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DEVELOPMENT OF GUIDELINES FOR FEEDING PRACTICES FOR CHILDREN AGED 2-5 YEARS IN BULAWAYO PROVINCE IN ZIMBABWE

by

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ABSTRACT

Introduction and background

Feeding practices are parental-feeding interactions which determine how, when and why children are fed. Poor feeding practices are more significant determinants of malnutrition in children than lack of food. Globally, 20 million children under 5 are malnourished, resulting in morbidity and mortality. Despite food supply strategies and programmes, 92% of all deaths in children under 5 in Zimbabwe are attributed to malnutrition. At the designated hospital, 35% of children aged 2-5 years have malnutrition, and 10% die from malnutrition-related illnesses. Global guidelines for feeding practices in children, such as the ten steps to successful breastfeeding and the baby-friendly hospital initiatives, focus on 0-2 years with scanty information on 2-5 years when it is the age range for rapid growth and development.

Aim

Develop guidelines for feeding practices for children aged 2- 5 years in Bulawayo province in Zimbabwe.

Objectives were to

Determine caregiver health literacy regarding current feeding practices for children aged 2-5 years in Bulawayo province in Zimbabwe.

Explore stakeholder views regarding feeding practices for children aged 2-5 years.

Obtain stakeholder suggestions for guidelines for feeding practices for children aged 2-5 years.

Develop guidelines for feeding practices for children aged 2-5 years in Bulawayo province in Zimbabwe.

Study design

Mixed methods sequential explanatory design.

Abstract

Methods

The study was conducted in three phases. Quantitative, a questionnaire was used to collect data on feeding practices used by approximately 260 caregivers of children aged 2-5 years. The statistician assisted with data analysis. Qualitative, consensus meeting to obtain views of 12 stakeholders about current feeding practices and obtain suggestions for the content of a guideline for feeding practices. Integration of the results of the two phases led to the drafting of guideline statements in phase 3. Three experts participated in a Delphi technique to reach a consensus on the final guidelines.

Significance of the study.

The body of knowledge on feeding practices for children aged 2-5 and research may be improved, reducing morbidity and mortality from malnutrition. Nurses' care and clinical practice may also be improved.

Key terms/concepts

Development, Guidelines, Caregiver, Child, Malnutrition, Feeding practices, Age group 2-5 years.

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CHAPTER 1: OVERVIEW OF THE STUDY

1.1 INTRODUCTION AND BACKGROUND

Feeding practices are the foundation for good nutrition in children. Poor feeding practices put a child at risk of malnutrition which is a leading cause of morbidity and mortality (Chanani, Wacksman, Deshmukh, Pantvaidya, Fernandez & Jayaraman, 2016:505; Aheto, Keegan, Taylor & Diggle, 2015:552; Udoh & Amodu, 2016:3; Berti & Socha, 2023:1; Ahmed & Mishra, 2022:1). Malnutrition, as defined by Hasegawa, Ito and Yamauchi (2017:1) is a lack of sufficient nutrition to meet growth demands, body maintenance and activity. Feeding practices facilitate growth and development of children under five years (Berti & Socha, 2023:1; Mulenga, Amukugo & Shilunga, 2016:20; WHO, 2019:1). Child growth is the most widely used measure for determining a child's nutritional status (Marume, Archary & Mahomed,2022 :1; Akhombi, Agho, Merom, Renzaho & Hall, 2017:2). Feeding practices help reduce the risk of infectious diseases and related mortality (Udoh & Amodu, 2016:3; Shagaro, Mulugeta & Kale, 2021:1; Dusingizimana, Weber, Ramilan, Iversen & Brough, 2020:1). Even in poor resource countries, improved feeding practices can lead to better nutritional status in children under five years. Inadequate feeding practices are a more significant determinant of malnutrition in children under five years than the lack of food. Poor feeding practices are a major obstacle to sustainable socioeconomic development and poverty reduction (Tette, Sifah, Tete-Donkor, Ameyaw & Nartey, 2016:3; Dusingizimana, Weber, Ramilan, Iversen & Brough, 2020:1; Mekonnen, Kinati, Bekele, Tesfa, Hailu, Jemall 2021:2).

According to Dusingizimana, Weber, Ramilan, Iversen & Brough, 2020:1, Krasevec, Murray, Kumapley and White (2017:1), Chanani, Wacksman, Deshmukh, Pantvaidya, Fernandez and Jayaraman (2016:505), Akhombi, Agho, Merom, Renzaho and Hall (2017:1), about 20 million children under the age of 5 years worldwide are malnourished resulting in irreversible consequences on growth and poor learning capacity (Ndava, Archary & Mahomed, 2021:14). Repeated infections and malnutrition accounts for at least 50% of all childhood deaths. Globally, 30% of children under five years are stunted due to poor feeding practices (WHO, 2019:1; Dusingizimana, Weber, Ramilan, Iversen & Brough, 2020:2). Therefore, children need the right foods at the right time. In addition, they need a diet consisting of at least four food

groups per day for them to grow to their full potential (Sanghvi, Seidel, Baker & Jimerson, 2017; WHO, 2019:1; Sirkka, Abrahamse-Berkeveld & van der Beek 2022:1). Diversified approaches such as foods containing a micronutrient content of local Indigenous foods and culture-specific nutrition counselling to caregivers are essential to prevent malnutrition in children (Tette, Sifar, Tete-Donkor, Ameyaw & Nartey, 2016:9; Sirkka, Abrahamse-Berkeveld & van der Beek 2022:1).

When admitted to the hospital, children have increased nutritional risk which, necessitates unnecessarily prolonged hospital stays and more significant complications such as hospital-acquired infections (Thomas, Marino, Marino, William & Beattie 2016:1119; Zimbabwe Nutrition Profile, 2017). At the designated children's hospital, caregivers have been observed feeding their children non-nutritious foods such as "freezits," which they bring into the hospital. This puts the sick child at increased risk of malnutrition in the hospital.

Khan, Turab, Khan, Rizvi, Shaheen, Ullah et al. (2016:1), Dusingizimana, Weber, Ramilan, Iversen and Brough (2020:1) and Seonandan and McKerrow (2019:114) cite that the majority of children affected by malnutrition and related mortality are in Sub Saharan Africa Statistics indicate that the under-five mortality from malnutrition in Burundi is at 57,7%, for Malawi it is at 47,1%. In the Democratic Republic of Congo, it is at 42,7% (Akhombi, Agho, Merom, Renzaho & Hall, 2017:1). In Ghana, Aheto, Keegan, Taylor, and Diggle (2015:552) cite that malnutrition accounts for 40% of under-five mortality.

