



**PREVENTION OF MALNUTRITION FOR CHILDREN
IN SOUTH AFRICA**

Examinationsdatum: 2015-01-12

Sjuksköterskeprogrammet 180 högskolepoäng

Självständigt arbete, 15 högskolepoäng

Kurs: 42

Författare: Hanna Gunnarsson

Författare: Nanci Kader

Handledare: Karin Casten Carlberg

Examinator: Margareta Westerbotn

ABSTRACT

Background

Malnutrition among children in South Africa is a huge issue, which are causing short- and long-term effects for the children suffering from it. In 64 percent of the cases where children die before the age of five, malnutrition is the underlying cause. Therefore there are non-governmental organizations who are doing preventive work to try to diminish malnutrition so all children have the same chance to a good childhood.

Aim

The aim of the study was to describe the prevention of malnutrition of children in South Africa.

Method

A qualitative design with semi-structured interviews with non governmental organizations was used for this study. Data was analysed by content analyse.

Findings

The findings show that one key intervention is nutritional education to empower people on how to best use the scarce resources they have. Therefore the non governmental organizations put a lot of emphasis on educating families about nutrition. Furthermore the stigma and mistaken beliefs about breastfeeding is targeted through education, as it is of vital importance to solely breastfeed as a preventive intervention.

Conclusion

Early interventions are emphasized due to the importance of preventing malnutrition early in a child's life. The link between HIV positive women and malnourished children is remarkable and the government of South Africa has promoted breastfeeding for all as a solution.

Key terms: Malnutrition, South Africa, Education, Breastfeeding, Poverty

TABLE OF CONTENTS

BACKGROUND.....	1
Malnutrition.....	1
Short- and long-term effects of malnutrition.....	1
Effects of malnutrition on a societal level.....	2
Health Promotion and health education- important aspects of nursing	3
Nutritional education.....	5
Nutritional guidelines	5
Why breastfeeding?.....	6
Implications of choosing one feeding practise	8
The study problem.....	8
AIM.....	9
METHOD.....	9
Study design	9
Inclusion criteria.....	9
Data collection.....	9
Data processing	10
Data analysis	10
Ethical considerations	11
FINDINGS	12
Education.....	12
Health Care.....	13
Helping Factors	14
Barriers	15
DISCUSSION	16
Discussion on findings	16
Discussion on method	19
Conclusion.....	21
REFERENCES	22

APPENDIX

A-B

BACKGROUND

“Stunting and other forms of undernutrition are clearly a major contributing factor to child mortality, disease and disability” (United Nations Children’s Fund [UNICEF], 2013, p. 5). According to UNICEF (2014) and Bourne, Pilime, Samo and Behr (2013) malnutrition is a huge issue in South Africa for children under the age of five. In 64 percent of the cases where children die at this age, malnutrition is the underlying cause. Furthermore, the lack of vitamins and minerals cause one in five children to be underdeveloped.

Malnutrition

According to Socialstyrelsen (2000, p. 15) the definition of malnutrition is: ”any disorder of nutrition status, including disorders resulting from deficiency of nutrient intake, impaired nutrient metabolism or overnutrition”

Data from The World Bank (2013) shows that South Africa is considered to be a developing country. Tasker (2013) says that in developing countries, malnutrition in paediatrics, are often linked to infections and is a leading cause of child death. It is also discussed in Tasker (2013) that the nutritional disorders may vary between protein-energy malnutrition, micronutrient nutritional deficiencies and morbid obesity. Specific nutritional deficiencies can be caused by a disruption in the balance of the nutrition intake of Vitamin A, Vitamin D, Vitamin K, Vitamin B1, Vitamin B12, Vitamin C, Vitamin E, Folic Acid, Iron, Zinc and Iodine.

Data from the National Food Consumption Survey demonstrated that malnutrition is a public health problem in South Africa. Nutrition burst by 67 percent for children one to nine years compared with recommended intakes regarding: energy, calcium, iron, zinc, selenium, vitamin A, vitamin D, vitamin C, vitamin E, riboflavin, niacin and vitamin B6 (Department of Health, 2013).

Tasker (2013) explains that assessments of nutritional status in paediatrics can be done in the following ways, among others: mid-arm circumference divided by head circumference, serum albumin sampling, recent weight loss, percentage weight for height and is assessed by taking the actual weight divided to the expected weight for height centile and multiply it by 100 and a value of ≤ 90 percent may indicate impaired nutritional statement.

Short- and long-term effects of malnutrition

UNICEF (2013) discusses that malnutrition has both acute and long-term consequences. The consequences can be direct and indirect and they both cause increased mortality. Indirect consequences increase mortality because malnourished children become more susceptible to diseases such as malaria, respiratory, or diarrheal diseases due to weakened defences. Guerrant, Oriá, Moore, Oriá & Lima (2008) says that malnutrition early in life cause long-term effects as it is a crucial time for the development. This is also stated by UNICEF (2013) where it says that the first 1000 days, which includes the pregnancy and the first two years of the child’s life, is the most vital time to receive the right amount of nutrition. During this period the child’s growth and development is very fast and needs the right nutrients to support that. Furthermore UNICEF (2013) report that children at this age are more vulnerable to catch infections and the tendency to develop diseases can change since children during this time have increased sensitivity to genetic programming.

In South Africa, data from 2007-2011 shows that 24 percent of the children under the age of five are suffering from stunting, five percent from wasting, nine percent are underweight, and the probability of dying before the age of five is 47 out of 1000 live births.

UNICEF (2013) explains the effects of malnutrition. The short-term effects of malnutrition are mortality, morbidity and disability. The long-term effects of malnutrition have impacts on adult height, cognitive ability, economic productivity, reproductive performance, and metabolic and cardiovascular disease. The risk of dying is four times more likely for a child that is severely stunted and nine times more if the child is wasted. Evidently malnutrition has devastating consequences and there is a limited time to prevent many of them. UNICEF (2013) says, that the 1000 first days is when most of the development of the brain and nervous system take place that consequently means that if the child does not receive enough and the right nutrition during this time, it will have long-term effects. Iron, folic acid and iodine are very important for the development of the brain and nervous system and if a child does not receive these vital micronutrients it can have harmful effects. If children do not receive enough nutrients up until two years of age their lost abilities cannot be regained, even if they after that age are provided with adequate nutritious food.

Studies that took place recently in Brazil, Guatemala, India, the Philippines and South Africa shows clear and definite evidence of the relation between stunting and poor school performance and failed grades. Consequently the ability to income-earning will be reduced in adulthood (Martorell et al., 2010). Data from the same study indicated that only weight gain before the second birthday improved the school results later in the childhood. Another long-term effect of malnutrition is according to Victora et al. (2008), Martorell, et al. (2010) nutrition deficiency early in life increases the risk of becoming obese later in life which in turn leads to higher risk of suffering from coronary heart disease, stroke, hypertension and type II diabetes.

The effects of malnutrition are a complex issue and so are the causes of malnutrition. Diarrhoea and malnutrition is a viscous cycle, they both exacerbates one another; malnutrition is worsen by diarrhoea and the risk of diarrhoea increases when suffering from malnutrition (UNICEF, 2013). According to Guerrant et al. (2008), malnutrition should be looked at as an enteric infection. When suffering from continuous diarrhoea infections it hampers the ability for children to absorb the nutrition they do receive. Furthermore Guerrant et al. claims that children suffering from malnutrition have more frequent, longer periods, and more severe diarrheal illnesses.

Effects of malnutrition on a societal level

According to Vorster (2010) poverty and malnutrition is linked to one another. People who live in poverty are at high risk of malnutrition due to lack of assets. Garza (2002) referred to in Vorster (2010) brings up that, nutritionists for a long time has agreed that nutrition has an elemental component in the development of human capital that is solid. As early as in 1973, Berg stated that; “[m]alnutrition adversely affects mental development, physical development, productivity, the span of working years – all of which significantly influence the economic potential of man” (Berg 1973, p.5 referred in Vorster, 2010). Vorster (2010) explains that this is a vicious cycle, which is hard to break; poverty cause malnutrition and malnutrition lead to continued poverty. Therefore when facing and working toward reduced poverty, malnutrition is an extremely important aspect to take into consideration.

Furthermore the issue of malnutrition in pregnant women and new mothers are addressed as well (Vorster, 2010, Bhutta, Darmstadt, Hasa & Haws, 2005). This issue causes the infants and children to have a reduced mental ability and an inferior development in human capital (Vorster, 2010).

