to exhibit high moral standards • Leaners understand the physical and psychosocial changes that they may go though • Leaners are taught about growth and development in terms of sexuality and

Main activity (domain)	Specific activities	Specific activities recommended according to the SHN guideline document
		development.
Nutrition	<ul style="list-style-type: none"> • Schools have put up gardens where they grow different types of crops in order to feed the children or sell the produce for fundraising • Feeding programmes are conducted occasionally, during this time children are given either maheu^e and biscuits, soy porridge, porridge with groundnuts or tea and bread • During the rainy season schools plant maize which they feed the children • Iron and vitamin A supplementation are administered as per recommendation by MOH • School children are taught on food nutrition and the importance of adopting healthy eating habits. They are also taught how to prepare healthy meals from the local foods. 	<p>Growth monitoring and promotion</p> <ul style="list-style-type: none"> • In collaboration with health centres provide regular weight and height measuring on all learner at least twice a year • Provide counselling on growth problems and refer cases of serious growth faltering to health and community feeding centres or any organisation offering such services. <p>Micronutrient supplementation</p> <ul style="list-style-type: none"> • Supplementation of learners with vitamin A capsules once a year. • Supplementation of learners with iron tablets as per schedule <p>Food production units(Home Grown School Feeding Programme)</p> <ul style="list-style-type: none"> • Improving feeding and eating practice • Establish a tuck shop which should be selling healthy foods • Ensure food handlers within the school premises are medically fit and practice good hygiene. • Ensure all vendors are oriented on hygiene and sanitation so that the food sold in the school is appropriately prepared, packaged and stored.
Health and Nutrition Education	<ul style="list-style-type: none"> • A class subject has been introduced where school children are taught basic principles of nutrition, how to prepare nutritious meals and other health and nutrition related topics • School children are given talks on good health habits, personal hygiene, oral health, hand washing and keeping the school surroundings clean. Schools do this once a week at parades or assembly • The school children educate one another on health issues through drama, poetry, songs and dance 	<ul style="list-style-type: none"> • Initiate nutrition clubs in schools and communities. • Revitalise the Child to Child methodology to disseminate health and nutrition information • Apply the integrated method of teaching SHN issues as identified in the curriculum frame work document • Teach learners basic health and nutrition principles • Teach learners importance of personal hygiene and good grooming • Educate learners and the community on how to read and understand food labels and symbols and how to make good choices when buying food • Educate learners on healthy eating habits in order to avoid becoming under or overweight •
Record keeping	<ul style="list-style-type: none"> • The schools only keep records on when mass activities like vitamin A, iron supplementation and deworming is conducted by MOH. 	<ul style="list-style-type: none"> • Ensuring a SHN card is kept for each child in all school grades • All the required vital statistics of the school health record for all the learners are filled in

^e A locally produced beverage, made out of fermented maize starch and milk.

Main activity (domain)	Specific activities	Specific activities recommended according to the SHN guideline document
		and updated as necessary.
Life skills	<ul style="list-style-type: none"> • The new introduced class subject teaches children crafts and needlework. • Children gain gardening skills from helping out in the school garden 	<ul style="list-style-type: none"> • Learners are to be equipped with psychosocial , practical, vocational and entrepreneurship life skill • Stakeholder participation in teaching life skills

For implementation of these activities the participants stated that they referred to guidelines provided by the MOE through the DEBS. Some schools referred to the materials made available to them by other partners like the clinics, and others used hand-outs or booklets provided by organizations like JICA. When comparing the activities listed by the participating schools and those listed in the SHN guidelines of the MOE, it was evident that not all the activities were implemented in the schools. For some domains nothing was mentioned as being implemented like the domain of guidance and counselling. The services to be offered under the guidance and counselling programme included counsel related to issues on reproductive health, dangers of sexually transmitted infections, HIV/AIDS, substance abuse and other issues that may have a bearing on the health and nutrition status of the school children.

3.4 THE CHALLENGES AND POSITIVE RESULTS IN RELATION TO IMPLEMENTING THE SCHOOL HEALTH AND NUTRITION PROGRAMME

3.4.1 Challenges

Participants were asked to explain the challenges the school were facing, if any, in relation to implementing the SHN programme. They stated that they faced a number of challenges; the most common of these being the insufficient grants or funds, inadequate manpower and parental resistance.

In relation to funds the schools normally received a lump sum of money from the MOE which they allocated to various activities for the smooth running of the school. The funds are allocated to different activities, including school administration and the SHN programme. Some schools gave an example of where they were only able to allocate about K100 (equivalent to 700 ZAR), quarterly to the programme. For this reason some programmes, for example the feeding

programme, were done occasionally. One school stated that the food is only enough for emergencies like when a child collapses in class due to hunger and for the vulnerable children they have identified. Participants also stated that they had a lot of vulnerable children in these schools and the little funding they receive, was not enough to cater for even a quarter of them.

There was also not enough manpower to help with some activities, for example preparation of meals for the children. Since the teacher in charge of SHN is first and foremost required to teach, they are normally left with little or no time to oversee the preparation of the meals. Also, physical examination of the school children by the teachers is a challenge especially in those classes with over 80 children. One participant explained the challenges as follows:

“The programme requires a lot of time especially during deworming and it is difficult as I have a class to teach, the programme is voluntary as there is no incentive attached to it and somehow discouraging. The enrolment is rather too high and it is tiring, the school has about 2 450 pupils.”

The participants added that some parents had a negative attitude towards general examination of their children and drug administration therefore they prevented their children from taking part in such activities. This resulted in some children not being part of the deworming programme, physical check-ups and administration of vaccinations. Access to water and good sanitation was a challenge in a large number of schools, some schools didn't have a constant supply of water and they also only had a few hand washing points and toilets as compared to the number of children in the school. One participant summarized various challenges as follows:

“We are having challenges on how we can handle the vulnerable pupils who come to school on empty tummies, we need to feed these pupils (nutrition). On oral health - it's a challenge - as much as we teach the learners to brush teeth, the response is negative. School population is too big against few toilets in school - water and sanitation is a challenge.”

3.4.2 Positive results

The participants who had an operational SHN programme in their schools (n=17) were asked to indicate whether the SHN programme had, in their opinion produced positive results and the majority (87.5%; n=15) indicated that they had observed positive outcomes from the SHN programme.

Examples of positive outcomes reported by participants included the improved pass rate and school performance of the children. Participants also observed that the children concentrated better in class and attended school more regularly. Enrolment of the school children had increased. It was observed that the attitude of the children towards health matters had changed as they developed a positive attitude towards their own health.

Additionally, children acquired some life skills like gardening, they became aware of the negative effects of drug and alcohol abuse and the importance of having or living in a clean environment. Improvement in children's health was evident from the reduction of diarrheal diseases, due to the cleaner school environment. There was also a reduction in the number of children falling sick from minor ailments, due to drug administration campaigns.

It was encouraging that the health knowledge gained by the children was being transferred to the community. Some parents thanked the schools for conducting activities like deworming and they also mentioned that they had observed a reduction of diarrheal disease among their children. One participant listed a number of positive outcomes:

“There is change of attitude towards health matters (positive), reduction in absenteeism due to minor ailments, worm infections are reduced because learners are dewormed, reduction of accidents at school because the environment is safe every day, dental disease are reduced pupils have learnt to brush their teeth with Colgate; pupils in general look healthy, they are taught the best food to eat hence they are healthy. We have good supply of fresh water and learners have learnt to wash hands with soap regularly.”

