PREVENTION OF MALNUTRITION IN SOUTH AFRICA AMONG CHILDREN

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ABSTRACT

Background
Malnutrition among children in South Africa is a substantial public health problem. Especially young children are vulnerable and exposed to malnutrition. Children suffering from malnutrition develop many short- and long-term health-consequences. Effective preventative work against this issue is crucial in order for malnutrition to diminish among the children in South Africa.

Aim
The aim was to describe how the preventative work against malnutrition is being performed among children aged zero to six in South Africa.

Method
The method used in this study was a qualitative descriptive study with six semi-structured interviews. Interviews were performed with registered nurses and researchers. The interview-data was analyzed based on a grounded theory through substantive coding where the most relevant codes where found, studied and concluded in the results.

Results
The results showed that both the registered nurses and researchers considered socioeconomic-factors and lack of knowledge about nutrition to be the most important causes for malnutrition among children, and also impacted heavily on the preventative work. It was found that more effective preventative work is needed, but for this to work it needs to be adapted to the social context in the country.

Conclusions
The preventative work against malnutrition must be able to break through socioeconomic barriers like poverty, misguided cultural beliefs about nutrition, lacking food security and the fact that many mothers to children are HIV positive, which also is strongly connected to malnutrition among young children. Education about nutrition must be further developed and reach out to more people in the country.

Key words: South Africa, malnutrition, education, prevention, children.
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**APPENDIX A-B**
BACKGROUND

Malnutrition in South Africa

Approximately 53.16 million people live in South Africa. According to The Worldbank (2011) 53.8 percent of the population lives in poverty. Households with poor economy have a disproportionately large burden of care for young children. Sixty-four percent of children under six years of age live in the poorest 40 percent of households (Hall, Sambu & Berry, 2014).

Malnutrition is a severe medical condition that develops when an individual does not get enough food and/or the right sort of food. Even if people get enough to eat, they can develop malnutrition if the food they eat does not provide the proper amounts of micronutrients - vitamins and minerals - to meet daily nutritional requirements (World Food Program, 2015). When suffering from malnutrition, normal growth and ability to resist disease becomes stunted. Physical work becomes problematic and learning abilities can be diminished. For women, pregnancy and producing nourishing breastmilk becomes risky and problematic (World Food Program, 2015). There are significant scientific evidence that malnourishment in childhood creates negative effects on future health and future level of education and labor market outcomes (Southern Africa Labour and Development research unit, 2015). There is a strong relationship between parental socioeconomic status and child health. This suggests that poor health in childhood could be an important mechanism in the intergenerational transmission of socioeconomic status (Southern Africa Labour and Development research unit, 2015).

The Worldbank (2015) states that South Africa faces a double burden of malnutrition due to that undernutrition exist both in children that are underweight, and children that are obese. Obesity has increased drastically over the last 15 years. This burden is the result of various factors. Progress in improving infrastructure and the public health systems has been slow, adoption of Western diets rich in refined carbohydrates, fats and sugars has happened fast, and sedentary lifestyles has increased. Urban children are twice as likely to become overweight or obese compared to rural children (The Worldbank, 2015).

About a quarter of children under the age of five years in South Africa suffer from a condition called stunting. Children suffering from stunting do not grow and develop as expected (Hall et al., 2014). Stunting is an indicator of chronic undernutrition and is associated with increased morbidity and mortality in young children. The prevalence of stunting in South African preschool children is around 20 percent (van Stuijvenberg et al., 2015).

World Health Organization (2015b) defines the most common causes for malnutrition in the following quote:

“Malnutrition is estimated to contribute to more than one third of all child deaths, although it is rarely listed as the direct cause. Lack of access to highly nutritious foods, especially in the present context of rising food prices, is a common cause of malnutrition. Poor feeding practices, such as inadequate breastfeeding, offering the wrong foods, and not ensuring that the child gets enough nutritious food, contribute to malnutrition. Infection – particularly frequent or persistent diarrhea,
pneumonia, measles and malaria – also undermines a child's nutritional status” (WHO, 2015b).

Monyeki et al. (2015) discusses that underweight and overweight are both effects of malnutrition and both are associated with negative health consequences for children. The burden of economic and social disparity in South Africa coexists with malnutrition among children. Underweight and overweight are still a problem among South African children, despite the government’s ambitions to manage the problem. There is not much evidence available to show that government strategic programs are effective in addressing the malnutrition problem (Monyeki et al., 2015).

A study published by Steyn et al. (2015) analyzed what kind of foods children in low-income settings in South Africa consumed the most. The result showed that the food groups that were least consumed were eggs, fruit and vegetables. In 2009 the most commonly eaten snacking items were table sugar in beverages and/or cereals (80.5 percent); followed by potato crisps (53.1 percent); non-carbonated beverages (42.9 percent); sweets (26.7 percent) and sugar-sweetened carbonated beverages (16 percent)(Steyn et al., 2015).

Nutritional recommendations in South Africa

The Food and Agriculture Organization of the United Nations (FAO), and the World Health Organization (WHO) got involved with the South African Authority Department of Health to take part of the Food-Based Dietary Guidelines for South Africa. The intention were to promote more appropriate diets based on already existing recommendations from FAO and WHO regarding optimal dietary patterns and healthy lifestyles (The South African Journal of Clinical Nutrition, 2013).

The government in South Africa was called upon to provide public advice in the form of understandable, evidence-based guidelines. These guidelines were formulated in a way that the public could relate and apply them. The Food-Based Dietary Guidelines were written to simultaneously ensure that adequate diets met all the nutrient needs and that the diets helped to prevent development of deficiencies and non communicable diseases (The South African Journal of Clinical Nutrition, 2013).