According to Schönfeldt, Gibson and Vermeulen (2010) the people who live in extremely low socio-economic conditions spend one third of the money they earn on food, which mainly contains of maize meal and bread. Unfortunately this does not contain all the nutrients needed and the lack of variety leads to poor health, loss of life, inability to work and reduced quality of life. In South Africa more and more people are moving from the rural areas into the cities where they settle down in urban areas to find job opportunities. A study was done in urbanized informal settlements in South Africa (Amuli, 2006) showed that the greater part of the people living in these areas had a monthly income of 66.55 US dollars. 71 percent was spent on food and primarily of maize meal. 66 percent of their daily intake of food was from porridge prepared off maize meal. The lack of nutrients in this unilateral diet has a great effect of peoples over all wellbeing. Another study done in 2007 revealed that, when stunted, there was an average of 22 percent loss of yearly income (Grantham-McGregor et al., 2007). Schönfeldt et al. (2010) also emphasizes the fact that malnutrition is the single largest contributor to the high numbers of child mortality.

Health Promotion and health education- important aspects of nursing

The main goal of nursing is health (The Swedish Society of Nursing, 2008). Health is a term that has been widely discussed and several definitions have been implied. Traditionally it has been defined as the absence of disease (The Swedish Society of Nursing, 2010). However, the definition of health today, that is more widely implemented was the one defined in the Constitution of The World Health Organization [WHO]: “Health is a state of complete physical, mental and social well-being and not merely the absence of disease or infirmity” (WHO, 1948, p. 1).

Nurses are expected to have the ability to promote health and prevent illness (Socialstyrelsen, 2005). In the terminology database of The National Board of Health and Welfare in Sweden, it is defined that health promotion interventions are interventions that aim to strengthen or maintain human psychical, mental and social well-being (Socialstyrelsen, n.d). Similarly, Bauer, Davies and Pelikan (2006) state that health promotion interventions aspire to increase resources to maintain or improve health. According to The National Board of Health and Welfare in Sweden (n.d) preventive measures within health and social care are interventions that prevent the occurrence of, or influence the course of illness, injury, physical, mental or social problems. Health promotions were defined in the Ottawa Charter as the process that provides humans the abilities to increase control over their health status and to improve it (WHO, 1986).

Chan and Perry (2012) addresses that there are health promotion interventions that proves to have a good evidence on reducing health risks in population groups. Both group interventions and individual counselling is effective and interventions such as education, motivational interviewing, and behavioural treatments such as self-help materials, behavioural support, recommendations and guidelines are all effective depending on what needs to be addressed.

Whitehead (2004) discusses that in contrary to the nature of health promotion, health education puts the emphasis more on the individuals to be personally responsible for the action they choose to take. As for health promotion, Whitehead says that it is recognized that the individual is a part of a larger picture and their health status is affected of external elements such as cultural, economic, environmental and political factors. It is stated in Rütten, Gelius & Abu-Omar (2010) that most of the theoretical approaches that explain health promotion policies come from the discipline of public health or political science. Cambon, Minary, Ridde and Alla (2013) also emphasize the social determinants of health, such as living conditions during early childhood, the schooling and working conditions. The nature of the environment plays an important role due to that it affects different groups' level of vulnerability to health problems. Cambon et al. (2013) explains that the nature of the environment provides a different prerequisite between groups which elicits different behavioural patterns or opportunities of providing access to psychosocial support. Wang, Moss & Hiller (2005), O'Dwyer, Baum, Kavanagh & Macdougall (2007) discusses that interventions in one setting may be ineffective in other settings and it is argued that the effectiveness of public health programmes are affected by the context it is applied within.

WHO (2009) consider that health promotion is dependent on the close cooperation on sectors beyond health services due to the fact that health promotions also needs to target the causes of health. Health is a diversity of conditions, which influence health. In Ottawa Charter (WHO, 1986) health promotion is discussed to be an action to help facilitate the conditions of political, economic, social, cultural, environmental, behavioural and biological factors through advocacy for health. It says that health can help these circumstances or conditions or be unhelpful to it. In Ottawa Charter, health is defined as a resource for daily life and not the objective of living (WHO, 1986). Further, it discusses that health promotion must enable an equality in health and aims at reducing differences in health status and requires a supportive environment, life skills, opportunities for making healthy choices and access to information. The demands for health with the complexity of health can therefore not be met by the health sector alone, and therefore it is explained that health promotion is a concern for all; for governments, nongovernmental organizations, local authorities, individuals and communities (WHO, 1986). As Glanz, Rimer and Viswanath (2008) address it; health for individuals does not exist in a social vacuum. Preventive health service can therefore be met by other sectors than the traditional health systems, although it is emphasized that health personnel are the mediators of health (WHO, 1986). The nurse plays an important role in health promotional interventions by inspiring healthy lifestyles, educating and informing about the risks of ill health and to identify and eliminate unhealthy habits at risk for pursuing ill health among the citizens (The Swedish Society of Nursing, 2010).

Whitehead (2004) states that health education can be seen as one of the strategies of health promotion, when there is a preventative approach, which is a method that is applied when the recipient may be at risk to continue unhealthy behaviour or to take up health-damaging behaviour. The recipient does not necessary have to have an existing undesirable health condition. Whitehead further discusses that health education is traditionally seen as a method of reaching out to individuals with information about the cause of illness and health. Usually it is about reaching out to individuals with the assumption that they are in need of health-related information and seeking to motivate the individual to accept that a behavioral change is needed or an avoidance of unhealthy behavior. It is assumed that individuals rate their health as important and that health staff can thus act upon the assumption that the individual wants to avoid or reduce adverse health conditions.

Although, Whitehead (2004) discusses that it might be assumed that the individual will benefit from the information. However, the outcomes may be either negative or positive. It is dependent on the priorities and the preferences on the recipient if the change is realistic and how the individual values the possibilities of accommodating a change, which will lead to a positive health status.

Nutritional education

Nutritional education given to mothers and caregivers has a high impact on the child feeding behavior (Els & Walsh, 2013). How this could have a long-term impact on the linear growth is further presented in the study. Although the report mainly focuses on the impact of feeding programs, it emphasizes the importance of nutritional education. It appears in the report of Els and Walsh (2013) that supplementations alone or even where availability of food is not significantly low is not enough factors to avoid malnutrition. One important contribution to malnutrition is the lack of knowledge of feeding practices. Therefore, it is highlighted that a nutritional education is a contribution with or without supplementation. Similar results of the contributive effect of nutritional education on its own show that it also had an impact on the recovery from moderate malnutrition. The difference between the effects of supplementation and nutritional education presented by Els and Walsh (2013) was that supplementation may be the undertaking contribution to the recovery from malnutrition, while education may be the driving force in the long-term aspect by providing the useful information on food choices, feeding routines and patterns of feeding.

Another dilemma is how to promote infant feeding practises, such as breastfeeding when it comes to HIV infected mothers. There is a misconception about this concerning child survival by the avoidance of HIV infection by not breastfeeding, due to the mixed messages that have been expressed from health care workers about feeding practises (Department of Health, 2013). UNICEF (2012) addresses that the problem is to change the mindset of the mothers who has been told for so long that formula is the safe way to feed their baby. Therefore it is very important to give the mothers educative information about breastfeeding as a preventive intervention. To almost completely prevent the risk of transmitting HIV from mother to baby, either the mother or baby are also given antiretroviral medicines.

Other aspects when support is important are when mothers face difficulties with breastfeeding such as; how to practice breastfeeding, nipple pain, fear of not being able to provide enough milk etc. WHO-UNICEF has initiated Baby-friendly hospitals in 152 countries, including South Africa, where support and extended care is provided for mothers and newborns to support higher rates of breastfeeding (WHO, 2014a).

Nutritional guidelines

The Department of Health in South Africa has developed nutritional guidelines for infants and children up to five years, called; South African Infant and Young Child Feeding Policy (Department of Health, 2013). The National Policy also promotes the United Nation's [UN]: Article 24 of the Convention on the Rights of the Child. In 1995 South Africa confirmed the United Nation's Declaration on the Rights of the Child, which means that they are obliged to follow its articles.

The following are extracts from Article 24; a) the goal is to diminish infant and child mortality, b) to guarantee that children get necessary medical assistance and health care, highlighting the development of primary health care, c) concerns the subject of malnutrition and combating disease, to achieve that the focus should inter alia be on application of readily available technology and through the provision of adequate nutritious food and clean drinking-water within the framework of primary health care and also taking into consideration the dangers and risks of environmental pollution, e) is stating that all parts of the society should be guaranteed, particularly parents and children, information, access to education and are supported in the use of basic knowledge of child health and nutrition, the advantages of breastfeeding, hygiene and environmental sanitation and the prevention of accidents (UNICEF, Article 24 Convention on the Rights of the Child 1990).

