

# **Assessment of the nutrition component within the Integrated School Health Policy in the Msukaligwa sub-district, Gert Sibande District, Mpumalanga**

By

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## **DECLARATION**

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## ABSTRACT

**INTRODUCTION:** The Integrated School Health Policy is a policy adopted by the national Department of Health and the Department of Basic Education. The policy was implemented in 2012. The focus of this policy is on addressing the primary health problems of learners and on implementing interventions that can improve their health and well-being. The aim of the policy is to ensure that school-going children, including those from remote rural areas, have equal access to quality health services. The Integrated School Health Policy strives to provide a healthy school environment, health education and school health services together with projects and outreach programmes that are implemented according to the policy framework. The aim of this study was to assess the implementation of Phase 1 of the policy's nutrition component in quintile 1 and quintile 2 primary schools in Msukaligwa sub-district, Gert Sibande District, Mpumalanga province.

**METHOD:** An observational, descriptive, cross-sectional study was conducted. The study population consisted of 112 full-time, appointed educators and nine acting headmasters from quintile 1 and quintile 2 primary schools in Msukaligwa. Data were collected through self-administered questionnaires. The outcome measures assessed were nutrition knowledge, perceptions, needs and barriers. Headmasters also completed the Care and Support for Teaching and Learning tool.

**RESULTS:** The mean percentage knowledge score for educators was 88% (SD+/- 15.92) and for the headmasters was 89% (SD +/- 18.16). There was no statistically significant difference ( $p=0.2959$ ) in the knowledge score between the educators and headmasters. Educators and headmasters perceived school-feeding programmes to increase food availability for school-going children who require adequate food. Need was expressed for the support of provincial and national stakeholders, training of educators on basic knowledge, improvement in infrastructural challenges, rotation, reliable and consistent suppliers, availability of security systems in schools and support in terms of the establishment of vegetable gardens.

The study findings revealed the following as barriers that hamper the successful implementation of a comprehensive Integrated School Health Policy: theft, insufficient funds, unreliable suppliers, infrastructural challenges, and limited resources, lack of community participation and unavailability of clean and safe water.

In terms of Care and Support for Teaching and Learning, few good practices exist under the health promotion component that includes infrastructure, water and sanitation, social welfare services, psychosocial support, nutrition and self-care. A foundation is already in place regarding safety, curricular support, material support, community support and availability of policies.

**CONCLUSION:** The study provides evidence that the implementation of the Integrated School Health Policy in the Msukaligwa sub-district is inadequate and requires improvement. There is a need for allocating adequate funds and appointing reliable service providers, as well as the monitoring and evaluating the appointed service providers and the entire programme by dedicated persons.

## ABSTRAK

**INLEIDING:** Die Geïntegreerde Skoolgesondheidsbeleid (GSGB) is 'n beleid binne die Nasionale Departement van Gesondheid en Departement van Basiese Onderwys en is in 2012 geïmplementeer. Die beleid fokus om beide die primêre gesondheidsprobleme van leerders, sowel as die implementering van intervensies wat hul gesondheid en welsyn kan verbeter aan te spreek. Die beleid het ten doel om te verseker dat skoolgaande kinders, insluitend dié van afgeleë landelike gebiede, gelyke toegang tot kwaliteit gesondheidsdienste het. Die GSGB streef daarna om 'n gesonde skoolomgewing, gesondheidsopvoeding en skoolgesondheidsdienste te voorsien, tesame met projekte en uitreikprogramme wat volgens die GSGB-raamwerk geïmplementeer word. Die doel van hierdie studie was om fase 1-implementering van die GSGB-voedingskomponent in kwintiel 1 en 2 primêre skole in die Msukaligwa subdistrik, Gert Sibande distrik, Mpumalanga provinsie, te assesseer.

**METODES:** 'n Waarnemings, beskrywende, deursnee-studie is uitgevoer. Die studiepopulasie het uit 112 voltyds aangestelde opvoeders en nege skoolhoofde uit kwintiel 1 en 2 primêre skole in Msukaligwa bestaan. Data is ingesamel deur self-gedadministreerde vraelyste. Die volgende uitkomst is gemeet: voedingskennis, persepsies, behoeftes en hindernisse. Die Sorg en Ondersteuning vir Onderrig en Leer instrument is addisioneel voltooi deur die skoolhoof of waarnemende skoolhoof.

**RESULTATE:** Die gemiddelde persentasie kennis telling vir opvoeders was 88% (SD +/- 15,92) en vir die hoofde was 89% (SD +/- 18.16). Daar was geen statisties beduidende verskil ( $p=0.2959$ ) tussen die kennis telling van die opvoeders en skoolhoofde. Opvoeders en skoolhoofde was van opinie dat skoolvoedingsprogramme die beskikbaarheid van voedsel vir skoolgaande kinders wat voldoende voedsel benodig verhoog. Die behoefte aan ondersteuning deur provinsiale en nasionale belanghebbendes, opleiding van opvoeders oor basiese kennis, verbetering van infrastruktuuruitdagings, rotasie, betroubare en konsekwente verskaffers, sekuriteitsstelsel wat by skole beskikbaar is en ondersteuning in terme van die vestiging van groentetuine was uitgelig.

Die studie bevind die volgende as struikelblokke wat die suksesvolle implementering van omvattende GSGB belemmer: diefstal, onvoldoende fondse, onbetroubare verskaffers, infrastruktuuruitdagings en beperkte hulpbronne, gebrek aan gemeenskapsdeelname en onbeskikbaarheid van skoon en veilig water. In terme van die Sorg en Ondersteuning vir Onderrig en Leer is daar min goeie praktyke onder gesondheidsbevorderingskomponent, infrastruktuur, water en sanitasie, maatskaplike welsynsdienste, psigososiale ondersteuning, voeding en selfversorging. Daar is reeds heelwat in plek onder veiligheid, kurrikulêre ondersteuning, materiële ondersteuning, gemeenskapsondersteuning en beskikbaarheid van beleide. Geen van die Sorg en Ondersteuning vir Onderrig en Leer komponente is aktief betrokke by goeie praktyke nie.

**AFSLUITING:** Die studie het bewys dat die implementering van die GSGB in Msukaligwa subdistrik ontoereikend is en verbetering benodig. Daar is 'n behoefte aan voldoende befondsing en die toekenning van betroubare diensverskaffers, asook die monitering en evaluering van die toegewysde diensverskaffers en die hele programme deur toegewyde persone.

## **CONTRIBUTIONS BY PRINCIPAL RESEARCHER AND FELLOW RESEARCHERS**

The principal researcher, Koena Beauty Marutla, developed the idea and the protocol. The principal researcher planned the research, undertook data collection, captured the data for analysis, interpreted the data and drafted the thesis. Dr Innocent Karangwa, a statistician in the Biostatistics Unit, Faculty of Medicine and Health Sciences at Stellenbosch University assisted with the sample size calculation in the protocol and the data analysis. Lynette Daniels (study leader) and Maria van der Merwe (co-study leader) provided input at all stages and revised the protocol and the thesis.

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## LIST OF ABBREVIATIONS

CRC	Convention on the Rights of the Child
CSTL	Care and Support for Teaching and Learning
DBE	Department of Basic Education
DoH	Department of Health
DSD	Department of Social Development
HIV	Human Immunodeficiency Virus
HREC	Health Research Ethics Committee
HPS	Health Promoting School
ISHP	Integrated School Health Policy
NDoH	National Department of Health
NSHP	National School Health Policy
NHI	National Health Insurance
NSNP	National School Nutrition Programme
PHC	Primary Health Care
PSNP	Primary School Nutrition Programme
RMCH	Reducing Maternal and Child Mortality Through Strengthening Primary Health Care
SADC	Southern African Development Community
SBST	School-Based Support Team
SDG	Sustainable Development Goal
SFP	School feeding programme
SHS	School Health Services
UN	United Nations
UNICEF	United Nations Children's Fund
WBOT	ward-based outreach team
WFP	World Food Programme
WHO	World Health Organization

## CHAPTER 1: INTRODUCTION

### 1.1 INTRODUCTORY COMMENTS

The Government of South Africa is committed to the reinstatement of health programmes in public schools, as indicated in the 2010 State of the Nation address.<sup>1</sup> Improvement of school health services (SHS) represents one of the key components in the efforts of the health sector to re-engineer and improve primary health care (PHC) delivery. One of the current focus areas in South Africa is the provision of quality education for all children. With South Africa's high primary school enrolment figures, school health interventions have the potential to reach nearly 12 million children annually and achieve close to 100% service coverage given the accessibility of children in schools.<sup>2</sup>

Factors such as child survival, growth and development, early initiation and promotion of breastfeeding, immunization and food security are important and ensured by optimal nutrition.<sup>2</sup> Investing in child nutrition has been shown to have a positive impact on the well-being of national and global populations. Well-nourished children are able to lead healthy lives, improve their learning capacity, obtain an education and positively contribute to the development of their own communities.<sup>2, 3</sup>

In South Africa, like in many other developing countries, some children continue to experience poverty- a factor that is not conducive to their development. Due to poverty, some children do not attend school, and are therefore denied the right to education, a right to which governments have committed to under the Children's Rights Convention (CRC). Access to health, education, safe water and sanitation, especially in rural, hard- to- reach areas remains a challenge. Poor nutrition, especially in Orphaned and Vulnerable Children (OVC) and child headed households, continue to leave children vulnerable to diseases, thereby curbing their educational progress.<sup>4</sup>

A review of South African literature shows a range of factors that impact negatively on the health and development of children, whereby 70% of children have found to be living in rural areas, and many live-in households with incomes below the poverty line. A proportion of children depend on social assistance primarily through the child support grant. The 2008 General Household survey identified challenges experienced by child-headed households, which experienced hunger due to poverty and various forms of abuse, with

resultant absenteeism and school dropout. The proportion of children living in households that reported child hunger fell from 30% to 18% between 2002 and 2008. Malnutrition remains common and is likely to have serious implications for future school performance.<sup>5,6,7</sup>

Overall in South Africa, 45.6% of the population are food secure, meaning access by all members of a household at all times to enough food for an active, healthy life (score of 0 out of 8), which is a marked increase from the observation in 1999 based on the National Food Consumption Survey (NFCS), 28.3% were at risk of hunger (score of 1–4 out of 8) which is a slight increase in the proportion of at risk of hunger, and a significant decline in hunger, with 26.0% experiencing hunger (were food insecure).<sup>7,8</sup>

Providing education for all children in the poorest countries of the world is not a simple task. For children to benefit from a full course of primary education, many aspects need to be in place. These aspects include schools that provide the full package of essential materials required for learning together with motivated and well-trained teachers who are guided by strong school leadership. Children need support from caregivers or parents who understand the process of education and encourage the children in their efforts. In addition, children need to be motivated and encouraged to succeed. They also need to see the rewards for their efforts in the availability of secondary schools, in jobs and livelihoods that reward the investment made in their education.<sup>9</sup>

Improving children's health and nutrition is one of the steps that can be taken towards achieving the goal of optimal nutrition for all. Health and nutrition programmes offer substantial benefits to children's education, helping them to attend school and learn. Such programmes benefit the education of the poorest in society the most, because the poor are more likely to suffer from ill health and poor nutrition and are more likely to experience a disruption in their learning as a result.<sup>10</sup>

School health and nutrition as priority programmes make use of the education system to deliver simple treatments for common conditions. The result of this integration is a highly cost-effective way to reduce inequalities in education and to help all children around the world to reach their educational potential. This argument is examined through a discussion of the challenges confronting child health and nutrition and the impact of these challenges



on education.<sup>8</sup> The discussion presents an analysis of the costs, benefits and policy options involved in the implementation of health and nutrition programmes in schools.<sup>10</sup>

Providing a simple and achievable solution to improving access, gender equality and the quality of basic education is essential to policy-, decision-makers, educational, health organisations, and researchers in international development, public health, psychology and education.<sup>10</sup>

Schools are regarded as an established setting for health promotion because they have the theoretical advantage of influencing health-related beliefs and behaviours early in the health career. A potential benefit of school nutrition interventions is that educational performance and learning may be enhanced through improving the health of schoolchildren.<sup>10</sup>

The proportion of children living in households that reported child hunger fell from 30% to 18% between 2002 and 2008. Yet malnutrition remains common and stunting affects one in five children. Research has shown that the national prevalence of underweight amongst the under 10 year of age population was 8.4%, stunting was 13.1% and wasting was 4.4%. The number of learners found to be overweight was 19.7% and 53% were obese. Chronic malnutrition has a significant impact on child development, especially during the first three years of life when the brain is still developing.<sup>5</sup>

Based on South African Demographic Health Survey (SADHS) 2016, 27% of children under 5 are considered short for their age or stunted (below -2 SD) and 10% are severely stunted (below -3SD). Overall 3% of children are wasted. In contrast, 13% of children are overweight. The results show that 6% of all children are underweight, and 1% are severely underweight. The proportion of children who are underweight ranges by province, from a low of 3% in the Eastern Cape to a high of 13% in North West.<sup>11</sup>

According to the statistics of the World Food Programme (WFP), the majority (791 million people) of the hungry people in the world reside in developing countries such as those in Sub-Saharan Africa where one in four people are undernourished.<sup>12</sup>

It is also estimated that approximately 100 million children (one in six) living in developing countries are underweight. Of these, 66 million are primary-school age children who attend classes or lessons hungry. In Africa, the number of school-age children who attend classes hungry is estimated at 23 million.<sup>12</sup>

Going to school without being fed greatly impedes children's learning ability. Therefore, initiating feeding programmes in schools is vital to mitigate the negative impact on children's education.

### **1.1.1 School-based nutrition interventions**

Nutrition alone can affect intellectual development and learning ability. Children with adequate diets consistently score higher on tests of factual knowledge than those with less adequate nutrition.<sup>13</sup> There is a significant correlation between nutritional status and cognitive test scores or school performance. A study in 2012 by Evans et al.<sup>14</sup> demonstrated that academic performance and the mental ability of pupils with good nutritional status are significantly higher than that of pupils with poor nutritional status.<sup>14</sup> Positive educational outcomes that are linked to good health in schoolchildren include improved classroom performance, school attendance, participation in school activities and student attitude.<sup>15</sup>

School feeding programmes (SFPs) have been given a two-fold definition by a joint publication of the WFP and the World Bank Group. An SFP is defined as the provision of healthy food to school going children.<sup>12</sup> This can either be done by feeding the children at the school (in-school feeding) or by giving the school-going child or their family food parcels of the SFP, ingredients to take home (take-home ration).

There are three main benefits attributable to an SFP, namely nutritional benefits, educational benefits and safety nets.<sup>12</sup>

A large number of school-going children who suffer from acute and chronic malnutrition and micronutrient deficiencies reside in developing countries.<sup>15</sup> School feeding programmes alone cannot improve these children's health and nutritional status. A number of complementary and nutrition-related interventions are conducted together with the SFP to enhance the effectiveness and efficiency of improving children's health and nutritional status. These include micronutrient fortification/supplementation, de-worming, provision of health and nutrition education and assurance of a safe and sanitary school environment.<sup>12,15</sup>

Schools, as health-promotion settings, provide the most effective and efficient method for reaching large portions of the population, including young people and their families.