In Zimbabwe, malnutrition in children under the age of five years is a cause for concern for policymakers as around 650 000 (27%) suffer from chronic malnutrition (Zimbabwe Nutrition Profile 2018:1; Demographic Health Survey DHS, ZIMSTAT and Inner City Fund (ICF) International, 2016; Matsungo & Chopera, 2020:S25). It is one of the leading causes of mortality, with 75 per 1000 live births (Strategic Directions for Nursing and Midwifery Services in Zimbabwe 2016-2020). In 2016 alone, 33000 children under five in Zimbabwe urgently needed treatment for severe malnutrition (Save The Children 2017:15; United Nations Children's Fund (UNICEF) 2016 and National Nutritional Strategy 2014-2018; UNICEF Nutrition Strategy 2020–2030). Poor feeding practices are cited as contributory to malnutrition (Zimbabwe United National Development Assisted Framework, 2016-2020; ZimStat and ICF, 2016;188, 191,192; Dusingizimana, Weber, Ramilan, Iversen & Brough, 2020:2; Mekonnen, Kinati, Bekele, Tesfa, Hailu, Jemal, 2021:1). The Zimbabwe nutrition profile (2016:1) indicates that 92% of all deaths in children under five years in Zimbabwe are attributed to malnutrition.

Furthermore, the WHO and UNICEF (2018) cite that optimum child health is possible if feeding guidelines are adhered to. Such guidelines are unavailable in the Bulawayo province in Zimbabwe, as little focus has been given to the feeding practices of children in the 2–5-year age range, hence the study.

Numerous food strategies, such as the Community Food and Nutrition Program (CFNP) and National Food and Nutrition Security (FNSP), have been put in place in Zimbabwe by international organisations such as the Food for Africa Organization (FAO) and the World Food Program (WFP). These programs aim to alleviate the problem of malnutrition in children under five years. However, not much success has been achieved with these programs (Matsungo & Chopera 2020:S27; Irigoyeni 2017), indicating the need for other interventions, such as investigating feeding practices utilised by caregivers to attain optimum health for all children.

1.2 PROBLEM STATEMENT

Global guidelines for preventing malnutrition in children under five years have focused mainly on breastfeeding practices such as the 'Ten steps to successful breastfeeding', Infant and young child feeding guidelines and the 'Baby friendly hospital initiatives. These guidelines have been accepted and adopted worldwide, including Zimbabwe (WHO 2018). The guidelines are in line with Sustainable Development Goals (SDGs) 2 and 3, which cite that there should be zero hunger and good health and well-being for all ages (Matsungo & Chopera, 2020: S26; UNICEF and WHO 2018). However, these feeding guidelines have focused on the 0–2 years age range and breastfeeding, with very little information on the ideal feeding practices for the age range of 2–5 years (Seonandan & McKerrow, 2016: 114). The 2–5 years period is a critical stage when rapid growth and development takes place indicating the need for good nutrition at that stage of growth (Berti & Sorcha 2023; 1; Adhikari, Acharya, Upadhya, Pathak, Pokharel, Pradlan, 2021:1; Serrano & Powel, 2013:1). The revised South Africa Road to Health Book of 2018 and the Infant and Young Child Feeding (IYCF) guidelines are the only resources providing information on feeding practices beyond two years in South Africa (Seonandan & McKerrow, 2016:114).

There is a scarcity of studies in Zimbabwe that focus on the feeding practices for children in the 2-5 years age range. According to Hjellbakk, Hailemariam, Reta and Engebretsen (2022: 10), Seonandan and McKerrow (2016:114, 113), even in hospitals, age-specific feeding, the frequency and type of snacks for children between 2-5 years are suboptimal. It has been observed that healthcare professionals give advice to reduce the portion size of adult meals, and the focus of the advice is more on breastfeeding, age-specific meals, snacks and milk for

children under the age of two years than for children over two years. This reflects the urgent need for guidelines on feeding practices for children in this age range to prevent malnutrition.

In Matabeleland, one of the regions in Zimbabwe, stunting in children under the age of five years is rife at 79% (Zim Stat & ICF International, 2016; Matsungo & Chopera, 2020:S25).

According to the 2018-2019 hospital statistics for the designated children's hospital, the largest referral hospital in the Matabeleland region, 45% of children aged 2 – 5 years admitted to the hospital have malnutrition. Those children who are discharged are often readmitted with malnutrition, and 10% of these children die from malnutrition-related illnesses.

According to the United Nations Refugee Agency (2023:2) and Mahmood, Saif, Mannan and Arshad (2018:67), a mortality rate of 10% due to malnutrition in children under five years is unacceptably high. Prevalence of acute malnutrition (>15%) in a population is considered a critical emergency (Chanani, Wacksman, Deshmukh, Pantvaidya, Fernandez & Jayaraman, 2016:505; United Nations Refugee Agency 2023:2). At the designated hospital, it is very common to see caregivers (parents, house helpers, grandparents, siblings, uncles, aunts) feed the hospitalised children with foods that have no nutritional value (Zimbabwe Nutrition Profile, 2018) when nutritious foods such as fruits like banana can be bought. This could imply that the current feeding practices continue the home feeding practices. These non-nutritional foods include sweetened, flavoured and frozen fizzy drinks, candy, Stumbo (lollipops), jiggles (a form of potato chips), and sachets of Maheu (fermented mealie meal with very high sugar content). According to the revised South African Road to Health Card (2018:7) utilised in South Africa, caregivers should avoid giving children unhealthy foods such as chips, sweets, sugar and fizzy drinks. Reading and following guidelines on feeding practices can help children to grow and develop (South Africa Road to Health Card 2018:1). The developed guidelines can be corroborated with existing health promotion interventions in Zimbabwe, such as at immunisation, where health education is mandatorily availed to caregivers and the community through mobile outreach services. The researcher envisages that the developed guidelines will be part of the health education information.

Despite food aid from various international organisations, Zimbabwe has suffered from high levels of chronic malnutrition in children (Ndava, Musemwa, Ndhleve & Zhou, 2021:14; Matsungo & Chopera, 2020: S25: S26). Based on the 45% admission rate for malnutrition, there is an urgent need to explore caregiver literacy regarding current feeding practices for children aged 2 – 5 years in Bulawayo province, Matabeleland, in Zimbabwe. Also, develop guidelines for feeding practices for children aged 2-5 years that may contribute to preventing

malnutrition in this age range. Optimum feeding practices rank among the most effective interventions to improve child health. These feeding practices do not depend only on what the child is fed but on how, when, where and by whom a child is fed (Adhikari, Acharya, Upadhya, Pathak, Pokharel & Pradlan, 2021:1; Ganesani, Jayaraj, Geminiganesan & Rajan, 2021:E909; UNICEF, 2014:20; Katepa-Bwalya, Mukonka, Masaninga, Babaniyi & Siziya, 2013:1; WHO 2018; UNICEF, 2014 & 2018).