The guidelines of the South African Infant and Young Child Feeding Policy are within frames that take into consideration the following aspects and are shortened AFASS. Followed is an explanation of the abbreviation: The chosen feeding practise is: Acceptable [A]: it is not perceived as a barrier for the mother, out of cultural and social reasons or causing fear of stigma and discrimination. Feasible [F]: allows enough time, knowledge, skills and other resources to prepare the food and feed the infant and the support to deal with any pressures from social entities for the mother or the family, and Affordable [A]: it is affordable, with the support from the health system or community, including all necessary ingredients above the purchase and the preparation of the feeding option such as clean water, fuel and equipment without effecting the spending on health and nutrition for the family, and Sustainable [S]: it is available and gives an uninterrupted continuation of the supplement and a reliable distribution for all the ingredients and equipment needed for the time the infants needs it, and Safe [S]: regarding replacement foods, are prepared in a correct and hygienic manner and stored correctly due to nutritionally adequate proportions, hands are clean while feeding with clean utensils, preferably cups are used rather than bottle (Department of Health, 2013).

To reduce the high child mortality the government of South Africa has introduced a new policy according to WHO's recommendations regarding breastfeeding. WHO's (2014a) recommendations are to exclusively breastfeed during the baby's first six months and to continue breastfeeding for at least two years together with complementary foods, although the breastfeeding should not be decreased when starting with complimentary solid foods. The solid foods can be mashed from family meals and sufficient time should be spared for the child to adapt to eat solid foods (WHO, 2014a).

Why breastfeeding?

WHO (2014a) states that 800 000 children life could be saved every year if children were breastfed within an hour of birth and exclusively breastfed their first six months and continued breastfed up to 24 months of age, as it is the best source of nourishment.

Breastfeeding is now a key child survival strategy in resource-poor countries and there is a national policy in South Africa that supports breastfeeding for all (Department of Health 2013). Health policy on breastfeeding promotion has short and long term benefits for children, with a far better chance of accomplishing benefits than other health promotions interventions (Bonuck et al., 2002).

In South Africa merely 25 percent of the women solely breastfeed their infants during the first six months. During the first six months a baby will receive enough nutrients and fat that they need if they are breastfed, but due to lack of knowledge, mothers introduce their infants to solid food too early, the recommended intakes is introducing solid foods when the infant is six months (UNICEF, 2014). The food they introduce is often lacking of vital nutrients and minerals, which cause the babies to be malnourished during their first months of their lives, and gives them disadvantaged preconditions right from the start. The remaining 75 percent use formula or mixed feeding of breast milk, formula, solids and other liquids during the infants first six months (WHO, 2014a). In a cohort study anthropometric markers showed severe malnutrition for infants fed with formula during their first two months of life (Alvarez-Uria, Midde, Pakam, Bachu and Naik, 2012). When formula feeding the child, contaminants can arise if the formula is not properly prepared for example with the use of unsafe water or equipment that is not sterilized, and bacteria that may be present in powdered formula (WHO, 2014a, Bourne et al., 2013). Also, infant formula does not contain antibodies that are present in breast milk. Of the infants who died within 28 days of birth, 60 percent died of malnutrition often caused by diarrhea (WHO, 2014a, UNICEF, 2012).

Ballard and Morrow (2013) states that breast milk from humans contains of the macronutrients: fats, lactose and proteins, though there is a variation between mothers in relation to maternal diet. Further, Ballard and Morrow (2013) shows that, the fatty acid profile is the one component mostly affected of the maternal diet. The concentrations of the macronutrients of protein were not significantly affected by the maternal diet and the macronutrient with the least variability of concentration in human milk was lactose. Above that, human milk contain of the micronutrients Vitamins A, B1, B12, B6, D and iodine. Ballard and Morrow (2013) says that the quantity of Vitamin K and Vitamin D is low in human milk and there are recommendations from the American Academy of Paediatrics of injections of Vitamin K and supplementations of Vitamin D for breastfed infants.

WHO (2014a) discusses that the benefits from breast milk are many. Breast milk is ready available and affordable. But above this, breast milk contains all the nutrition an infant needs for a healthy development and contains all the antibodies a child need including the antibodies to protect from common child infections such as diarrhoea and pneumonia, that are the major causes of child mortality. How that has to do with malnutrition is that an intestinal infection, for instance lead to a poorer nutrient uptake (Guerrant et al., 2008).

The possible mechanisms that advocate that exclusive breastfeeding has a lower risk of transmission of infections than mixed feeding or formula feeding are that when an infant is breastfed only, the breast milk protects the integrity of the intestinal mucosa. In case of an ingestion of contaminated fluids and food, it is less likely to penetrate an intact and healthy gastrointestinal mucosa rather than damaged mucosa, which means that bacteria and other contaminants are less likely to be introduced and a less risk of inflammatory responses to rise (Coutsoudis et al., 2011, Coutsooudis, Pillay, Spooner, Kuhn & Coovadia, 1999 & Rollins et al., 2008). This is also supported by Bonuck et al. (2002) that states that breastfeeding the first two years of life has protective effects against gastrointestinal infections [GI]. How malnutrition then arises is presented in the study from Guerrant et al. (2008) which addresses that a significant proportion of global malnutrition is due to weakened absorptive intestines due to recurrent enteric infections.

It is explained by a disturbance of the intestinal barrier function that makes children vulnerable to repeated bouts of intestinal infections and that lead to bowel injury and consequently a poorer nutrient uptake during the developmentally critical first two years of life (Guerrant et al., 2008).

It has appeared through several studies, among them a large cohort study from Cavarelli and Scarlatti (2011) that exclusive breastfeeding up to 6 months minimizes the risk of HIV transmission from mother to child compared to mixed feeding and similar results of minimizing the risk of HIV transmission was shown to no breastfeeding and exclusive formula feeding only. The risk of HIV transmission from mother to child due to mixed feeding is an important aspect due to the large number of HIV prevalence among women in South Africa (Avert, 2012).

Implications of choosing one feeding practise

The implications of staying with one feeding practise, according to a research from Doherty, Chopra, Nkonki, Jackson and Greinard (2005) compliance to one feeding practise is difficult and although total avoidance of breastfeeding would eliminate a transmission of HIV, for most women in poor settings the total avoidance of breastfeeding is not possible nor encouraging. The replacement feeding should in that case be acceptable, feasible, affordable, sustainable and safe [AFASS] (Department of Health, 2013). However the study from Doherty et al. (2005) shows that 12 out of 15 women who chose to formula feed ran out of formula milk at least once and dreaded to go and ask the clinic for more before the scheduled time. Mothers who chose to formula feed their infants therefore experienced a constant struggle to obtain formula milk for their infants due to their dependence on health care workers to get hold of milk. Many mothers were told at the hospitals or the clinics that there was no formula milk in stock and some mothers said that with no money they could not provide their child with sufficient nutrition without breastfeeding their infants. Furthermore, it is revealed that one mother even said that three weeks passed without formula milk. These and other circumstances bring forth the mothers to mix feeding and the infants lose the protective characteristics that exclusive breastfeeding offers (Doherty et al., 2005, Coutsooudis et al., 2011, Coutsooudis et al., 1999 & Rollins et al., 2008). To try to make the formula last longer, it is diluted more than it should and malnutrition can arise from that. So when formula eventually becomes unavailable and the mother is forced to return to breastfeeding, the breast milk production is reduced due to the infrequent practise (WHO, 2014a).

The study problem

According to WHO (2014b) the problematic aspect of malnutrition in South Africa has multiple dimensions that interacts and that derives to the high number of deaths in children. WHO (2014b) explains that malnutrition is rarely stated as the direct cause of deaths. Other underlying factors such as infections, for example diarrhea, malaria and pneumonia, inadequate feeding practices for example breastfeeding, food choices, and the rising food prices that lead to deficiencies to obtain nutritious food are all contributing factors of malnutrition. As malnutrition is the most common cause of death among children in South Africa, UNICEF (2014) stresses the huge need of preventive work. Therefore it is of vital importance to support and educate families and offer health care to those living in vulnerable areas. On the basis of this it is important to highlight the need of identifying the preventive work being done on the issue of malnutrition for children in South Africa.

AIM

The aim of the study was to describe the prevention of malnutrition of children in South Africa.

METHOD

Study design

To be able to describe the prevention of malnutrition of children in South Africa, a qualitative study with semi-structured interviews was used. This method was considered appropriate in relation to the study aim to uncover sensitive information without having access to documents or to that information through documents. According to Polit & Beck (2012) qualitative methods provides flexibility and an emergent design, which helps to uncover complex issues involved. The interviews were based on a semi-structured model and while questions were prepared, it was possible to deviate from these. As Polit & Beck (2012) addresses, it is appropriate to use interviews when the study design is qualitative because the purpose is to draw significance from collected data.

Inclusion criteria

The chosen study group was Non-Governmental-Organizations [NGO's]. Polit & Beck (2012) addresses that the selected groups should not be chosen randomly but with reflection so it can best answer to the subjectivity of the study. NGO's work on prevention of malnutrition for the South African population with special focus on vulnerable children; children living in poverty. For that reason, it seemed particularly important to interview these organizations on how the work is formed and its outcome. The interviewees included a Program Manager, Fundraising Manager, Director, Founder and Chief Executive Officer [CEO]. The diversity of their roles provided the study with a dimension of the complexity in the prevention work of the organizations. We did not have any requirements for how long they had worked for the NGO's.