These positive outcomes were, however, subjective opinions of the participants because they did not have baseline data before and after implementation of the SHN to measure improvement of these positive outcomes.

3.5 REPORTING FROM SCHOOLS ON SHN PROGRAMME ACTIVITIES

According to the SHN guidelines schools are required to submit feedback about the activities of the SHN programme to various officials or authorities. The majority (n=13; 76.5%) stated that they provided feedback to the DEBS office under MOE annually. One participant mentioned submitting feedback to their local clinics, one school submit feedback to their local clinic once every quarter and another one stated they submitted to the school head teacher or principal. Two schools indicated that they did not submit feedback at all.

CHAPTER 4: DISCUSSION

4.1 INTRODUCTION

School Health and Nutrition (SHN) programmes have been in existence in Zambia even before independence (1964).⁹ Unfortunately, there is no consistency in the continuation of these programmes. There were periods when the programme was widely implemented or active in almost all schools in the country and there were periods when the majority of schools stopped implementing it.⁹ From 1964, the Ministry of Health (MOH) used to provide services like physical examination of school children, treatment of ailments and referral when appropriate, inspection of immunizations scars to determine if the child has received some of the relevant immunisations and micronutrient supplementation to school children, but this ceased with time.⁹

In 2001, the MOE and MOH signed a letter of understanding in which they stated the aim of reviving the SHN programme in Zambia with various measures and activities put in place, which were supposed to continue to be functional.⁸⁴ With this backdrop, it was deemed necessary to explore the current status of the implementation of the SHN programme in government-administered primary schools in Lusaka district in Zambia. This study provides an indication of where the district is in terms of SHN implementation and the information could prove to be useful to the MOE, who are the initiators of the programme. The information gathered could inform the MOE about which activities are working and which ones are not. They could also use this information to lobby for some funds from government, international organisations and the private sector.

4.2 THE PURPOSE OF THE SCHOOL HEALTH AND NUTRITION PROGRAMME

Study participants on School health and nutrition training and importance

The main aim of this study was to explore the implementation of the School Health and Nutrition (SHN) programme in government-administered schools in Lusaka District in Zambia, from the SHN coordinators' perspective. The school SHN coordinators were the main participants of this study, but the head teachers and deputy head teachers were included for those schools without an active SHN programme and a coordinator. This was done so that they could report accurately on

the current status of the SHN programme in the schools. Before a teacher is appointed as a SHN coordinator, they undergo training from the MOE which reportedly mostly lasted a week.⁸⁴

The study revealed that before 2009, the MOE used to offer the SHN training frequently and therefore the majority of the participants had undergone the training. As such, the SHN coordinators were knowledgeable about what the programme entails and what it intended to achieve. The participants stated that the SHN programme is a combination of activities implemented in schools with the aim of bettering the health of the school children and thereby improving their school attendance and performance. The SHN coordinators in this study understood and clearly expressed that schools are a good setting to introduce health and nutrition interventions because a large group of children can be reached in one place and over an extended period of time, and it can also be used as a means of conveying health and nutrition information to the community.

In line with this, a number of studies in different parts of the world have shown that the various activities implemented under SHN programmes improve school children's school performance and reduce absenteeism.^{87,88,89} According to a systematic review, studies have shown that school children very often will share the information they receive at school with their families, increasing the reach of SHN programmes beyond the school.⁹⁰ Jomaa et al.⁹¹ stated that one of the motivations for establishing SHN programmes (especially school feeding programmes) is to provide targeted families and their children, especially girls, an incentive to attend school. Various studies have also concluded that the SHN programmes can be a powerful instrument for achieving many multi-sectorial benefits like education, gender equality, food security, poverty reduction, nutrition, health and agricultural development.⁹² This corresponds with various Sustainable Development Goals (SDG's) such as no poverty (SDG 1), zero hunger (SDG 2), good health and wellbeing (SDG 3), quality education (SDG 4), gender equality (SDG 5) and clean water and sanitation (SDG 6).^{4,5}

Key role players in the implementation of School Health and Nutrition programme in Lusaka district

It was observed in this study that various key role players were working together to ensure the success of the SHN programme. Initially the SHN related activities were perceived to be the responsibility of the Ministry of Health (MOH) since these SHN activities are health inclined.⁹ The MOE and MOH started working together (2001) and became the key role players in relation to SHN implementation.⁸⁴ Specifically for Lusaka district, it is the District Education Board Secretary (DEBS) under MOE and Lusaka District Health Medical Team (LDHMT) under MOH that work together. Unfortunately, the majority of the participants believed that the MOE is not adhering to their obligation of providing funds and materials and ensuring that the programme is implemented in the schools, hence the schools also don't put in much effort towards implementation of the programme. The schools need to be aware that it is not merely the responsibility of the ministry to ensure that the SHN programme is active in the school but the responsibility of schools as well. The schools have the responsibility of ensuring that the SHN programme is successfully run in the schools and to follow up with the two ministries when there is a delay in the delivery of services. In this way schools can hold the ministry accountable.

4.3 CURRENT STATUS OF SHN IMPLEMENTATION AND VARIOUS ACTIVITIES IMPLEMENTED

The SHN programme is one way of overcoming the burden of malnutrition among school children through its various activities. Unfortunately, this study revealed that there were a large number of schools not implementing the SHN programme both from the peri-urban and urban areas. Those implementing the programme are equally not conducting all the activities. Thus they are missing the opportunity to benefit from the positive outcomes of SHN and also to contribute to achieving some of the SDGs. Currently some activities are non-existent in the schools. There was no statistically significant difference in terms of SHN implementation between schools located in the peri-urban areas and those in the urban areas and since schools located in the peri-urban areas (informal settlements) have higher numbers of less privileged children it means the children from those schools could be worse off in terms of need for services.

Activities implemented under the SHN programme

According to the guidelines provided by the MOE,⁸³ the SHN programme is a combination of various activities and these activities are grouped into six main domains, including health, nutrition, health and nutrition education, record keeping, life skills and guidance and counselling services. It was observed that most of the activities the schools implemented fell under the health domain. The schools were conducting the vaccination campaigns and according to the results of this study, this programme was well implemented in the schools.

Health intervention

The MOE is working with the MOH to attain this objective, the schools have specific periods when the nurses from nearby health centres come and conduct the activity simultaneously in all schools in the district. School-based vaccination and immunization programmes are important because it is one way of reaching older children and adolescents with vaccination services, especially with the availability of newer vaccines [e.g. human papillomavirus (HPV)] and greater attention to provide booster doses of routine vaccines to older children (e.g. Diphtheria Tetanus Pertussis (DTP), 2nd dose of measles).⁹³ The schools also have successful deworming programmes. This activity is vital because literature indicated that worm infected children become physically, nutritionally and cognitively impaired, and therefore their educational performance and school attendance is affected.³⁵ Worm infestation is also known to lead to internal blood loss which can lead to anaemia, as well as under nutrition due to loss of appetite and increased malabsorption of some nutrients among the affected.³⁸

Physical examination is another activity that falls under the health domain. This activity helps in identifying early health warning signs and ailments among school children. Some of the signs checked for include malnutrition, micronutrient deficiencies, hearing, speech and vision problems and whether children have undergone immunization.^{2,3} It was observed that this domain of the SHN programme is not well implemented in the schools. It is up to the teachers to conduct this activity, but unfortunately the number of children in a class could be up to 80 learners. One teacher cannot manage having to physically examine each child and then also teach. According to the SHN guidelines it was suggested that the teacher examines every child before entering class. The mode of delivering of this activity should be re-evaluated to make

practical suggestions for its implementation. A similar structure for this activity could be as for deworming and vaccination by dedicating an entire day to this activity and also bringing in the health professionals from the nearby clinics to assist.