1.3 RESEARCH QUESTIONS, AIM AND OBJECTIVES

1. What are the feeding practices currently utilized by caregivers for their children aged 2 - 5 years in Bulawayo province in Zimbabwe?
2. What are the views of stakeholders regarding current feeding practices for children aged 2 – 5 years in Bulawayo province in Zimbabwe?
3. What are the stakeholders' suggestions regarding feeding practices for children aged 2-5 in Bulawayo province, Zimbabwe?
4. Which literature on feeding practices for children aged 2 - 5 years can be obtained through a scoping review?
5. Which content should be included in guidelines for feeding practices for children aged 2-5 years in Zimbabwe?

1.4 AIM AND OBJECTIVES

This study aimed to develop guidelines for feeding practices for children aged 2- 5 years in Bulawayo province, Matabeleland, Zimbabwe.

The objectives of this study were addressed in phases:

PHASE 1: Quantitative component

To determine feeding practices caregivers are currently utilising for their children aged 2 – 5 years in Bulawayo province in Zimbabwe.

PHASE 2: Qualitative component and scoping review

To explore stakeholders' views regarding current feeding practices for children aged 2 – 5 years in Bulawayo province in Zimbabwe.

To obtain suggestions from stakeholders regarding guidelines for feeding practices for children aged 2 – 5 years in Bulawayo province in Zimbabwe.

To conduct a scoping review to obtain information on feeding practices utilised by caregivers of children aged 2-5.

PHASE 3: Development of guidelines

To develop and refine guidelines for feeding practices for children aged 2 – 5 years in Zimbabwe.

1.5 DEFINITION OF KEY CONCEPTS

The fundamental concepts in the study are defined and described in Sections 1.5.1 to 1.5.5:

1.5.1 Caregiver

A caregiver is a relative, friend, or neighbour who helps and supports others by providing daily activities, food, and shelter (Schulz, Beach, Friedman, Martsolf, Rodakowski, and James, 2018:2).

A caregiver is a person who tends to the needs or concerns of a person with short- or long-term limitations due to illness, injury or disability. Family caregivers play a significant role in health care, as they are often the primary source of valuable information about the patient. (John Hopkins Bayview Medicine, 2023)

> A caregiver provides care to someone who needs help taking care of themselves. The person who needs help may be a child, an adult, or an older adult. They may need help because of an injury, disability, or chronic disease (MedlinePlus, 2020). Caregivers care for loved ones at home, reducing healthcare system costs and resources (Liu, Heffernan & Tan 2020:438, 443).

For this study, a caregiver will refer to any person taking direct care of a child in terms of feeding and grooming, such as parents/parents, childminders, grandparents/parents, or any other close relative such as an aunt or an uncle.

1.5.2 Feeding practices

Feeding practices are parental-feeding interactions that determine how, when and why children are fed and may be potentially modifiable determinants of a child's weight status

through dietary intakes (Quah, Syuhada, Fries, Chan & Toh, 2018:2). Serrano and Powell, (2013:1) and UNICEF (2014:15) cite feeding practices as when a caregiver chooses what, when, where, how and where to feed a child.

For this study, feeding practices will be the constituents of a child's diet offered by a caregiver, including the timing, frequency, and manner in which the food is offered.

1.5.3 Child

Every human being below 18 years, unless, under the law applicable to the child, majority age is attained earlier (United Nations Convention on the Rights of the Child (1990: article 1). A young person in the age group of 0-18 years would be legally considered a child. A child is a state of being. From the age perspective, there is a chronology of growth and development (Bajpai, Asha Mukundan, Nigudkar 2013: 2, 9). A child is a minor who goes through a natural process of childhood to become an adult (Qamar 2021:38). Both the Constitution of Zimbabwe (section 81) and the Zimbabwe National Orphan Care policy define a child as any person below the age of 18 years.

For this study, a child will refer to every person between the ages of 2 and 5.

1.5.4 Malnutrition

State of nutrition in which a deficiency or excess or imbalance of energy, protein and other nutrients cause measurable adverse effects on tissue/ body form, shape, size, composition, body function and clinical outcome (Soeters, Bozzetti, Cynober, Forbes, Shenkin & Sobotka, 2016). Malnutrition is a deficiency or improper intake of energy and nutrients. It includes undernutrition (wasting, stunting, underweight, mineral and vitamin-related malnutrition) and overnutrition (Menalu, Bayleyegn, Tizazu & Amare, 2021:1683). Malnutrition is a condition that results from poor nutrient intake and diseases or conditions that cause hypermetabolism or malabsorption and can impose a significant healthcare cost burden if left untreated (Phillips, Dolley & Boi 2020:74). WHO (2024) cite malnutrition as deficiencies or excesses in nutrient intake, imbalances of essential nutrients and consists of both undernutrition and over nutrition and obesity as well as diet-related non-communicable diseases. It may manifest as wasting, stunting, underweight and micronutrient deficiencies.

In this study, malnutrition will refer to a state of undernutrition or overnutrition in children aged 2 - 5 years in which there is inadequate intake of essential nutrients necessary for physical, mental, cognitive, and psychological growth and development, leading to faltering of these and mortality.

1.5.5 Guidelines

It systematically developed statements used in clinical practice to optimise patient care and present recommendations to healthcare decision-makers to improve the effectiveness and quality of care rendered to patients (Kredo, Benhardsson, Machingaidze, Young, Louw, Ochodo and Grimmer, 2016: 122,123). Clinical guidelines are part of an evidence-based practice toolkit, which, transformed into practice recommendations, can potentially improve both the process of care and patient outcomes (Pereira, Silva, Carvalho, Zanghelini & Barreto, 2022: 1; 13). Guidelines are statements that include recommendations that are intended to optimise patient care that are informed by a systematic review of evidence and an assessment of the benefits and harms of alternative care options (Lunny, Ramasubbu, Puil, Liu, Gerrish, Salzwedel, Mintzes, Wright 2021:3).

For this study, guidelines will be written statements developed to inform caregivers and policymakers on feeding practices for children aged 2 – 5 in the Zimbabwean context, aiming to improve the quality of life of children of this age range.

1.5.6 Age group 2-5 years

The age group 2-5 is a period known as preschool or prekindergarten, and it is characterised by significant physical, cognitive, social, and emotional development. It is the age range when a child explores the world around them, bustles with energy, and, like all age ranges, can vary according to context and culture (UNICEF 2013; iv).

For this study, the 2-5-year age group will be the critical age group when the child develops specific food preferences depending on their caregiver's feeding practices.

1.6 SETTING

In all three phases of the study, the setting was Mpilo Children's Hospital, the largest public referral hospital for children in the Matabeleland region. Matabeleland region consists of three provinces: Bulawayo Province, Matabeleland North and Matabeleland South. Mpilo Children's Hospital is the second largest children's referral hospital in Zimbabwe after Harare Children's Hospital. Mpilo Children's Hospital has 200 beds, caters for children below 12 years of age and is located in one of the oldest and most highly populated suburbs of Bulawayo province.

The hospital comprises a casualty department, two medical wards - where children with malnutrition are admitted, one surgical ward, an outpatient department, an intensive care unit, and a nutrition unit where children with malnutrition get nutritional rehabilitation during admission and on discharge.