Data collection

Interview guide

Before the interviews were conducted, an interview guide was prepared with topics and questions to each subject. When preparing the interview guide, as advised by Polit & Beck (2012), 'yes' and 'no' – questions were avoided to make sure that as much data as possible would be collected during the interviews so that the aim of the study could be answered. The interview guide was designed with four different topics; organization, families, results and stigma. And from these topics, 24 open-ended questions were designed to retrieve information for the study.

Obtaining permission

Before the interviews, an information letter was used which contained information about the authors, the aim of the study, the study design, the chosen data collection method, and a permission request to use a voice recorder to record the interview. Further the participants were informed that their confidentiality would be maintained throughout the study and about their right to withdraw or exclude information from the study.

The participants were also informed verbally and written that in case they did not approve of being recorded; one of the authors would be conducting the interview while the other person would take notes.

Pilot interview

It is important to test the interview guide before conducting the interviews; therefore a pilot interview was set (de Vos, Strydom, Fouché & Delpont, 2011). The pilot interview was conducted in order to examine whether the questions worked as expected, if they were in the right order and if expected information and data was collected. Although, the questions worked out really well and enough information was retrieved for us to include the pilot interview in the study.

Interview process

The interviews were all conducted in South Africa. All the data was collected with the use of a voice recorder, with the permission of the interviewees. By recording the interviews it was possible to have the exact version of what had been said (Yin, 2013). Thereby we were able take into consideration the tone of voices, sighs and other expressions that are problematic to write down. The nuances of the spoken word can change the message, which is hard to write down and nevertheless be remembered from the interview. Furthermore, the benefits of using a recorder was helpful due to the large amount of information received during the interviews. The authors took turns in conducting the interviews. The interviews were conducted on separate days because each interview took approximately 55 minutes and to be able to transcribe it as soon as possible after the interview, time was needed in between the interviews. The interview was based on the interview guide but it was clarified that it was all right to deviate and add to the questions. To enhance the possibilities of gaining needed data through the interviews; it is according to Polit & Beck (2012) important to create a good environment so the interviewee can talk freely about all the subjects. All interviews were conducted in the offices of the NGO's.

Data processing

The collected data was transcribed and collated. The material was being transcribed the same day the interview was held. The authors went through the recorded material carefully and verbatim, to not let personal values or interpretations of what was being said affect the material. As it is advised by Polit & Beck (2012) it is critical to listen again to the taped interview while doing the cross-check to check the accuracy of transcribed data. After the cross-check, we processed the material by reading it thoroughly together as said by Polit & Beck (2012), to enhance credibility before interpretations were made.

Data analysis

A qualitative content analysis was made with an inductive approach. An inductive approach is according to de Vos et al. (2011) where the researcher observes the empirical data and then fits it into theoretical concepts, meaning that there is a creative reasoning and science is added upon and in this case the conclusion is not always completely definite but only investigative. So the process goes from moving from an abstract thinking towards refining the ideas into more accurate theoretical concepts. A manifest analysis was approached. As Henricson (2012) suggests, manifest analysis are used when there is an obvious meaning. The purpose of the analysis was to take out the obvious meaning, what was being said about the preventive work.

Polit and Beck (2012) suggests that in order to understand the data and become acquainted with it, it is important to read the transcribed material over and over again with the pursuit of finding significance and indulgence that could best answer the aim of the study. The authors did the reading of the transcribed material together.

The authors identified meaning units together from the transcribed material, and that data was broken down into smaller units by creating codes. Their importance in relation to their aim of the study was evaluated together by the authors. Codes that represent the same content were organized by grouping the codes together and then creating a category scheme they could fit into. This was done by identifying related concepts that the codes had in common. Some categories had been drafted before the data collection, called different themes in our interview guide, but new categories emerged from the data. Other or more categories can emerge during coding according to Polit & Beck (2012), which was the case in this study. The whole process of identifying meaning units, codes and categories were assessed through discussions and no disagreements arose between the authors. Four categories and twelve codes emerged and were organized in a table (see table 1). To make sure not to have left something out, and that the categories preserved the aim of the study, the data was read again in its totality to notice potential underlying concepts that had been left out and that could build category schemes. This process involves not only finding similarities between data but also natural patterns and varieties in each data (Polit & Beck, 2012).

Ethical considerations

The ethical consideration was the importance of informed consent of the participants. This was preceded by providing the participants with accurate information in order for the participants to take an informed decision before giving their oral consent (Kjellström, 2012). The participants were informed both written and verbally. According to Kjellström (2012), it is important to provide the information verbally and written. The information consisted of an email with the missive (APPENDIX A) that was sent out beforehand and also handed to the participants to make sure the missive was read. The participants were also informed verbally before the interview took place. The information contained a presentation of the authors, aim of the study, study design, data collection method; a request to use a voice recorder, information about their full right at any time to withdraw from the interview without any further explanation, to exclude any contribution on request, to choose to not answer any of the questions and the right to reject the use of a voice recorder.

Kjellström (2012) discusses the ethical dilemma of the interviewee being in a disadvantaged position towards the interviewer and might feel compelled to answer the questions. It is therefore very important to create a good atmosphere throughout the interview and to let the participant know that they do not have to answer any questions they do not want to answer. Of the very same reason, the missives were sent out beforehand to the possible participants so they could be read undisturbed the first time without any pressure of the presence of the interviewer.

The authors signed the missive when the participants approved the provided information and gave their oral consent, before starting the interview, to ensure the participants that the authors would follow what was written in the missive.

The participants were further informed orally that secrecy was going to be maintained throughout the study by not labelling the data so it cannot be derived to them. The participants were informed that the audio files and the transcriptions would be stored on the authors computers that only the authors have access to. The audio files were deleted as soon as the transcriptions had taken place and the transcriptions were deleted immediately after the analysis, according to confidentiality of data regarding the participants (Kjellström, 2012).

A possible consequence for the participants that was regarded upon, is linked to nonmaleficence, do no harm. It is about the organizations sharing the struggles that they face in their preventive work and the question of the principle of beneficence that can raise ethical issues between patients and organizations (Silva & Ludwick, 1999). However, we could see the interest of the participating organizations to share their work and to give out the message of the need for more help. Hopefully this can bring light to the tremendous work that is needed for preventing malnutrition for children in South Africa and be beneficial for those patients. It is important that the potential benefits outweigh the potential risks of the study (WMA Declaration of Helsinki, 2013).

FINDINGS

Below the findings are presented in table 1 based on the categories and codes that emerged during the analysis process. The categories are sorted to the left and the codes are sorted beside each corresponding category. Further below findings are presented in the order they are displayed in the table with exemplifying citations in italics and quotations. Words that are left out are marked with three dots.

Table 1 Categories and codes

Category	Codes
Education	Passing on knowledge Empowerment
Health Care	Early health interventions Easy accessible health care
Helping factors	Policies Community health workers Facilitating the help
Barriers	Safety Overwhelming load Inadequate interventions Stigma Adverse cultural norms

Education

Passing on the knowledge

A huge part of the preventive work is to educate as many people as possible on nutritional knowledge. This is so people can make as healthy choices as possible for themselves and their children, but also the goal is that they pass on the knowledge they have learned to other families.

So by the organizations teaching families in the communities the hopes are that the knowledge is going to be spread within the communities to all. The education is about how to breast feed, feeding practices, healthy nutrition and other health interventions that the nurses don't have time to explain about. Knowledge in these topics is of vital importance as it gives the families the chance to give their children the best possible start in life.

"(...) we're training up our 200 food preparers next month around feeding and nutrition so that they can pass on their skills to feeding in that particular way."

"Nurses don't have time to adequately explain you now why are we taking your blood, what's the medication and what are we measuring and so on."

Empowerment

The ambition is to use knowledge as a tool to empower the families. Even though food and money is indeed a scarce, the goal is to educate the families so that they can make an as healthy choice as possible with the resources they do have.

"With the government providing grant to people it is not knowing how to spend their grants correctly so we try to help people budgeting and that there are healthy option in the stores that are not so expensive and that buying chocolate and chips are far more expensive. It is largely a case of educating people and also giving them practical skills on how to best use the money that is given to them."

"(...) the training is very practical- how to help a mother breastfeed, how to prepare formula feed in the home, if the child has diarrhoea we help the mother prepare things against dehydration, very practical things that they can do in their home."

Health Care

Early health interventions

Some health interventions are made for all new-born infants at the organizations own clinics or at hospitals in the area. So to prevent malnutrition even before the infants are born, mothers in childbearing age and pregnant mothers are targets for health interventions. In very severe cases food is also provided within the organizations own clinics.