The Food-Based Dietary Guidelines provides different nutritional advice towards different age groups. The guidelines are short and positive science-based messages with the aim to change the eating behaviors of the general population. The goal is to change people’s diets to a more optimal diet that meets the energy and nutrient requirements. The following guidelines are aimed at children under five years of age:

• Avoiding the frequent consumption of juice or other sugar-containing drinks.
• Discouraging the child from sleeping with a bottle.
• Promoting noncariogenic foods as snacks.
• Fostering eating patterns that are consistent with healthy eating guidelines.
• Limiting cariogenic food to mealtimes.
• Rapidly clearing cariogenic food from the child’s oral cavity, either by brushing his or her teeth, or ensuring...
the consumption of protective foods, e.g. cheese and nuts.

- Restricting sugar-containing snacks that are slowly eaten, e.g. sweets, lollipops and suckers (The South African Journal of Clinical Nutrition, 2013).

**Consequences of malnutrition**

Many of the children that suffer from malnutrition are experiencing several health-consequences. This is especially common among preschool children. This is a result from lack of economical resources, lack of information regarding nutrition and inadequate breastfeeding (Motadi, Mbhenyane, Mbhatsani, Mabapa & Mambolo, 2014).

UNICEF (2015) discusses both the long and short-term effects of malnutrition. All of the effects from malnutrition lead to increased mortality and morbidity. Some of the effects that are being discussed are anemia, inadequate growth, osteoporosis, decreased cognitive ability and lack of zinc, iron and other vital minerals and vitamins. One very important effect is that children with malnutrition become more susceptible to diseases such as diarrhea, malaria and other infections caused by bacteria or viruses. UNICEF (2015) also states that the first 1000 days of a child's life, pregnancy included, is the most important time for the child to receive the right nutrition. During this time the child is growing and developing fast and needs to be supported by sufficient nutrition.

Malnutrition and diarrhea goes hand in hand in many cases in South Africa. The lack of clean drinking water is the main cause of diarrheal diseases that very quickly drains the body from both nutrition and fluids. Therefore, clean drinking water also plays a big part in the treatment of malnutrition (UNICEF, 2015).

**Breastfeeding**

Breastfeeding has an extraordinary range of benefits and is the most effective way to provide proper nutrition for a baby. Breastmilk provides all the essential nutrients, vitamins and minerals a baby needs for growth and normal development during the first six months. The milk also provides antibodies from the mother that helps the baby combat diseases (UNICEF, 2014). Breastfeeding also creates a special bond and connection between the mother and the baby, which has been proven to be very important for the baby's stimulation, sleep, behavior, speech development and sense of wellbeing. Breastfeeding also helps to lower the risk of developing different medical conditions later in life, such as high blood pressure, diabetes, childhood asthma and high cholesterol (UNICEF, 2014).

WHO have constructed AFASS, shortened for Acceptable, Feasible, Affordable, Sustainable and Safe. This was intended to help health-workers to council the mothers of infants who take replacement feeds, such as formula milks, and how to make it safe through giving them the right information (WHO, 2010). The information includes safe water and sanitation, the ability to prepare the replacement feed and give it safely to the child and education about continuity and adequate supplies. AFASS also include giving support to the families and availability to healthcare. AFASS is designed to be used in both
individual meetings and group discussions with mothers who need this kind of support (WHO, 2010).

Doherty, Sanders, Goga and Jackson (2011) states that in South Africa, it is hard to follow the WHO AFASS criteria for formula feeding due to the lack of clean water, sanitation and electricity used for cooking in big parts of the country. In the most recent South African Demographic and Health Survey it was established that the access to piped water into a dwelling was 58 percent for the urban residents and only 11 percent for rural residents. Eighty-seven percent of the urban residents and 56 percent of the rural residents used electricity for cooking. Seventy-four percent of urban residents and only five percent of rural residents had a flush toilet (Doherty et al., 2011).

South Africa has one of the lowest rates of breastfeeding in the world, which is a challenge for improving exclusive breastfeeding practices. According to the Demographic and Health Survey only eight percent of infants under the age of six months were breastfed exclusively (Doherty et al., 2011). Because of the high rates of HIV in South Africa, many woman that are HIV positive do not know if / how they are able to breastfeed, and how they should replace the breastmilk correctly if they use milk formula. Because of this fact, a program called Prevention Of Mother-to-child Transmission of HIV (PMTCT) was formulated in 2010 (Doherty et al., 2011). The PMTCT has an approach to infant feeding that maximizes child survival and not only focuses on the avoidance of HIV transmission between mother and child. The PMTCT guidelines recommend that every pre-birth visit at a public clinic should include counseling on infant feeding. However, several studies made in South Africa have shown that there is a poor quality of the counseling provided (Doherty et al., 2011).

Another supporting nutrition-program in South Africa is the Protein Energy Malnutrition (PEM) Scheme. The PEM Scheme is a take-home nutrition supplementation program that provides food supplements. The PEM Scheme is aimed towards malnourished children under the age of six, individuals with chronic illnesses and pregnant and lactating women in the Northern Cape Province of South Africa (Hendricks, le Roux, Fernandes & Irlam, 2003). To take part of the PEM program, specific criteria must be fulfilled. These include being underweight or suffering from growth faltering for at least two successive months for children under the age of six. The criteria for pregnant and lactating women are poor weight gain and / or a Body Mass Index under 18.5. The criteria for infants are faltering growth (Hendricks et al., 2003). The criteria for the PEM scheme from 2003 are still valid. In conjunction with the food supplementation, dietary counseling and nutritional education is also provided (Global Alliance for Improved Nutrition, 2009).

WHO and UNICEF has founded baby-friendly hospitals in South Africa where support, education and care is provided for mothers and babies to increase sufficient breastfeeding and therefore better nutrition for babies in South Africa (WHO, 2015a).

Education

According to UNICEF (2012) people in South Africa needs to receive education about nutrition. This is one of the biggest steps towards improving nutritional security. The most important people to receive this education are mothers and other caretakers in South Africa that provides the children with food. The education needs to cover how to provide themselves and the children with enough nutrients, and how this will be performed with
the families’ individual resources in mind (UNICEF, 2012).