Schools provide a setting to introduce nutrition information and technologies to the community and to advocate policies and services that promote good nutrition.<sup>15</sup>

The introduction of SHS into schools was aimed at ensuring healthy lives and promoting the well-being for all as part of the SDG 3.<sup>16</sup> According to the International Food Policy Research Institute, the SDG 1 aims to end poverty throughout the world.<sup>16</sup>

To fulfil this aim, through SFPs worldwide, schools have successfully attracted poor children to attend and have retained them, by offering what they would probably not obtain elsewhere.<sup>12,13</sup>

Training of educators, both pre- and in-service, is an important factor in a successful school health education programme.<sup>17</sup> Such training should sensitise educators to the concept of health promotion in schools.<sup>17</sup>

All educators need to receive training and accurate information in order to address health and nutrition effectively in their environments. Education and training should inspire and equip educators with the knowledge and skills to compile a curriculum that encourages learners to build healthy eating habits and practices and to make nutritious food choices.<sup>17</sup>

In addition, teachers should be able to assess and improve their own eating habits and practices through nutrition training and be made aware of the behavioural messages that they impart to learners as role models.<sup>18</sup>

According to available 2013 data, globally, 59 million children of primary-school age were not attending school, and estimates show that among these 59 million children, one in five children had dropped out of school. Recent trends suggest that two in five schoolchildren will never enter a classroom.<sup>19</sup> The SDGs recognise that this gap must be closed while the international community explicitly addresses the challenges of quality and equity as explained in the report of the Secretary-General, on progress towards the Sustainable Development Goals.<sup>16</sup>

The Integrated School Health Policy (ISHP) is a South African policy that integrates most of the Sustainable Development Goals (SDGs).

On 19 July 2014, the United Nations (UN) Open Working Group of the General Assembly on SDGs forwarded a proposal to the Assembly.<sup>16</sup> The proposal contained 17 goals with 169 targets and covered a broad range of sustainable development issues such as ending poverty and hunger, improving health and education, increasing sustainability of cities,

combating climate change and protecting oceans and forests.<sup>16</sup> On 25 September 2015, 193 countries of the UN General Assembly adopted the 2030 development agenda titled, “Transforming our World: The 2030 Agenda for Sustainable Development”.<sup>16</sup>

Following the adoption of the agenda, the UN agencies decided to support the campaign known as ‘Project Everyone’. The adopted official agenda outlines 17 SDGs as follows:

**Table 1.1: Sustainable Development Goals**

<b>SDGs</b>	<b>EXPLANATION</b>
1. Poverty	End poverty in all its forms worldwide
2. Food	End hunger, achieve food security and improved nutrition, promote sustainable agriculture
3. Health	Ensure healthy lives and promote well-being for all at all ages
4. Education	Ensure inclusive and equitable quality education and promote lifelong learning opportunities for all
5. Women	Achieve gender equality and empower all women and girls
6. Water	Ensure availability and sustainable management of water and sanitation for all
7. Energy	Ensure access to affordable, reliable, sustainable and modern energy for all
8. Economy	Promote sustained, inclusive and sustainable economic growth and full, productive employment and decent work for all
9. Infrastructure	Build resilient infrastructure, promote inclusive and sustainable industrialisation and foster innovation
10. Inequality	Reduce inequality within and among countries
11. Habitation	Make cities and human settlements inclusive, safe, resilient and sustainable
12. Consumption	Ensure sustainable consumption and production patterns
13. Climate	Take urgent action to combat climate change and its impacts
14. Marine-ecosystems	Conserve and sustainably use the oceans, seas and marine resources for sustainable development
15. Ecosystems	Protect, restore and promote sustainable use of terrestrial ecosystems and management of forests, combat desertification and halt or reverse land degradation and biodiversity loss
16. Institutions	Promote peaceful and inclusive societies for sustainable

SDGs	EXPLANATION
	development, provide access to justice for all and build effective, accountable and inclusive institutions at all levels
17. Sustainability	Strengthen the means of implementation and revitalise the global partnership for sustainable development

## 1.2 THESIS OUTLINE

The thesis is divided into the following chapters:

Chapter 1: The introduction provides introductory comments relating to the ISHP. The roles and the importance of the ISHP, SHS and school-based nutrition interventions are discussed. The aim and objectives of the study are also presented.

Chapter 2: The literature review provides an overview of the ISHP, its benefits, implementation and evaluation nationally. Furthermore, it explains the integration of SDGs known as 'Project Everyone' and how this aims to improve the lives of all. In addition, Chapter 2 describes the National School Nutrition Programme (NSNP) and SHS.

Chapter 3: This chapter presents the methodology of the study. Details regarding the study plan, study population, method of sample selection and method of data collection are provided.

Chapter 4: This chapter comprises a description of the study sample and the results of the study. The results from the questionnaires relating to knowledge, perceptions, needs and barriers are presented. The chapter includes the interpretation and assessment of the schools as centres of CSTL.

Chapter 5: The results of the study are discussed in relation to other studies.

Chapter 6: In this chapter, general conclusions, recommendations and study limitations are presented based on the study findings.

## **CHAPTER 2: LITERATURE REVIEW**

### **2.1 INTRODUCTION**

The World Health Organization (WHO) defines a school health programme as a combination of services that ensure the healthy physical and mental state of learners and their social well-being to maximise their capabilities.<sup>18</sup> The ISHP was launched in 2012 with the goal of improving health outcomes in learners. The vision of the policy is optimal health and development of school-going children and the communities in which they live and learn.<sup>19,20,21</sup> Schools are regarded as ideal settings for health promotion and life orientation, with educators representing the primary caretakers.

### **2.2 NUTRITION AND ITS IMPACT ON CHILD HEALTH**

The WHO Expert Committee on School Health confirms that school health programmes can advance public health, education, social and economic development. For children to benefit from the education programmes, they need to be healthy. This strong link between health and education identifies school as a perfect environment where the children's well-being is supported and maintained.<sup>18</sup>

School Health and Nutrition (SHN) addresses the critical health and nutrition factors that keep children out of school and reduce their ability to learn effectively while in school. The essential elements of an effective SHN program, as outlined in the Focusing Resources on Effective School Health (FRESH) framework agreed at the 2000 World Education Forum in Dakar, Senegal that aimed to:<sup>22</sup>

- Ensure equitable health-related school policies
- Increase access to safe and hygienic learning environment
- Promote lifelong healthy behaviours through skills based and child focused health education, including HIV
- Increase access to health and nutrition services for school age children.

## 2.3 BENEFITS OF SCHOOL HEALTH PROGRAMMES

School health is a non-negotiable integral part of the comprehensive package of primary health care services that must be delivered to all schools. A comprehensive school health programme allows children access to health promotion and education during their years of learning. It also allows for the identification of potential barriers to learning, and thus maximises children's learning potential.<sup>23</sup>

The greatest potential of school health programmes is their influence in facilitating delivery of health services to school-going children. However, similar to other programmes aimed at improving health, the continuous support and strengthening of these programmes can only be achieved if there is evidence that they positively affect the school environment and the health of the school community.<sup>24</sup> School-based nutrition education has the potential to affect the nutritional health and dietary behaviours of children positively and is included as an important element in comprehensive school health.<sup>25</sup> This statement makes a strong case for the need to evaluate the impact of these programmes.

Integrated school-based programmes such as nutrition and school health can play an important role in promoting lifelong healthy eating.<sup>26</sup> The national health-promotion and disease-prevention objectives encourage schools to provide nutrition education from as early as pre-school, known as Grade R, up to Grade 12, as recommended by the Centres for Disease Control and Prevention.<sup>27,28</sup>

The nutritional benefits attributed to a well-designed feeding programme include increase in height, increase in weight, increased access to a nutritious meal and reduction of micronutrient malnutrition such as iron and vitamin A deficiencies. Furthermore, a well-designed feeding programme leads to a reduction in short-term hunger, resulting in improved concentration and cognitive abilities.<sup>24,29</sup> In a systematic review by the MRC and UCT/MRC ESSM unit, school interventions were more likely to be successful if they were offered at primary schools and implemented by qualified educators to children in grades 4-7.<sup>15,30</sup>

It is important to plan and coordinate programmes based on existing evidence of best practice. Evidence supports that at a relatively low cost, well-managed nutrition education programmes can bring about behavioural changes that contribute to improved nutritional well-being.<sup>15</sup>

This is demonstrated in the HealthKick programme initiated in schools in the Western Cape.<sup>15</sup> A study on this HealthKick programme highlights the key role that educators play in the impact of policy and practice within school settings.<sup>15</sup>

Schools are capable of providing interventions that improve nutrition in ways that are highly cost effective in order to prevent or reduce health problems and the consequences of malnutrition.

School health interventions such as assessments conducted by school health nurses and the provision of health education have been shown to improve health when compared with various public health approaches such as food fortification and changing food environments as they were found to be changing people's eating patterns and forcing them to eat unhealthy foods.<sup>31,32</sup>

## **2.4 EVALUATION OF SCHOOL HEALTH PROGRAMMES**

A nutrition education programme which promotes classroom consumption of fruits and vegetables and consists of a behavioural classroom curriculum, parental involvement and food service modifications was implemented in 2000 in California.<sup>26</sup> Positive feedback was received from the educators regarding the effectiveness of the curriculum, their ability to teach the programme content and the importance of consuming fruits and vegetables.<sup>26</sup> In a systematic study by Knai C et al on getting children to eat more fruit and vegetables in Atlanta, it showed that educators tend to be confident in their ability to provide multi-component nutrition education programmes to learners. The study concluded that educators' encouragement of multi-component nutrition messages positively affects student outcomes such as learning capability.<sup>27</sup>

In 2009, Steyn et al.<sup>15</sup> conducted a study reviewing global school nutrition interventions as an evidence base for the development of the HealthKick programme in the Western Cape. This study found numerous school-based nutrition interventions that achieved significant improvements in the nutritional behaviour of children. Furthermore, it provided evidence that the nutrition-based curriculum offered at schools by trained educators improved behavioural outcomes, including physical activity.<sup>15</sup>



## 2.5 EVALUATION OF IMPLEMENTATION OF SCHOOL HEALTH POLICIES IN SOUTH AFRICA

During the year 2010, a study was conducted to evaluate the implementation of the 2003 School Health Policy.<sup>20</sup> The main study findings indicated that the minimum requirements for the implementation of SHS were met; however, concerns relating to health promotion activities were identified. A lack of coverage of SHS in some areas and no dedicated budget for SHS due to shortage of nurses and transport were identified.<sup>20</sup>

The study recommendations included improving educators' level of awareness and understanding of the policy, reviewing and revising policy guidelines and ensuring a dedicated budget for SHS.<sup>20</sup>

A study on the barriers to the successful implementation of SHS in the Mpumalanga and Gauteng provinces recommended that SHS should be a priority programme that advances the agenda for children.<sup>34</sup> The study identified governance issues and raised concerns that government has ratified the Convention on the Rights of the Child (CRC); however, government has portrayed very little political support for SHS.<sup>34</sup>

In 2013, Jacobs et al.<sup>35</sup> conducted a study on the evaluation of a school-based nutrition and physical activity programme for Grade 4 learners in the Western Cape province. The findings of the study on the Making the Difference Programme showed only a modest effect on the self-reported nutrition and physical activity behaviour of the learners.<sup>36</sup>

A study conducted in the Bloemfontein region of South Africa showed the need to create enabling food environments in the immediate vicinity of schools in order to improve health and non-communicable disease prevention.<sup>36</sup> Currently, there is concern for the health and well-being of children and youth in South Africa, that includes their habits regarding physical activity and their sedentary behaviour. The Healthy Active Kids South Africa Report Card 2014 evaluates the current activity status of children.<sup>37</sup> The study highlights the key role that educators play in implementing school-based interventions but states that developing the capacity of school staff is not simple or easy.<sup>37</sup>

A study on overweight and obesity among six-year-old children in quintile 4 and quintile 5 schools conducted in Mangaung in the Free State province found that food policies and parents' perceptions play an important role in reducing the prevalence of obesity and overweight.<sup>38</sup>

## **2.6 NATIONAL SCHOOL NUTRITION PROGRAMME**

The NSNP is an initiative of the Department of Basic Education (DBE), that is designed to ensure that children living in poor households are being fed healthy meals daily.<sup>20</sup> The NSNP contributes to the enhanced learning capacity of learners and improves food security since most schools dedicated as Health Promoting Schools (HPSs) have vegetable gardens.<sup>21</sup> Not all schools implementing NSNP are accredited as HPS, as some of them do not have vegetable gardens yet.

The NSNP was conceptualised primarily as an educational intervention aimed at addressing children's ability to learn rather than a health intervention to improve the nutrition of children.<sup>21</sup> In other words, it deals with short-term rather than long-term hunger. The choice of this goal was motivated by the fact that school feeding schemes have generally proved to be an ineffective and a costly means of improving the nutritional status of children.<sup>21</sup>

### **2.6.1 Implementation of the National School Nutrition Programme in South Africa**

The NSNP is primarily designed to identify and reach areas where poverty is extreme.<sup>39</sup> Therefore; it is implemented in quintile 1 and quintile 2 primary schools nationally. A quintile is defined as a "system of ranking and of funding schools that takes into account the socio-economic circumstances of learners with the intended objective of ensuring that public funding is skewed in favour of the poorest learners".<sup>40</sup>

The NSNP aims to provide one meal a day from the menu approved by the National Department of Health (NDoH). Provinces select their menu based on social acceptance, availability and cost. In the Gert Sibande District of the Mpumalanga province, a warm menu is chosen, which includes pap and beans or soya, samp and beans wherever possible. In addition to the delivery of food to learners, the programme aims to involve local communities in the procurement and preparation of the food. Establishing and supporting food gardens has become an increasing focus of support for the programme and schools.<sup>39</sup>

Proper implementation of NSNP has shown to improve punctuality, regular school attendance, concentration and the general well-being of participating learners. Schools are also encouraged to establish vegetable gardens to supplement the menu in line with

South African Food Based Dietary Guidelines (SAFBDGs). The gardens are also used as a teaching and learning resource and to beautify the environment.<sup>39,40</sup>

## 2.7 SCHOOL HEALTH SERVICES

The reform initiative of the South African health systems introduced the Comprehensive Primary Health Care Model, stipulating that SHS would be incorporated as of 2001.<sup>41</sup>

In addition to the CRC, the Constitution of South Africa<sup>42</sup> enshrines rights that have a direct bearing on health promotion in schools, as outlined in the following sections:

- Section 24(a): Everyone has the right to an environment that is not harmful to his or her health and well-being.
- Section 27(1) (a): Everyone has the right to have access to health care services.

The South African government has shown commitment towards improving the welfare of its children by pledging to put children's lives first. This was demonstrated through signing the CRC<sup>42</sup> and by giving children special recognition in the Bill of Rights of the South African Constitution.<sup>41</sup> These are all indications that the welfare of children is considered a priority in the South African context.

Since 1994, a number of programmes aimed at improving children's health, knowledge and practices at schools have been implemented by various sectors. These include the Primary School Nutrition Programme (PSNP) from the DBE, SHS rendered by the Department of Health (DoH), the formation of the Child Protection Unit (CPU) by the Department of Social Development (DSD) in collaboration with the South African Police Services and provision of education in Human Immunodeficiency Virus/Acquired immune Deficiency Syndrome (HIV/AIDS) and Life Skills.