"And what we found is that a lot of our children who were malnourished was actually consequences of being a low birth weight child/baby so we decided to then start tracing all pregnant women and supporting them throughout their pregnancy. And through the first two years throughout the child's life. A lot of pregnancies are still unplanned yet so they identify all women within childbearing age."

"We give vitamin a supplementation and we provide D tablets and we are looking at providing zink tablets too in their homes. And they get vitamin K shots at the clinics when the infants are born. Our nutritional supplements are all fortified."

Easy accessible health care

Even though health care is provided free within the area, it is for some people hard to know when to seek the help or where. For others to reach out and be in easy access to them is sometimes a crucial factor to identify and treat health issues. Some organizations deal with this by having clinics in the area or nurses out on the field, as they call it.

Others use community health workers who are educated in basic health care. They are a good resource to make the basic assessments at peoples homes. For the severe cases, the community workers contact the nurses so they can visit those homes and then make referrals to the clinic.

“(...) each mentor mother is supported by what we call an assistance coordinator who ideally is staff who then report to professionalisms who go and look out for the serious cases and then we have two professional nurses and they report directly to them so, they jump to see all the serious cases.”

“Our nurses are out on the field every day. We focus mostly on moderate malnutrition in the homes because all the severely malnourished children are referred to our nutrition centres in our clinics.”

Helping Factors

Policies

Due to the many stigmas around feeding practises, the formulated policies from the government about for example breastfeeding for all, made it easier for mothers to stick to exclusive breastfeeding and defend why. In this way, it does not become a choice of her own and she does not get punished in the community for it in the same way.

“Right now there is a policy that everyone should be breastfeeding so it’s helping a bit.”

Community health workers

Using community health workers is a useful way of reaching out to the huge amount of people living in the slums or other children in need. The majority of the volunteers are women and mothers themselves. Most of them work in the area they live in which is helpful. When they go knocking doors it is easily to be invited because they are known. They go home to families to make an assessment if there are malnourished children in the household or other issues that the family needs help with. People are more comfortable in asking for their help or telling about their issues since they believe that the person in front of them understands what they are going through, being from the same community.

“It is people who are in these areas that have been able to success in raising their children despite the challenging circumstances so they really have these positive coping mechanisms and they also know the community as well and they know what resources there are available to them and they also understand the challenges in living in these communities.”

“The community health workers are known in their area and people often are like: oh there is a neighbour over there who needs your support, can you go there and visit? And things like that so there are many people who refer themselves to the community health workers. If they need extra support or if somebody becomes pregnant or stuff like that.”

Facilitating the help

Sometimes providing the help to prevent malnutrition lies in such small things as facilitating the contact with the health care or linking the people to the resources they rightfully should have, as example gaining their government grants or accessing free health care and medication.

“We trying to bridge the gap between people and the clinic, they don't really know how to negotiate the system and about waiting queues.”

“(…) in South Africa most people have government grants and it's available to them so first thing is linking them to be able to access them to the grant so that they have money and are able to provide nutritious food.”

Barriers

Safety

Far from all who needs the help are getting the help due to the problem of reaching certain areas out of safety reasons. Another safety issue that is a barrier in the preventive work of malnutrition is the lack of good sanitation in the people's homes. Even if they do get formula food and fortifiers for their children it is hard for them to prepare it and keeping it in a safe way. There are safety issues with the feeding practices as well, people give their infants solid food too early, and the infants are as small as two months when introduced to it.

“Some of these areas are quite hard to negotiate out of safety reasons. But that's our goal, 100 percent coverage in the area.”

“Sanitation is such an issue here that providing safe access to everything you need when you are formula feeding is a huge challenge. So we have high rates of diarrhoea and that is the results of the mix feeding and preparing formula feeding and also the introduction of solids too early. People give their children solid food when they are two to three months old so that's a huge challenge.”

Overwhelming load

There is a clear-shared vision of what the organizations want to achieve; they want to help as many children as possible, or rather all children who are in need of help. As very well put in one of the interviews *“Our vision is no more hungry children.”* Although this is the vision and goal there are an overwhelming amount of children needing help, who are suffering from malnutrition and it is hard to reach out to everybody who needs the help. For the older children, the children in school, the desirable situation would be for the school nurses in resource poor areas to make an assessment of all the children's nutrition status, but due to the overload of schoolchildren per school nurse, it is not possible and assessment are only done after the teachers has pointed out a hungry child. The younger children are looked after through community health workers who knock on almost every door in an area to make assessments about their nutrition status.

“(…) they really are overwhelmed with the amount of schoolchildren per school nurse in our country.”

“(…) they will be given a geographical area for about 500 households.”

Inadequate interventions

In South Africa there is a major problem with HIV and if you are malnourished you become more prone to infections. Some organizations agree that there are some huge international HIV interventions that are inadequate. Huge organizations who work with HIV and AIDS often forget the most basic need; adequate nutrition and food.

There is a sense of frustration to why there is not a greater emphasis on nutrition from these huge organizations.

“(...) we have major HIV/AIDS programs in the country, founded by America, European Union..., but none of their provided budgets is for feeding and nutrition. And if you go into the homes of the families that you’re talking about, to take antiretrovirals, it makes you feel as sick as a dog... They’re toxic and you should have them with some form of food in your stomach.”

Stigma

Stigma about HIV is creating risk factors for applying mixed feeding when mothers feed their infants. The reason is that the feeding practises are an indication of mothers’ health status in front of the society.

“Stigma is a huge problem with HIV so moms goes to the clinics and getting a whole pack of the formula and everyone then sees her and says oh you must be HIV positive. So that’s why a lot of people are mixed feeding because they don’t want people to see that so.”

“Yeah but also if you exclusively breastfeed your child that is also a stigma of being HIV positive so you can’t really escape of that.”

Adverse cultural norms

Concerned organizations noticed a resistance or difficulties among communities to believe in interventions that go against their cultural beliefs about what is to be considered beautiful or healthy, rather than what is good for them, which inhibits change and leads to unfavourable decisions taken in health matters. And there is also resistance to outsiders trying to change their cultural beliefs. Educating people about healthy eating is a challenge for the organizations. As far as people in some cultural settings believe obesity is seen as something healthy as it shows that the child does not have HIV and formula feeding is seen as a nicer more exclusive option.

“Formula feeding is still thought to be you know the more expensive nicer option and there is a lot of cultural beliefs about breastfeeding so our breastfeeding rates are very low.”

“The child with obesity within this area is culturally actually good for him so you want to be fatter because that means they are healthier and wealthier, and they are not HIV positive, things like that, so as much as you educate people about healthy eating, changing that culture and beliefs is far more challenging and so we are not really doing a great job regarding that.”

DISCUSSION

Discussion on findings

In this study the most common result that has emerged from the participants, is the emphasis that have been on preventing malnutrition for children in an early age. Many interventions that have been applied target the first years of a child’s life.

The necessary and beneficial aspects of preventing malnutrition early in a child's life is supported by Guerrant et al. (2008) who claims that malnutrition early in life cause long-term effects due that the first time in a child's life is crucial for their development. UNICEF (2013) states that the most vital time to receive the right amount of nutrients is the first 1000 days of the child's life including the time of the pregnancy.

It has emerged through the findings that there have been different interventions applied to address the task of preventing malnutrition for infants. Starting from when the women is pregnant with educating her and having health talks along her pregnancy and about aspects after the baby is born, such as breastfeeding, nutrition and sanitation. A lot of emphasis is put on the first two years of a child's life starting from when the woman first gets pregnant. Even starting from targeting women in childbearing age and educating them, for even earlier interventions has been another way of approaching a solution to prevent malnutrition. Another early intervention that organizations are caring to give prominence to and that some organizations provide is to give D tablets and K shots at their own clinics. This is in alignment with the recommendations of the American Academy of Paediatrics of injections of Vitamin K and supplementations of Vitamin D to infants (Ballard & Morrow, 2013). Supplementations that were given to the infants from the interviewed NGO's are all fortified.

The results showed that one of the important aim for most of the organizations participated, is to increase the rate of breastfeeding women as it is acknowledged as the best single way of targeting malnutrition for children in the long run. As well as it is acknowledged to prevent other diseases that may undertake a risk of suffering from malnutrition. Bonuck et al. (2012) explains that one of them is the risk of suffering from GI, due to the reason that if a woman does not breastfeed her child, the child will not obtain the protection in the intestines that breast milk provides and will be easier exposed to infections that will increase the risk of getting malnourished. Diarrhoea is a big issue in developing countries due to GI and it leads to that the child cannot absorb the nutrients from the food.

Through the results it was found that when educating women along their pregnancies and after the child is born, the theoretical education is combined with practical skills. When it comes to breastfeeding the mothers are taught how to practically breastfeed, how often, implications and complications regarding breastfeeding such as nipple pain and fear of not being able to provide enough milk to the baby and how to deal with those situations. They are also taught how to prepare formula milk and in relation to that keep a good sanitation and what to do if diarrhoea occurs. These are important matters to address according to UNICEF and WHO (2012, 2014a) who speaks about the risks with contaminations that can arise if formula milk when not properly prepared since it lacks from the antibodies that breast milk has. Sixty percent of the infants who dies within 28 days of birth died of malnutrition caused by diarrhoea (UNICEF, 2012).