Oldewage-Theron (2015) conducted a study that investigated how nutrition education, soy and vegetable gardening and food preparation skill training could improve the nutrition-status among women in a poor community in South Africa. Women in this resource-poor community lacked a variety of foods in their diet. They had inadequate micronutrient intake and adequacy. Results from the study showed that a combination of nutrition education, soy and vegetable gardening, and food preparation skill training interventions, seemed to positively influence the nutrient adequacy and overall dietary diversity of the women participating in this study (Oldewage-Theron, 2015).

Introducing education about nutrition in schools is also of high value, since schools have access to a large number of children. Schools can reach out to children at a young, critical age where they can be educated about how to eat healthy and resist falling into unhealthy eating habits (Meko, Slabber-Stretch, Walsh & Kruger, 2015). Today, nutrition education programs are not in place in many schools or are not enough developed to really manage to affect the children's habits (Meko et al., 2015).

Dalais et al. (2014) states that when introducing these nutrition programs in schools, one of the most important factors in order to make it successful, is that the educator's have enough knowledge about nutrition. A study conducted in 2014 investigated the level of knowledge about nutrition and physical activity among teachers. The results showed that the educator's knowledge was poor. Sixty-nine percent of the educator’s incorrectly believed that eating starchy foods causes weight gain and only 15 percent knew that it is recommended to eat five or more fruit and/or vegetables per day. Poor nutritional knowledge, misconceptions regarding actual body weight status, and challenges in changing health behaviors, emerged as issues that needs to be addressed among educator’s. The knowledge among teachers and parents needs to improve so that they can properly educate children (Dalais et al., 2014).

Kupolati, Gericke and MacIntyre (2015) investigated teacher’s opinions about nutritional education. The study explored teacher's perceptions of the impact of nutritional education on students eating behaviors. The teacher’s opinion regarding the role of the school in shaping the students eating behaviors touched three main themes: time- and resource- allocation, support for nutritional education and importance of nutritional education in schools. Time- and resource-allocation were valued to be inadequate if nutritional education in schools was to help students to become accustomed to healthy eating. The students did learn better if they participated in activities that demonstrated what is taught, with adequate resources for teaching. Many teachers expressed that the support for nutritional education was inadequate, and some expressed that support was not in place at all (Kupolati et al., 2015). Regarding the importance of nutritional education, the teacher's opinion was that it is highly important, and can have major effects on the children. If the students receive adequate nutritional education, they will pass on their knowledge to others. On a personal level for the students, some of the effects of nutritional education are: empowering to choose healthy foods, to take responsibility for their health, prevent
nutrition-related diseases and have a good mental development, which could improve future academic performance (Kupolati et al., 2015).

**Definition of prevention**

The concept of prevention means to prevent something from happening or arising (Nationalencyklopedin, 2015). The term primary prevention within healthcare stands for; measures to prevent the occurrence of disease and/or injury (Nationalencyklopedin, 2015). According to Hall et al. (2014) malnutrition is crucial to address before the age of five, otherwise it will most likely prolong into adulthood. Therefore, the prevention of malnutrition is extra important regarding infants and young children.

**Rationale**

According to UNICEF (2013) malnutrition among children is a substantial public health problem in South Africa that requires a systematic approach to promote behavior change, more knowledge and support. One of the main goals regarding behavior change is to manage to improve breastfeeding in the country. The goal is that every woman with a baby should breastfeed properly for at least six months.

Since socioeconomic-factors play a massive role in malnutrition among children in South Africa, support has been developed by for an example adding key vitamins and minerals to wheat flour, maize flour and retail sugar. This was done in accordance with mandatory regulations that came into effect in 2003 (UNICEF, 2013).

According to Oldewage-Theron and Egal (2012) one main factor that influences the nutritional status among children in South Africa is the lack of nutritional knowledge and education. Another important factor is parents whom pass on harmful and inappropriate diets to their children.

This subject is highly important to investigate and study to be able to evolve knowledge, ideas and strategies on how to prevent this health-issue. People from other countries that work with healthcare need to engage themselves in this problem to be able to provide aid to children in South Africa.
AIM

The aim was to describe how the preventative work against malnutrition is being performed among children aged zero to six in South Africa.

Research questions

How is the preventative work against malnutrition performed?

What are the challenges and obstacles for the preventative work against malnutrition?

What needs to be improved and developed so that the preventive work can become better and more effective?

METHOD

Study design

The method used in this study was a qualitative descriptive study with semi-structured interviews. This method was suitable for the subject and aim since the thesis describes the interview-participants perceptions and experiences about the issue (Flick, 2014). Because perceptions and experiences were interpreted in this research, a qualitative descriptive study method was chosen.

According to Patton (2015) there are no absolute rules when using a qualitative analysis, except possibly that the researchers should use their full capacity to achieve an accurate way to represent the collected data and show how it is connected with the purpose of the research.

Inclusion criteria

The first interview-group was researchers that conducted research on the issue of malnutrition among children. This group was chosen since research about the issue is an important factor when it comes to preventing malnutrition. The other group was registered nurses working in clinics/other workplace that encounters malnourished children and their caretakers. This group was chosen since registered nurses have an important role working with public health, and therefore nutrition, in the country. The interviews included three different researchers and three different registered nurses. Totally, six interviews were performed and conducted.

The inclusion criteria for the individuals to be able to participate were: for researchers; performing research in present time about children and nutrition and at least one year of experience as a researcher. For registered nurses; minimum one year of experience as a registered nurse and currently working in a clinic/other workplace that encounters children suffering from malnutrition and the children’s caretakers.

The research took place in Cape Town, South Africa. The researchers that were interviewed conducted research that covered the whole country, not only the Cape Town area. One of the interviewed researchers focused on the socioeconomic causes of malnutrition among children. The second researcher focused on physical and psychological
consequences of malnutrition and micronutrients deficiencies. The third researcher focused on socioeconomic preventive work such as developing education about nutrition and practical solutions for communities such as community-gardens.