Ensuring a safe and healthy school environment is among the activities that fall under the health domain. This study revealed that the majority of schools don't have a constant supply of water, enough hand washing points and toilets. According to a survey done by UNICEF in 2004, more than 25% of the basic schools in Zambia did not have access to a safe water supply and sanitation.⁹⁴ Poor water, sanitation and hygiene (WASH) can lead to malnutrition.⁹⁵ The link between WASH and malnutrition is evident from research conducted in India. The data from studies pointed out that the widespread practice of open defecation is one of the leading causes of India's high levels of malnutrition.⁹⁵ Children who come from communities that lack access to clean water, toilets and hygiene are susceptible to repeated exposure to bacteria and parasites that either cause diarrhoeal disease or damage the small intestines and reduce their capacity to absorb nutrients.⁹⁵ Repeated and prolonged diarrhoea causes under nutrition and it also reduces resistance to infections and impair growth and development among children.⁹⁵ Evidence also shows that poor sanitation and hygiene can lead to stunting and that effective WASH interventions are vital for improving nutritional status.⁹⁶ Research on the effect of toilets constructed in India's national Total Sanitation Campaign found that there was a reduction in stunting in the districts where the campaign was implemented comparable with the average impact of other health and nutritional programmes.⁹⁵ A meta-analysis done by Ejemot et al. showed that hand washing with soap can reduce the incidence of diarrhoea in children under five by 37 to 48% .⁹⁷ The schools in this study tried to keep the school surroundings and the toilets clean but more needs to be done. According to the findings of this study the schools are conducting most of the activities under the health domain though there is room for improvement, especially with WASH related activities.

Nutrition intervention

Nutrition intervention is another important aspect of the SHN programme. Zambia is one of the countries faced with the challenge of high levels of nutrition related illnesses.⁹⁸ Under nutrition is a major concern which poses a serious threat to the wellbeing of many. The most recent

Zambia Demographic and Health Survey (ZDHS), carried out in 2007, revealed that 45% of children under the age of five were stunted, 5% wasted, 15% underweight, and 8% of children were estimated to be overweight.⁹⁸ Another form of under nutrition the country is struggling with, is the micronutrient deficiencies which affects mainly women of child bearing age and children under the age of five in Zambia. The most common of these deficiencies are iron, vitamin A and zinc which manifests in anaemia, night blindness and zinc deficiency.⁹⁸ It is evident that nutrition intervention is very relevant considering that the complications children suffer due to the ailments continue even in their later years and the knowledge children gain in school will help them make better health and nutrition decisions for themselves and their children later on in life.¹⁴

In addition, some schools in this study had successful micronutrient supplementation programmes mainly for vitamin A and iron (ferrous). This activity is done in collaboration with the health care professionals at least once a year. Some of the aims of this intervention are to reduce the prevalence of anaemia among the children, boost their immune system as well as vision. These activities are necessary especially considering that more than half (54%) of children under the age of five are still vitamin A deficient and 53% of children under five in Zambia are reportedly affected by iron deficiency anaemia.⁹⁸

Schools in this study set up food production units (school gardens) and the harvest from these gardens are either used to feed the school children or sold to raise money to buy food for the children. However, according to the participants the food obtained from these units is not sufficient to feed all the children included in the SHN programme, hence this feeding only occurs occasionally. In some schools the feeding only occurs during emergencies, for instance when a child collapses in class due to hunger or it is limited to the vulnerable children they have identified. According to literature, in poor countries, school meals are often the only regular and nutritious meal a child receives. Without them, hunger and micronutrient deficiencies can cause irreversible damage to their growing bodies.²¹ A systematic review of school feeding programs by Kristjansson et al. based on 18 studies, concludes that school meals have significant benefits for disadvantaged children as measured by indicators of physical growth and cognitive abilities provided it is adequate.⁹⁹ Some countries have successful school feeding programmes because of

their government's involvement, e.g. India which has a long tradition of a successful school feeding programme largely supported by their government.¹⁰⁰ Brazil is among the countries with the largest school feeding programme covering over 37 million children each year. This programme is included in their country's national constitution, and is part of the government's Zero Hunger Programme.¹⁰⁰ The MOE in Zambia is currently not providing any food for the feeding programme in the district. Therefore there is a need for the government to be more involved by providing funds and food for this programme to be a success, since the schools are not managing to do so on their own.

The researcher observed that there are other nutrition intervention activities that do not exist in the schools but are present in the SHN guidelines. They include schools not performing growth monitoring of children and the lack of a health policy that includes documented guidelines on what types of food is to be sold in the tuck shops. It was observed that the schools have tuck shops which are normally rented out to vendors, however none of the participants mentioned of having a policy that state what kinds of food is to be sold and what kind of vendors are allowed in the school. None of the participants mentioned having such policies. Implementation of such a policy is an important nutrition intervention activity in schools, since studies have shown that there is an association between the type of food sold in school tuck shops and the children's Body Mass Index (BMI). Selling of more nutritious foods (e.g. dairy products, fruit, vegetables) and less junk food (high energy and low nutrient foods) on the school premises not only reduce the prevalence of overweight and obesity among the school children but also has the potential to contribute to the nutrient intake of under nourished children.²⁶ It is therefore clear that in the domain of nutrition, a lot more focus and attention is required from all role players.

Health and physical education

In 2014, some modifications were done to the "Home Economics for primary schools" subject and children should be taught on various SHN related issues like food and nutrition, health education and skills (needlework and crafts), starting from grade one to seven.¹⁰¹ Physical education is also included and during this time the children engage in outdoor exercises which are normally done once a week.¹⁰¹ Physical education is an important aspect of SHN since it is necessary for children's development and ensuring good health by curbing overweight and

obesity, which are a growing public health concern among school children.^{47,48} It is crucial that the content of this subject is implemented optimally thus schools still require the support of the MOE to meet his requirement.

Good nutrition practices come about when children acquire knowledge and skills at an early age and develop into healthy and productive adults. A study by Ruzita et al.³¹ on the effectiveness of nutrition education in primary schools showed that a good nutrition education programme has a positive impact. The children from schools that participated in that study were described as having good nutrition knowledge, attitudes and healthy eating habits.³¹ According to the findings of this study the schools are effectively implementing the health and nutrition education programme. They are also practicing the child-to-child methodology to disseminate health and nutrition information to peers and families. However, it was observed that there are other recommended activities that could to be implemented, like initiation of nutrition clubs in schools and the community, which are not present.³¹

School Health and Nutrition record keeping

The health and nutrition record keeping programme is partially implemented in the schools in this study as they only keep records on when they conduct health and nutrition activities like vitamin A, iron supplementation and deworming. Initially when the SHN programme was introduced, every child used to have a School Health and Nutrition card (Addendum 7).⁸⁴ This card was used for recording physical examination results, drugs, supplements and vaccines the child received since they enrolled in grade one until they reach grade seven. This card was very helpful during referral procedures, for providing part of the medical history of the child and keeping track of when the child received micronutrient supplements and deworming.⁸⁴ Therefore this is an important activity which the MOE should ensure that schools reinstate, because it is difficult to track who has received deworming and micronutrient supplementation, especially if some learners were absent on those days of administration.