The findings revealed that passing on knowledge from other women in the community has been one way of approaching these matters. By educating women in the community to teach other women, a bigger impact is being adhered. This is a new finding of preventive interventions that was not acknowledged as the study began. The study from Schopfloser et al. (2012) shows that neighbourhood interventions are useful due to that there are interactions within communities between individuals that support what healthy choices are available.

A study from Wang, Moss and Hiller (2005) argues that there are external and internal contextual matters if an intervention is effective. One important aspect is the capacity of implementing interventions as for resources, skills of local people, organizational factors as well as the political and social environment. The NGO's in this study have noticed that the use of community health workers is an important recourse itself because of the skills of those people to handle upcoming situations. The community health workers were well familiar with the needs of the community and how to communicate to those needs. Many of the community health workers were women and mothers and had despite the challenging circumstances been able to successfully raise their own children and had the positive coping mechanisms. Above all, they understood the challenges living in these communities.

Warr, Mann and Kelaher (2012) stresses that community engagement is essential to improve health among disadvantaged poor settings among people whose needs may not be well-understood, regarding the fact that many of the people that runs the organizations are not from the communities they serve in. There are some cultural matters that are being helped by the use of community health workers. As Whitehead (2004) claims, health promotion interventions are affected by cultural factors. Cambon et al. (2013) explains this by addressing that the nature of the environment provides the different prerequisite for people to be provided with psychosocial support and the conditions that elicit different behavioural patters. Wang et al. (2005) explains that interventions that are applied are therefore affected by the context it is applied within. This has been experienced by organizations in this study by noticing a resistance to believe in what is good for them that goes against their cultural beliefs about what is considered healthy. For instance, obesity is seen as a healthy state because it indicates that the child is not HIV positive. Also formula food is seen as a more exclusive, nicer option than breastfeeding. The organizations have also noticed a resistance for outsiders to come in and change cultural beliefs. The use of community health workers from the areas has helped to overcome cultural obstacles.

One organization in the study offered six weeks training program and also continuous training every week at the organizations own clinics for the people in the area that wants to practise as community health workers. It is professional nurses that hold the courses. This can be related to the expectations that Socialstyrelsen (2005) express, that a nurse is expected to have the ability to promote health and prevent illness. Further this can be related to what the Swedish Society of Nursing (2010) expresses, that the nurse is an important link in health promotional interventions about educating and informing about health and risks of ill health among the citizens. The professional nurses were also out on the field everyday to provide the expertise among the community health workers and to visit the severe cases in the households to refer them to the clinics.

Organizations in the study agree that educating the families is one of the key strategies to prevent malnutrition from arising or as a recovery from moderate malnutrition. Els and Walsh (2013) supports this in their study, which showed that supplementations alone without nutritional education had a weaker long-term impact. It is shown that it is not enough with supplementations to avoid malnutrition, even in areas where the availability of food is not significantly low. The organizations in this study have noticed a lack of knowledge in the communities they serve and Els and Walsh (2013) addresses that the lack of knowledge of feeding practises, such as food choices, feeding routines, patterns of feeding and sanitation makes nutritional education a useful tool to target that.

The organizations that participated in the study had the intentions of educating the families and teaching practical skills with the idea of empowering the people, giving them tools to make healthy choices with the resources they have. Warr et al. (2012) urges how community participations and empowerment are important mechanisms to decrease inequalities in health. Bonuck et al. (2002) addresses that health policy on breastfeeding promotions has short and long term benefits for children, and is a better way of accomplishing benefits than other health promotion interventions. This is a health prevention intervention used by the government of South Africa called South Africa's promotion of exclusive breastfeeding for all today (UNICEF, 2012). The organizations that participated in the study noticed indeed a significant impact the health policy on breastfeeding for all has had on mothers with infants. The challenge for the organizations was to stop mothers from introducing their infants to solid foods too early, before the recommended intake from UNICEF of six months (2012). In many cases, people give their children solid foods from two or three months old. UNICEF (2014) acknowledges this as a problem due to lack of knowledge.

The problematic aspect of promoting breastfeeding for all that UNICEF (2012) has initiated is that HIV infected mothers are supposed to take antiretroviral medicines or to give antiretroviral medicines to their children as long as they are breastfeeding. However, one of the participated organizations argued that the implications of that is that when you are on that kind of medication, it makes you extremely nauseous and without adequate nutrition it is difficult with the compliance. So the mothers might avoid taking the medicines and therefore do not stick to exclusively breastfeeding their infants. The organization argued that there are big interventions for preventing HIV but none of them has in the provided budget a part for feeding and nutrition. This brings forth the mothers to mixed feeding and lose the protective characteristics that exclusive breastfeeding offers (Doherty et al., 2006, Coutsoydis et al., 2001, Coutsoydis et al., 1999; Rollins et al., 2008). The organizations that participated recognise that this problem has underlying causes of the inadequate interventions from major HIV/AIDS programs in the country who does not budget for nutrition and this is an important aspect due to the large number of women in South Africa who are HIV positive and the risk of HIV transmission from mother to child due to mixed feeding (Avert, 2012). Many studies, among them Cavarelli and Scarlatti (2011) claim that exclusive breastfeeding up to six months minimizes the risk of HIV transmission from mother to child, given that the mother or child is on antiretroviral medicine or on exclusive formula feeding. However according to Doherty et al. (2005) choosing one feeding practise is often unachievable because for most women in poor settings in South Africa, mothers who chose to formula feed their infants often ran out of formula milk and were told in clinics and hospitals that it was out of stock. This is not in alignment with the recommendations of the Department of Health (2013) who claims replacement feeding should be acceptable, feasible, affordable, sustainable and safe. This fails when it comes to the guideline of being sustainable, that it should be available and give an uninterrupted continuation of the supplement and a reliable distribution for all the ingredients and equipment needed for the time the infants needs it (Department of Health, 2013).

Discussion on method

To answer the purpose of this study a qualitative method was used with a semi-structured interview guide. To use a qualitative method as a study design was indeed a helpful way of answering the aim of the study.

There is a huge knowledge to be shared, stories and experiences that reflect the situation about malnutrition and the preventive work in South Africa, in a way a literature study or a quantitative method could not have responded to because through interviews, a subjective approach could be gained that provides a picture the actual situation, what is being done today to prevent malnutrition. According to de Vos et al. (2011) a qualitative study gives the reader a subjective and more expressive picture of the interviewees' individual experiences and world, which is why this method was in our favour. Although it is also stressed the issue of letting the author's own opinions incorporate the participants' voices in the findings. To ensure this would not happen, the authors of this study have both gone through the transcribed material. The semi-structured interviews were chosen to get a detailed picture of the interviewees' beliefs and personal insights in the subject of malnutrition as it is a more flexible method in accordance to de Vos et al. (2011).

The included organizations all targeted different topics that all contributed to the prevention work for malnutrition for children. They targeted different ages and had different interventions for example providing food for schoolchildren or educating young mothers. For that reason it was meaningful to include all of these organizations to get a nuanced picture of what works, obstacles they meet, and where emphasizes are put to target the issue of malnutrition. Henricsson (2012) address the importance of rather finding fewer participants with different experiences than many with too similar experiences.

The interviews were conducted on different days because this way the memory of the interview was still fresh in mind. As stated by Polit & Beck (2012), conducting an interview may be quite exhausting, so to conduct a second one on the same day was not an option for us. It would have been hard to focus entirely on the second interview, especially since the interviews were almost an hour long each. Also, it was important to pay very close attention to what the interviewee said as many of the questions were answered earlier during the interview, as to not repeat what had already been answered.

When conducting the interviews a tape recorder was used. The missive that was sent out to the participants beforehand was beneficial because it included information about wanting to use a voice recorder during the interview. We were granted their permission beforehand, but also we especially noticed the relaxed atmosphere about the use of the recorder, we assessed that it could have been due to that the participants were mentally prepared.

A pilot interview was conducted to test the questions and see if the authors got the information required for the study. It was of great benefit to conduct a pilot interview as the authors decided to change the interview guide afterwards. At first when the interview guide was created, we wanted to specify what interventions and prevention work was done for the children up to a certain age, 12 years old, so the age was included in our inclusion criteria. However, after the pilot interview the authors realized that including the age was difficult as the organization's does not help children up until a certain age, this was also pointed out by the interviewee during the pilot interview. They help children of all ages and there is a person centred approach as they evaluate regularly which children still are in need of help or not. Therefore we decided to exclude that criteria after the pilot interview. This is in accordance to Polit and Beck (2012) whom states that as the qualitative study design is flexible and therefore if new information arises during the data collection it can adapt to the new information that has emerged. However, the pilot interview was still included in the study, since all the information gained was useful.