The interviewed registered nurses worked locally within Cape Town. Two of the registered nurses worked at a breastfeeding clinic. One of the nurses had in addition to her nursing degree graduated as a physiotherapist. Giving advice and education to mothers about breastfeeding was the clinics main purpose. The third nurse was located at a care center that worked a lot with public health such as advice on nutrition, smoking, alcohol-consumption and exercise habits.

Different institutions were visited, both public and private. The public clinics informed that a governmental approval was required to perform interviews at the public clinics. This was applied for long before the interviews would commence, but a reply never returned. Therefore, interviews at the public clinics were denied by the Clinical Directors. Because of this fact, the interviewed registered nurses in this study were located at private clinics.

**Study group**

The selected study group in this study was children aged zero to six. This study group was chosen because this particular age-group among children is extra vulnerable to poor living conditions as they are still growing, has increased nutritional needs and have a high risk of infections. Therefore they become a very vulnerable age-group regarding malnutrition (Hall et al., 2014).

**Data Collection**

**Interview Guide**

Before the interviews were conducted, an interview guide was developed with interview-questions (Appendix A). When the interview guide was developed, a critical discussion was held about what kind of information should be valued as relevant to collect. This was done in order to obtain relevant interview-data connected to the aim of the study.

The information that was valued as important to collect was the following; information about how the interview-participant worked with children with malnutrition, how they contribute / work with preventive work, if they work with education and information about nutrition and their professional opinions about solutions to the malnutrition-issue. When this was clarified, the interview questions were designed with those guidelines in mind. When the questions were developed the focus were on open questions, and to avoid closed questions that would create "yes" or "no" answers. This was done to be able to collect as much credible data as possible (Polit & Beck, 2012).

**Information to participants**

Before the interviews were performed, the missive (Appendix B) was sent to the participants through email. The intent was that the participants would receive satisfactory information about the project, the researchers of the study and the purpose of the interviews. The participants were also informed on location that he / she could stop the interview if he / she desired, and that it was entirely up to them to approve if a recorder
could be used or not during the interview. All of the participants approved a recorder to be used during the interviews.

**Test interview**

Before the interviews with the participants started, the interview guide was tested through a test interview. The test interview was performed in order to examine if the interview-questions was functioning as expected. The test interview was performed between the two researchers of the study.

**Pilot interview**

One pilot interview was performed to test the study method and interview-questions with a participant in the study. Polit and Beck (2012) states that the main purpose of a pilot interview is to discover issues within the study method, and then correct and eliminate these issues. Since the pilot interview was conducted with a qualified participant and provided high quantity of relevant information in relation to the aim, the pilot interview was included in the result.

**Interview process**

The interviews were designed through a semi-structured model with prepared questions (Appendix A). Follow up questions was asked, and these varied depending on the interview-participant. The language used through-out all communication during the research (e-mails, phone-calls & interviews) was English.

All interviews were conducted in Cape Town, South Africa. The participants were contacted through email or phone to receive information about the research project. After getting in contact with the interview-participants, a meeting was arranged to perform the interview. The interviews were performed at the participant’s workplaces. As recommended by Polit and Beck (2012) the interviews were held in a separate, quiet room. This was done so that the participants could speak freely and without disturbances. During the interviews, the researchers of the study took turns interviewing and taking notes. The equipment used during the interviews was a recorder through a smart-phone. This was helpful when analyzing the interview content afterwards and to cognize non-verbal communication like sighs and other sound-expressions that were too complicated to write down. Notes were also taken during the interviews. After the interviews were completed, each participant received information about where he/she could read the essay when it was finished and published.

**Data analysis**

The material from the interviews was investigated systematically and analyzed based on a grounded theory to enable to find codes within the data. Stated by Grounded Theory Institute (2014) a grounded theory is an inductive methodology suitable for systematic research. The suitable coding-technique for a grounded theory is substantive coding which summarize empirical data (Grounded Theory Institute, 2014). During the data analysis, Interview Transcripts and field notes were used to detect differences and patterns between the different interviews (Bogdan & Biklen, 2007).
The definition of a code is: to assign a code to (something) for identification or classification (The Free Dictionary, 2011).

The coding-technique used was substantive coding. Substantive coding implicates to discover codes within the interview-data. The analyzed material should be closely connected to the collected data, and the created codes should be guided by the collected data. When the substantive coding was performed, the process started with open coding (Fejes & Thornberg, 2015). Open coding means that the material was first carefully listened to / read, in order to detect meaningful units (codes) within the material. When these units were found they were given a name which summarized the identified unit. The name that they were given was called a category, which structured the found codes into different categories that was relevant for the study (Fejes & Thornberg, 2015).

When the open coding was done, the coding process continued to selective coding. The most relevant codes were detected and chosen. When this coding was performed, the focus was on finding the codes that reoccurred in most of the interview-data and thus was stable patterns in the empirical data (Fejes & Thornberg, 2015).

Example of coding schedule (Fejes & Thornberg, 2015):

<table>
<thead>
<tr>
<th>Codes</th>
<th>Condensing units</th>
<th>Sub-categories</th>
<th>Category</th>
</tr>
</thead>
<tbody>
<tr>
<td>We try to improve the children’s eating habits by educating their parents</td>
<td>Educating parents to improve children’s eating habits</td>
<td>Education to prevent malnutrition</td>
<td>Education to prevent malnutrition</td>
</tr>
<tr>
<td>Maybe they know, but they can’t even explore those thoughts, because they don’t have the money to support their family</td>
<td>Maybe some people are aware of what they should feed their children, but due to poverty they don’t have the opportunities to apply that knowledge</td>
<td>Poverty affecting malnutrition</td>
<td>Socioeconomics</td>
</tr>
</tbody>
</table>

**Ethical considerations**

During the research, one main ethical aspect was that every interviewed individual participated voluntary and free from pressure. The respect for the participant’s confidentiality and anonymity was also of high ethical value (Webster, Lewis & Brown, 2014). The individuals that participated in the interviews received full information about the background and the aim of the study, both written and verbal. After this information was given, the participants could give their informed consent (Polit & Beck, 2012). The information provided to the participants was personalized, so that every person who contributed to the study understood the meaning of answering the questions (Webster et al., 2014).