Life skills training and counselling

Life skills is a group of psychosocial competencies and interpersonal skills that help people make informed decisions, solve problems, think critically and creatively, communicate effectively,

build healthy relationships, empathise with others, and cope with and manage their lives in a healthy and productive manner.¹⁰² Research shows that life skills-based health education promotes healthy lifestyles and reduces risky behaviour. It's proven to help in preventing peer rejection and bullying, teaches children to control their anger, promotes positive social adjustment and reduces emotional disorders among children.¹⁰² It has also proven to lead to an improvement in health-related behaviours and self-esteem among children and an improvement in their academic performance.¹⁰² According to the SHN guidelines provided by the MOE (Zambia) the school children are supposed to be equipped with psychosocial, practical, vocational and entrepreneurship life skills.⁸³ The finding of this study indicated that the schools are focused only on practical and vocational skills which are gardening, crafts and needlework thus the psychosocial competencies and interpersonal skills may not be developed optimally. The WHO have advised that the teachers can impact psychosocial skills through activities like small or large group class discussions, role play, debates, situation analysis or case studies, games and storytelling to mention a few.¹⁰²

School counsellors provide counselling programmes in three critical areas: academic, personal/social, and career. Their services and programmes help children resolve emotional, social or behavioural problems and help them develop a clearer focus or sense of direction.^{83, 103} According to the guidelines, the schools are required to provide guidance and counselling to the children in various areas. The most common being on HIV/AIDS, substance abuse, reproductive health and the dangers of sexually transmitted diseases.⁸³ Research shows that school counselling interventions have a substantial impact on children's educational and personal development.¹⁰³ A study done by Gerler et al. on the effects of counselling on classroom performance found that the underachieving children who received counselling improved significantly on the self-rating scale of classroom behaviour and in mathematics and language arts grades.¹⁰⁴ According to the finding of this study the guidance and counselling programme is not well implemented; it is not even included as part of the SHN activities as required by the guidelines and none of the participants mentioned having any certified counsellors in the school.

According to the guidelines provided by the MOE, the schools were encouraged to include or structure the activities in a manner that relates to the problem faced by individual schools.^{83,84} It

was assumed that some schools would have challenges that may not be applicable in other schools, especially differences due to location (urban and peri-urban areas). According to the findings of this study none of the schools mentioned implementing any unique activity other than those outlined in the guideline.

4.4 FACTORS HINDERING THE IMPLEMENTATION OF THE SHN PROGRAMME IN SCHOOLS AND THE CHALLENGES FACED BY SCHOOLS IMPLEMENTING THE PROGRAMME

The schools included in this study face a number of challenges in implementing the SHN programme, and it was observed that the challenges are similar in all the schools. The participants highlighted that the challenges mostly include insufficient funds and resources to run the programme, high employee turnover, lack of manpower to help with the SHN activities, fears by parents to allow their children to be part of the vaccination and micronutrient supplementation programme and lack of support from school administration. Financial constraints were the main reason for sub-optimal implementation of the SHN programme. The funds the schools received from external sources, like the MOE, are generally not sufficient to enable schools to conduct the SHN activities optimally. To supplement the shortfall, the MOE suggested that schools put up orchards and gardens to produce food for feeding the children and funds to finance other activities.⁸⁴ Unfortunately this is not a realistic option as a school can only plant on a small scale due to limitations in terms of land and resources. Therefore the harvest is quite small and certainly not enough to provide children who are mostly undernourished with adequate nutrition on a continuous basis. Gardening is also done mainly by the school children after classes, therefore not much can be achieved with the gardens. Furthermore, unlike the secondary schools, the primary schools cannot generate money from within because of the free education policy. It is important to state that primary schools are independent from secondary schools, hence the funds raised in secondary schools are only used within the secondary schools and not for the benefit of primary schools.

Some participants stated that the SHN programme began to decline when external funding came to an end. One of these sources was CHANGES, which was a USAID funded project that helped to resuscitate the SHN programme and the agreement was that they would help formulate the

guidelines and fund the programme until such a time when the ministry would be ready to take over.⁸⁴ The duration of the funding obtained from CHANGES was from 2001 to 2005.^{84,85} Unfortunately, when the CHANGES programme ended, the ministry could not maintain the programme for long. It is a common problem for programmes to cease when funders pull out.¹⁰⁵

The government of Zambia need to take ownership of this programme if it is to succeed. Commitment to revive the SHN programme was made in 2001⁸⁴ but has not been fulfilled. The commitment needs to be backed with action in which the schools or even the community could be held accountable. School score cards could be introduced and government could insist on consistent feedback from the schools. It would also show commitment by government if the SHN programme was included in the national budget. Then the schools won't have to rely on the little money they receive from the school administration for the SHN. Some countries (such as India and Brazil) have successful SHN programmes because the programme is included in the countries national agendas.¹⁰⁰

Lack of research and data on the impact of the SHN programme among school children and the community in Zambia also adds to non-commitment of the ministry (government). According to the guidelines provided by the MOE, the schools are supposed to conduct evaluations on the SHN programme and submit reports to the ministry. Even though the participants in this study stated that they have observed positive outcomes of the SHN programme there is no documented data to back that up due to lack of reporting.

The schools face the challenge of a high employee turnover. When a SHN coordinator is transferred, a void is left since the MOE is not training as many SHN coordinators as they used to. For the effective running of the SHN programme, there is a need for coordinators to be equipped with the necessary skills and knowledge. Therefore, the MOE's decision to stop providing such training is a major disadvantage to SHN implementation.

The lack of manpower to help with the preparation of food for the children has also proven to be a challenge for those schools that conduct the feeding programmes. Normally the SHN coordinator is supposed to oversee the preparation of the food, but this becomes a challenge

since the coordinators are also teachers whose first priority is to teach a class. The other challenge is that being a coordinator does not come with any incentives, hence most SHN coordinators are not motivated to conduct the required duties. There is a need for the MOE to engage people who will be responsible for the preparation of the meals. These people need to be trained in food storage and preparation and most importantly, food safety in order to avoid food hazards. The participants also suggested that the school administration should consider providing incentives to the SHN coordinators as motivation considering that they take on extra work.

Vaccination and micronutrient supplementation are one of the best ways parents can protect infants, children and teens from potentially harmful diseases. The participants stated that they face challenges during drug administration, macronutrient supplementation, vaccinations and the exercise of physical examinations. Some parents refused to give consent for their children to participate, hence there are a number of children missing out on such activities. To overcome this challenge, some countries (Ontario and New Brunswick provinces in Canada) have instituted laws which state that for a child to be admitted to school they need to be vaccinated.¹⁰⁶ The community members on the SHN committee can also assist the schools in overcoming this challenge by being part of the drug administration exercise and helping with sensitising the community on the services or drugs schools intend to offer to children as well as their benefits. UNICEF recruits community members (mainly religious leaders) to take part in vaccination procedures and they have said that this approach is quite effective in convincing the community to allow their children to take part in such health related interventions.¹⁰⁷

Finally, the last challenge identified is the lack of support from the school administration, since the onus for the administration of the SHN rests upon the coordinator, especially for the schools without a SHN committee. According to the recommendation from the MOE the schools are required to have a SHN committee, which comprises of representatives from the ministries like MOH, MOE, MOA, Ministry of Local Government and the Ministry of Community Development, Mother and Child Health. It also needs to include the head teacher, the SHN coordinators, a teacher, pupil's representatives (mainly the head boy and head girl), a health worker from the local health centre and a few community representatives.⁸³ Putting up structures which clearly indicate the role of each committee member can help overcome this challenge.