All children up to five years old who attended the children's hospital are treated free if the caregiver brings the Child Health Card (Zimbabwe) with them, whether referred or un-referred. All caregivers in the children's hospital participate in caring for their children, including feeding the children and staying with them until discharge. The caregivers are accommodated in waiting rooms located in the two medical wards. No caregiver is allowed to go home, leaving the child behind at any time during the period the child is hospitalised.

Table 1.1: The staff members who work in the children's hospital comprise of:

Staff member	Number
Paediatricians	8
Doctors	27
Registered Nurses	118
Nutritionists	4
Nurse Aides	24
General Hands /General Assistance	18

At any given time, at least 50 or 60 children, and sometimes up to 100 children, will be admitted to the two medical wards. The figures correspond to the caregivers accommodated in the respective waiting rooms. Chapter 2 comprehensively discusses the setting in which this study took place.

1.7 PARADIGMATIC ASSUMPTIONS

A paradigm is a set of philosophical assumptions that are inherently coherent about the nature of reality. A paradigm can also be defined as a research work's philosophical foundation or framework. The philosophical base of the research guides the researcher to precede the entire process and derive meaning from the researched phenomenon (Khatri 2020: 1439). The paradigm that will be utilised in this study is pragmatism. Pragmatism concerns action, change, and the interplay between knowledge and action (Dawadi, Shrestha & Giri 2021: 25; Goldkuhl 2012:136). It refers to a basic set of beliefs that guide actions (Kaushik & Walsh, 2019: 1; Kelly & Cordeiro 2020: 1, 2; Cresswell & Cresswell, 2023:12) and applies to mixed methods design because researchers can draw liberally from both quantitative and qualitative assumptions.

Pragmatism deals with what works in particular settings (Kaushik & Walsh, 2019:1; Allemang & Dimitropoulos, 2021: 38; Cresswell & Cresswell, 2023:12).

1.7.1 Ontology

Ontology is about the nature of reality (Dawadi, Shrestha & Giri 2021: 25; Plowright, 2011:135). Pragmatists believe that reality is not static and changes with the turn of events. Meaning is inseparable from human experience and needs and is dependent on the context (Khatri 2020: 1436; Kaushik & Walsh 2019:1). Therefore, a sequential explanatory mixed methods design will be utilised in the study whereby more than one research method will be used to obtain a clearer picture of the reality of the participants (Molina-Azorin, 2019: 6; Muyembe 2020: 84, 86). In phase one, the quantitative phase of the research, caregivers were given questionnaires to obtain their experiences of the current feeding practices they utilise on children aged 2 – 5 years. In phase two, interviews were conducted with stakeholders to explore their views of feeding practices for children aged 2 – 5 years and obtain their suggestions for guidelines for feeding practices for children of this age range.

1.7.2 Epistemology

Epistemology is about the relationship between the knower and reality and the participant. It is about creating knowledge in the interest of change and improvement (Khatri 2020:1437). It is about the information that counts as acceptable knowledge and how it should be acquired and interpreted (Meem 2020:4). In this study, a sequential explanatory design was utilised to obtain knowledge that leads to developing guidelines for feeding practices for children aged 2 – 5 years. In the quantitative phase of the research, questionnaires were given to caregivers on current feeding practices they utilise and in phase two, interviews were conducted with stakeholders to obtain their suggestions for guidelines for feeding practices for this age range. The researcher refined the guideline statements using results from phases 1 and 2 and literature on feeding practices for children aged 2-5 years through a scoping review. The third source of knowledge was the Delphi technique, which experts used when evaluating the developed guidelines.

1.7.3 Methodology

The methodology is a philosophical assumption that places value in empirical research. It deals with the how aspects of the inquiry process. Methodological considerations in a paradigm include participants, instruments used in data gathering, and measures for data analysis through which knowledge is gained about the research problem. It articulates the logic and flow of the systematic processes followed in conducting a research project to gain knowledge about a research problem (Khatri 2020:1437). Cresswell and Cresswell 2023: 3,4

cite methodology as a research approach that spans from broad assumptions to detailed data collection methods, analysis and interpretation. In this study, the methodological assumptions were determined through research results from questionnaires given to caregivers in phase 1; interviews were conducted with stakeholders in phase 2, as well as stakeholder suggestions for guidelines for feeding practices for children aged 2 – 5 years in Bulawayo province in Zimbabwe. This was facilitated by stakeholder consensus, content analysis and consultation with scientific literature, such as a scoping review. Experts' evaluation skills and consensus on the developed guidelines for feeding practices for children aged 2 – 5 years in Bulawayo province in Zimbabwe will add to the research findings as the guideline evaluation results will be original and independent of each expert. A sequential mixed method was used.

1.8 SIGNIFICANCE

This study may help improve the quality of life of children aged 2 – 5 years in Bulawayo province in Zimbabwe through reduction of morbidity and mortality from malnutrition, improved nutrition, reduction of hospital admissions and readmissions for malnutrition through utilisation of the developed guidelines for feeding practices for this age range by caregivers. Improved quality of life of children aged 2 – 5 years in Bulawayo province in Zimbabwe will afford caregivers time for other commitments rather than staying in hospital frequently with a child admitted for malnutrition. This study will provide information to assist policymakers and management in decision-making and allocating resources regarding feeding practices and nutrition of children aged 2 – 5 years in Bulawayo province in Zimbabwe. As fewer children will be admitted for malnutrition, hospital costs could be reduced through fewer children being admitted, and costs for drugs and food will be reduced, as fewer children will be admitted for malnutrition. The study will help contribute to nursing knowledge and research, especially in Zimbabwe.

1.9 THEORETICAL FRAMEWORK

The theoretical framework is the blueprint a researcher borrows to build their research inquiry. It is the foundation upon which research is built (Adom, Hussein and Agyem, 2018; 438). Pender's Health Promotion Model (1996) was utilised in this study. This is because the model stresses changing unhealthy behaviours and health promotion (Khodaveisi, Omidi, Farokhi & Soltanian 2017:166), which is consistent with what the researcher envisaged in this study, caregivers of children aged 2-5 years in Bulawayo province in Zimbabwe to move away from giving their children foods that are of no nutritional value such as "jiggies" (corn snacks manufactured through popping in factories and homes). Suppose guidelines for feeding

practices for children aged 2-5 years in Bulawayo province in Zimbabwe developed in this study are adopted. In that case, they can lead to health promotion in children of this age range. Central concepts in this model, namely, individual characteristics and experiences, which influence behaviour-specific cognitions and affect and behavioural outcomes, will be utilised in this study. These concepts guided the researcher in data collection in phases 1 and 2. The desired behavioural outcome of this model is a health-promoting behaviour (Pender, 2006), which in this study was likened to caregiver utilisation of feeding practices to attain optimum health, thereby preventing illness (malnutrition), which is consistent with the aim of this model of promoting healthy lifestyles and preventing illness.