The progress made in this regard includes the following:

- In 2003, the National School Health Policy (NSHP) was developed to address the health needs of school-going children. However, the reality is that SHS are poorly resourced and, therefore, SHS are unevenly provided within and between provinces.<sup>43</sup>
- In 2004, the government established the South African Social Security Agency (SASSA).<sup>44</sup>

- In 2005, the disbursement of social support grants such as child support grants increased,<sup>44</sup> and a separate policy that addresses the health needs of school-going children was developed.<sup>45</sup>
- In 2010, the NSHP was evaluated, and the findings of the study were that only minimum requirements for the implementation of SHS were being met.<sup>41</sup>
- In 2012, the new ISHP was implemented.<sup>33</sup>
- In 2013, the organisation, Reducing Maternal and Child Health Through Strengthening Primary Health Care (RMCH), conducted the baseline assessment of the ISHP within 22 districts across South Africa.<sup>46</sup>

### **2.7.1 SOUTH AFRICAN CONTEXT ON SCHOOL HEALTH SERVICES**

School health services is an initiative that abides by the mandate to have a health presence in every school.<sup>33</sup> It is a component of the PHC re-engineering stream that entails the employment of additional school health nurses and their deployment to schools in each district.<sup>47</sup> PHC re-engineering is a strategy seeking to shift the PHC system from a passive, curative, vertically and individually oriented system to one with a more proactive, integrated and population - based approach. PHC re-engineering comprises of three streams namely: strengthening of school health services, deployment of Ward-Based Outreach (WBOT) services and deployment of District Clinical Specialist Team (DCST).<sup>47,48</sup>

The four priority arrears of the NSDA include increasing life expectancy, reducing maternal and child mortality rates, combating HIV and AIDS and decreasing the burden of diseases from TB and strengthening the effectiveness of the health system.<sup>36,37</sup> According to the report by South African Minister of Health, Dr Aaron Motsoaledi, as part of the Negotiated Service Delivery Agreement (NSDA), the initial focus of the re-engineered PHC will be on the poorest schools in which learners have limited access to health services.<sup>49</sup>

School health services have the potential to provide a safety net for children who did not access preventive health services during their pre-school years. These services are able to identify preventable health problems that may constitute barriers to learning. An effective school health programme will ensure that professionals are able to capitalise on this invaluable opportunity for the healthy development of children and the communities in

which they live. The minimum package of SHS phase one that should be provided in all schools includes<sup>46</sup>:

- health education and promotion
- learner assessment and screening
- provision of onsite services
- follow-up and referral

## **2.8 INTEGRATED SCHOOL HEALTH POLICY**

The ISHP is a policy within the NDoH and the DBE that was implemented in 2012. The policy focuses on addressing the primary health problems of learners and implementing interventions that can improve learners' health and well-being.

The policy ensures that school-going children, including those from rural areas, have equal access to quality health services.<sup>33,45</sup>

The ISHP strives to provide a healthy school environment, health education and SHS together with projects and outreach programmes implemented according to the ISHP framework. Nutrition and food safety programmes such as feeding schemes create opportunities for physical education and recreation for a healthy mind and body.<sup>33</sup>

The ISHP has several key components<sup>33</sup>:

- Health assessments whereby children are screened for a number of health conditions such as vision and hearing
- Health education and promotion – age appropriate
- Psychosocial and mental health assessments
- Identification and support of children with chronic health conditions
- Identification of gender-based violence and abuse of children
- Facilitating the creation of safe and healthy school environments
- Preventive interventions – mainly immunisations and de-worming (the provision of sexual and reproductive services at schools is still in contestation)
- Addressing minor ailments

### 2.8.1 Integrated School Health Policy implementation

Implementation of the ISHP requires integration and collaboration between the different sectors, especially the DoH, the DBE and the DSD.

For this reason, the revised policy is co-signed by both the Minister of Health and the Minister of Basic Education. The ISHP policy has the potential to contribute substantially to improving health and learning outcomes for school-going children.<sup>19,20,33,42</sup>

The current ISHP is a revision of the school health policy of 2003. It was launched by the former Honourable President Jacob Zuma and is an integrated policy between the NDoH and the DBE. Within the Basic Education sector, SHS are an integral part of the CSTL framework of the DBE.<sup>1,19</sup>

The CSTL Programme is a Southern African Development Community (SADC) initiative that was adopted in 2008 by SADC education ministers.<sup>19</sup>

The goal of the CSTL Programme is to realise the educational rights of children, particularly vulnerable children, through schools becoming inclusive centres of learning, care and support.

The programme intends to prevent and mitigate factors that have a negative impact on the enrolment, retention, performance and progression of vulnerable learners in schools by addressing the barriers to learning and teaching.<sup>46</sup>

The following nine priority areas have been identified for CSTL programme implementation:

- Nutrition
- Health promotion
- Infrastructure, water and sanitation
- Social welfare services
- Safety and protection
- Psychosocial support
- Curriculum support
- Co-curricular support
- Material support

The organisation RMCH conducted a baseline assessment of the ISHP in 2013–2014 across South Africa, with the Gert Sibande District representing Mpumalanga province.<sup>46</sup> The focus of the assessment was to gain information in order to implement and monitor the RMCH strategy for strengthening the delivery of SHS.<sup>46</sup>

The key pillars of the RMCH strategy are<sup>46</sup>:

- Strengthening linkages between schools, communities and service providers
- Building capacity in school communities to support the delivery of the ISHP
- Strengthening health promotion in schools

The RMCH assessment highlighted teenage pregnancy as a key health and nutrition concern for school-age children in the Gert Sibande District.<sup>46</sup> Other specific health problems affecting school-age children such as scabies and other skin conditions appear to be more localised than the key issues of nutrition and teenage pregnancy.<sup>46</sup>

The prevalence of HIV and other sexually transmitted diseases was cited by RMCH organization as a priority health issue.<sup>46,50</sup> Otitis media and oral hygiene is also a concern since children frequently require referral for tooth decay.<sup>46</sup>

The listed output 2 of the RMCH project is aimed at strengthening the delivery of SHS to support the goal of the ISHP, which is to improve the general state of health of school-age children and the environmental conditions in schools and to address the health barriers to learning.<sup>46</sup>

### **2.8.2 Health promoting school programme**

The HPS programme is one of the key national priority programmes within the DoH and contributes to a healthy lifestyle for the community as a whole.<sup>51</sup> Health promotion is part of the ISHP and is implemented by both the DoH and the DSD. In an HPS, health and nutrition education addresses food and its preparation and consumption as an essential positive and enjoyable aspect of life.<sup>51</sup>

The goal of an HPS is the strengthening of its capacity as a health setting for living, learning and working. Many schools are found to have already been designated HPS, and a strong network has developed for mutual support and sharing of resources.<sup>52</sup>

In the Msukaligwa sub-district of the Gert Sibande District, the 33 quintile 1 primary schools and the 17 quintile 2 primary schools have each been launched as an HPS.<sup>53</sup>

### **2.8.3 Integrated School Health Policy in Mpumalanga province**

The implementation of the ISHP in the Mpumalanga province is targeted at quintile 1 and quintile 2 primary schools. This implementation was initiated in 2012 with the aim of rollout to all quintile 1 and quintile 2 primary schools in phases over five years.<sup>53</sup>

A provincial task team has been established with representatives from the DoH, the DBE and the DSD. The task team is responsible for ensuring that SHS reach all learners in the targeted schools. Specialised school-health mobile vehicle units have been deployed to facilitate follow-up in remote areas of the National Health Insurance (NHI) pilot sites since school health is one of the non-negotiable service delivery areas.

The resources are in place to bring services and follow-up care closer to the learners as beneficiaries of the service. Ideally, each school health team should comprise one professional nurse per 2 000 learners, one enrolled nurse, one health promoter and one nutritionist.<sup>34,44,45,50</sup>

In the Mpumalanga province, there was a critical shortage of health promoters and all categories of nurses and nutritionists.<sup>53</sup> As a result, professional nurses were recruited for SHS within the province.<sup>53</sup> During the financial year 2016 / 2017, the province appointed 11 nutritionists for the DoH, of which three were allocated to the Gert Sibande District, resulting in a total of five for the entire district. The province also started to advertise permanent posts for school health nurses, professional nurses and enrolled nursing assistants within this financial year.<sup>53</sup>

### **2.8.4 Implementation of school health services in Gert Sibande District**

The Gert Sibande District within the Mpumalanga province consists of seven sub-districts and has been identified as the NHI pilot site of the province since 2012. Thus, resource allocation has been prioritised to this district. The District-Based Support Team was established to support sub-districts and to ensure that the SHS are implemented.



Ward-Based Outreach Teams (WBOTs) were also formed to act as one of the three streams of the PHC re-engineering.<sup>53</sup>

Currently, a team consisting of one professional nurse and one enrolled nurse is managing the SHS in the Gert Sibande District.

The WBOT for the Gert Sibande District consists of the professional nurse from the PHC staff establishment and the community health workers.

The aim of a WBOT is to provide outreach services to very remote areas and to carry out follow-ups for the learners referred to the health facilities by the school teams. The PHC outreach team will often provide or assist in the provision of SHS in certain areas. Both WBOT and PHC outreach teams also form part of the NHI project because school health is a priority programme, and nurses are delegated, not appointed, to render SHS due to their shortage. In addition, the Gert Sibande District employs two registered nutritionists within the DoH. These officials do not have a role or a link to the NSNP but are involved in the ISHP.

Within the Msukaligwa sub-district, two incomplete teams for school health comprise a retired professional nurse (appointed on a contract basis) and an enrolled nurse.

Both teams are fully equipped with transport and the basic equipment for rendering routine SHS.<sup>53</sup>

### **2.8.5 Role of the Department of Basic Education in the implementation of the Integrated School Health Policy in the Gert Sibande District**

Since 1999, the DoH and the DBE have collaborated to develop and implement school health programmes that are guided by the PHC package of South Africa norms and standards document of 2001.

The DoH is responsible for the provision of the entire package of SHS while the DBE creates a conducive environment for the service to be rendered. The implementation of the ISHP at school level is the responsibility of the school-based support team (SBST) under the guidance of the school headmaster/principal. The Life Skills / Life Orientation teacher or a designated staff member coordinates all the ISHP activities within the school. The SBST also plays a role in providing on-going support and assistance to learners with

long-term health conditions. No nutritionists have been appointed by the DBE to monitor the implementation of the NSNP or the ISHP in the Gert Sibande District, specifically the Msukaligwa sub-district.

## **2.9 STUDY MOTIVATION**

The ISHP provides the framework for implementing nutrition activities that ensure that learners receive nutrition-education messages that are re-enforced throughout the school environment. The ISHP addresses nutrition education, screening, feeding schemes and physical activity and creates a conducive environment and a link with health professionals who can prevent and treat nutritional problems that can impair learners' capacity to learn.

It is important that educators are aware and familiar with the ISHP since they are key to the implementation thereof and should be supported in understanding how this policy is related to the HPS Initiative.

School health services provide a safety net for many children of school-going age, and the services can be integrated into the lesson plans of other school subjects to maximise classroom time.

Evaluation studies that focus on outcome or impact of the policy programme require that the policy be in operation for a certain period before evaluating its outcomes or impacts.<sup>49</sup>

It is appropriate to carry out a process assessment before evaluating the impact of a programme. The effectiveness of school health programmes largely depends on the roles played by educators and parents. These programmes require educators to function in a number of areas that are not necessarily part of their core function. The success of school health programmes, therefore, depends on the educators' understanding of the areas that are essential to these programmes.

The ISHP is newly implemented and it is, therefore, important to evaluate the knowledge and perceptions of educators and headmasters relating to the nutrition components of the policy. An understanding of the barriers and needs within their environment is also essential to enable educators and headmasters to deliver a high-quality nutrition service. The purpose of this study was, therefore, to assess how well the ISHP nutrition component is implemented in quintile 1 and quintile 2 primary schools in the Msukaligwa sub-district.

## **CHAPTER 3: METHODOLOGY**

### **3.1 AIM**

The aim of this research project was to assess the implementation of Phase 1 of the ISHP nutrition component in quintile 1 and quintile 2 primary schools located in the Msukaligwa sub-district.

Phase 1 entails the provision of School Health Services with Grade 1 assessment that includes the follow-up visits to monitor and support children identified as having health problems, also Health Promotion and Health Education activities that includes liaison with and support of educators and caregivers, Coordination and Partnership, Capacity Building and Community Participation.<sup>19</sup>

The research question is “how well the ISHP phase 1 implemented within quintile 1 and 2 primary schools in Msukaligwa sub-district with regard to nutrition component? The second question is, what is the educators and headmaster’s knowledge concerning ISHP nutrition component, in Msukaligwa sub-district.

### **3.2 OBJECTIVES**

The objectives of the research are as follows:

- To assess the nutrition knowledge of educators and headmasters relating to the nutrition component of the ISHP in quintile 1 and quintile 2 primary schools
- To investigate the perceptions of educators and headmasters with regard to the nutrition activities within the ISHP in quintile 1 and quintile 2 primary schools
- To explore barriers to the implementation of the nutrition activities within the ISHP in quintile 1 and quintile 2 primary schools
- To identify the needs of educators and headmasters regarding the nutrition activities within the ISHP in quintile 1 and quintile 2 primary schools
- To assess schools as centres of Care and Support for Teaching and Learning (CSTL)

### **3.3 STUDY DESIGN**

An observational, descriptive, cross-sectional study was conducted.

### **3.4 STUDY SETTING**

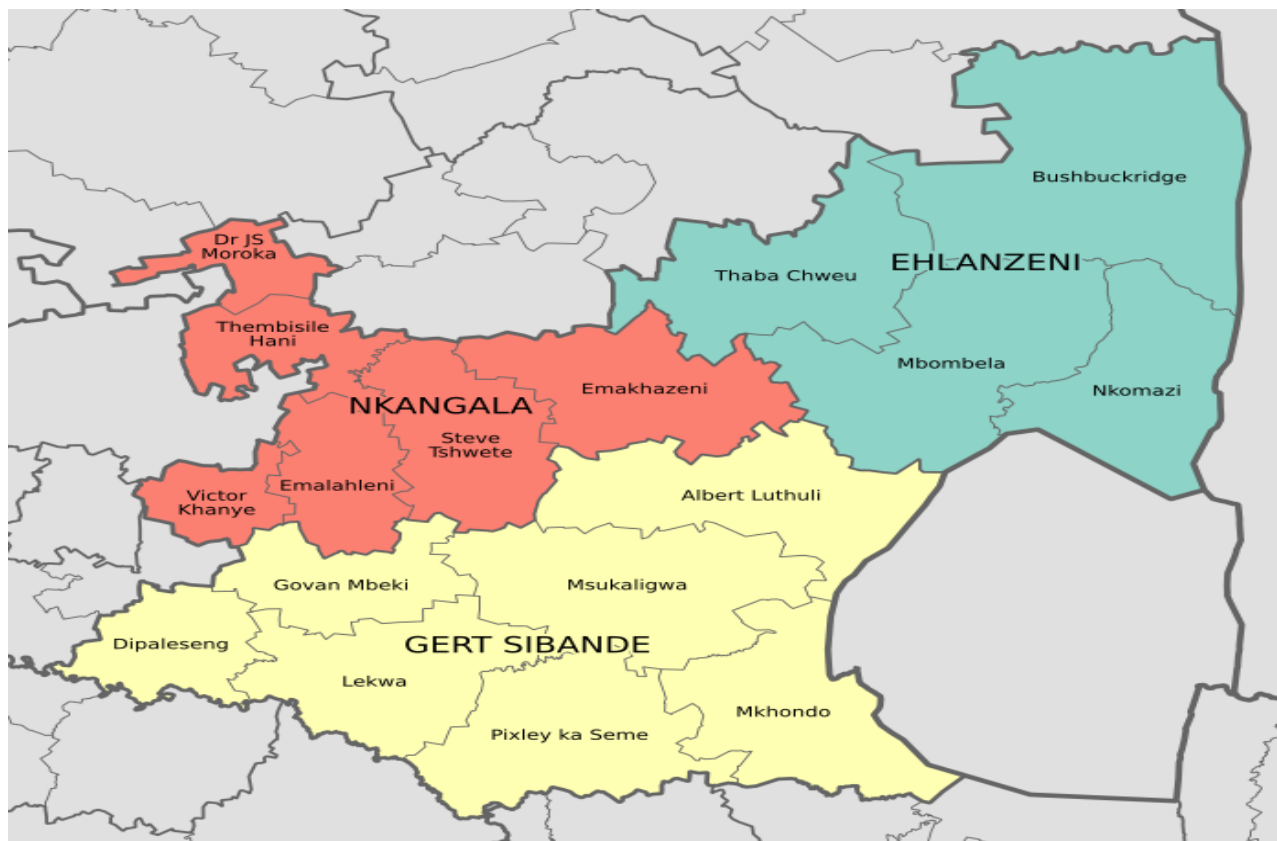
The current study was conducted in the Msukaligwa sub-district of the Gert Sibande District in Mpumalanga province. The Gert Sibande District is one of the three districts of the Mpumalanga province and is located in the southeast of the province. The district is mainly a rural area where communities have difficulties in accessing health services. It is characterised by poor roads that are under reconstruction, some of which are inaccessible during the rainy season and therefore learners cannot access schools and delivery vehicles and educators cannot access schools. Msukaligwa sub-district, education sector is divided into circuit i and ii, whereby circuit i has 31 schools, of which 4 are secondary and combined schools, 7 are secondary schools, 17 primary and 3 private schools. Circuit ii comprise of 27 schools, of which three are secondary and combined, three secondary and 21 primary schools. Overall, they do have 58 schools.<sup>53</sup>

The Gert Sibande District is demarcated into seven sub-districts, namely Msukaligwa, Albert Luthuli, Mkhondo, Lekwa, Govan Mbeki, Pixley Ka Seme and Dipaleseng, as indicated in Figure 3.1. The area is 61% rural and 39% urban, with a total population of 1 086 851. Of the total population, 88% of the inhabitants of the Gert Sibande District do not have medical aids and do not own the land in which they live. They do not qualify for receiving housing within formal infrastructure, and they depend on the public health sector for service delivery and 30.9% are unemployed.<sup>53</sup> The district is characterised by vast farming and forestry areas. Its main economic activities are mining, generation of coal-powered electricity by South Africa Synthetic Oil Liquid (SASOL) and production of synthetic fuels.<sup>53</sup>

### **3.5 SELECTION OF THE STUDY SITE**

The Msukaligwa sub-district in the Gert Sibande District was identified as a pilot site for the NHI since 2012 because the district has not been reaching national and provincial child-health targets.<sup>53</sup> The sub-district currently has no access to mobile services in the hard-to-reach areas apart from the NHI mobile units that are mainly used for mop-up campaigns.