When analyzing the data, one main ethical consideration was to never distort any part of the given answers. It was highly important to completely understand the answers, so no misinterpretations were made when the content was analyzed (Helgesson, 2006). When the interviews were performed, another ethical aspect was to always value mutual respect and
integrity between the researchers, the interviewed participant and the participant’s workplace (Boydell, 2007).

RESULTS

The headlines in the result represent the most relevant categories that emerged during the coding-processing of the interview data. To determine which categories that were most relevant, they were evaluated by how related they were to the aim. The most relevant categories described the challenges that the preventative work faces, and how the preventative work is performed.

Under each headline, the found results are summarized. The information is structured by using subheadings that represent the found results. Quotes from the interview participants are included in the result in order to strengthen the credibility.

Socioeconomic factors

Poverty

Socioeconomic factors play a big role in the issue of malnutrition among children in South Africa. This fact was heavily emphasized by both the registered nurses and the researchers that participated in the study. Lack of financial resources makes it difficult for many families to afford healthy food. Foods such as vegetables and fruits are significantly more expensive than foods that are high in carbohydrates, fats and sugar. These foods do not contain enough nutrients, but since they are more affordable, many families buy them anyway to be able to provide a sufficient quantity of food for their family and to prevent hunger. High energy foods such as maze meal, white rice and white bread also keeps the individuals full for a longer time than after eating vegetables and fruits.

Because of these factors, it is hard for poor families to find the economical possibility or motivation to buy healthier foods since they cannot afford it, and will be hungrier if they switch from consuming high energy foods to vegetables and fruits.

Two of the registered nurses that participated in the study emphasized that the rising food-prices in South Africa, especially in Cape Town, is a major issue for poor families trying to support themselves with enough and healthy food. The food prices are rising when at the same time, there is a big problem with unemployment in the country. Also, there are differences in the assortment of foods in supermarkets in urban and rural areas. One of the researchers shared the following information:

“You find a lot of the supermarkets in the rural areas which have the cheaper foods, which are the unhealthy foods. That’s a major contributor.”

One of the researchers that participated informed that some action plans that already have been established in selected rural communities, such as helping residents to plant vegetables and to educate them on how to maintain them, have shown to fail due to multiple factors. One factor is the lack of motivation among many residents due to
depression, usually developed from unemployment. These people are struggling to survive the day, so being able to find motivation to maintain a garden may feel distant.

Another factor is that families with parents that do work, mostly spend their days outside of their home and work long hours to provide for their family. Undeveloped infrastructure in rural areas restricts the routes to and from work which results in long journeys. When the parents spend long hours travelling to and from work, it leaves little energy left for chores at home, such as gardening. When the stress of poverty is so severe, almost everything else becomes secondary priorities, like education about nutrition. This subject was heavily emphasized during the interviews, and one of the participants shared the following information, which highlights this issue clearly:

"Maybe they know, but they can’t even explore those thoughts, because they don’t have the money to support their family."

Food security

Another issue that the majority of the participants stressed was the fact that many poor people in the country cannot prepare and consume fresh food because they do not have access to electricity or running water. Access to functioning sanitation facilities is also a major problem in big parts of South Africa. Due to the lack of clean water and sanitation, many children suffer from diseases such as diarrhea, which is strongly connected to malnutrition and increased mortality.

The lack of food security is most severe in rural areas, where families also do not have access to or the economy to buy healthy food that are sufficient, safe and nutritious enough to meet dietary needs. Two of the researchers that participated in the study stated that to improve food security in South Africa, new and evolved strategies must develop. These strategies must cover how these communities will get access to clean water, sanitation and safe food-practices. One of the researchers shared the following information:

"Trying to sort out diseases like diarrhea, which is a major contributing factor to malnutrition, includes sorting out water and sanitation."

Access to healthcare

The lack of financial resources is also a determining factor for parents to be able to provide good medical care for their children. This problem was emphasized by all of the interviewed registered nurses. Many families are in need of proper support and education about how to provide the right nutritional support for their children. However, a visit to a private clinic is often too expensive for many families. The families can then seek help at a public clinic, but waiting times are often long. The opportunity to give proper education is also often limited due to undermanned staff. Since the staff is too few, it is problematic for them to have enough time to provide education to the patients. Because of this, many families choose to not seek help at all.
Another problem regarding access to healthcare is large distances within the country. Many people live in rural areas that are far away from a hospital or other care facility. Therefore, it takes long and exhausting journeys to reach medical care, which results in that many people in these areas do not receive any medical care if they get sick. This is a big issue, since children from rural areas have a greater chance of developing malnutrition and/or stunting than urban children.

Culture affecting nutrition

Another social factor that needs to be taken into account is culture. This is a subject that was discussed by all of the participants, and all of them emphasized this subject from different angles. Since South Africa is a very diverse country in terms of culture, the country contains many different food-practices. In some communities where most residents have a good economy, they still consume food that is high in fat, sugar and carbohydrates. One of the participating researchers explained that this is rooted in a cultural view that being overweight symbolizes wealth and health. Especially regarding the health, overweight is considered to show that the individual is not HIV positive. The following information was shared during one of the interviews:

“They would rather eat unhealthy and be overweight than being skinny because people then think they got aids.”

In some high-income communities, breastfeeding is defective but not due to restricted economical resources or physical problems with breastfeeding. In these communities, mothers choose not to breastfeed since it is considered unfashionable. The mentality around breastfeeding is orbiting around a wish to keep their breasts attractive and avoiding pain in the breasts associated with breastfeeding. It is also a matter of peer-pressure in these communities. When most women bottle-feed their babies, increasingly more mothers start to question why they should breastfeed when others bottle-feed.