Every individual has unique personal characteristics and experiences which affect eventual actions (Pender, 2006). The effect of these personal characteristics and experiences will depend on the desired target behaviour, which may be potentially relevant for attaining a particular health behaviour (Pender, 2006) (view Figure 1).

The targeted behaviour-specific cognition and affect factors considered in this study are perceived self-efficacy and perceived benefits of action, which are relevant to healthy nutritional outcomes of children aged 2–5. Perceived self-efficacy was likened to caregiver abilities, efficiency and skills pertinent to attaining the desired action, which in this study are feeding practices. To attain perceived benefits of action, a caregiver engages in the desired action to have a well-nourished and healthy child who will recover from current malnutrition and will not suffer malnutrition again.

This motivates caregiver behaviour by giving foods that are of nutritional value. These skills are hence considered a health-promoting behaviour in this study.

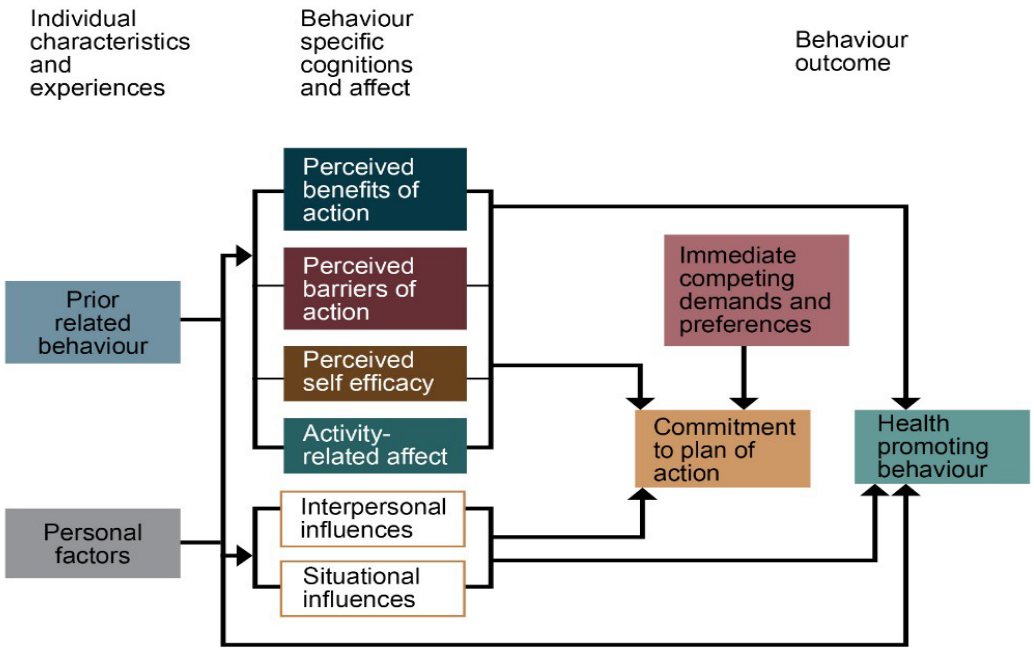

Figure 1: Diagram of Pender`s Health Promotion Model (Source: Pender 2006)

In this study, factors such as age, strength, or agility are biological and personal factors (Pender, 2006:52) which can influence caregiver perception of feeding practices.
A very young or very old caregiver and level of education may adversely influence desired action due to the lack of desired expertise in feeding practices, thereby adversely affecting the child's health. Ethnicity can influence feeding practices due to cultural differences in food choices and taboos, affecting the child's nutritional status. Jointly, behaviour-specific cognition and affect and interpersonal factors can affect commitment to a plan of action, subsequently affecting health-promoting behaviour. Immediate competing demands, such as caregivers emulating giving of foods of no nutritional value, such as 'jiggies' and maize snack foods, popped up in factories and homes. Some are coated with sugar, and some have variegated colours. Also, being coated with sugar and sweets by other caregivers in the ward can affect health-promoting behaviour. This can lead to malnutrition; hence, the nurse practitioner has a role in modifying these behaviours in the current environment.

Pender (2006:52) cites prior related behaviour as having direct and indirect effects on the likelihood of engaging in a health-promoting behaviour. This study will liken prior related behaviour to experiences on feeding practices for this age range, which may influence current feeding practices, especially if the former were deficient. Deficient caregivers' current feeding practices could be due to habit formation predisposing caregivers to engage in the behaviour automatically (Pender, 2006), leading to malnutrition. Suppose the repeated behaviour is feeding practices such as giving foods of no nutritional value. In that case, the caregiver will automatically continue with the practice even in the hospital, as observed by the researcher, thereby exacerbating malnutrition.

Perceived barriers to action affect commitment to a plan of action, which in this study are intentions for good behaviour (feeding practices) and can directly influence the caregiver's behaviour by serving as hurdles or blocks (Pender, 2006). In this study, perceived barriers will be likened to caregivers' inadequate health literacy on feeding practices for children aged 2 – 5 years, which can be counteracted by the attainment of knowledge and skills of feeding practices through the development of feeding guidelines. The nurse in this study helps the caregiver to overcome these hurdles by shaping positive behaviour and focusing on the benefits of behaviour, which in this study will be avoiding giving foods that have no nutritional value, thereby assisting caregivers in attaining optimal health for their child.

1.10 RESEARCH DESIGN AND METHODS

This study utilised a sequential explanatory mixed methods design. According to Dawadi, Shrestha and Giri (2021:25,30,33), Molina-Azorin (2019: 264), and Cresswell and Cresswell (2023:4,5), a mixed methods design includes at least one quantitative and one qualitative research design in one study, making research more meaningful, complete, and purposeful than using a singular approach. This is consistent with what the researcher endeavours to achieve in this study by using quantitative and qualitative research designs in phases 1 and 2, respectively, to ensure the research is more robust.

For this study, a sequential explanatory design which involved the implementation of an initial quantitative component followed by a subsequent qualitative component that depended on and was informed by the initial quantitative results was utilised Plano-Clark (2019:107); Cresswell and Cresswell (2023: 15.16); Dawadi, Shrestha and Giri (2021: 27) as depicted below in Figure 2). This was done to help provide a more general picture of the research problem (MolinaAzorin 2019:7; Dawadi, Shrestha & Giri 2021: 25). The 2 phases made up the sequential explanatory design. Literature on feeding practices for children aged 2-5 years was obtained through a scoping review. In Phase 3, after merging the results of the two phases, guidelines for feeding practices were drafted, developed and refined. The two phases are connected in the intermediate stage of the study (Ivankova, Cresswell & Stick 2006:5). See Figure 1.2 for a visual presentation of the research phases.