The Msukaligwa sub-district is one of the first sub-districts in the Gert Sibande District to appoint two teams of school health nurses. The implementation of the ISHP was initiated during the year 2012 within this sub-district.



**Figure 3.1: Map of Mpumalanga province**

Source: [https://en.wikipedia.org/wiki/List\\_of\\_municipalities\\_in\\_Mpumalanga](https://en.wikipedia.org/wiki/List_of_municipalities_in_Mpumalanga)

### 3.6 STUDY POPULATION

The study population consisted of full-time educators and headmasters in quintile 1 and quintile 2 primary schools.

Only quintile 1 and 2 primary schools were included in the study as they cater for the poorest 20% of learners in Msukaligwa sub-district. They also receive the highest allocation of funding including transportation of learners and one meal per day during school time. Most of them are in farms. Quintile 3 schools are regarded as a

benchmark and mostly in townships; hence, they were not included in the study.<sup>52,53,54</sup>

### **3.6.1 Inclusion criteria**

The inclusion criteria for study participants were:

- schools that agreed to participate;
- male and female educators and headmasters on full-time appointment; and
- educators and headmasters who were present and gave informed consent.
- educators and headmasters fluent in English

### **3.6.2 Exclusion criteria**

The exclusion criteria for study participants were:

- schools that did not agree to participate;
- educators and headmasters on part-time appointment; and
- educators and headmasters who were absent or did not give consent to be included in the research.
- educators and headmasters not fluent in English

## **3.7 SAMPLING STRATEGY AND SAMPLE SIZE**

According to the 2014 DBE database, there are 33 quintile 1 primary schools and 17 quintile 2 primary schools in the Msukaligwa sub-district.<sup>53</sup> The primary schools are stratified into two clusters, namely quintile 1 and quintile 2 primary schools. Seventeen quintile 1 primary schools were randomly selected, by selecting every second quintile 1 primary school on the list provided by DBE. All 17 quintile 2 primary schools were selected to form a total sample size of 34 primary schools. Educators and headmasters were selected using convenience sampling (all available participants that gave informed consent).

### 3.8 DATA COLLECTION METHODS AND TOOLS

Data were collected by means of a self-administered questionnaire that was distributed to the educators and headmasters between 13 October and 27 November 2016.

A self-administered questionnaire (SAQ) is a type of a questionnaire that a respondent completes on her/his own. It can be completed at a convenient time, there is no need to set up interview appointment, a large number of respondents can be reached and low cost per completion. The limitations include low response rate, with some possible clarity issues, and if online, there is possibility of access issues.<sup>55</sup>

After the formal approval letter from the DBE has been received, the identified schools were contacted telephonically to request permission from the school principal to participate in the study. The DBE approval letter also forwarded (faxed) to the identified schools. After the school principal gave permission to participate, a date and time were arranged for data collection.

Upon arrival at the selected schools, all participants meeting the inclusion criteria were gathered into a group. The headmasters assisted the researcher to get all the educators together and encouraged them to participate in the research. The researcher then provided the participants with information regarding the study purpose and the study procedure. Subsequently, the participants were requested to complete and sign the informed consent forms that were presented in duplicate to study participants, and copies given to them.

The researcher then continued to obtain written informed consent. Thereafter, the questionnaires were distributed to the educators for completion. The researcher was available during this time to answer any questions.

Regarding the headmasters' questionnaires, the researcher approached the headmaster of the school to request informed consent. Thereafter the headmaster proceeded to complete the questionnaire. All questionnaires were checked by the researcher after the data collection, to ensure completeness.

### 3.8.1 Questionnaire description

The questionnaires included open- and closed-ended questions, multiple choice questions and Likert scale type of questions. The questionnaires were only available in English because the study participants are all proficient in English.

The questionnaire for the educators included the following five sections: socio-demographic information; nutrition knowledge; perceptions; barriers; and needs (Addendum A). The questionnaire for the headmasters included all the above-mentioned aspects in addition to general questions related to SHS.

This resulted in seven sections: socio-demographic information; general questions; perceptions (eight questions); nutrition knowledge (seven questions); needs (one question); barriers (divided into issues relating to community and programme/management); and the CSTL tool (Addendum B). Part of the existing questionnaires was used to compile the questionnaire. To assess a school as a CSTL centre, the researcher used the CSTL tool that was derived from the 2012 ISHP of the DBE.<sup>19</sup>

The headmaster in each school was approached to complete the headmaster questionnaire, which included the CSTL checklist. The checklist covered the following aspects:

- health promotion
- infrastructure, water and sanitation
- safety
- social welfare services
- psychosocial support
- curricular support
- co-curricular support
- nutrition
- material support
- community
- self-care



- policies

The questionnaire took an average of 15 minutes to complete.

Table 3.1 and 3.2 provides a description of the section, type of questions and the number of questions per section.

**Table 3.1: Educators questionnaire description.**

SECTION	HEADING	TYPE OF QUESTIONS	NUMBER OF QUESTIONS
1	Socio-demographic information	Closed-ended	5
2	Perceptions	Likert scale	8
3	Nutrition knowledge	Multiple choice	5
4	Needs	Open-ended	1
5	Barriers	Open-ended	3

**Table 3.2: Headmasters questionnaire description.**

SECTION	HEADING	TYPE OF QUESTIONS	NUMBER OF QUESTIONS
1	Socio-demographic information	Closed-ended	7
2	General questions	Closed-ended, open-ended and multiple choice	6
3	Perceptions	Likert scale	8
4	Nutrition knowledge	Multiple choice	4
5	Needs	Open-ended	1
6	Barriers	Open-ended	3
7	CSTL tool	Multiple-choice	14

### 3.9 VALIDITY

Three officials who are independent experts in the field of nutrition assured content validity through a review of the data-collection tools. Some of the questions were rephrased in terms of grammar and formatting following this review.

Reliability is defined as a test giving same measure if repeated under the same condition.<sup>55</sup> The face validity and reliability of the questionnaire were assessed during the pilot study by observing and clarifying the questions.<sup>55,56</sup>

Three experts reviewed the questionnaire to test the content validity of the questionnaire. The expert reviewers made limited changes.

### **3.10 PILOT STUDY**

The pilot study was conducted prior to the main study on 10 October 2016 at a conveniently selected primary school in Msukaligwa sub-district. The purpose of the pilot study was to evaluate the effectiveness and efficiency of the questionnaire and procedure. No changes were made to the questionnaire after the pilot study. One headmaster and four educators were included in the pilot study and the results of the pilot study were included in the final study.

### **3.11 DATA ANALYSIS**

A statistician appointed by the Faculty of Medicine and Health Sciences at Stellenbosch University assisted the researcher with the statistical analysis. The researcher performed quality control checks on the entered data, to check for accuracy, missing and completeness. Microsoft Excel was used to capture the data, and STATISTICA version 10 from Stat Soft Inc. ([www.statsoft.com](http://www.statsoft.com)) was used to analyse the data.

Summary statistics were used to describe the variables. Distribution (normal vs. others) of variables was presented through histograms and/or frequency tables. Medians or means were used as the measures of central location of ordinal and continuous responses. A mean percentage knowledge score was calculated for the educators and headmasters. Standard deviations and quartiles were used as indicators of spread. Open-ended questions were grouped and major themes were identified.

A p-value of <0.05 represents statistical significance in hypothesis testing, and 95% confidence intervals were thus used to describe the estimation of unknown parameters.

Assessment of the school as a CSTL centre was scored using the interpretation guide for the calculated score as presented in Table 3.3.

**Table 3.3: Interpretation guide for the calculated CSTL score**

12–17	The school still has much to do, but we have started the journey to becoming a centre of CSTL.
18–23	The school has a few good practices; with hard work and commitment, we can turn our school into a full-fledged centre of CSTL.
24–29	The school already has a groundswell of activities; we only need to fine-tune our practices, and we will soon be a full-fledged centre of CSTL.
30–36	The school is actively involved in practices that make it a centre of CSTL; it must keep up the good work.

### 3.12 ETHICAL AND LEGAL ASPECTS

#### *Approval by Research and Ethics committees*

Permission to conduct the research was requested from the DBE, Gert Sibande District (Addendum C). The selected schools and participants were fully informed of the study. The research protocol was submitted for ethical approval to the Health Research Ethics Committee (HREC), Faculty of Medicine and Health Sciences, Stellenbosch University (Ethics reference number: S16/02/027) and for research approval by the Mpumalanga Provincial Health Research Committee (see Addendum D).

#### *Informed consent*

Participants were requested to provide a signed informed consent form in order to participate in the study (Addendum E). Informed consent was completed in duplicate and a copy handed to study participants.

There were no incentives for participating in the study. Participation was voluntary, and the participants were free to withdraw from the study at any time.

#### *Participant confidentiality*

Each selected school was provided with a unique participating-school code, which was documented on an Excel spreadsheet.

Only the relevant code was recorded on the questionnaire. Participants remained anonymous, and confidentiality was ensured by only using the unique participant-identification numbers on the questionnaires.

## CHAPTER 4: RESULTS

### 4.1 INTRODUCTION

The study aimed to include 34 identified quintile 1 and quintile 2 primary schools. Four of the schools were permanently closed due to an inadequate number of enrolled learners, three schools were in hard-to-reach areas due to floods and two schools refused participation in the study, thus reducing the total number of participating schools to 25. Among these 25 schools, nine were quintile 1 primary schools and 16 were quintile 2 primary schools. In total, 112 educators (89 educators from the quintile 1 schools and 13 educators from the quintile 2 schools) and nine headmasters (five headmasters from the quintile 1 schools and 4 from the quintile 2 schools) participated in the study. There was a high refusal rate among the headmasters of the schools, which lead to the small sample size. The results of the self-administered questionnaires of the educators and headmasters are presented in this chapter.

During the data-collection period, appointments at the schools could not be made because officials appointed by the DBE were on strike. Most of the headmasters could not be reached during the data-collection period. In addition, certain headmasters refused to give their consent to participate because exam time for the learners was approaching. Only a few headmasters consented to participate in the study.

### 4.2 DEMOGRAPHIC INFORMATION

The demographic information of the headmasters and educators is summarised in Table 4.1.

**Table 4.1: Demographic information**

Demographic variable	Headmaster (n=9) n (%)	Headmaster (n=9) n (SD)	Educators (n=112) n (%)	Educators (n=112) n (SD)
Mean age (SD)		51(4.7)		49 (9.6)
Gender: Male	7 ( 77.8)		22 (19.6)	
Gender: Female	2( 22.2)		90 (80.4)	
Mean years of experience		14(7.9)		17.5(10.6)
Home language:	7(77.8)		96 (85.7)	

Zulu	2(22.2)		15 (13.4)	
Other				

The mean age of the headmasters was 51 years (SD+/- 4.7) with the majority being male (n=7; 77.8%), whereas the mean age of the educators was 49 years (SD+/- 9.6) with the majority being female (n=90; 80.4%). The mean number of working years' experience of the headmasters was 14 years (SD+/-7.9) and 17.5 years (SD+/-10.6) for the educators.

The home language of the headmasters (n=7; 77.8%) and educators (n=96; 85.7%) was predominantly isiZulu.

#### **4.3 GENERAL QUESTIONS TO HEADMASTERS REGARDING THE NUTRITION COMPONENT OF THE INTEGRATED SCHOOL HEALTH POLICY**

Through the information obtained from the questionnaires completed by the headmasters from nine schools, it was determined that almost one-half (n=4; 44.4%) of the schools had implemented a feeding scheme and provided nutrition education to the children. Only one school indicated they had a vegetable garden. More than one-half of the schools (n=5; 55.6%) had an SBST that co-ordinated the SHS, with three headmasters indicating that no SBST was available.

Four of the headmasters (44%) mentioned that they do not know when the coordinating forum meets, while three headmasters indicated that the forum meets quarterly. Two headmasters indicated that the forum meets bi-monthly.

The majority (n=7; 77.8%) of the headmasters reported that the number of learners referred for nutritional problems has decreased over time.

The headmasters indicated that the forum discusses items such as supplier logistics (n=2; 22.2%) (E.g. quality of delivered items, consistency in delivery times) and the school menu (n=1; 11.1%). Assistance at the schools by senior managers and the community and implementation needs (n=3; 33.3%) are also discussed during forum meetings. One headmaster reported that health screening had been conducted in the previous quarter and again during the previous month. One headmaster reported

that health screening had been carried out in the last year, and another stated that health screening had been conducted in the previous six months.

**Table 4.2: Responses of headmasters (n=9) to general questions relating to nutrition activities implemented at schools**

	(n)	%
<b>Feeding scheme</b>		
Yes	4	44.4
No	5	55.6
<b>Nutrition education</b>		
Yes	4	44.4
No	5	55.6
<b>Vegetable garden</b>		
Yes	1	11.1
No	8	88.9
<b>School-based support team (SBST) coordinating school health services</b>		
Yes	5	55.6
No	3	33.3
Do not know	1	11.1
<b>How often does the coordinating forum meet?</b>		
Bi-monthly	2	22.2
Quarterly	3	33.3
Do not know	4	44.5
<b>Number of learners referred for nutritional problems</b>		
Decreases	7	77.8
Increases	1	11.1
Do not know	1	11.1
<b>Issues discussed at forum meetings</b>		
Assistance, implementation needs	3	33.4
Supplier logistics (e.g. quality of products delivered, delivery times)	2	22.2
Menu	1	11.1
None	3	33.3
<b>Last conducted health screening</b>		
Last month	1	11.1
Previous quarter	1	11.1
Previous six months	2	22.2
Last year	2	22.2
Do not know	3	33.4

(n=9)

#### 4.4 NUTRITION KNOWLEDGE AND OPINIONS OF EDUCATORS AND HEADMASTERS CONCERNING NUTRITION ACTIVITIES WITHIN THE INTEGRATED SCHOOL HEALTH POLICY

In order to determine the educators and headmasters' knowledge of nutrition, the questionnaires included 5 multiple-choice questions for the educators and for the headmasters. The results are summarised in Table 4.3.