According to findings of this study, the SHN programme in the government administered schools in Lusaka District is not as active as it used to be between 2001 and 2009, when it was reinstated. At the moment many schools do not have a SHN programme in place, and for those still implementing the programme, a large number of activities have ceased to exist. The remaining activities run the risk of ceasing because of limited funds, resources and manpower.

Aggressive sensitization backed with evidence is necessary to grab the government's attention and raise awareness about the expressed concerns. Efforts to overcome the challenge of malnutrition among school children through the SHN programme will require resources and political will. There is a need for schools to gather data on the positive outcomes of the SHN programme in the Zambian schools as well as the resources required for the programme to succeed. Emphasis has to be put on the effects of poor health and nutrition on children's ability to learn and its influence on long term performance. In developing countries high poverty levels contribute to children's poor health, therefore to avoid long-term costs of impaired academic functioning, children from poor households should be targeted for additional resources aimed at remediating early childhood environments. In 2010 it was estimated that about 60.5% of the Zambian population live below the poverty line. This implicates that there are many children affected by poverty, and this makes a case for the relevancy of a programme such as the SHN programme for the country.

CHAPTER 5: CONCLUSION

Murray et al. stated that the evaluation of school health programmes is challenging to conduct due to issues related to sample size, recruitment, random assignment to condition, implementation fidelity, costs and adequate follow-up time. However, school health programmes hold promise for improving academic outcomes for children.¹⁰⁸ In this study, the SHN programme coordinators were found to be knowledgeable about the SHN programme and could well articulate the importance of the programme. They were also aware of their roles and the role of various parties in the implementation of this programme. Before they were appointed to be in charge of the programme, the SHN coordinators underwent one week training by the MOE. They were trained on various activities, including how to run a SHN programme, what programmes to implement and how to go about doing that. However, few schools were still implementing the programme and many schools were not.

The schools implementing the programme were also not implementing all the recommended activities outlined in the SHN guideline hand book provided by the MOE. Schools not implementing the SHN programme reported that it was mainly due to a lack of resources and inconsistency by the MOE in following up with the schools to ensure that they are implementing the programme. Despite the challenges, the SHN programme has reportedly produced positive results as seen by the reduction of illnesses among the children and improvement in school attendance and pass rate of the children.

5.1 LIMITATION AND RECOMMENDATIONS

5.1.1 Limitations

It would have been ideal to conduct the study for the whole country but due to time limitation and other logistical constraints, including long distances and finances, it was only possible to conduct the study in one district of Zambia. The findings can therefore not be generalised.

It was observed that the schools offer health and nutrition related activities which are not listed as part of SHN programme. Therefore, when the SHN coordinators were asked to state the SHN

activities being implemented, they would only include those which are listed as part of SHN and which they are in charge of. As a result not all the school health and nutrition related activities were captured. For example, the schools have a guidance and counselling teacher, but when the SHN coordinators were asked to list the SHN activities, guidance and counselling was not always included.

The study population was small, therefore the findings cannot be generalised. There were also limited comparisons that could be done, hence in-depth statistical analysis of data was not possible.

The provision to include the participant's position (SHN coordinator, head teacher or deputy head teacher) was not provided for on the questionnaire. This resulted in missing out on valuable information, for example, how many of the participants were SHN coordinators, head teacher and deputy head teachers.

The actual implementation of reported activities were not assessed, checked or audited in this study, which could have provided some valuable information.

There could have been some response bias in some questions for instance, when the participants were asked to recall the training they received on SHN from the MOE, some had done so 10 years ago.

5.1.2 Recommendations

The MOE needs to intensify sensitization about the need and importance of the SHN programme to government, so that adequate funding can be provided. If possible, government should include the SHN funding in the national budget especially since improving the nutritional status of the citizens is currently top priority for the government. This is necessary because most activities cannot be implemented without funding e.g. the feeding programme, printing of the SHN cards and SHN coordinators trainings, to mention a few.

The MOE and schools should explore the possibilities of a private /public partnership to support the programme. Private companies can offer approved products (through the ministries involved) and give talks to the children and teachers. If more companies would engage in this gesture, the schools could have access to funds, food products and other supplies necessary for the running of the programme.

Though the schools are putting in efforts to ensure the continuation of the SHN programme, it is evident that the programme is not as active as it used to be when it was introduced. It is imperative that the MOE re-evaluates and ensures that all schools are implementing the programme and that they put in place policies that will ensure the continuation of the SHN programme. The MOE also needs to train more SHN coordinators because there seem to be a shortage of SHN coordinators in Lusaka district.

There is a need for the schools to advocate for better WASH services, reinstate the SHN card programme as well as the guidance and counselling programme in the schools to ensure all the health benefits these interventions can offer.

Frequent evaluation of the SHN programme (positive outcomes), both short term and long term, is needed both by the MOE and the schools so that they have evidence when advocating for funding and that they are not merely relying on subjective opinions of the SHN coordinators.

The SHN coordinators and the members of the SHN committee need to intensify sensitization on SHN to the communities in order to help lessen the resistance amongst parents who do not allow their children to take part in some SHN activities. Involving the community members in some of the SHN activities can help parents be comfortable with activities like drug administration.

The MOE or the schools should consider employing people to be in-charge of meal preparation and inspection of the feeding programme. This will reduce the work load on the SHN coordinator.

It is recommend that a similar study is conducted that focuses on the MOE's perspective on the current status of SHN implementation in the schools. This will investigate whether they are aware that the programme is not widely implemented in Lusaka district and help in knowing if the MOE have put in place measures to ensure continuation of the programme in the schools.

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ADDENDUM 1: PARTICIPANT'S QUESTIONNAIRE

PLEASE READ THE INSTRUCTIONS BEFORE ANSWERING THE QUESTIONS.

1. All information on this questionnaire will be kept **confidential** and **anonymous**.
2. **DO NOT** put your name or address on it in order to maintain anonymity.
3. By completing this questionnaire you are giving consent to your participation.
4. Mark all relevant answer with a tick.
5. For the questions that are open ended (those with longer answers) please provide full descriptions or explanation. Your frank opinion is important to us. There are no right or wrong answers, it's your opinion or perception that is of interest to us.

Official use only

School number:

Participant number:

Date.....

1. What is your gender?

Female

Male

2. What is your age

20 - 30

31- 40

41 - 50

Above 50

3. What is your highest level of education?

Certificate

Diploma

Degree

Master's degree

PHD

Other specify.....

4. How many years of teaching experience do you have?

Below 5

5 – 10

Above 10

5. Have you received the initial School Health and Nutrition programme training from the ministry of education?

Yes

No

6. If you have been trained, when did you receive this training? Please indicate the month and year

7. What was the duration of this training?

One day

A week

A month

Other specify

8. List the main activities that were included in the training?

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9. Have you received any other SHN training from other organisations or ministry?

Yes

No

If you answered no to question 9, please proceed to question 13. If you answered yes to question 9 proceed to question 10.

10. If you have which organisation or ministry conducted the training?

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11. What was the duration of your training?

One day

A week

A month

Other specify

12. List the main activities included in the training?

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13. Explain what you understand, about the School Health and Nutrition programme?