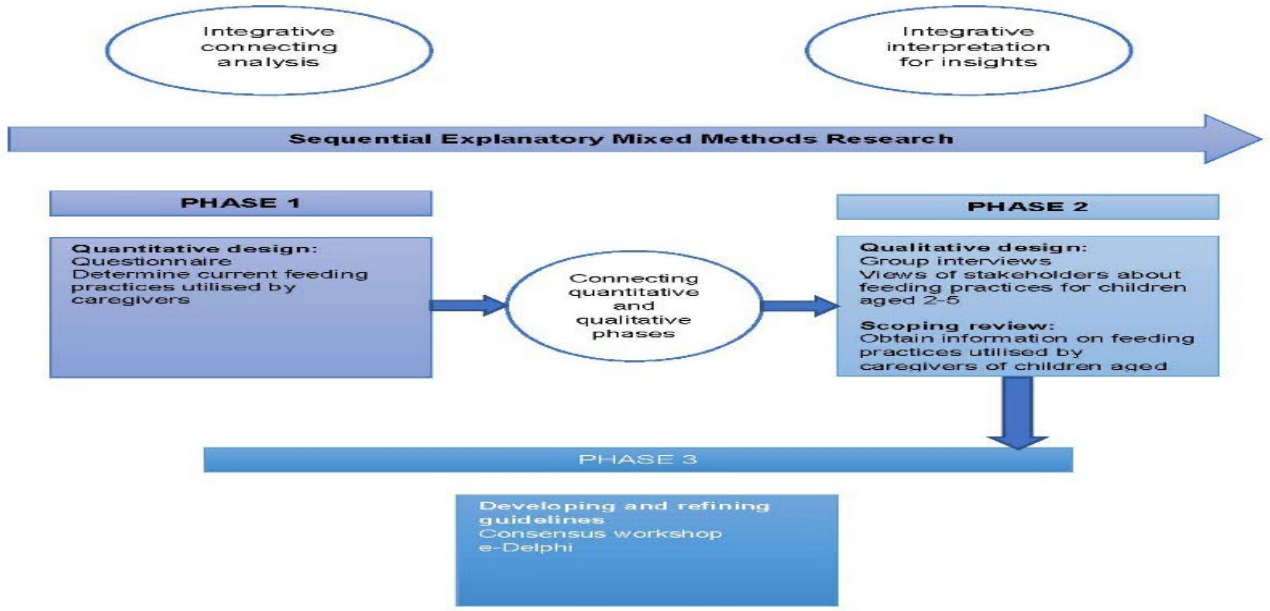

Figure 1.2 Visual presentation of the research phases

Table 1.2 provides a summary of the research methods. Chapter 3 provides an in-depth discussion of the research design and methods.

Table 1.2: Summary of the Research Methods

Research methods	PHASE 1	PHASE 2	PHASE 3
Research objectives	To determine feeding practices caregivers are currently utilising for their children aged 2 – 5 years in Bulawayo province in Zimbabwe.	To explore stakeholders' views regarding current feeding practices for children aged 2 – 5 years in Bulawayo province in Zimbabwe. To obtain suggestions from stakeholders regarding guidelines for feeding practices for children aged 2 – 5 years in Bulawayo province in Zimbabwe To conduct a scoping review to obtain information on feeding practices utilised by caregivers of children aged 2-5 years.	To develop and refine guidelines for feeding practices for children aged 2 – 5 years in Zimbabwe.
Population	Caregivers	Stakeholders	Experts
Sampling	Census sampling population	Total population sampling	Purposive sampling
Data collection	Semi-structured questionnaire	Group interviews	e-Delphi consensus method
Data analysis	Descriptive statistical techniques using the statistical system (SAS) v. 9.4 software	Inductive content analysis	Refinement of guidelines
Rigour/ Trustworthiness	Validity and reliability	Credibility, Dependability, Confirmability, Transferability	Credibility, Dependability, Confirmability, Transferability

1.11 ETHICAL CONSIDERATIONS

Ethics is concerned with respecting research participants (Plowright 2011:149) and are the rules for correct behaviour and moral principles that a researcher has to follow while

conducting nursing research to ensure the rights and welfare of individuals, groups, or communities under study (Priyadarshini, 2020:6080). In nursing research, ethics can be defined as the act of moral principles that the researcher has to follow while conducting nursing research to ensure the rights and welfare of individuals, groups, or communities under study (Priyadarshini, 2020:6080). As documented in the Declaration of Helsinki and Belmont Report for the Protection of Human Subjects of Biomedical and Behavioral Research in 1978, ethical principles guide those conducting health sciences research to protect human subjects. The core principles are respect for persons, beneficence and justice (Cilliers & Viljoen, 2021:3,4). This study adhered to these principles through informed consent, the right to withdraw from the study without prejudice, confidentiality and anonymity, beneficence/ non-maleficence and justice.

In this study, before the researcher could start with data collection, the proposal was submitted for review to the Research Ethics Committee of the Faculty of Health Sciences University of Pretoria (749/2020), Research Ethics Review Board of Mpilo Children's Hospital and Medical Research Council of Zimbabwe (MRCZ/A/2692) (view Annexures A1-A3). Furthermore, permission was obtained from the necessary institutional and nursing management to conduct the study in the different departments/wards at Mpilo Children's Hospital. After permission had been granted from the said management, the researcher also arranged a meeting with the heads of the different departments/wards to inform them about the study and what would be expected from them during the study. This was done to protect the participants and the institution where the research was conducted.

1.11.1 Informed consent and respect for persons

According to Cilliers and Viljoen (2021:3,4), respect for persons means that participants should be treated as autonomous agents, and persons with diminished autonomy are entitled to protection. To adhere to this principle, all participants should seek informed consent. Sivasubramaniam et al. (2021:12) also cite that providing a participant information sheet/leaflet with a full explanation about the research that is being carried out and a clause for the participant to withdraw their consent at any time without prejudice is paramount for the protection of participants. The informed consent process aims to provide potential participants with information about health research that enables them to decide whether to participate (Hoverd, Staniszewska & Dale 2021:1). The informed consent principle was adhered to throughout the study.

- ✓ **Application to the study (quantitative phase)**

For this study, the nature of the research was explained to the caregivers. This was done in phase 1 to facilitate obtaining written informed consent (see Annexures B3i and B3ii). The purpose, aim of the study, research procedure and how long the study was expected to last, as well as the potential risks and benefits, were explained. The participants were informed that participation was voluntary. They could withdraw from the study before submitting the questionnaire, even after signing consent without prejudice. Participants were assured that it was within their rights to or not to participate in the study.

Participants were also informed that they could, however, not withdraw from the study once they had completed and submitted the questionnaire. The information given enabled the participants to decide whether they wanted to participate in the study.

- ✓ **Application to the study (qualitative phase)**

The study procedure was explained to the stakeholders in phase 2 before the commencement of the Focus Group Discussion. The stakeholders were given adequate time to go through the information leaflet to choose to participate voluntarily or not in the study to facilitate the signing of an informed consent (see Annexures D1 and D2). Stakeholders were informed that participation was voluntary and there were no incentives they would get by participating in the study. They were free to withdraw their participation at any time without prejudice.