It was important to read the material again after picking out meaning units, codes and categories, to get another overview of the material in case something important was missed. Indeed, the categories that had been designed for the interview guide were no longer relevant and were all changed. To be able to provide credibility and make it possible for the readers to make assumptions about the material, many citations were presented and collated under codes and categories for the readers, which provided a good overview of what was the ongoing topic. In quantitative methods it is difficult to generalise or transfer the results of the study because of the subjective approach that was gained by the respondents in the interviews. Also, the interview guide was semi structured and allowed a subjective approach. Therefore, it is of importance to include citations in the findings to illustrate what had been said during the interview and as a base for the conclusions taken, to increase credibility for the study.

Conclusion

The main finding was that educating the families about nutrition to know what to do with the resources they have and the knowledge of the benefits of breastfeeding their infants, are important interventions to be able to prevent malnutrition. Therefore organizations have put a lot of emphasis on educating families through the help of community health workers in poor settings. This way a child that is malnourished is also detected in the household. What is needed to address to further make a progress in the preventive work of malnutrition is to further educate and empower families as well as to eliminate misconceptions that the avoidance of breastfeeding does not eliminate transmission of HIV between mother and child. This is an important aspect due to the large number of women who are HIV positive. The link between HIV positive women and malnourished children is remarkable and the government of South Africa has promoted breastfeeding for all as a solution.

Further research

Detecting how the health promotion national policy of “breastfeeding for all” is having an impact on the mothers needs further research by interviewing mothers with infants in South Africa.

Clinical relevance

Found results in this study can bring knowledge to the nursing profession about the importance of the nurses’ abilities of promoting health through education to prevent illnesses which has emerged through this study to be one of the main interventions to prevent malnutrition due to lack of resources. Malnutrition has the long term consequence that even in those children who survive, they have a huge risk to grow up to malnourished adults who can more easily pick up diseases, such as HIV (and other infections), and this may mean that they can not fully contribute to society with labor which will have a cycle of poverty that continue downwards. Therefore it is of high importance to see what is being done to prevent malnutrition and what obstacles and barriers the organizations face in their daily work.

REFERENCES

Alvarez- Uria, G., Midde, M., Pakam, R., Bachu, L., & Naik, K. P. (2012). Effect of formula feeding and breastfeeding on child growth, infant mortality, and HIV transmission in children born to HIV-infected pregnant women who received triple antiretroviral therapy in a resource-limited setting: Data from an HIV cohort study in India. *PEDIATR*, 763591, 9. doi: [10.5402/2012/763591](https://doi.org/10.5402/2012/763591)

Amuli, DJ. (2006) *Purchasing patterns of major plant staples in low- income households in the Vaal Triangle*. MTech dissertation. Vaal University of Technology. Retrieved from: <http://vut.netd.ac.za/handle/10352/160>

Avert. (2012). *HIV & AIDS in South Africa- 2012 Statistics*. Retrieved from: <http://www.avert.org/hiv-aids-south-africa.htm>

Ballard, O. & Morrow, A. L. (2013) Human Milk Composition: Nutrients and Bioactive Factors. *Pediatr Clin North Am*. 60(1), 49-74 doi: [10.1016/j.pcl.2012.10.002](https://doi.org/10.1016/j.pcl.2012.10.002)

Bauer, G., Davies, J. & Pelikan, J. (2006) The EUHPID Health development model for the classification of public health indicators. *Health Promotion International*, 21(2). doi:10.1093/heapro/dak002

Bonuck, K., Arno, P., Memmott, M., Freeman, K., Gold, M., & Mckee, D. (2002) Breast-feeding promotion interventions: Good public health and economic sense. *Journal of Perinatology*, 22, 78-81.

Bourne, L. T., Pilime, N., Sambo, M. & Behr, A. (2013). Food hygiene and sanitation in infants and young children: a paediatric food-based dietary guideline. *S Afr J Clin Nutr* 26(3).

Bhutta, Z. A., Darmstadt, G. L., Hasa, B. S. & Haws, R. A. (2005). Community-Based Interventions for Improving Perinatal and Neonatal Health Outcomes in Developing Countries: A Review of the Evidence. *PEDIATRICS*, 115(2) doi:10.1542/peds.2004-1441

Cambon, L., Minary, L., Ridde, V. & Alla, F. (2013). A tool to analyse the transferability of health promotion interventions. *BMC Public Health*, 13:1184 doi:10.1186/1471-2458-13-1184

Cavarelli, M. & Scarlatti, G. (2011). Human immunodeficiency virus type 1 mother-to-child transmission and prevention: successes and controversies. *Journal of Internal Medicine*, 270 (6), 561- 79. doi: <http://dx.doi.org/10.1111/j.1365-2796.2011.02458.x>

Chan, C. V. & Perry L. (2012). Lifestyle health promotion interventions for the nursing workforce: a systematic review. *Blackwell Publishing Ltd: Journal of Clinical nursing*, 21, 2247–2261, doi: 10.1111/j.1365-2702.2012.04213.x

Coutsoudis A., Pillay K., Spooner E., Kuhn, L. & Coovadia H. M. (1999). For the South African Vitamin A Study Group. Influence of infant-feeding patterns on early mother-to-child transmission of HIV-1 in Durban, South Africa: a prospective cohort study. *Lancet*, 354 (9177), 471-76.

Coutsoudis A., Pillay K., Kuhn L., Spooner, E., Tsai, W. Y. & Coovadia H. M. (2001). Method of feeding and transmission of HIV-1 from mothers to children by 15 months of age: prospective cohort study from Durban, South Africa. *AIDS*, 15 (3), 379 - 387.

Department of Health. (2013). *South African Infant and young child feeding policy*. Retrieved from: www.health-e.org.za/2013/09/20/infant-young-child-feed-policy-2013/

de Vos, A. S., Strydom, H., Fouché, C. B. & Delport, C. S. L. (2011). *Research at grassroots – For the social sciences and human service professions*. Pretoria: Van Schaik Publishers

Doherty T., Chopra M., Nkonki L., Jackson, D. & Greiner, T. (2006). Effect of the HIV epidemic on infant feeding in South Africa: “When they see me coming with the tins they laugh at me”. *Bulletin of the World Health Organization*, 84 (2), 90-96.

Els, A. & Walsh, C. (2013). The impact of preschool feeding programs on the growth of disadvantaged young children in developing countries: a systematic review of randomized trials. *The South African journal Clinical Nutrition*, 26(2), 33-40.

Glanz, K., Rimer, K. B. & Viswanath, K. (2008). *Health behaviour and health education: theory, research and practise*. 4th edition. San Fransisco: Jossey-Bass

Grantham-McGregor, S., Cheung, Y. B., Cueto, S., Glewwe, P., Richter, L., Strupp, B. ... International Child Development Steering Group. (2007). Developmental Potential in the First 5 Years for Children in Developing Countries. *Lancet*, 369(9555), 67

Guerrant, R., Oriá, R., Moore, S., Oriá, M. & Lima, A. (2008) Malnutrition as an enteric infectious disease with long-term effects on child development. *Nutr Rev.* 66(9), 487–505. doi: [10.1111/j.1753-4887.2008.00082.x](https://doi.org/10.1111/j.1753-4887.2008.00082.x)

Henricson, M. (2012). *Vetenskaplig teori och metod: Från idé till examination inom omvårdnad*. Lund: Studentlitteratur.

Kjellström, S. (2012) Forskningsetik. I M. Henricson (Red.), *Vetenskaplig teori och metod: Från idé till examination inom omvårdnad* (ss. 69-94). Lund: Studentlitteratur.

Martorell, R., Horta, L. B., Adair, S. L., Stein, D. A., Richter, L., Fall, H. D. C.,... Consortium on Health Orientated Research in Transitional Societies Group. (2010). Weight Gain in the First Two Years of Life Is an Important Predictor of Schooling Outcomes in Pooled Analyses from Five Birth Cohorts from Low- and Middle-Income Countries. *Journal of Nutrition*, 140(2), 348-354.

O’Dwyer, L. A., Baum, F., Kavanagh, A. & Macdougall, C. (2007). Do area-based interventions to reduce health inequalities work? A systematic review of evidence. *Critical Public Health*, 17(4), 317–335 doi: [10.1080/09581590701729921](https://doi.org/10.1080/09581590701729921)

Polit, D. F., & Beck C. T. (2012). *Nursing research: Generating and assessing evidence for nursing practice* (9th intern. ed.). Philadelphia: Lippincott Williams & Wilkins.