**Table 4.3: Nutrition knowledge of headmasters and educators**

<b>Knowledge Questions</b>	<b>Headmaster s n (%)</b>	<b>Educators n (%)</b>
<b>Which of the following options do you consider as a balanced meal?</b>		
Bread, cheese, tomato slice, fruit juice	2 (22.2)	106 (94.6)
Pap and potatoes	0 (0.0)	5 (4.5)
Bread and chips	0 (0.0)	0 (0.0)
Lettuce, tomato and cucumber	7 (77.8)	1 (0.9)
<b>Food groups that protect the body against illness</b>		
Fruits and vegetables	9 (100)	99(88.4)
Meat and milk products	0 (0.0)	10 (8.9)
Do not know	0 (0.0)	3 (2.7)
<b>Food groups that provide the body with energy</b>		
Fruits and vegetables	3 (33.3)	39 (34.8)
Meat and milk products	1 (11.1)	33 (29.5)
Bread/rice	5 (55.6)	39 (34.8)
Do not know	0 (0.0)	1 (0.9)
<b>Good source of protein</b>		
Crisps (e.g. Simba, Lays)	0 (0.0)	1 (0.9)
Fruit (e.g. apple, banana)	0 (0.0)	25 (22.3)
Sweets (e.g. lollipops)	0 (0.0)	8 (7.1)
Nuts (e.g. pecan nuts, peanuts)	8 (88.9)	74 (66.1)
Do not know	1(11.1)	4 (3.6)
<b>High-fibre foods</b>		
Fruit (e.g. apple, pear, banana)	6 (66.7)	75 (67.0)
Dairy (e.g. cheese)	2 (22.2)	17 (15.2)
Soft drinks (e.g. Fanta)	0 (0.0)	9 (8.0)
Do not know	1(11.1)	11 (9.8)

Headmasters (n=9); Educators (n=112)

Through the information obtained from the headmasters and educators, most of the educators understand the constituents of a balanced meal (n=106; 94.6%), however only two headmasters (n=2; 22.2%) were able to report it correctly.



All nine (100%) headmasters and the majority (n=99; 88.4%) of the educators could correctly identify the food groups that protect the body against illness. More than 55% of headmasters and only 35% of the educators had correct knowledge of the food groups that provide energy. A high percentage (n=8; 88.9%) of headmasters and (n=73; 65%) of the educators could correctly identify the food group options that provided the best source of protein. Six headmasters (67%) and 75 (67%) educators knew the food options that contained the most fibre.

A mean percentage knowledge score was calculated. The mean percentage knowledge score for educators was 88% (SD+/- 15.92) and the mean percentage knowledge score for the headmasters was 89% (SD +/- 18.16). There was no statistically significant difference (p=0.2959) in the knowledge score between the educators and headmasters using the two-sample t test.

Table 4.4 indicates the opinions of educators and headmasters relating to nutrition activities implemented at schools.

**Table 4.4: Opinions of the educators and headmasters relating to nutrition activities implemented at schools.**

<b>Opinions concerning nutrition activities</b>	<b>Headmasters n (%)</b>	<b>Educators n (%)</b>
<b>Why is nutrition screening important?</b>		
To monitor the child's growth and development	0 (0.0)	54 (48.2)
To detect underlying diseases	2 (22.2)	4 (3.6)
Early referral for further management	0 (0.0)	3 (2.7)
All of the above	7 (77.8)	51 (45.5)
<b>Performance is enhanced by good nutritional status</b>		
Healthy mind, healthy body	2 (22.2)	56 (50.0)
Hunger affects intelligence	1 (11.1)	6 (5.4)
Poor nutritional status worsens the risk of disease	0 (0.0)	0 (0.0)
All of the above	6 (66.7)	48 (42.8)
None of the above	0 (0.0)	2 (1.8)
<b>Health and nutrition is a critical component of ISHP</b>		
True	9(100)	104 (92.8)
False	0 (0.0)	3 (2.7)
Do not Know	0 (0.0)	5 (4.5)

Seventy-seven percent of headmasters had a correct opinion that nutrition screening is important for growth and development, detecting underlying diseases and for early

referral. Only 2.7% of educators reported that nutrition screening could be useful for early referral. Fifty percent of educators and 22% of headmasters were of the opinion that performance can be enhanced by healthy mind, healthy body. Sixty-six percent of headmasters and only 42.8% of the educators was of the opinion that good nutrition is important to build a healthy mind and body, that hunger affects intellectual performance and that a poor nutritional status negatively affects the risk of disease. All nine headmasters (100%) and the majority of the educators (n=104; 93%) agreed and were of the opinion that health and nutrition is a critical component of the ISHP.

#### 4.5 PERCEPTIONS OF HEADMASTERS AND EDUCATORS CONCERNING ACTIVITIES WITHIN THE INTEGRATED SCHOOL HEALTH POLICY

Table 4.5 indicates the perceptions of headmasters and educators regarding school-based nutrition activities. Most of the headmasters (n=8; 89%) strongly agreed and agreed with the statement that SFPs increase food availability to school-going children who need adequate food.

The majority (n=109; 97%) of the educators indicated that they strongly agree and agree with the statement. Only three educators (n=3; 2.7%) strongly disagreed and disagreed with the statement.

**Table 4.5: Perceptions of headmasters and educators regarding school activities**

Statement	Strongly Agree n (%)	Agree n (%)	Disagree n (%)	Strongly Disagree n (%)
School feeding programmes increase food availability to school-going children.				
Headmasters	7 (77.8)	1 (11.1)	0 (0.0)	1 (11.1)
Educators	66 (58.9)	43 (38.4)	2 (1.8)	1 (0.9)
Academic performance and learning of schoolchildren may be enhanced by school nutrition interventions.				
Headmasters	6 (66.7)	2 (22.2)	0 (0.0)	1 (11.1)
Educators	56 (50.0)	52 (46.4)	3 (2.7)	1 (0.9)

Academic performance of pupils with a good nutritional status is higher than that of pupils with a poor nutritional status.				
Headmasters	4 (44.4)	3 (33.3)	2 (22.2)	0 (0.0)
Educators	58 (51.8)	50 (44.6)	2 (1.8)	2 (1.8)
Physical performance of schoolchildren can be enhanced by good nutrition.				
Headmaster	5 (55.6)	3 (33.3)	1 (11.1)	0 (0.0)
Educators	50 (44.6)	54 (48.2)	4 (3.6)	4 (3.6)
School-based nutrition interventions improve nutritional behaviour of children.				
Headmasters	4 (44.4)	5 (55.6)	0 (0.0)	0 (0.0)
Educators	47 (42.0)	59 (52.6)	5 (4.5)	1 (0.9)
Nutrition education for school-going children plays an important role in improving healthy eating habits.				
Headmasters	2 (22.2)	7 (77.8)	0 (0.0)	0 (0.0)
Educators	47 (42.0)	61 (54.5)	3 (2.6)	1 (0.9)
Schools have a responsibility to provide nutritional support for children as part of the learning environment.				
Headmasters	5 (55.6)	4 (44.4)	0 (0.0)	0 (0.0)
Educators	50 (44.6)	58 (51.8)	3 (2.7)	1 (0.9)
Foods that children eat during the school day affect their readiness to learn.				
Headmasters	4 (44.4)	5 (55.6)	0 (0.0)	0 (0.0)
Educators	20 (17.8)	35 (31.3)	38 (33.9)	19 (17.0)

Headmasters (n=9); Educators (n=112)

Most headmasters (n=8; 89%) strongly agreed and agreed that academic performance and learning can be enhanced by school-based nutrition interventions. One-half of the educators (n=56; 50%) strongly agreed with this statement, (n=52; 46.4%) of educators agreed and (n=3; 2.7%) disagreed. Only one (0.9%) educator strongly disagreed that learning can be enhanced by school-based nutrition interventions.

The majority of the headmasters (n=7; 77.8%) and educators (n=108; 96.4%) strongly agreed and agreed that the academic performance of pupils with a good nutritional status is higher than that of pupils with a poor nutritional status. Only (n=4; 3.6%) of the educators disagreed and strongly disagreed.

Most headmasters (n=8; 89%) strongly agreed and agreed that the physical performance of schoolchildren can be enhanced by good nutrition. Almost one-half of the educators (n=50; 44.6%) strongly agreed that the physical performance of schoolchildren can be enhanced by good nutrition, (n=54; 48.2%) agreed, (n=4; 3.6%) disagreed and (n=2; 1.8%) strongly disagreed.

All the headmasters(n=9) strongly agreed and agreed with the following three statements: (i) school-based nutrition interventions improve the nutritional behaviour of children; (ii) nutrition education for school-going children plays an important role in improving healthy eating habits; and (iii) schools have a responsibility to provide nutritional support to children as part of the learning environment. The majority of educators (n=59; 52.7%) agreed that school-based nutrition interventions improve the nutritional behaviour of children, and (n=47; 42%) strongly agreed. Five educators strongly disagreed (4.5%) and one educator (0.9%) disagreed.

Regarding the statement that nutrition education for school-going children plays an important role in improving healthy eating habits, (n=61; 54.5%) of educators agreed and (n=47; 42%) strongly agreed. One educator (0.9%) strongly disagreed and three educators (2.7%) disagreed.

Of the educators who completed the questionnaire, (n=50; 44.6%) strongly agreed that schools have a responsibility to provide nutritional support to children as part of the learning environment and (n=58; 51.8%) of educators agreed. Only one educator (0.9%) strongly disagreed and three educators (2.7%) disagreed.

All nine headmasters (100%) strongly agreed and agreed that foods children eat during the school day affect their readiness to learn.

However, more than one-half (n=39; 50.9%) of the educators disagreed and strongly disagreed with this statement.

#### **4.6 NEEDS OF EDUCATORS AND HEADMASTERS REGARDING NUTRITION ACTIVITIES WITHIN THE INTEGRATED SCHOOL HEALTH POLICY**

Table 4.6 indicates the needs identified by the headmasters and educators. The most frequently listed need was adequate food supply (n=56; 46.3%). This was followed by the need for a fully equipped kitchen (n=28; 23.1%) to prepare meals

and to act as a storage area for food items. The need for a vegetable garden to supplement the meals prepared at schools (n=11; 9.1%) and the use of reliable suppliers to provide quality food (n=3; 2.5%) were listed thereafter.

**Table 4.6: Needs identified by headmasters and educators regarding nutrition activities**

<b>Needs</b>	<b>Headmasters needs n (%)</b>	<b>Educators needs n (%)</b>
<b>Adequate food supply</b>	3 (33.3)	53 (47.3)
<b>Equipped kitchen</b>	1 (11.1)	27 (24.2)
<b>Vegetable garden</b>	2 (22.2)	9 (8.0)
<b>Reliable supplier</b>	2 (22.2)	1 (0.9)
<b>Water</b>	1 (11.1)	0 (0.0)
<b>None</b>	0 (0.0)	22 (19.6)
<b>TOTAL</b>	<b>9 (100)</b>	<b>112 (100)</b>

Headmasters (n=9); Educators (n=112)

#### **4.6.1 Comments /challenges raised**

Most of the challenges experienced and reported by educators involved theft. The issue of community being stricken by poverty with most of the schools in quintile 1 was a challenge. Members unlawfully help themselves with produce from vegetable gardens due to unemployment. Cases were reported to South African Police Services (SAPS) but no arrests will be made. As a result, only one school had vegetable garden. Certain educators mentioned the issue of portion sizes served to learners as a challenge because the learners come from different family situations. Educators were concerned that the portion sizes are too small since some learners go to bed and come to school on an empty stomach. The educators felt that such cases needed to be treated differently. Most of the schools with health promotion status have their own vegetable gardens to supplement the supplies, but the challenge is the lack of fencing. Due to this lack of security, livestock is damaging their crops, and theft occurs over weekends. Some of the educators reported that the food was inadequate, as the supplier was not delivering according to the delivery

schedule. Some educators reported that supplies are returned if the foods are of poor quality.

#### 4.7 BARRIERS TO IMPLEMENTATION OF NUTRITION ACTIVITIES

In order to determine the educators and headmasters' barriers to implementation of nutrition activities at their work places, the questionnaires included two components. The results are summarised in Table 4.7.

**Table 4.7: Barriers to implementing nutrition activities according to headmasters and educators**

<b>Barriers</b>	<b>Headmasters n (%)</b>	<b>Educators n (%)</b>	<b>Total n (%)</b>
<b>Programme/Management</b>			
Supplier irregularities	5 (55.5)	22 (19.6)	27 (22.3)
Lack of management cooperation	1 (11.1)	11 (9.8)	12 (9.9)
<b>Community</b>			
Theft	2 (22.2)	21 (18.7)	23 (19.0)
Lack of resources	1 (11.1)	12 (10.7)	13 (10.7)
Lack of community participation	1 (11.1)	18 (16.0)	19 (15.7)

Headmasters (n=9); Educators (n=112)

The most frequently identified barriers that affect ISHP implementation include programme and management irregularities in terms of consistency in deliveries (n=27; 22.3%). This was followed by community barriers due to theft by community members (n=23; 19%). The lack of community participation by parents and community members (n=19; 15.7%) in terms of accepting job offers as cooks was listed thereafter. The lack of resources such as human resources and lack of allocated centralised funds to run the programme (n=13; 10.7%) were mentioned. Lastly, lack of cooperation (n=12; 9.9%) of management at sub-district, district and provincial level was stated as a barrier.

#### 4.8 SUGGESTIONS FROM HEADMASTERS AND EDUCATORS TO IMPROVE THE INTEGRATED SCHOOL HEALTH POLICY

The following suggestion were obtained from the educators and headmasters in order for them to improve the Integrated School Health Policy:

**Table 4.8: Suggestions from headmasters and educators to improve ISHP implementation**

Suggestions	Headmasters' n (%)	Educators n (%)	Total n (%)
Infrastructure (e.g. equipped kitchen and water)	5(55.5)	21 (18.7)	26 (21.5)
Systems in place	2(22.2)	20 (17.9)	22 ( 18.2)
Quality food supplied	1 (11.1)	34 (30.3)	35 ( 28.8)
Resources (e.g. budget, staff)	0 (0.0)	4 (3.5)	4 ( 3.3)
Vegetable garden	1(11.1)	2 (1.8)	3 (2.5)

Headmasters (n=9); Educators (n=112)

Table 4.7 indicates the suggestions from the headmasters and educators to improve the ISHP. An equipped kitchen with a water supply to prepare meals was suggested by (n=26;22%) of educators. Service providers to supply quality food was mentioned by (n=35;28.8%) of educators. This was followed by (n=22;18.2%) of educators who suggested: having monitoring and evaluation systems in place such as security measures to minimise theft and vandalism; systems to change the menu; and awareness campaigns to inform the community about the importance of having nutrition activities in schools.

Four (3.3%) educators mentioned increased financial and human resources as it was inadequate, and (n=3;2.5%) of educators suggested having vegetable gardens in their schools. Meals were prepared by unskilled local people appointed by School Governing Body (SGB), and the orders placed by headmaster or educator delegated to oversee PSNP for that month.

#### 4.9 ASSESSMENT OF SCHOOLS AS CENTRES OF CARE AND SUPPORT FOR TEACHING AND LEARNING

In order to assess whether the schools are ready to be recognised as centres of care and support for teaching and learning, the headmasters' responses are indicated in Table 4.9.