- ✓ **Application to the study (e-Delphi)**

Information on the e-Delphi process was given to the experts in phase 3 through information leaflets before the onset of the Delphi so that they could voluntarily decide to participate in the study. The experts were informed that they were free to withdraw their participation at any time without penalty and that there were no incentives they would get by participating in the study. Participation was voluntary. Participant information and consent documents (Annexure A Phase 1, Annexure B Phase 2 and Annexure C Phase 3) were given to participants in all phases of the study so that the participants had adequate information to agree to participate voluntarily.

1.11.2 Right to withdraw from the study

The researcher informed participants that they could withdraw from the study at any time, even after signing consent, without providing any reason and that it would not affect them in any way.

This applied to all phases of the study throughout the study as follows:

- ✓ **Application to the study (quantitative)**

The caregivers were informed that they could withdraw from the study without penalty. This information was provided in the information leaflets, and further explanation was given whenever required.

- ✓ **Application to the study (qualitative phase)**

Through information leaflets, stakeholders, namely nurses, paediatricians, doctors, and nutritionists, were informed that they could withdraw from the group interviews without penalty.

- ✓ **Application to the study (e-Delphi)**

Experts were given information through information leaflets that they could withdraw their participation from the study without prejudice.

1.11.3 Confidentiality and anonymity

According to LoBiondo-Wood and Haber (2018:509), confidentiality and anonymity are the researcher's mandates to protect participants' information from intruders. Anonymity is the researcher's effort to protect participants' identities from being revealed in a research study. Only the researcher knows the identity of the study participants, and information obtained from the study is held in privacy.

- ✓ **Application to the study (quantitative phase)**

Anonymity was ensured in Phase 1, as the participants' names did not appear anywhere in the study or report; only numbers were used, making it difficult to link to participant information. The questionnaires were kept in a locked cupboard accessible only to the researcher and research assistants, protecting the study participants' anonymity and the collected data's confidentiality.

- ✓ **Application to the study (qualitative phase)**

Confidentiality was ensured in Phase 2. The researcher, under the supervision of her supervisors, analysed the data in Phase 2 and reported it so that people outside of the research could not link information to any specific participant. Recognising the unique challenges associated with ensuring confidentiality in group interviews, a sentence has been added to the Participant Information Consent Document to alert participants to this effect.

- ✓ **Application to the study (e-Delphi)**

Confidentiality was guaranteed in Phase 3 as information obtained during the e-Delphi was also confidential, and experts could not identify the other panel members.

1.11.4 Beneficence/Non-maleficence

According to Cilliers and Viljoen (2021:6), beneficence is protection from harm. Throughout the study, no harm occurred to the participants.

- ✓ **Application to the study (quantitative phase)**

The researcher ensured that the study participants were free from any harm throughout the study. Any questions the participants had were answered honestly each time. The study participants were not exposed to any form of risk throughout the study. Participants did not receive any financial benefits from participating in the study.
Still, the study may eventually contribute to caregiver feeding practices that will improve children's health and quality of life aged 2 – 5 years.

- ✓ **Application to the study (qualitative phase)**

The researcher ensured that stakeholders were not exposed to any harm throughout the group interviews, which was also ensured through voluntary participation in the discussions.

- ✓ **Application to the study (e-Delphi)**

The experts were not exposed to any form of harm throughout the study. Each expert's identity was held confidential from the other experts throughout the study.

1.11.5 Justice

Justice refers to ‘fairness in distribution’ or ‘what is deserved’. Selection should be fair (Cilliers & Viljoen 2021:4). In this study, the researcher ensured participant selection was fair based on their compliance with the inclusion criteria.

- ✓ **Application to the study (quantitative phase)**

The selection process of research participants was fair and carefully considered. All participants who met the inclusion criteria were selected fairly and treated with respect during participation. Participants all had an equal chance to participate. Respect for participants was ensured by fully disclosing the necessary information regarding the study and not using force, coercion or any other form of influence to include them. Participants' privacy was also ensured by not intruding into areas they were uncomfortable discussing.

✓ **Application to the study (qualitative phase)**

The stakeholder selection criteria were applied consistently, ensuring fairness. Only stakeholders who met the inclusion criteria and were willing to participate in the study were considered.

✓ **Application to the study (e-Delphi)**

Experts who met the inclusion criteria and were willing to participate in the study were considered. The selection process was fair, and the anonymity of the experts was ensured throughout.

1.12 LAYOUT OF THE CHAPTERS

The study comprises seven chapters. The layout of the study is presented in Table 1.3

Table 1.3 Layout of the study

Chapter	Title	Description
1	Orientation to the study	This chapter provides a general orientation to the study. It includes, among other things, a description of the problem that led to the initiation of the study as well as the research questions, aim, and objectives that followed. The study's significance, paradigmatic approach, and conceptual framework are explained. A summary of the research methodology is provided, and ethical considerations are discussed.
2	Context	This chapter describes the study's context. It touches on the broader Zimbabwe context, the participating hospital, and associated clinics where children are followed up post-discharge.
3	Design and methods	This chapter entails an in-depth discussion of the research design and methodology utilised in the study, which is addressed in the two phases (quantitative, qualitative, and analysis). The e-Delphi technique was employed for phase 3.

4	Understanding feeding practices utilised for children aged 2-5 years: A scoping review. ***Article 1***	This article provides a general orientation to understanding the feeding practices utilised for children aged 2-5. It uses a scoping review to obtain literature on the feeding practices for children of this age range. Introduction. The methodology for scoping review, results, and discussion, amongst other things, is given to understand the feeding practices utilised.
5	Caregiver feeding practices and food group consumption of children aged 2-5 years in Bulawayo province in Zimbabwe ***Article 2***	This article provides a general picture of the feeding practices and food group consumption of children aged 2-5 in Bulawayo province in Zimbabwe. It presents and analyses feeding practices and food groups utilised by caregivers of children of this age range in Bulawayo province. Related literature and recommendations for both are given.
6	Guideline development	This chapter summarizes the phases that were worked on first, leading to guideline development in this study. Phase 1 (quantitative) informed phase 2 (qualitative), leading to the drafting of initial feeding guidelines. The draft guidelines were refined and finalised through recommendations of 3 experienced experts in the area of study through e-Delphi, leading to the final guidelines.
7	Conclusions, implications for practice, limitations and recommendations	This chapter provides an overall perspective of the whole study, starting from the identified problems that led to an interest in conducting it, its aim, and its objectives. Data collection in phases through quantitative and qualitative means led to the development of the guidelines for feeding practices for children aged 2-5 years in Bulawayo province in Zimbabwe, which was the overall aim of the study. Findings were presented and analysed through articles 1 and 2. Implications to nursing practice, limitations and recommendations for future studies are also given.