Another contributing factor to the low rates of breastfeeding in these communities is the easy access to formula in convenience stores and pharmacies. Being able to breastfeed properly often takes some time and patience. Because of this, many mothers choose to buy formula instead since it is much easier and convenient.

Lack of education

Defective knowledge about nutrition among parents

Lack of knowledge about nutrition among the South African people is a topic that was heavily emphasized by all the participating researchers and registered nurses. Many parents in South Africa give their children the wrong nutritional support in forms of lacking variety of foods, inadequate breastfeeding or substituting breastmilk or the correct formula with for instance goat- or cow-milk. Many families with small children stop breastfeeding early and feed the child what is available. In many cases children that are
only nine or ten months old only eat vegetable and fruit purees which is insufficient for growth and does not contain enough nutrients for a child that young. Many mothers are in need of support and education on how they should feed their child when the child shall transcend from breastmilk to other food, or how they should combine breastmilk with other foods if the mother has trouble breastfeeding. During the interviews, one participant said:

"I think it’s education. They don’t realize that the child needs more proteins and variety."

Another contributing factor to malnutrition and stunting among children is the fact that many parents do not have knowledge about restriction of alcohol- and cigarette consumption during pregnancy. There is not enough education available to parents in many communities about the impact on the child when smoking and/or drinking during pregnancy.

This is a result from the lack of education provided about nutrition in many parts of the country. The amount of education that the parents receive is also connected to the socioeconomic factors, since families that never seek healthcare, never receive any adequate information about nutrition for their children. The majority of the participant’s said that the education provided from the healthcare must reach out in a greater amount, and be adjusted so that the education provided takes the socioeconomic factors into consideration. The education must be applicable for the majority of families that are living in poverty and unemployment.

Another challenge regarding the education that was emphasized by two of the registered nurses was that the education must be able to break through barriers of food-practice culture. Educating a mother with a good economy about nutrition for her child can be an equal challenge compared to educating a poor mother, depending on the individual’s culture. As earlier mentioned, there are a lot of barriers regarding culture and nutrition, for an example on how to manage to get through to mothers that choose not to breastfeed simply because they do not want to and it is considered unfashionable. It is crucial that these mothers understand the consequences of the decision to not breastfeed, and how they shall feed their child so the child do not develop nutrition-deficiencies if the child shall sustain on formula and/or other foods.

Nutritional support in schools

Managing more schools to spread education about nutrition among children is an important factor in the preventative work. Some schools in South Africa have already involved nutritional education in the students learning. This needs to be evolved further so the education can become better, and reach out to as many children as possible. If this is possible or not in different schools is strongly connected to socioeconomic factors, such as available resources in different areas and communities. The teacher’s knowledge about nutrition and whether or not there is access to a school nurse are also determining whether or not the education about nutrition can become successful in the schools. A good progress regarding this would also be if the parents of the children could take part in the nutritional
education at the children’s school. In some schools the nutritional education is provided by a school-nurse. In other schools the education is provided by teacher’s that usually receives nutritional knowledge from the healthcare system.

An important factor to keep in mind regarding this is that if the children and/or their caretakers shall participate in education it is crucial that they are not suffering from severe hunger. Hunger affects concentration, energy-levels and motivation. If people are starving and cannot afford to buy food for the day, it is difficult to assimilate guidelines on what kind of food they should buy and consume. The following information was shared during one of the interviews about this matter:

"We all believe in good education, formal education. But if they’re sitting in class really hungry they can’t even concentrate on the class because all they think about is food.”

Education in rural areas

In many rural communities, education becomes less of a priority due to the situation of crisis management which is performed on a daily basis. People focus on getting through the day and to have enough food to feed their families, than taking part of an education program. This result in that many children do not go to school and that parents never receive information or support about nutrition from the school system. It is also common that people from such communities never seek healthcare, which also unable them from receiving information and support from the healthcare system.

One of the participating researchers shared that in some rural communities the access to fresh food is limited and poor families consume a lot of cheap and accessible food such as liver. Liver contains high amounts of vitamin A which should be consumed with care by pregnant women and children. Due to lack of knowledge and access to other foods, people in these areas consume liver in bigger quantities than recommended. The opportunities to reach out with education about nutrition in these communities are a challenge which results in a lack of knowledge among the residents. Many of the children in these areas suffer from a shortage of essential micronutrients such as vitamin D and calcium but have a high content of vitamin A in their diet. This is a result from the fact that children in these areas consume high amounts of liver but not foods rich in vitamin D and calcium, such as milk. This results in nutritional-deficiencies which lead to stunting among the children.

Future in South Africa

The diversity in South Africa in terms of culture, socioeconomic status, economical resources and geography is strongly reflected in the eating habits of the population. Therefore, one action-program against malnutrition will not suit all. The preventative work needs to be conformed to different communities to be able to create a brighter future in South Africa regarding malnutrition among children. This is a big challenge, but necessary if the problem shall diminish further in the whole country. This fact was stated by five of the participants.
It is important to recognize that the problem of malnutrition is mostly rooted in poverty. The issue regarding unemployment and poverty needs to be managed if malnutrition is supposed to diminish. However, this is a large and complex problem that is not easily solved. One of the participating researchers stated that the country needs more action-programs in terms of providing the poorest communities with clean water, functioning sanitation and medication against diseases.