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14. According to your understanding, what is the importance of having a School Health and Nutrition programme?

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17. Why has the School Health and Nutrition programme not been implemented at your school?

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18. When was the School Health and Nutrition programme introduced in your school?
Indicate the year

19. Indicate which grades are included in the School Health and Nutrition programme? (Tick all applicable options)

Grade 1-4

Grade 5-7

Other specify

20. Do you have a SHN committee?

Yes

No

21. List the School Health and Nutrition programme activities that are being implemented in your school?

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22. Name the guidelines/ resources you refer to and use when formulating these activities?

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23. What role do the school children play in the implementation of the School health and nutrition programme?

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24. Which organisations have helped in terms of funding the school health and nutrition programme?

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25. Explain the challenges your school is facing, if any in relation to implementing the School Health and Nutrition programme?

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26. According to your observation has the introduction of school health and nutrition programme produced any positive outcome?

Yes
No

Other specify.....

27. Describe the positive outcomes if any observed since the implementation of the School Health and Nutrition programme in your school?

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28. Where does your school submit feedback or documentation on the implementation of the School Health and Nutrition programme in your school?

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29. How often do you submit the feedback or documentation to the body you mentioned above?

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Thank you for your participation!

ADDENDUM 2: LETTER TO THE FACE AND CONTENT VALIDITY PARTICIPANTS


UNIVERSITEIT • STELLENBOSCH • UNIVERSITY
jou kennisvenoot • your knowledge partner

The Permanent Secretary
Attn: Director Planning and Information
Ministry of Education Science Vocation Training and Early Education
Lusaka
Zambia
11/05/2015

Dear Sir/Madam

RE: VERIFICATION OF THE FACE AND CONTENT VALIDITY OF THE QUESTIONNAIRE

With reference to the above, you have been selected to assist with verifying the content validity of the questionnaire to be used in a research. I am currently enrolled in the Master of Nutrition program at Stellenbosch University in South Africa. As a requirement for my programme, I need to conduct a research project. The title of my research is "Exploring the status of the School Health and Nutrition Programme in Government run Schools in Lusaka District, Zambia".

The aim of this research involves understanding School Health and Nutrition from the teachers perspective and also to determine the actives been implemented under this programme in the different schools. A sample of 52 randomly selected government run schools in Lusaka district are participating in this research. The questionnaire involved is intended for the SHN co-ordinators or the teachers in charge of the programme. The only requirement from you is to determine if the questions on the questionnaire are appropriate and adequate to achieve the aim of this research.

Your participation will be highly appreciated.

Sincerely

Mulenga. C. Napanje

Approved by:

Faith M. Nchito
Please print your name and title
School Feeding Coordinator


Signature

10th July 2015
Date


Fakulteit Geneeskunde en Gesondheidswetenskappe
Faculty of Medicine and Health Sciences

Afdeling Menslike Voeding • Division of Human Nutrition

Posbus 241 / PO Box 241 • Kaapstad / Cape Town, 8000 • Suid-Afrika/South Africa
Tel: +27 21 938 9259 • Faks/Fax: +27 21 933 2991

ADDENDUM 3: ETHICS APPROVAL LETTER



UNIVERSITEIT • STELLENBOSCH • UNIVERSITY
jou kennisvennoot • your knowledge partner

Approved with Stipulations New Application

09-Dec-2014
Napanje, Mulenga MC

Ethics Reference #: S14/10/251

Title: Exploring the status of the school health and nutrition programme in Government Schools in Lusaka District, Zambia.

Dear Ms Mulenga Napanje,

The **New Application** received on **29-Oct-2014**, was reviewed by members of **Health Research Ethics Committee 1** via Expedited review procedures on **09-Dec-2014**.

Please note the following information about your approved research protocol:

Protocol Approval Period: **09-Dec-2014 -09-Dec-2015**

The Stipulations of your ethics approval are as follows:

The consent document needs simplification.

Please remember to use your **protocol number (S14/10/251)** on any documents or correspondence with the HREC concerning your research protocol.

Please note that the HREC has the prerogative and authority to ask further questions, seek additional information, require further modifications, or monitor the conduct of your research and the consent process.

After Ethical Review:

Please note a template of the progress report is obtainable on www.sun.ac.za/rds and should be submitted to the Committee before the year has expired. The Committee will then consider the continuation of the project for a further year (if necessary). Annually a number of projects may be selected randomly for an external audit.

Translation of the consent document to the language applicable to the study participants should be submitted.

Federal Wide Assurance Number: 00001372

Institutional Review Board (IRB) Number: IRB0005239

The Health Research Ethics Committee complies with the SA National Health Act No.61 2003 as it pertains to health research and the United States Code of Federal Regulations Title 45 Part 46. This committee abides by the ethical norms and principles for research, established by the Declaration of Helsinki, the South African Medical Research Council Guidelines as well as the Guidelines for Ethical Research: Principles Structures and Processes 2004 (Department of Health).

Provincial and City of Cape Town Approval

Please note that for research at a primary or secondary healthcare facility permission must still be obtained from the relevant authorities (Western Cape Department of Health and/or City Health) to conduct the research as stated in the protocol. Contact persons are Ms Claudette Abrahams at Western Cape Department of Health (healthres@pgwc.gov.za Tel: +27 21 483 9907) and Dr Helene Visser at City Health (Helene.Visser@capetown.gov.za Tel: +27 21 400 3981). Research that will be conducted at any tertiary academic institution requires approval from the relevant hospital manager. Ethics approval is required BEFORE approval can be obtained from these health authorities.

We wish you the best as you conduct your research.

For standard HREC forms and documents please visit: www.sun.ac.za/rds

If you have any questions or need further assistance, please contact the HREC office at 219389156.

Included Documents:

Application form
CV_Napanje
Declaration_Napanje
Cover letter
CV_Marais
CV_du Plessis
Declaration_du Plessis
Synopsis
HREC Checklist
Declaration_Marais
Protocol

Sincerely,

Franklin Weber
HREC Coordinator
Health Research Ethics Committee 1

Investigator Responsibilities

Protection of Human Research Participants

Some of the responsibilities investigators have when conducting research involving human participants are listed below:

1. Conducting the Research. You are responsible for making sure that the research is conducted according to the HREC approved research protocol. You are also responsible for the actions of all your co-investigators and research staff involved with this research.

2. Participant Enrolment. You may not recruit or enrol participants prior to the HREC approval date or after the expiration date of HREC approval. All recruitment materials for any form of media must be approved by the HREC prior to their use. If you need to recruit more participants than was noted in your HREC approval letter, you must submit an amendment requesting an increase in the number of participants.

3. Informed Consent. You are responsible for obtaining and documenting effective informed consent using **only** the HREC-approved consent documents, and for ensuring that no human participants are involved in research prior to obtaining their informed consent. Please give all participants copies of the signed informed consent documents. Keep the originals in your secured research files for at least fifteen (15) years.

4. Continuing Review. The HREC must review and approve all HREC-approved research protocols at intervals appropriate to the degree of risk but not less than once per year. There is **no grace period**. Prior to the date on which the HREC approval of the research expires, **it is your responsibility to submit the continuing review report in a timely fashion to ensure a lapse in HREC approval does not occur**. If HREC approval of your research lapses, you must stop new participant enrolment, and contact the HREC office immediately.