**Table 4.9: CSTL scores**

	SCHOOLS									
CSTL COMPONENTS	A	B	C	D	E	F	G	H	I	MEAN SCORE
<b>Health promotion</b>										
Never		1	1		1					
Sometimes							2			
Always	3			3		3		3	3	
<b>Infrastructure, water and sanitation</b>										
Never		1			1					
Sometimes			2							
Always	3			3		3	3	3	3	
<b>Safety</b>										
Never										
Sometimes		2			2					
Always	3		3	3		3	3	3	3	
<b>Social welfare services</b>										
Never		1	1							
Sometimes					2			2	2	
Always	3			3		3	3			
<b>Psychosocial support</b>										
Never					1			1	1	
Sometimes						2	2			
Always	3	3	3	3						



CSTL COMPONENTS	SCHOOLS									MEAN SCORE
	A	B	C	D	E	F	G	H	I	
<b>Co-curricular support</b>										
Never	1					1	1	1	1	
Sometimes			2							
Always		3		3	3					
<b>Nutrition</b>										
Never		1						1	1	
Sometimes										
Always	3		3	3	3	3	3			
<b>Curricular support</b>										
Never										
Sometimes										
Always	3	3	3	3	3	3	3	3	3	
<b>Material support</b>										
Never										
Sometimes								2	2	
Always	3	3	3	3	3	3	3			
<b>Community</b>										
Never										
Sometimes					2					
Always	3	3	3	3		3	3	3	3	
<b>Self-care</b>										
Never		1								
Sometimes	2				2			2	2	
Always			3	3		3	3			
<b>Policies</b>										
Never										
Sometimes								2	2	
Always	3	3	3	3	3	3	3			
<b>TOTAL</b>	<b>33</b>	<b>25</b>	<b>30</b>	<b>36</b>	<b>26</b>	<b>33</b>	<b>32</b>	<b>26</b>	<b>26</b>	<b>267 (22.2)</b>

Table 4.9 provides the overall scores for the nine schools that were evaluated.

From the schools evaluated, five (55.6%) schools (schools A, C, D, F, and G) are actively involved in practices that make them centres of CSTL. Their overall scores range between 30 and 36. The remaining four (44.4%) schools (schools B, E, H, I) have a groundswell of activities but need to fine-tune their practices to become fully-fledged centres of CSTL. Their overall scores range from 24 to 29.

The overall score for School A is 33, which implies that the school is actively involved in practices that make it a centre of CSTL. However, the school is lacking in the co-curricular support component because it never provides activities after school hours to assist in promoting the physical, social and emotional health of learners.

The overall score for School B is 25, which implies that the school has a groundswell of activities. The school simply needs to fine-tune its practices to become a fully-fledged centre of CSTL. The school is lacking in the health promotion component because it does not have a day or a time set aside for such an activity. The school also has infrastructure, water and sanitation challenges. School B has never been involved with social welfare services to promote physical and psychosocial health. The school does not have nutritional policies and practices that focus on healthy nutrition and does not promote self-care to the entire school community.

The overall score for School C is 30, meaning that the school is actively involved in practices that make it a centre of CSTL. School C has health promotion challenges because it functions without any interventions that address the factors that affect the well-being of the entire school community. In addition, the school is not involved with social welfare services to promote physical and psychosocial health.

School D achieved score of 36, which is the highest score of the nine schools. This means that the school is actively involved in practices that make it a centre of CSTL.

The school does not experience any challenges because it is able to implement all the CSTL components.

The score for School E is 26, meaning that the school has a groundswell of activities. The school simply needs to fine-tune its practices to become a fully-fledged centre of CSTL.

The health promotion component is a challenge at this school because it has not implemented interventions that address the factors that affect the well-being of the

entire school community. The school also lacks a water supply and the psychosocial support in response to the social, mental and emotional needs of learners and teachers.

The overall scores for School F is 33 and for School G is 32, meaning that these schools are actively involved in practices that make them centres of CSTL. These schools only have co-curricular support challenges since they do not provide activities after school hours that assist learners in promoting their physical, social and emotional health.

The overall score for School H is 26, meaning that the school have a groundswell of activities and simply need to fine-tune their practices to become fully-fledged centres of CSTL.

In addition, the overall score for School I is 26, meaning that the school have a groundswell of activities and simply need to fine-tune their practices to become fully-fledged centres of CSTL.

School I and school H has psychosocial-support challenges in response to the social, mental and emotional needs of learners and teachers. The school also demonstrates co-curricular support challenges. This is because the school does not provide activities after school hours that assist learners in promoting their physical, social and emotional health due to its use of common scholar transport. School I is also confronted with nutritional challenges.

## CHAPTER 5: DISCUSSION

The aim of the study was to assess the implementation of Phase 1 of the ISHP nutrition component in quintile 1 and quintile 2 primary schools located in the Msukaligwa sub-district. The primary objectives were: (i) to assess the nutrition knowledge of educators and headmasters regarding the nutrition component of the ISHP; (ii) to investigate the perceptions, (iii) barriers and (iv) needs of the educators and headmasters regarding the nutrition activities within the ISHP; and (iiv) to assess schools as centres of Care and Support for Teaching and Learning. Information was obtained through the distribution of a self-administered questionnaire to the headmasters and the educators of the primary schools. The results achieved are discussed below.

### 5.1 GENERAL ACTIVITIES

The answers to the general activities posed to the nine headmasters in this study indicated that more than one-half of the schools do not implement a feeding scheme or provide nutrition education as indicated in the study findings. From the nine headmasters interviewed, only 4 of them (44.4%) has feeding scheme and provide nutrition education respectively. These schools have not allocated a day or time for nutrition education as part of the health promotion component, thus nutrition education is only being implemented partially.

Only one of the nine headmasters reported having a vegetable garden at the school. The lack of vegetable gardens at schools could be due to a lack of secure fencing and water supply constraints at the schools. Having a vegetable garden can be very beneficial in schools since it can assist in supplementing the school menu, especially during delivery crises and in terms of preventing illness among children.

School gardens are seen as settings that create a sense of community, instil concern for the environment, foster a connection with nature and help learners to develop self-confidence, discipline and skills in cooperation and gain multi-cultural understanding.<sup>57</sup>

School gardens play a variety of roles and are not limited to environmental education. The presence of vegetable gardens at schools shows learners how to grow a variety of foods and exposes them to new types of fruits and vegetables, thus improving their preferences and increasing their nutritional knowledge. Increased advocacy of the initiation of vegetable gardens in these schools is recommended, and the benefits thereof should be promoted.

The Food and Agriculture Organization of the United Nations and WHO suggest that it is unrealistic to expect a school garden to meet all the staple food needs of a school feeding programme. However, a school garden can be an excellent source of foods rich in proteins, vitamins and minerals. This adds variety and nutritional quality to school meals.<sup>57,58</sup> This study confirms the earlier findings of Helen Keller International<sup>59</sup> in Bangladesh, which demonstrate that without nutrition education, the impact of food gardens is lessened as its impacts are not known. This study partially gave nutrition education and did not implement vegetable gardens.

With nutrition education, food gardens had an impact in the areas of improved production and increased consumption of micronutrient foods, diversified diets, improved status of women, and increased income from garden and livestock production and increased capacity building at community and household levels.<sup>51</sup>

The current study reports the decrease in the number of learners referred to the next level of care after screening. This may be due to fewer visits by school health teams since the teams are incomplete or may be the result of effective services rendered by the teams. The decrease may also be an indication of the good health status of the learners. There is also a self-reported reduced frequency in the number of health screenings conducted, possibly due to the above-mentioned reasons.

The RMCH organization reports similar findings in their assessment: access to services by children from rural communities who are referred is a challenge; and it is difficult for health teams to access remote areas.<sup>46</sup> The conclusion is that many school health teams are not adequate although school health is a priority programme.

A study by Mohlabi et al.<sup>34</sup> in 2010 on the barriers to the successful implementation of SHS in the Mpumalanga and Gauteng provinces found that certain headmasters

refused school health nurses entry into the school premises. The headmasters considered that SHS is the jurisdiction of the DoH and not the DBE.<sup>27</sup>

## 5.2 NUTRITION KNOWLEDGE

The mean percentage knowledge score educators were 88% (SD +/- 15.92) and for the headmasters was 89% (SD +/- 18.16). There was no statistically significant difference ( $p=0.2959$ ) in the knowledge score between the educators and headmasters. The majority of the headmasters could correctly identify the food groups that prevent illness, the sources of protein and the best source of fibre-rich foods, however the minority could identify a balanced meal option.

Educating parents and teachers about nutrition provides the knowledge base needed to reduce the risk of nutrition-related health problems.<sup>61</sup> A study conducted in 2010 on the evaluation of the implementation of the School Health Policy in two schools in Cape Town differently to this study, found that educators and school health nurses did not have the same level of knowledge and understanding of the PSNP; educators were less informed about the policy.<sup>62</sup> Challenges to policy implementation included lack of nutrition knowledge, poverty, staff shortages and the lack of a budget for SHS dedicated by senior departmental managers.<sup>62</sup>

In the RMCH assessment, respondents reported that the provision of an NSNP improved school attendance and performance.<sup>46</sup> Most of the learners in this assessment were affected by poverty and a lack of food in their homes.<sup>46</sup>

The Directorate of Nutrition of the DoH has emphasised the call for improved nutrition with the development of the Integrated Nutrition Programme.<sup>41</sup>

The nutrition situation is worsened by a lack of nutritional information and knowledge. In addition, the situation is aggravated by unwanted dietary habits, nutrition-related practices, attitudes, perceptions and socio-cultural influences that could adversely affect the nutritional status of the entire population.<sup>41</sup>

To attain good health and nutritional status, people need sufficient knowledge and skills to grow, purchase, process, prepare, eat and feed their families a variety of foods in the right quantities and combinations.<sup>41</sup>

### 5.3 PERCEPTIONS

In the current study, headmasters and educators perceived that school-feeding programmes increase food availability to school-going children.

The study was conducted in quintile 1 and quintile 2 primary schools, which are in poverty-stricken rural areas according to the definition of a quintile. Therefore, most of the learners arrive at school hungry.<sup>52,54</sup> School-based nutrition interventions improve the nutritional behaviour of children.<sup>52</sup> Nutrition education during school years is as important as nutrition itself. Studies have documented the negative effects of malnourishment on children's intellectual development.<sup>54,57,63</sup>

In the present study, headmasters and educators had a perception that the academic performance of pupils with a good nutritional status is higher than those of poor nutritional status. The headmasters and educators also perceived that academic performance and learning of schoolchildren is enhanced by school-nutrition interventions. In a qualitative research study in Turkey, students suggest strategies for increasing healthy eating in schools, which include improving the taste, appearance, availability and convenience of healthy eating options.<sup>39</sup>

In South Africa, physical education was phased out from the curriculum as a standalone subject in 2004.<sup>63</sup> Physical education as a subject was placed in the learning area of life orientation as one of the four learning outcomes.<sup>63</sup>

The National Curriculum Statement defines life orientation as a broad emphasis on the persistent influence of skills, knowledge, values and attitudes.<sup>63</sup> All these aspects will lead to positive decision-making and action concerning health promotion and social, personal and physical development in all health-promotion settings. Various challenges in implementing physical activity within life orientation are identified, and the need for capacity development in this area is highlighted.<sup>26</sup>

In a systematic review by the Medical Research Council and the University of Cape Town, school interventions were more likely to be successful when offered at primary schools and implemented by qualified educators.<sup>14,57</sup> In contrast to the findings by Steyn et al.<sup>15</sup> in 2009, this study found that respondents perceived nutrition education for school-going children to play an important role in improving healthy eating habits. The systematic review study was conducted in the Western Cape,

Province, South Africa. The study findings were that numerous school-based nutrition interventions have shown significant improvements in children's nutritional behaviours.<sup>15</sup>

The headmasters and educators in this study perceived schools to be responsible for providing nutritional support to children as part of the learning environment. In a study by Lucarelli et al.<sup>64</sup> in 2014, school personnel expressed frustration with the perceived societal pressure on schools to influence students to eat healthily in their home environment when the broader community did not support these efforts.

Two-thirds of the school personnel perceived parents were not providing healthy choices at home and were relying on fast foods and pre-packaged foods for cost and convenience reasons.<sup>64</sup> School personnel considered that their lack of time resulted in the health initiative receiving a lower priority than their day-to-day operational commitments and activities related to academic achievement and test scores.<sup>64</sup>

According to the National School Climate Council<sup>65</sup> which is the International body, "There is growing appreciation that school climate, the quality and character of school life, fosters children's development, learning and achievement. School climate is based on the patterns of people's experiences of school life; it reflects the norms, goals, values, interpersonal relationships, teaching learning and leadership practises, and organizational structures."

There are four commonly accepted dimensions of school climate: safety (physical and social-emotional); teaching and learning (quality of instruction, social, emotional and ethical learning, professional development and leadership); relationships (respect for diversity, school community and collaboration, morale and connectedness); and environmental-structural (physical surroundings). School climate is consistently associated with a variety of student outcomes, including learning, academic achievement, social well-being, emotional health and mental health.<sup>65</sup>

In the current study, the headmasters perceived that when the foods that the children eat during the school day affects their readiness to learn. Interestingly, almost one-half of the educators disagreed with this statement. A study by the Child Health Unit<sup>66</sup> on the evaluation of South Africa's PSNP indicated that educators perceived



school feeding as contributing to learner cognitive attentiveness, improved school attendance, reduced absenteeism and household food security. Most of the educators did not perceive school feeding as an infringement on the learners' learning time or as a waste of time.<sup>66</sup>

#### **5.4 BARRIERS**

The most-identified barriers in this study included unreliable suppliers, lack of cooperation of management, theft by community members, unavailable or inadequate funds, lack of help from the local community members and no community participation.

A multidisciplinary approach is vital in meeting the needs of clients and care providers. To attain satisfaction in health-promoting schools, all stakeholders should share ideas and reach a consensus.<sup>67</sup>

Both professionals and non-professionals need to work together to establish a healthy and well-functioning multidisciplinary team that can address the health issues affecting learners and educators. In the School Health Policy and Implementation Guidelines,<sup>20</sup> one of the objectives stipulated is that the school community should be assisted through the development of intersectoral plans to support and develop health-promoting schools.

Marx and Northrop, cited in Marx and Wooley,<sup>68</sup> stated that when parents or caregivers are comfortable with the school and communicate with the school regularly, they are more likely to understand and support school health programmes. The participants in the study generally embraced the idea of involvement of communities. Working together with communities also benefits education and health in that when learners are healthy, educational achievements are high.<sup>69</sup>

Families, community members and community organisations can provide support and in turn, be supported by all the other components of a coordinated school health programme.<sup>69</sup>

The RMCH assessment<sup>46</sup> reported that leadership of the ISHP at district level and higher appears to be an issue in some areas such as the Gert Sibande District. One

respondent stated that “there is no or limited directorship at sub-district level. There is no support or guidance from management at higher level”.<sup>46</sup> This finding links to the identified barrier of lack of cooperation of management.<sup>46</sup>

In a study by Mohlabi et al.<sup>34</sup> in 2010 on barriers to the successful implementation of SHS in the Mpumalanga and Gauteng provinces, the findings reveal barriers related to governance such as lack of policy guidelines for SHS and failure of government to prioritise SHS. Programme-related issues such as Intersectoral collaboration, management-related issues such as lack of support by management and managers and limited knowledge of the Health Promotion School Initiative were mentioned.<sup>34</sup> Community-related issues such as non-inclusion of the communities in school health programmes by health professionals were indicated. Respondents stated that there is a need for political commitment in consistently placing the health and education of learners as a priority on the national agenda.<sup>34</sup>

In a study by Lucarelli et al.<sup>64</sup> in 2014 on facilitators for the promotion of health in schools, the barriers included budgetary constraints leading to low prioritisation of health initiatives, availability of unhealthy, competitive foods and perceptions that students would not eat healthy foods. One-half of the staff members acknowledged that the food-service budget influenced the items served at school meals.