Together with action-plans to improve the socioeconomic situation in the country, the education about nutrition needs to improve as well. Today, there is not enough sufficient education provided to families from schools or the healthcare system. The education must be provided by more schools and more hospitals/clinics and be able to reach out to the many families that live in rural areas. The following information was shared by one of the participants during the interviews:

"Even the education system is failing everybody, so where would they get information from?"
DISCUSSION

Discussion on results

The main finding in this study was how socioeconomic factors are connected to malnutrition among children and the preventative work against this problem. Together with the researchers and registered nurses who participated in the study, the importance of the subject socioeconomics arose. Before the study began, we did not know how much the socioeconomic factors impacted on the public-health work and the prevention against malnutrition among children. Earlier in the study it was informed that The Southern Africa Labour and Development research unit (2015) emphasizes that there is a strong relationship between a child’s health and the socioeconomical status among their parents. This is something that we discovered through the study to be highly important. We discovered during the research that the socioeconomics was an essential component to be able to understand the nutritional-health among the children in South Africa, and how to work preventative against malnutrition.

Vorster (2010) discusses the link between poverty and malnutrition and the importance of the socioeconomic factors when it comes to battling malnutrition in South Africa. Sen (1999) implies that poverty is not only based on economics, but also on the absence of the capability to live a minimally acceptable life. By that, Sen (1999) entails that poverty is characterized by having a low personal income, lack of opportunities, being unable to bear the costs for healthcare and lack of access to good healthcare. Vorster (2010) indicates that many factors are included in the widening of the definition of poverty, for example economic, social, political, and educational factors. These factors lead to an increased consciousness of the relationship between poverty, health and malnutrition. During this study, we came to the same implication that malnutrition is strongly rooted in poverty and other socioeconomic factors. All research about this issue is important, but we discovered that different types of studies approach the subject malnutrition from various angles. Some researchers focus on micronutrient deficiencies and how it impacts children's health (World Food Program, 2015), while others examine the foundation of the problem which is being discussed by Vorster (2010) and Sen (1999).

The topic education also showed to be important within the preventative work against malnutrition among children. It emerged that the lack of knowledge about nutrition affects children’s nutritional status and has a negative influence on their future nutritional behavior. The importance of good education, especially among pregnant women and families with infants, was found to be lacking and important to improve. If the parents receive proper education about nutrition, it will have a major impact on the child's health. As mentioned earlier in the study, UNICEF (2015) states that the first 1000 days of a child's life, pregnancy included, is the most important time for the child to receive the right nutrition. Education is however also connected to the socioeconomic factors. Families’ availability to healthcare and school, their economical resources and cultural beliefs are all determining factors regarding if/how they receive any adequate education about health and nutrition.

The lack of breastfeeding was also found to be a major issue in South Africa. With proper support and education, mothers can improve their breastfeeding which would profit
children’s health. UNICEF (2014) states that the content of breastmilk will help the child’s development during the first six months, and help the baby combat diseases through transferred antibodies from the mother. The importance of teaching mothers how to breastfeed and to keep breastfeeding for at least six months was found to play a huge role in the outcome of children’s nutritional status and health. However, it was found during the study that the socioeconomics also influence breastfeeding since many mothers choose not to breastfeed due to personal beliefs or they do not possess the economical resources to seek help from the healthcare system if they have problems breastfeeding. In many cases the mothers also live in isolated rural areas where a hospital or clinic is very far away and requires long and exhausting journeys.

The findings that was discovered during this study was strongly connected to the aim and all of the research questions were fully answered. However, even though the study covered only the particular age-group of children aged zero to six, the results from the interviews showed that it is a very broad and complex issue. A bigger project with more time and resources would have made it possible to cover even more discoveries and factors of this issue. All of the constructed questions were answered fully during the interviews, but the answers were often very broad with a lot of information. To be able to cover all of the information and present it in a proper way, a much bigger study is needed. Therefore, the answers and discoveries from the interviews had to be summarized and narrowed down to fit the format of this study.

Regarding the importance of this study towards healthcare and nursing, this study revise how public-health and preventive work is affected by socioeconomic factors, and how the preventative work must be able to adapt to different social contexts. In a country like South Africa, with all its complex social problems, developing a functioning and proper nurturance and healthcare is a challenge. South Africa is a country with such major diversity regarding poverty, culture, resources, geography and knowledge that it is impossible to apply the same kind of preventative work all over the country. Because of these discoveries, the socioeconomic factors obtained a lot of space in this study because without studying and understanding them, it would be impossible to understand the issue of malnutrition and the preventative work. To understand that nurturance and preventative work is so strongly connected to the social situation in a country, is a learning important to share. For registered nurses and other healthcare staff, this discovery is important to understand, especially when working with healthcare in such a complex country like South Africa.

If we were to continue this study, the focus would have lied on understanding the issue even deeper by involving the social context in the country further. Another angle to the study would have been to examine how different people get treatment and education from the healthcare system depending on their social status and what kind of healthcare they can afford.

**Discussion on method**

The method used during the study was a qualitative descriptive method with semi-structured interviews which gave the participant’s space to express opinions, thoughts and ideas that was not necessarily a part of the prepared questions (Flick, 2014). The designed questions that were asked during the interviews showed to be successful in the sense that the authors never received any closed “yes” or “no” answers. This provided us with a lot of
credible information (Polit & Beck, 2012). Using a quantitative method for this study would not have created the same kind of results. Since the wish for the study was to explore the subject deeply, a quantitative method would have enabled that since the questions would not have been answered with the same width. Stated by Flick (2014) a qualitative method with semi-structured questions is suitable for a study that wants to capture the participant’s personal perceptions and experiences.

Six interviews where performed during the study. The original goal was to interview seven or eight people to get an even deeper understanding of the issue. This was however discussed after the first three interviews. We then realized that the topic is very broad and extensive, which led to the conclusion that six interviews would be suitable for a study of this size. During the six interviews, a lot of information was given that was valued as adequate and credible to the study’s aim. The six interviews conducted in this study were performed on separate days. The coding for each interview was also made before the next interview was held. This was done in order to have every interview fresh in mind when coding them. By doing this, the chances of forgetting or distorting any content from the interviews were reduced.