5. Amendments and Changes. If you wish to amend or change any aspect of your research (such as research design, interventions or procedures, number of participants, participant population, informed consent document, instruments, surveys or recruiting material), you must submit the amendment to the HREC for review using the current Amendment Form. You **may not initiate** any amendments or changes to your research without first obtaining written HREC review and approval. The **only exception** is when it is necessary to eliminate apparent immediate hazards to participants and the HREC should be immediately informed of this necessity.

6. Adverse or Unanticipated Events. Any serious adverse events, participant complaints, and all unanticipated problems that involve risks to participants or others, as well as any research-related injuries, occurring at this institution or at other performance sites must be reported to the HREC within **five (5) days** of discovery of the incident. You must also report any instances of serious or continuing problems, or non-compliance with the HRECs requirements for protecting human research participants. The only exception to this policy is that the death of a research participant must be reported in accordance with the Stellenbosch University Health Research Ethics Committee Standard Operating Procedures www.sun025.sun.ac.za/portal/page/portal/Health_Sciences/English/Centres%20and%20Institutions/Research_Development_Support/Ethics/Application_package All reportable events should be submitted to the HREC using the Serious Adverse Event Report Form.

7. Research Record Keeping. You must keep the following research-related records, at a minimum, in a secure location for a minimum of fifteen years: the HREC approved research protocol and all amendments; all informed consent documents; recruiting materials; continuing review reports; adverse or unanticipated events; and all correspondence from the HREC

8. Reports to the MCC and Sponsor. When you submit the required annual report to the MCC or you submit required reports to your sponsor, you must provide a copy of that report to the HREC. You may submit the report at the time of continuing HREC review.

9. Provision of Emergency Medical Care. When a physician provides emergency medical care to a participant without prior HREC review and approval, to the extent permitted by law, such activities will not be recognised as research nor will the data obtained by any such activities should it be used in support of research.

10. Final reports. When you have completed (no further participant enrolment, interactions, interventions or data analysis) or stopped work on your research, you must submit a Final Report to the HREC.

11. On-Site Evaluations, MCC Inspections, or Audits. If you are notified that your research will be reviewed or audited by the MCC, the sponsor, any other external agency or any internal group, you must inform the HREC immediately of the impending audit/evaluation.

ADDENDUM 4: LETTER TO THE MINISTRY OF EDUCATION OF THE REPUBLIC OF ZAMBIA

Ministry of Education

Lusaka

Zambia

13/09/2014

Dear Sir/Madam

RE: AUTHORISATION TO CONDUCT A RESEARCH PROJECT IN THE SCHOOLS

I am currently enrolled in the Master of Nutrition programme at Stellenbosch University in South Africa. As a requirement for this degree programme, I need to conduct a research project. The title of my proposed research project is “Exploring the status of the School Health and Nutrition Programme in Government run Schools in Lusaka District, Zambia”.

I am writing to request permission to conduct a research project in a sample of Government run schools in Lusaka District. The aim of the research involves understanding School Health and Nutrition from the teacher’s perspective and also to determine the activities being implemented under School Health and Nutrition programme in the different schools. Only 40 randomly selected government run schools in Lusaka District will need to take part in the research. SHN coordinators will be the key participants of this research and the only requirement from them will be to fill in a questionnaire.

If you agree kindly sign below or alternatively kindly submit a signed letter of permission on your ministries letterhead acknowledging your consent and permission for me to conduct this research in the schools.

Sincerely

Mulenga .C. Napanje

Approved by:

Please print your name and title

Signature

Date

ADDENDUM 5: RESPONSE FROM THE MINISTRY OF EDUCATION

MESVTEE/7/8/2
In reply please quote:
No:.....

*All communications should be addressed to:
the Permanent Secretary Ministry of Education,
Science, Vocational Training and Early Education
Not to any individual by name.*

Telephone: 250855/251315/251283
251293/211318/251291
251003/251319



REPUBLIC OF ZAMBIA

MINISTRY OF EDUCATION, SCIENCE, VOCATIONAL TRAINING AND EARLY EDUCATION

P.O. BOX 50093
LUSAKA

30th June, 2015

M^s Mulenga C. Napanje
Stellenbosch University

Dear **M^s Napanje**,

RE: AUTHORISATION TO CONDUCT A RESEARCH PROJECT IN THE SCHOOLS

Reference is made to the above captioned subject matter.

This serves to inform you that permission has been granted to conduct your research project in 52 Public Schools in Lusaka District. The 52 schools should be those coordinating School Health and Nutrition programmes. However, your programme should not interfere with the teaching and learning activities in the schools.

I wish you the best as you carry out your research project.



Chishimba Nkosha
PERMANENT SECRETARY
MINISTRY OF EDUCATION, SCIENCE, VOCATIONAL TRAINING AND EARLY EDUCATION

ADDENDUM 6: PARTICIPANT INFORMATION LEAFLET AND CONSENT FORM

PARTICIPANT INFORMATION LEAFLET AND CONSENT FORM

TITLE OF THE RESEARCH PROJECT: Exploring the status of the School Health and Nutrition Programme in Government run Schools in Lusaka District, Zambia.

REFERENCE NUMBER:

PRINCIPAL INVESTIGATOR: Mulenga Chansa Napanje

ADDRESS: Mulenga. C. Napanje
C/o Joseph Kafuko
Devolution Trust Fund
164 Mulombwa close, Fairview
Lusaka, Zambia

CONTACT NUMBER: +260968663280

You are being invited to take part in a research project. Please take some time to read the information presented here, which will explain the details of this project. Please ask the study staff any questions about any part of this project that you do not fully understand. It is very important that you are fully satisfied that you clearly understand what this research entails and how you could be involved. Also, your participation is **entirely voluntary** and you are free to decline to participate. If you say no, this will not affect you negatively in any way whatsoever. You are also free to withdraw from the study at any point, even if you do agree to take part.

This study has been approved by the **Health Research Ethics Committee at Stellenbosch University** and will be conducted according to the ethical guidelines and principles of the

international Declaration of Helsinki, South African Guidelines for Good Clinical Practice and the Medical Research Council (MRC) Ethical Guidelines for Research.

What is this research study all about?

This study involves understanding the School Health and Nutrition programme from the school health and nutrition co-coordinators perspective. The focus will be on government run schools in Lusaka District in Zambia. Specifically we would like to determine the different activities implemented under School Health and Nutrition programme in the different schools as well as success stories and challenges faced by the schools.

The study will be conducted between January and March 2015, it will involve 40 randomly selected government run schools in Lusaka District. The participants are the school health and nutrition coordinators or the teachers in charge of the SHN programme in the schools. Stratified random sampling will be used to obtain a sample of 40 schools from the 84 schools in Lusaka District. The participant will be presented with a questionnaire which they will have to fill in private. A written document containing the finding of the study will be available and can be accessed at the ministry of education library.

Why have you been invited to participate?

You have been invited to participate because your school falls under the 40 government run schools which were randomly selected from 84 schools in Lusaka District and you are also in charge of the SHN programme at your school.

What will your responsibilities be?

Your only responsibility will be to fill in one questionnaire with 29 questions, this will only take a maximum of an hour. Each questionnaire will only include questions related to School Health and Nutrition and the answers provided will be used to answer the research question and objectives. The questionnaire will be delivered to you.

Will you benefit from taking part in this research?

The findings of the study will help in accessing the different SHN activities being implemented in the schools and their sustainability. This will also help in exploring the challenges faced by the schools as well as success stories in implementing this programme. The findings will be relevant to the Ministry of Education (MOE) as it will help to assess how far they have come in terms of implementing the SHN programme in Lusaka District and also if what is being implemented is in line with the guidance provided. It will also help the MOE know some of the common challenges the schools are facing if any, in implementing the programme. Therefore your school will benefit indirectly from these findings.