Schools with a key set of characteristics such as the presence of a coordinated school health team, nutrition policies and a school health champion experienced more improvement in the learners in terms of school attendance, referrals and decrease in number of diseases.<sup>36</sup>

In the present study, some participants expressed the suspicion that the awarding of tenders for service providers may be politically influenced because suppliers were not rotated or changed despite dissatisfaction with the service rendered in certain schools. Some of the participants reported theft by community members, with no arrests being made after reporting the incidents to the police.

Poverty is found to be a social problem that is inherent in many communities, such as in Msukaligwa sub-district, irrespective of whether the community is rural semi-urban or urban. Most of the rural communities are vulnerable to poverty due to a lack of resources and accessible information. A study by Gyekye and Akinboade<sup>70</sup> in

2007 asserted that developmental programmes in rural communities should be intensified in areas where people are poor. The authors add that any strategy for poverty alleviation should pay attention to increasing the skills of these people in order to enable them to control their poverty status.<sup>70</sup>

In the current study, some of the participants reported lack of cooperation of the district management demonstrated by the lack of addressing complaints. In addition, the respondents suggested proper infrastructures to prepare and serve meals in the schools and reliable service providers that would supply groceries on time. Participants also suggested the portion size should be increased and two meals should be served per day to learners since most learners are from poverty-stricken families and rely on the meals served at schools.

## **5.5 NEEDS**

The most frequently identified need in this study was adequate provision of food, which related to irregular deliveries from suppliers and unreliable suppliers.

Suppliers that are contracted to provide food to schools must be held accountable by the DBE to supply food according to the specifications stipulated in the respective contracts.

In a 2014 study on facilitators for promoting health in schools, the findings were that the type of food-service provider might be an important determinant of school meal quality, student satisfaction and willingness of students to eat the provided healthy food.<sup>64</sup>

A study by Lucarelli et al indicated that outsourcing food-service operations is likely to influence the success of future nutrition interventions. In all schools visited in this study, budget cuts have led to reductions in the number of educators and food-service staff, leaving the remaining staff with additional responsibilities.<sup>64</sup>

This study provided food service providers with education, marketing resources and healthy recipes, thus enabling them to make their own decisions.<sup>64</sup>

A study by Peu et.al.<sup>71</sup> in 2010 on the needs relating to the health-education training of educators at Makapanstad schools in the North West province concluded that there is a need for the support of the North-West University in the training of educators. The needs listed included: the university's acknowledgement of educators' responsibilities; provision of basic knowledge regarding health promotion such as exercise, diet and nutrition; provision of a full health team; and the addressing of the common health needs of learners and the indirect health problems caused by poverty and lack of resources such as funds and staff.<sup>71</sup>

According to the RMCH assessment,<sup>46</sup> funding allocated to feeding a nutritious meal is inadequate, and the money allocated per learner per day is low. The perception is that more resources are allocated to urban schools and, therefore, the limited resources that reach rural schools derail the ability of these schools to implement the programme.<sup>46</sup> Participants considered school health and nutrition services not well coordinated.

In addition, prioritisation of resource allocation that would enable districts to deliver a comprehensive package of health and nutrition services to schools effectively was lacking.<sup>46</sup>

## **5.6 CARE AND SUPPORT FOR TEACHING AND LEARNING**

The schools included in this study were achieving well under the following components: safety, curriculum support, material support, community and policies. A substantial number of activities under the above-mentioned components have been implemented, but some need refinement. However, only a few practices have been implemented under the health promotion component.

Few practices that are implemented under the health promotion component include establishing vegetable gardens as only one school has garden and encouraging community involvement and development to minimize theft and better health of learners. The schools have not allocated a day or time for nutrition education, and no interventions have been undertaken to address factors affecting the well-being of the entire school community.

There is a need in this study that health promotion programmes relating to school health that involve families and communities can positively influence the wider

community. An additional potential benefit is that by improving the health of school-going children, educational performance and learning may be enhanced. As an example of the recognised benefit of health promotion in schools, the American Heart Association<sup>72</sup> in a recent scientific statement underlined the importance of school health promotion for the prevention of chronic diseases.

This study determined that infrastructure, water and sanitation implementation practices are limited. This, in turn, affects the environment and eating habits of the learners since schools have a responsibility to provide nutritional support to children as part of their learning environment. In the study by Lucarelli et al.<sup>64</sup> in 2014 on facilitators promoting health in schools, the findings demonstrate that school climate is consistently associated with a variety of student outcomes, including learning ability, academic achievement, social well-being and emotional and mental health. Meko et al.<sup>73</sup> conducted a study on the nutritional environment of secondary schools in Bloemfontein, South Africa. The authors determined that the environment does not support healthy eating habits.<sup>73</sup> The study concluded that nutrition policies need to be introduced into schools to improve the nutritional environment because the available food for learners at the tuck shops and via the vendors is mostly unhealthy.<sup>73</sup>

The present study indicated that the practices of social welfare services are available as they always or sometimes have support service, and the promotion of psychosocial and physical health. In addition, psychosocial support services are observed and lack support for the social, mental and emotional needs of learners due to lack of social workers as an incomplete team is visiting the schools.

According to Meko et al.<sup>73</sup>: "The psychosocial factors of children's environment doubtlessly constitute at the moment the most important pathogenic factor for children's well-being and health".<sup>73</sup> Co-curricular support services were also determined to be few in the current study. The schools investigated do not have activities after school hours to assist in promoting the physical, social and emotional health of learners, nutrition and self-care.

Daily physical activity and recreational activities have changed dramatically with the invention of new technologies such as television with remote controls and personal computers.

Health consequences such as metabolic syndrome that is associated with insulin resistance are expected to be a worldwide concern in the future since learners spend most of their time utilising new technology involving remote controls rather than standing up and changing television channels themselves.<sup>73,74</sup>

In the study by Steyn et al.<sup>15</sup> in 2009, which reviews school nutrition interventions globally as an evidence base for the development of the HealthKick programme in the Western Cape, the findings reveal that a nutrition-based curriculum offered at schools by trained educators generally improves behavioural outcomes. Numerous school-based nutrition interventions such as physical activity programmes, social cognition and social marketing have shown significant improvements in children's nutritional behaviours. The lessons learnt from this review were applied in the development of the HealthKick programme initiated in certain schools in the Western Cape in 2007.<sup>15</sup>

This programme aimed at improving diet and physical activity by means of a teacher-based curriculum, a parental component and a healthy school environment that is conducive to healthy eating and increased physical activity.<sup>15</sup> In the present study, only 19% of the acting headmasters indicated that the sport facilities at the school were adequate.

## **CHAPTER 6: SUMMARY OF FINDINGS, RECOMMENDATIONS, STUDY LIMITATIONS AND CONCLUSION**

### **6.1 SUMMARY OF FINDINGS**

The study provides evidence that the implementation of ISHP in Msukaligwa sub-district, Gert Sibande district is inadequate as, the provision of SHS is limited to once or twice a year. In most of the schools, it could be due to insufficient allocation of school health teams, which resulted in the decreased frequency of screening. The educators and the senior/acting/headmaster were having same knowledge concerning the nutrition component of the ISHP. Educators were concerned about the availability of food for learners and if food would be available throughout the entire year.

Both educators and headmasters perceived that SFPs increase food availability for school-going children. The educators and the headmasters also strongly agreed that academic performance and the learning of schoolchildren are enhanced by school nutrition interventions. The headmasters and educators also perceived that the academic performance of pupils with a good nutritional status is higher than those of poor nutritional status. In addition, the learners perform better academically and physically after having eaten meals at schools, irrespective of the menu, since some learners arrive at school without food from home.

The main needs indicated by both educators and headmasters related to the adequate food supply, fully equipped kitchen resources and reliable service providers. There is a need for the allocation of adequate funds and the awarding of tenders to reliable service providers. The main identified barriers that affect ISHP implementation related to selected suppliers and irregularities, theft by community members and the lack of community participation by parents and community members.

The study provides evidence that the implementation of the ISHP is inadequate and requires improvement. Thereafter, monitoring and evaluating the allocated service providers by dedicated persons is crucial.

## 6.2 RECOMMENDATIONS FOR GOVERNMENT AND SCHOOLS

South Africa has progressively engaged in the fight against hunger and poverty through its policies and programme interventions. An integrated approach to ensure delivery of food security programmes has been pursued through the implementation of the Integrated Food Security and Nutrition Programme. The Government of South Africa approved the National Food and Nutrition Security Policy and the Household Food and Nutrition Security Strategy in 2013 in order to continue responding to the hunger challenges in the country.<sup>75</sup> The implementation of poverty-relief projects that benefit community members such as establishing vegetable gardens at schools and community is, therefore, recommended. Recommendations made by the participants on improving vegetable gardens, expanding the gardens, sponsoring the schools to acquire irrigation facilities, training on proper food gardening practices, involving the children in the gardening, using skilled labour, and assisting the schools to acquire greenhouses.

Government departments such as the DBE and the DoH are responsible for implementing the Food and Nutrition Policy Plan. The main goal of the National Food and Nutrition Security Policy is to ensure availability, accessibility and affordability of safe and nutritional food at national and household levels.<sup>75</sup> It is also important to monitor and evaluate the implementation plan of established community projects, which will require the participation of all stakeholders involved.

There is a need to appoint more educators and train them in the implementation of the ISHP by nutritionists and school health nurses because their involvement in the programme is crucial. Conducting in-service training of educators by their seniors or experts together with information dissemination after the training is recommended.

The development and validation of a health education package by the DBE that will assist educators to empower learners is needed. The South African Sugar Association (SASA) already has a programme that is offered freely in all provinces. This programme can be used to assist educators in empowering learners. There is also a need for intersectoral collaboration between the DoH and the DBE in terms of integrating Early Childhood Development centres with the DSD so that children can



be taken care of at an early stage. In so doing, the perceptions of the educators can be addressed.

Cooking facilities need to be upgraded, and cooks need to be equipped with the necessary skills to implement the ISHP. Provision of kitchen facilities and human resources to schools is needed in order to ensure the smooth operation of the schools and effective implementation of the ISHP.

Establishing and increasing standards for food safety and quality control within local food-value chains by the DBE is also recommended. This will assist with the availability of local producers that are compliant in supplying quality food to schools.

Local food producers and processors need to be linked to the government food purchase programme to assist with the timeous delivery of fresh produce.

All the schools that participated need to be encouraged and supported in sustaining the health promotion initiative. Management of schools must ensure that they receive the appropriate support and feedback at regional, provincial and national levels.

Motivation for the appointment of nutritionists and/or dieticians at the district level to monitor the implementation of the ISHP is needed. Nutritionists and dieticians are uniquely qualified to monitor policy implementation and to steer interventions to create environments that facilitate healthy dietary practices and physical activity in schools.

Community relationships and engagements should be strengthened to minimise theft. Involvement of the community in decision-making and support is essential for the community to realise the benefits of SFPs for their children. Hence, there is the need to empower communities to control their lifestyles.

It is recommended that senior managers consider infrastructure, electricity, fencing, water and sanitation in their efforts to minimise the challenges experienced by schools. Support, hard work and commitment is needed from school senior management for the schools to become fully-fledged centres of CSTL.

National, provincial and district departments for basic education need to facilitate the encouragement of vegetable gardening at schools.

The SBSTs need to be improved, and stronger links to service providers and the relevant school community stakeholders need to be incorporated.

### **6.3 LIMITATIONS OF THE STUDY**

The findings of this study cannot be generalised to other schools due to the unequal distribution of schools and the small sample size.

Only 9 quintile 1 primary schools and 16 quintile 2 primary schools were included in the study instead of the equal distribution of 17 schools from each quintile. However, this unequal distribution is not significant in terms of the study findings.

There was potential for questionnaire bias with the way the questionnaire was designed and the wording that was used that may have not been fully understood by the participants.

### **6.4 CONCLUSION**

In conclusion, all the schools included in this study provide ISHP services; however, the implementation is not adequate. The headmasters were found to be more knowledgeable than the educators concerning the nutrition component of the ISHP were. The perceptions of the headmasters and the educators regarding the ISHP were positive. The needs indicated in terms of adequate provisions and reliable service providers were found to be similar for both educators and headmasters. Coordination, stakeholder involvement and resources pose a challenge to the successful delivery of the ISHP. Other barriers and challenges to full implementation of the ISHP include shortage of resources such as infrastructural challenges, fencing of the schoolyard, no centralised budget and the perception that more resources are allocated to urban schools than to rural schools. There is a need for the allocation of adequate funds since school health is a national priority programme. A monitoring and evaluation system of the entire programme needs to be in place and needs to be assessed by the DBE at least once a year to determine the impact.

Political commitment and policies that are supportive of health should safeguard school health as an economic and political asset.

Most participants suggested the idea of community involvement. Working together with communities' benefits both education and health because when learners are healthy, educational achievements are high. Families and other community organisations, who support the nutrition component of a coordinated school health programme in turn, can be supported by the other components of the programme.

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## ADDENDA

### ADDENDUM A: EDUCATORS QUESTIONNAIRE

#### OFFICIAL USE

Participant code	
Facility code	
Date:..... dd/mm/yyyy	

#### SCREENING:

Are you a full time employed educator in the Department of education?

Yes  No

If yes, please proceed

**Instructions: Please fill in the blank space provided or tick the relevant option where blocks are provided Please answer ALL the questions.**

#### SECTION 1: SOCIO DEMOGRAPHIC INFORMATION

How old are you (in years)? \_\_\_\_\_

Please indicate your gender Male  Female

Please indicate your position/rank: Junior Educator   
Senior Educator

How long have you been employed as an educator? \_\_\_\_\_Years\_\_\_\_\_Months

Please indicate your home language:

English  Afrikaans  Zulu  other  please specify \_\_\_\_\_

<b>SECTION 2: PERCEPTIONS</b>
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**1. School feeding programmes increase food availability to school-going children who need adequate food.**

I strongly agree		I agree		I disagree		I strongly disagree	
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**2. Academic performance and learning of schoolchildren may be enhanced by school nutrition interventions.**

I strongly agree		I agree		I disagree		I strongly disagree	
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**3. Academic performance of pupils with good nutritional status are higher than those of poor nutritional status**

I strongly agree		I agree		I disagree		I strongly disagree	
------------------	--	---------	--	------------	--	---------------------	--

**4. Physical performance of schoolchildren can be enhanced by good nutrition.**

I strongly agree		I agree		I disagree		I strongly disagree	
------------------	--	---------	--	------------	--	---------------------	--

**5. School-based nutrition interventions improve nutritional behaviour of children.**

I strongly agree		I agree		I disagree		I strongly disagree	
------------------	--	---------	--	------------	--	---------------------	--

**6. Nutrition education to school going children plays an important role in improving healthy eating habits.**

I strongly agree		I agree		I disagree		I strongly disagree	
------------------	--	---------	--	------------	--	---------------------	--

**7. Schools have a responsibility to provide nutrition support to children, as part of the learning environment**

I strongly agree		I agree		I disagree		I strongly disagree	
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## 8. Foods children eat during the school day affect their readiness to learn

I strongly agree		I agree		I disagree		I strongly disagree	
------------------	--	---------	--	------------	--	---------------------	--

### SECTION 3: NUTRITION KNOWLEDGE

The following questions will test your knowledge of nutrition. You may choose only 1 option.