The interview questions used in this research were designed thoroughly to ensure that the collected interview-data was useful and relevant in relation to the aim. To increase the credibility, the authors consulted each other during the study to ensure that the collected data were analyzed truthfully before interpretations were made (Polit and Beck, 2012). The analyzing process was reviewed critically by recurrently asking critical questions about the content, with guidance from adequate literature (Thornberg and Fejes, 2015).

One major obstacle that arose during the study was that interviews at public clinics require permission from the government. This was applied for before the study began, but a response and approval was never given. Later, when visiting public clinics the clinic managers informed us that it can take several months to over a year in some cases to get approval from the government. Since an approval was never received, interviews were denied at the public clinics. This was a clear weakness in the study, since we had wished to interview registered nurses who worked in both public and private clinics. It would have been a strength for the study to be able to see the differences between public and private clinics, and to explore the work on a public clinic where the majority of poor people seek healthcare. Because of this, there was a loss of over five public clinics/hospitals that had been contacted for interviews while we waited for the approval from the government.

Regarding strengths of this study, one strength is that all of the participant’s worked at workplaces that were relevant to the topics public-health and malnutrition. All six participants therefore contributed with six different angles which together created an interesting and relevant picture of the problem. Another strength of the study was the chosen interview-groups which were researchers and registered nurses. By interviewing both of these groups, the study managed to create an in-depth picture of the problem of malnutrition among children in South Africa. Since healthcare and nursing cannot develop without proper research, healthcare and nursing goes hand in hand with research. Therefore, we decided to interview these two groups to be able to understand and compare how research affects the public-health care and preventive work. The researchers also contributed with a deep understanding of the factors that creates malnutrition, while the registered nurses contributed mostly with information about their preventative work at their workplaces. During the presentation of the results, the main goal was to present the
interview-data truthfully and accurately. It was also important to manage to select and summarize the information that was relevant to the aim of the study, since a lot of information was received during the interviews. However, not all information was entirely relevant to the aim. Therefore, the coding process of the interviews took a lot of time since we had to sort and evaluate all of the given information and be sure to correctly present the information that was valued relevant and interesting.

As mentioned earlier in the study, Hall et al. (2014) states that malnutrition is most important to address before the age of five, otherwise it will most likely prolong into adulthood. Because of this fact, we chose to examine the age group zero to six in this study. When conducting the interviews based on this age group, we realized that narrowing the age group even further, for example to only focusing on infants, could have been beneficial to get a more slim result that would only focus on the child's first 1000 days in life, which earlier in the study had been established by UNICEF (2015) to be the most critical days in a child's life to receive the right nutrition. However, this was discussed several times and the age-group of zero to six was decided to remain. This age group made it possible for us to compare interviews with different participants that encountered children in different ages, from infants to six years old. This decision was made based on the wish to understand the issue and preventative work on a deeper level.

Conclusions

The main finding in this study was that in order to develop the preventative work against malnutrition among children in South Africa, the work must be adapted to the complex social situation. Public health and preventive work is closely connected to peoples living situation, resources, culture and knowledge. Therefore, one approach against malnutrition will not function in the whole country. Different action plans, educational support and aid must be developed for different communities. There is also a great need for developed education about nutrition, but the access to this education is limiting because of socioeconomic factors. Families need access to adequate education about nutrition for their children, mainly about the importance of breastfeeding and how they can be able to meet their children's nutritional needs with their available resources. Mothers who are HIV positive are in need of education and support about if/how they can breastfeed their babies, since HIV positive mothers and malnutrition among infants and children showed to be strongly connected.

Further research

More research is needed about this subject to improve knowledge about malnutrition among children, and to discover how to manage the problem. More studies on how to implement action plans, public-health work and education in different communities is needed. These studies must consider the different social contexts and resources that are found in different parts of the country.

Clinical implications

For healthcare and nursing, this essay will contribute with an insight regarding preventative work in a country like South Africa. Healthcare staffs that only worked in
developed countries that are not experiencing much segregation and social-problems within the society are accustomed to routines, policies and practices that work in the social context in which they are accustomed. Working preventively against health problems in a developing country like South Africa is very difficult. The research made in this study is relevant because the study focuses on how public-health work and thus the preventive work in a country can be improved by understanding how the society works. The study also shows the importance of proper education about health, in this case nutrition.
REFERENCES


Webster, S., Lewis, J., & Brown, A. (2014). Ethical Considerations in Qualitative


Interview Guide

- How do you encounter children with nutritional problems?
- How does your unit work preventative against malnutrition?
- Do you provide any kind of information about nutrition to the children and/or their guardians? If yes, how?
- What are the main reasons that many South African people have poor quality of knowledge about nutrition?
- What are the main health-complications related to malnutrition that you come across?
- How do you approach these complications?
- What kind of long-term solutions do you believe to be necessary for this problem to diminish in the future?
Hello,

Our names are Fanny and Camilla and we are nursing students at Sophiahemmet University, semester five. We will complete an independent project of 15 course credits. The subject to be studied concern malnutrition among children in South Africa. We are therefore interested in performing conducting interviews.

The aim of the study is to describe how the preventative work against malnutrition is being performed among children aged zero to six in South Africa.

The inclusion criteria to be able to participate in the research are: for researchers; performing research in present time about children and nutrition and at least one year of experience as a researcher. For nurses: at least one year of experience as a nurse and working in a clinic/other workplace that encounters malnourished children and the children’s caretakers.

Interviews will be performed with prepared questions, although it is possible to deviate from these. A recorder will be used during the interviews, with the purpose not to misrepresent the information given since we compile the information afterwards. The method used is qualitative analysis based on the interviews. The interviews will be analyzed and coded into categories and subcategories that are relevant to the aim.

One of the main ethical aspects of our research is to not apply subjective thoughts and values into the interviewed participants answers. It is also of ethical value not to ask leading questions that may affect the way the person give their answers.

Yours sincerely,
Fanny Enstrom
Camilla Pettersson

Sophiahemmet College
The students' signatures

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The supervisor's name and telephone number:

* = Anonymous upon the finished work