Are there any risks involved in your taking part in this research?

There are no risks for taking part in this research, the questionnaire will be completed anonymously; thus the participant and school names will remain confidential.

If you do not agree to take part, what alternatives do you have?

Participation is voluntary. If you decided not to participate or you decide to withdraw during the session, your decision will be respected and this won't affect you in anyway.

Who will have access to this information?

Only the researcher, research supervisors and the University of Stellenbosch Research Ethics Committee will have access to your information which will be treated as confidential. Instead of participant's names, codes will be used during data capturing and analysis. You and your school will remain anonymous.

Will you be paid to take part in this study and are there any costs involved?

You will not be paid to take part in the study and there will be no costs involved for you, if you do take part.

Is there anything else that you should know or do?

- You can contact Ms Mulenga C Napanje at +20968663280 if you have any further queries or encounter any problems.
- You can contact the Health Research Ethics Committee (Stellenbosch University, South Africa) at +27 21 938 9207 if you have any concerns or complaints that have not been adequately addressed by your study leader.
- You will receive a copy of this information and consent form for your own records.

Declaration by participant

By signing below, I agree to take part in a research study entitled “Exploring the status of the School Health and Nutrition Programme in Government run Schools in Lusaka District, Zambia”.

I declare that:

- I have read or had read to me this information and consent form and it is written in a language with which I am fluent and comfortable.
- I have had a chance to ask questions and all my questions have been adequately answered.
- I understand that taking part in this study is **voluntary** and I have not been pressurised to take part.

- I may choose to leave the study at any time and will not be penalised or prejudiced in any way.
- I may be asked to leave the study before it has finished, if the study researcher feels it is in my best interests, or if I do not follow the study plan, as agreed to.

Signed at (*place*) on (*date*) 2015.

.....
Signature of participant

.....
Signature of witness

Declaration by investigator

I (*name*) declare that:

- I explained the information in this document to
- I encouraged him/her to ask questions and took adequate time to answer them.
- I am satisfied that he/she adequately understands all aspects of the research, as discussed above
- I did/did not use an interpreter. (*If an interpreter is used then the interpreter must sign the declaration below.*)

Signed at (*place*) on (*date*) 2015.

.....
Signature of investigator

.....
Signature of witness

ADDENDUM 7: SCHOOL HEALTH AND NUTRITION CARD


Republic of Zambia
MINISTRY OF EDUCATION
School Health Card

GRADE 3 **2006**

EMIS NO:.....
Admission No:.....

SHN FORM 01

Name of School: North mead..... **District:** Lusaka.....
Name of Child: Mutale Kamunde..... **Sex** **F** **M** ✓
Date of Birth: 27th December 1996.....
Village / Address: 13/17.....

Distance between Home and School - Km or..... **Hours / Minutes**
Mother alive / dead....If Mother dies at a later date indicate when.....
Father alive / dead....If Father dies at a later date indicate when.....
Name of Parent / Guardian:**Relationship**.....
Chronic Illness: Epilepsy, Sickle Cell Anemia
 No / Yes Specify

Screening Exam
Grade 1 **Date of Exam** / / **Child's Age:** Yrs. 10 Months. 2

Hair: Lice	No / Yes	Nose	Clear / Running
Skin: Rash	No / Yes	Walking ability	Good / Poor
Nails	Clean / Dirty	Speech	Good / Poor
Eyesight	Good / Poor	Hearing	Normal / Poor
Ears: Infection/Pus	No / Yes	BCG scar	No / Yes
Teeth: Decay	No / Yes		

Academic work	Term One	Term Two	Term Three	Final Grade
Above average				
Average				
Below average				
General Health status				
Good, average, poor				

Grade 2

Date of Exam / /

Child's Age: Yrs.....Months.....

Hair: Lice	No/Yes	Nose	Clear / Running
Skin: Rash	No/Yes	Walking ability	Good / Poor
Nails	Clean / Dirty	Speech	Good / Poor
Eyesight	Good / Poor	Hearing	Normal / Poor
Ears: Infection/Pus	No/Yes	BCG scar	No / Yes
Teeth: Decay	No/Yes		

Academic work

Term One

Term Two

Term Three

Final Grade

Above average				
Average				
Below average				
General Health status Good, average, poor				

✓ **Grade 3 B**

Date of Exam

31/01/2006

Child's Age: Yrs...12...Months...2...

Hair: Lice	✓No/Yes	Nose	✓Clear / running
Skin: Rash	✓No/Yes	Walking ability	✓Good / Poor
Nails	✓Clean / Dirty	Speech	✓Good / Poor
Eyesight	✓Good / Poor	Hearing	✓Normal / Poor
Ears: Infection/Pus	✓No/Yes	BCG scar	✓No / Yes
Teeth: Decay	✓No/Yes		

Academic work

Term One

Term Two

Term Three

Final Grade

Above average				
Average				
Below average				
General Health status Good, average, poor				

Grade 4

Date of Exam / /

Child's Age: Yrs.....Months.....

2007

Hair: Lice	No/Yes	Nose	Clear / Running
Skin: Rash	No/Yes	Walking ability	Good / Poor
Nails	Clean / Dirty	Speech	Good / Poor
Eyesight	Good / Poor	Hearing	Normal / Poor
Ears: Infection/Pus	No/Yes	BCG scar	No / Yes
Teeth: Decay	No/Yes		

Academic work	Term One	Term Two	Term Three	Final Grade
Above average				
Average				
Below average		✓		
General Health status Good, average, poor				

Grade 5

Date of Exam / /

Child's Age: Yrs.....Months.....

Hair: Lice	No/Yes	Nose	Clear / running
Skin: Rash	No/Yes	Walking ability	Good / Poor
Nails	Clean / Dirty	Speech	Good / Poor
Eyesight	Good / Poor	Hearing	Normal / Poor
Ears: Infection/Pus	No/Yes	BCG scar	No / Yes
Teeth: Decay	No/Yes		

Academic work	Term One	Term Two	Term Three	Final Grade
Above average				
Average				
Below average				
General Health status Good, average, poor				

Grade 6 **Date of Exam** / / **Child's Age: Yrs.....Months.....**

Hair: Lice	No/Yes	Nose	Clear / Running
Skin: Rash	No/Yes	Walking ability	Good / Poor
Nails	Clean / Dirty	Speech	Good / Poor
Eyesight	Good / Poor	Hearing	Normal / Poor
Ears: Infection/Pus	No/Yes	BCG scar	No / Yes
Teeth: Decay	No/Yes		

Academic work	Term One	Term Two	Term Three	Final Grade
Above average				
Average				
Below average				
General Health status Good, average, poor				

Grade 7 **Date of Exam** / / **Child's Age: Yrs.....Months.....**

Hair: Lice	No/Yes	Nose	Clear / running
Skin: Rash	No/Yes	Walking ability	Good / Poor
Nails	Clean / Dirty	Speech	Good / Poor
Eyesight	Good / Poor	Hearing	Normal / Poor
Ears: Infection/Pus	No/Yes	BCG scar	No / Yes
Teeth: Decay	No/Yes		

Academic work	Term One	Term Two	Term Three	Final Grade
Above average				
Average				
Below average				
General Health status Good, average, poor				