#### 1. Which of the following options do you consider as a balanced meal?

Bread, cheese, tomato slice, fruit juice	
Pap and potatoes	
Bread and chips	
Lettuce, tomato and cucumber	

#### 2. Why is nutrition screening important?

To monitor the child's growth and development	
To detect underlying diseases	
To refer early for further management and care	
All of the above	

#### 3. Why do you think good performance is enhanced by good nutritional status?

Healthy mind, healthy body	
Hunger suppresses intelligence	
Poor nutritional status exacerbates the risk of diseases	
All of the above	
None of the above	

#### 4. Please tick the food groups that protects the body against illnesses

Fruit and vegetables	
Meat and milk products	
Bread and rice	
I do not know	

**5. Please tick the food groups that gives the body energy**

Fruit and vegetables	<input type="checkbox"/>
Meat and milk products	<input type="checkbox"/>
Bread and rice	<input type="checkbox"/>
I do not know	<input type="checkbox"/>

**6. Please tick which of the following food group is a good source of protein?**

Chips, e.g. Simba, Lays	<input type="checkbox"/>
Fruit , e.g. Apple, Banana	<input type="checkbox"/>
Sweets, e.g. Lollipops	<input type="checkbox"/>
Nuts, e.g. pecan nuts, peanuts	<input type="checkbox"/>
I do not know	<input type="checkbox"/>

**7. Which of the following foods contain a lot of fibre?**

Fruit, e.g. apple, pear, banana.	<input type="checkbox"/>
Dairy, e.g. cheese	<input type="checkbox"/>
Sweets, e.g. jelly tots	<input type="checkbox"/>
Soft drinks e.g. Fanta	<input type="checkbox"/>
I do not know	<input type="checkbox"/>

**8. Health and nutrition is a critical component of the Integrated School Health Programme.**

True	<input type="checkbox"/>	False	<input type="checkbox"/>	I do not know	<input type="checkbox"/>
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**SECTION 4 : NEEDS**

**1. What are your needs regarding the nutrition interventions that can be implemented within the Integrated School Health Programme in your school?**

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**SECTION 5: BARRIERS**

**1. Please tick the barriers that you find to be hampering the implementation of Integrated School Health Programme in your school? (If ticked, please elaborate on the nature and extent of the barrier)**

Political barriers

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Community related issues

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Management related issues

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Programme related issues such as multi-sectoral approach

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**2. What suggestions do you have to improve the implementation of nutrition services at your school?**

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**3. Any other comments/information that you would like to add to what you have said so far.**

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**Thank you very much for your time.**





**SECTION 2: GENERAL QUESTIONS**

**1. Which of the following nutrition promotion activities are implemented at your school?**

ACTIVITIES	Yes	No
Feeding scheme		
Nutrition education		
Vegetable garden		

**2. Is there a coordinating forum for the integrated school health services at this school? (Please circle your response)**

Yes / No / Do not know

**If yes:**

**2.1 Please list the members/stakeholders of this coordinating forum:**

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**2.2 How often does this coordinating forum meet? Please tick where applicable**

Weekly	
Bi-weekly	
Monthly	
Bi-monthly	
Quarterly	
Do not know	

**2.3 What issues are discussed during the forum meetings?**

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**2.4 When was the last health screening conducted at this school?**

Last month	
Previous quarter	
Previous six months	
Last year	
Do not know	

**SECTION 3: PERCEPTIONS**

**1. School feeding programmes increase food availability to school-going children who need adequate food.**

I strongly agree		I agree		I disagree		I strongly disagree	
------------------	--	---------	--	------------	--	---------------------	--

**2. Academic performance and learning of schoolchildren may be enhanced by school nutrition interventions.**

I strongly agree		I agree		I disagree		I strongly disagree	
------------------	--	---------	--	------------	--	---------------------	--

**3. Academic performance of pupils with good nutritional status are higher than those of poor nutritional status**

I strongly agree		I agree		I disagree		I strongly disagree	
------------------	--	---------	--	------------	--	---------------------	--

**4. Physical performance of schoolchildren can be enhanced by good nutrition.**

I strongly agree		I agree		I disagree		I strongly disagree	
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**5. School-based nutrition interventions improve nutritional behaviour of children.**

I strongly agree		I agree		I disagree		I strongly disagree	
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**6. Nutrition education to school going children plays an important role in improving healthy eating habits.**

I strongly agree		I agree		I disagree		I strongly disagree	
------------------	--	---------	--	------------	--	---------------------	--

**7. Schools have a responsibility to provide nutrition support to children, as part of the learning environment**

I strongly agree		I agree		I disagree		I strongly disagree	
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**8. Foods children eat during the school day affect their readiness to learn**

I strongly agree		I agree		I disagree		I strongly disagree	
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#### **SECTION 4: NUTRITION KNOWLEDGE**

*The following questions will test your knowledge of nutrition. You may choose only 1 option.*

**1. Which of the following options do you consider as a balanced meal?**

Bread, cheese, tomato slice, fruit juice	
Pap and potatoes	
Bread and chips	
Lettuce, tomato and cucumber	

**2. Why is nutrition screening important?**

To monitor the child's growth and development	
To detect underlying diseases	
To refer early for further management and care	
All of the above	

**3. Why do you think good performance is enhanced by good nutritional status?**

Healthy mind, healthy body	
Hunger suppresses intelligence	
Poor nutritional status exacerbates the risk of diseases	

All of the above	
None of the above	

**4. Please tick the food groups that protects the body against illnesses**

Fruit and vegetables	
Meat and milk products	
Bread and rice	
I do not know	

**5. Please tick the food groups that gives the body energy**

Fruit and vegetables	
Meat and milk products	
Bread and rice	
I do not know	

**6. Which of the following food group is a good source of protein?**

Chips, e.g. Simba, Lays	
Fruit , e.g. Apple, Banana	
Sweets, e.g. Lollipops	
Nuts, e.g. pecan nuts, peanuts	
I do not know	

**7. Which of the following foods contain a lot of fibre?**

Fruit, e.g. apple, pear, banana.	
Dairy, e.g. cheese	
Sweets, e.g. jelly tots	
Soft drinks e.g. Fanta	
I do not know	

**8. Health and nutrition is a critical component of the Integrated School Health Programme.**

True		False		I do not know	
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**SECTION 5 : NEEDS**

**1. What are your needs regarding the nutrition interventions that can be implemented within the Integrated School Health Programme in your**

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school?

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**SECTION 6: BARRIERS**

**1. Please tick the barriers that you find to be hampering the implementation of ISHP in your school?  
(If ticked, please elaborate on the nature and extent of the barrier)**

Political barriers

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Community related issues

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Management related issues

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Programme related issues such as multi-sectoral approach

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**2. What suggestions do you have to improve the implementation of nutrition services at your school?**

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**3. Any other comments/information that you would like to add to what you have said so far.**

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<b>CARE AND SUPPORT FOR TEACHING AND LEARNING CHECKLIST</b>
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**Instructions: Please tick the applicable response for each statement and provide further information under the 'comments' column**

	<b>Never 1</b>	<b>Sometimes 2</b>	<b>Always 3</b>	<b>Comments</b>
1. <u>Health Promotion</u> : Our school has health promotion interventions, which address the factors that influence the well-being of the entire school community (including providing skills-based health education).				
2. <u>Infrastructure, water, sanitation</u> : Our school provides and maintains physical school structures, which are clean, beautiful and promote health.				
3. <u>Safety</u> : Our school provides an environment, which is safe both physically and psychosocially for the entire school community.				
4. <u>Social welfare services</u> : Our school draws on local and regional support services in efforts to promote both physical and psychosocial health.				
5. <u>Psychosocial support</u> : Our school provides support in response to the social, mental and emotional needs of learners and teachers.				
6. <u>Co-curricular support</u> : Our school provides activities after school hours, which assist in promoting the physical, social and emotional health of learners.				
7. <u>Nutrition</u> : Our school has policies and practices, which focus on healthy nutrition (e.g. feeding scheme; healthy lunchbox and tuck-shop policy).				



		<b>Never 1</b>	<b>Sometimes 2</b>	<b>Always 3</b>	<b>Comments</b>
8.	<u>Health Promotion</u> : Our school has health promotion interventions, which address the factors that influence the well-being of the entire school community (including providing skills-based health education).				
9.	<u>Infrastructure, water, sanitation</u> : Our school provides and maintains physical school structures, which are clean, beautiful and promote health.				
10	<u>Safety</u> : Our school provides an environment, which is safe both physically and psychosocially for the entire school community.				
11	<u>Social welfare services</u> : Our school draws on local and regional support services in efforts to promote both physical and psychosocial health.				
12	<u>Psychosocial support</u> : Our school provides support in response to the social, mental and emotional needs of learners and teachers.				
13	<u>Co-curricular support</u> : Our school provides activities after school hours, which assist in promoting the physical, social and emotional health of learners.				
14	<u>Nutrition</u> : Our school has policies and practices that focus on healthy nutrition (e.g. feeding scheme; healthy lunchbox and tuck-shop policy).				

**Thank you very much for your time.**

## **ADDENDUM C: LETTER TO CONDUCT A RESEARCH STUDY**

**Director-Department of Education  
Gert Sibande Region  
Private Bag x 9029  
ERMELO  
2350**

**Dear Ms. MV. Mthethwa**

### **RE: PERMISSION TO CONDUCT A RESEARCH STUDY IN QUINTILE 1 AND 2 PRIMARY SCHOOLS**

I am a Master in Nutrition student at Stellenbosch University, Faculty of Medicine and Health Science, Division of Human Nutrition, who aims to embark on a research study entitled: Assessment of the nutrition component within the Integrated School Health Policy (ISHP) Msukaligwa sub-district, Gert Sibande district, Mpumalanga.

The aim of the study is to assess the implementation of the nutrition component within the ISHP. The study population will include full time educators and headmasters from 34 selected quintile 1 & 2 primary schools in Msukaligwa sub-district.

The objectives of the study are:

- To assess the nutrition knowledge of educators and headmasters relating to the nutrition component within ISHP in quintile 1 & 2 primary schools
- To assess the perceptions of educators and headmasters with regard to nutrition activities within ISHP in quintile 1 & 2 primary schools
- To identify barriers to implementation of nutrition activities within ISHP in quintile 1 & 2 primary schools.
- To assess the needs of educators regarding nutrition activities within ISHP in quintile 1 & 2 primary schools
- To assess the schools as centre of Care and Support for Teaching and Learning

Data will be collected by means of a self-administered questionnaire. With the information obtained from the study, the researcher expects that the study may contribute to the improvement of the ISHP nutrition component implementation. The protocol has been approved by the Health Research Ethics Committee (HREC) of the Faculty of Medicine and Health Sciences, Stellenbosch University (Ethics Reference number: S16/02/027) and the Mpumalanga Provincial Health Research Ethics Committee. A copy of the protocol is attached for your perusal.

Permission to access these schools will be greatly appreciated. Should any further information be required, please feel free to contact the principle Investigator (Beauty Marutla) on 017 811 1642 (work), 082 7480058(cell) e-mail: BeautyM@mpuhealth.gov.za

Yours in Health,

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Principle investigator: Beauty Marutla

## ADDENDUM D: ETHICS APPROVAL



UNIVERSITEIT • STELLENBOSCH • UNIVERSITY  
jou kennisvennoot • your knowledge partner

### Approval Notice Response to Modifications- (New Application)

06-May-2016  
Marutla, Koena KB

**Ethics Reference #:** S16/02/027

**Title:** ASSESSMENT OF THE NUTRITION COMPONENT WITHIN THE INTEGRATED SCHOOL HEALTH POLICY (ISHP) MSUKALIGWA SUB-DISTRICT, GERT SIBANDE DISTRICT, MPUMALANGA.

Dear Ms Koena Marutla,

The **Response to Modifications - (New Application)** received on **20-Apr-2016**, was reviewed by members of **Health Research Ethics Committee 2** via Expedited review procedures on **06-May-2016** and was approved.

Please note the following information about your approved research protocol:

Protocol Approval Period: **06-May-2016 -05-May-2017**

Please remember to use your **protocol number** (S16/02/027) 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](http://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](mailto:healthres@pgwc.gov.za) Tel: +27 21 483 9907) and Dr Helene Visser at City Health ([Helene.Visser@capetown.gov.za](mailto:Helene.Visser@capetown.gov.za) Tel:



No. 3, Government Boulevard, Riverside Park, Ext. 2, Mbombela, 1200, Mpumalanga Province  
Private Bag X11285, Mbombela, 1200, Mpumalanga Province  
Tel: +27 (13) 766 3428, Fax: +27 (13) 766 3458

Uliko Lelenghlo

Departement van Gesondheid

Umkhango Wazemaphiso

*Ereukies, Thema: Reserch.01X196.2016*

19 May 2016

**Ms Beauty Marutla**  
39 Jan Van Riebeeck Street  
Private Bag x 9028  
Ermelo  
Mpumalanga, 2350

Dear Ms Marutla

**APPLICATION FOR RESEARCH & ETHICS APPROVAL: ASSESSMENT OF THE NUTRITION COMPONENT WITHIN THE INTEGRATED SCHOOL HEALTH POLICY, MSUKALIGWA SU-DISTRICT, GERT SIBANDE DISTRICT, MPUMALANGA**

The Provincial Health Research and Ethics Committee has approved your research proposal in the latest format that you sent.

**PHREC REF: MP\_2016RP37\_512**

Kindly ensure that you provide us with the soft and hard copies of the report once your research project has been completed.

Kind regards

  
**MR. JERRY SIGUDLA**  
MPUMALANGA PHRC



## **ADDENDUM E: PARTICIPANT INFORMATION LEAFLET AND CONSENT FORM**

**TITLE OF THE RESEARCH PROJECT: ASSESSMENT OF THE NUTRITION COMPONENT WITHIN THE INTEGRATED SCHOOL HEALTH POLICY (ISHP) MSUKALIGWA SUB-DISTRICT, GERT SIBANDE DISTRICT, MPUMALANGA.**

**REFERENCE NUMBER: S16/02/027**

**PRINCIPAL INVESTIGATOR: MS. BEAUTY MARUTLA**

**ADDRESS:** Faculty of Medicine and Health Sciences, Division of Human Nutrition, Stellenbosch University, P O Box 19063, TYGERBERG, 7505

**CONTACT NUMBER: 021 – 938 9259**

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. In addition, your participation is **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 Mpumalanga Department of Health 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 Ethical Guidelines for Research.

### **What is this research study all about?**

- The aim of the study is to assess the implementation of the nutrition component within the Integrated School Health Policy. The study will be conducted in Mpumalanga Province, Msukaligwa sub-district. The study population will include full time educators and headmasters from 34 selected quintile 1 & 2 primary schools.

**Why have you been invited to participate?**

- You have been invited to participate because you are full time employed educators or a headmaster in a quintile 1 or quintile 2 primary school.

**What will your responsibilities be?**

- Your responsibilities will be to complete a questionnaire and answer questions about your nutrition knowledge, perceptions, needs and barriers relating to nutrition activities within Integrated School Health Policy.
- Additionally, if you are a headmaster you will also complete a checklist to assess the school as a centre for care and support for teaching and learning and answer some general questions.

**Will you benefit from taking part in this research?**

- There are no short-term benefits related to the study. However, with the information obtained, the researcher expects that the study may contribute to the improvement of the Integrated School Health Policy nutrition component implementation.

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

- No risks involved.

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

- Participation is voluntarily, no further arrangements will be made even if you withdraw.

**What will happen in the unlikely event of some form injury occurring as a direct result of your taking part in this research study?**

- It is not expected that taking part in this study will cause any harm or injury to you.

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

- No one will be paid to take part in the study. 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 the Health Research Ethics Committee at 021-938 9207 if you have any concerns or complaints that have not been adequately addressed by your principal investigator.
- 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:** Assessment of the nutrition component within the integrated school health policy (ISHP) Msukaligwa sub-district, Gert Sibande district, Mpumalanga

I declare that:

- I have read the attached information leaflet 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 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*) ..... 2016.

.....

Signature of participant

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 not use an interpreter.

Signed at (*place*) ..... On (*date*) ..... 2016.

.....  
Signature of investigator

.....  
Signature of witness