Rollins, N. C., Becquet, R., Bland, R. M. Coutsoydis, A., Coovadia, H. M. & Newell, M-L. (2008). Infant feeding, HIV transmission and mortality at 18 months: The need for appropriate choices by mothers and prioritization within programmes. *AIDS*, 22(17), 2349–2357. doi: [10.1097/QAD.0b013e328312c740](https://doi.org/10.1097/QAD.0b013e328312c740)

Rütten, A., Gelius, P. & Abu-Omar, K. (2010) Policy development and implementation in health promotion – from theory to practice: the ADEPT model. *Health Promotion International*, 26(3). doi: 10.1093/heapro/daq080

Schopflocher, D., VanSpronsen, E., Spence, J. C., Vallianatos, H., Raine, K. D., Plotnikoff, R. C. & Nykiforuk, C. I. J. (2012). Creating neighbourhood groupings based on built environment features to facilitate health promotion activities. *Health*, 103(3), 61-S66.

Schönfeldt, H. C., Gibson, N. & Vermeulen, H. (2010). The possible impact of inflation on nutritionally vulnerable households in a developing country using South Africa as a case study. *Nutrition Bulletin*, 35(3), 254-267. doi:10.1111/j.1467-3010.2010.01837

Silva, M. C. & Ludwick, R. (1999). Interstate Nursing Practice and Regulation: Ethical Issues for the 21st Century. *Online Journal of Issues in Nursing*, 4(2)

Socialstyrelsen. (n.d) *Termbanken*. Retrieved from: <http://socialstyrelsen.item.se/>

Socialstyrelsen (2000). *Näringsproblem i vård och omsorg: Prevention och behandling*. Stockholm: Modin-Tryck. Retrieved from: <http://www.socialstyrelsen.se/publikationer2000/2000-3-11>

Socialstyrelsen. (2005). *Kompetensbeskrivning för legitimerad sjuksköterska*. Stockholm: Socialstyrelsen. Retrieved from: <http://www.socialstyrelsen.se/publikationer2005/2005-105-1>

Tasker C. R., McClure J. R. & Acerini L. C. (2013). *Oxford Handbook of Paediatrics*. United Kingdom: Oxford University Press

The Swedish Society of Nursing. (2008). *Strategi för sjuksköterskans hälsofrämjande arbete*. Stockholm: Svensk Sjuksköterskeförening. Retrieved from: www.strategi.for.sjukskoterskans.halsoframjande.arbete.pdf

The Swedish Society of Nursing. (2010). *Indikatorer för hälsofrämjande omvårdnad*. Stockholm: Svensk Sjuksköterskeförening. Retrieved from: www.OM.indikatorer.for.halsoframjande.omvardnad_webb.pdf

The World Bank. (2013). *World Economic Situation and Prospects 2013: Country classification. Statistical annex*. Retrieved from: www.un.org/en/development/desa/policy/wesp/.../2013country_class.pdf

UNICEF. (2012). *South Africa promotes exclusive breastfeeding for all* [Video file]. Retrieved from: <https://www.youtube.com/watch?v=D4G3XacLxvI#t=27>

UNICEF. (2013). *Improving Child Nutrition - The achievable imperative for global progress*. Retrieved from: http://www.unicef.org/southafrica/survival_devlop_755.html

- UNICEF. (2014). *Child and Maternal Health- Nutrition*. Retrieved from: http://www.unicef.org/southafrica/survival_develop_755.html
- United Nation Human Rights. (1990). *Article 24 – Convention on the rights of the child*. Retrieved from: <http://www.ohchr.org/en/professionalinterest/pages/crc.aspx>
- Victora, C. G., Adair, L., Fall, C., Hallal, P. C., Martorell, R., Richter, L. & Singh Sachdev, H. (2008). Maternal and child undernutrition: consequences for adult health and human capital. *Lancet*; 371: 340–57. doi: 10.1016/S0140- 6736(07)61692-4
- Vorster, H.H. (2010). The link between poverty and malnutrition: A South African perspective. *Health SA Gesondheid* 15(1), 435: 6. doi: 10.4102/hsag.v15i1.435
- Wang, S., Moss, R. J. & Hiller, E. J. (2005). Applicability and transferability of interventions in evidence-based public health. *Health Promotion International*, 21(1). doi:10.1093/heapro/dai025 Oxford University Press.
- Warr, D. J., Mann, R. & Kelaher, M. (2013) A lot of the things we do...people wouldn't recognise as health promotion': addressing health inequalities in settings of neighbourhood disadvantage. *Critical Public Health*, 23(1), 95-109. doi: <http://dx.doi.org/10.1080/09581596.2012.739681>
- Whitehead, D. (2004) Nursing theory and concept development or analysis: Health promotion and health education: advancing the concepts. *Journal of Advanced Nursing* 47(3), 311–320
- WHO. (1948). *Constitution of the World Health Organization as adopted by the International Health Conference: Basic documents*. New York: *Official Records of the World Health Organization*. Retrieved from: www.who.int/governance/eb/who_constitution_en.pdf
- WHO. (1986). *Ottawa Charter for health promotion*. First International Conference on Health Promotion. World Health Organization. Retrieved from: <http://www.who.int/healthpromotion/conferences/previous/ottawa/en/>
- WHO. (2009). Milestones in health promotion: statements from global conferences. World Health Organisation. Retrieved from: <http://www.who.int/healthpromotion/milestones/en/>
- WHO. (2014a). *10 facts on breastfeeding*. Retrieved 16th of October from: <http://www.who.int/features/factfiles/breastfeeding/facts/en/>
- WHO. (2014b). *Malnutrition*. Retrieved from: http://www.who.int/maternal_child_adolescent/topics/child/malnutrition/en/
- WMA Declaration of Helsinki. (2013). *Ethical principles for medical research involving human subjects*. Retrieved from: <http://www.wma.net/en/30publications/10policies/b3/index.html>
- Yin, K. R. (2013). *Kvalitativ forskning från start till mål*. Lund: Studentlitteratur

Missive,

We are two nursing students from Sophiahemmet University, in Sweden, in the last year of our studies and our names are Hanna Gunnarsson and Nanci Kader. Currently we are writing our bachelor thesis, 15 HEC, and we are interested in conducting interviews with you for our study.

Our study focuses on the preventive work against malnutrition for children age 0-12 in South Africa. It is a qualitative study that provides flexibility and an emergent design that hopes to uncover the complex issues involved.

Interviews will be used to collect data with the use of a recorder, with the permission of the interviewee. By recording the interview it will be easier to reproduce what was actually said during the interview. In cases where the interviewee does not approve of being recorded, notes will be taken. The expected benefit of the study is to identify the underlying problems of malnutrition and what is done to prevent it in South Africa.

The interview is based on a semi-structured model and while questions have been prepared, it is possible to deviate from these. Interviewees have the full right at any time to withdraw from the interview without any further explanation and to exclude any contribution on request. Interviewees may also choose not to answer any of the questions. The collected data will be transcribed along with the other interviews conducted and will be processed and collated. Anonymity will be maintained throughout the study.

Best Regards,

Hanna Gunnarsson, Nurse Student at Sophiahemmet University
Nanci Kader, Nurse Student at Sophiahemmet University

Date and Place

Date and Place

Signature Hanna Gunnarsson

Signature Nanci Kader

Organisation:

1. What is the name of your organisation?
2. How many people work for your organisation?
3. How is the organisation structured?
4. What is your role?
5. What is your mission statement?
6. Do you think the organization is fulfilling its mission?
7. In what ways does the organisation target malnutrition in South Africa?
8. How do you come into contact with those who need your help?
9. What nutrition guidelines do you use for your work with malnutrition?
10. Do you have collaborations? If so, would you like to tell us about it?

Families:

1. Would you like to tell us about how your program remain responsive to the needs of the community it serves?
2. What would you like to add to make the program more responsive?
3. How does the education program help families with limited resources?
4. How are the families involved in the education program?
5. How do the families that need help come in contact with you?
6. How is the actual help provided?
7. According to recommendations from World Health Organization (WHO), mothers should solely breastfeed their infants for the first 6 months and to continue breastfeed for at least two years together with complementary foods. But for over a decade mothers have been told that formulas were the best nutrition for the infants especially to reduce the risk of transmitting diseases. The government handed out formula for free throughout the government's Prevention of Malnutrition and Transmitting Program, has that effected your chances of making a change in preventing malnutrition in the first stage of childhood?

Results:

1. Tell us about the biggest achievements of your programs?
2. In your opinion, what are the biggest contributing factors to these achievements?
3. What changes would you recommend to make the program more effective? Where should the focus be? [Infrastructure, education, motivation, recourses, attitudes, accessibility, governmental, families].
4. What do you consider to be the biggest problem to address? E.g. is it poverty, lack of education, absence of breastfeeding, or something else?

Stigma:

1. Have you observed any stigmas when working in the field?
2. If so, what is the kind of stigmas you have noticed?
3. If there are stigmas, has the stigma been an obstacle in providing the help?

Is there anything you would like to add for our study, something you think that is important to shar