1.13 CONCLUSIONS

This chapter provides an orientation to the study. It describes the introduction, statement of the problem, objectives, research questions, definitions of key terms, research paradigms, design and methodology of the study, and ethical considerations, among other things.

Chapter 2 provides an overview of the study's context, including the broader Zimbabwe context.

CHAPTER 2
CONTEXT OF THE STUDY

2.1 INTRODUCTION

Chapter 1 discussed the background, problem statement, aim, research design, and methods, as well as the ethical considerations of the study. This chapter describes the context of the study, including the country, population profile, health care system and health care facilities, burden of disease, education and training of nurses, and link of the context of the study with feeding practices of children aged 2-5 years.

2.2 ZIMBABWE

Zimbabwe, previously known as Rhodesia, is officially known as the Republic of Zimbabwe. Formerly a British colony from 1890 until independence in 1980, Zimbabwe is a land-locked country in Southern Africa. The Republic of Zimbabwe stretches from the Zambezi River to the Limpopo River and covers an area of 390 580 square kilometres, a length of 852 kilometres and a width of 710 kilometres. Zambia borders Zimbabwe in the north, South Africa in the south, Mozambique in the east, and Botswana in the west (Schneider and Ferguson, 2020:894). Figure 2.1 depicts a map of Zimbabwe, and Figure 2.2 shows the provinces of Zimbabwe.

Figure 2.1 Map of Zimbabwe

Source: *Zimbabwe Demographic and Health Survey, 2010-11*.

Figure 2.2 Provinces of Zimbabwe

Source: Demographic and Health Survey 2015 Final Report: xxvi

Zimbabwe is divided into ten (10) provinces (Demographic and Health Survey (2015) cited in the final report: government of Zimbabwe web portal zim.gov.zw 2022), namely Bulawayo, Matabeleland North, Matabeleland South, Midlands, Masvingo, Manicaland, Mashonaland East, Mashonaland West, Mashonaland Central and Harare. Bulawayo and Harare are cities with provincial status. The languages spoken in Zimbabwe are English, Shona, Ndebele, Tonga, Ndau, Shangaan, Sotho, Nambia, Chewa, Korekore, Kalanga and Manyika. The study was conducted in Bulawayo province, where English, Ndebele, and Shona are spoken. Table 2.1 lists the population of Zimbabwe for 2017-2020.

The study was strategically conducted in Bulawayo province, a significant location in Zimbabwe. Bulawayo, the second largest city of Zimbabwe after Harare, is in the Matabeleland region. This region, home to 133 healthcare facilities, including the renowned Mpilo Central Hospital, is a crucial hub for healthcare services. Mpilo Central Hospital, which houses the

second largest referral Children's Hospital in Zimbabwe, is essential in providing specialist healthcare services for all children aged 0-12 years.

This means that all sick children in the Matabeleland region requiring expert health care services are referred to this hospital. According to Mpilo Children's Hospital statistics for 2022-2023, at least 240 children with malnutrition were admitted every six months at the designated hospital, underscoring the pressing need for our study on feeding practices.

Table 2.1 Population of Zimbabwe 2017-2020

Year	Population	Fertility Rate
2020	14,862,924	3,63
2019	14,645,468	3,99
2018	14,438,802	3,99
2017	14,236,595	3,99

Source: Zimbabwe-total-population 2017-2020

According to Zimbabwe-Total-Population (2017-2020), Zimbabwe has a population of 14,438,802 million, and the populations of Harare and Bulawayo are 1,542,813 and 699,385, respectively. Most of Zimbabwe's population (8,738,342) live in rural areas, while the minority (5,700 460) live in urban areas.

The population increased from 14,236,595 in 2017 to 14,862,924 in 2020. The population of Zimbabwe constitute 0,19% of the total world population. The population density of Zimbabwe is 38 per square kilometre, and the total land area is 386,850 square kilometres.

The median age in Zimbabwe is 18,7 years, and life expectancy is 62,16 years (Zimbabwe-Total-Population (2017-2020). In 2020, there was a relatively high fertility rate in Zimbabwe, with 3,63 births per woman. Figure 2.3 depicts the population curve of Zimbabwe.

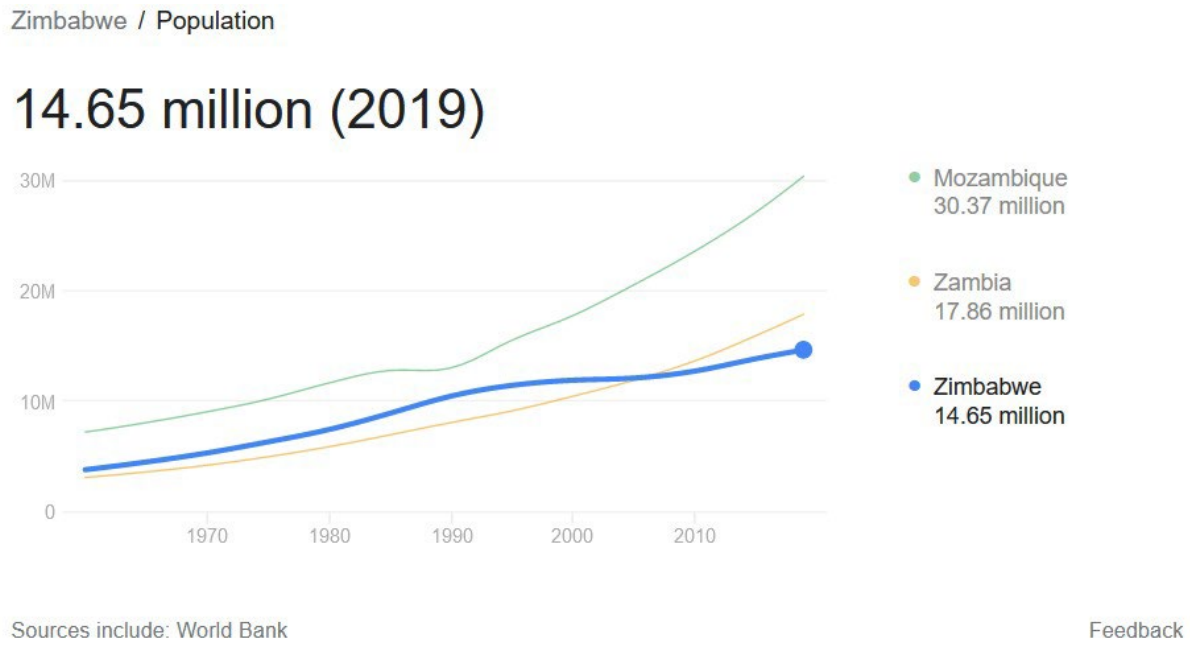

Figure 2.3 Population Curve of Zimbabwe

Source: Graph adopted from ZimStats 2019

Zimbabwe's population growth rate is 1,48%, but it is expected to slow significantly towards the end of the century, leading to a flattening population growth curve (ZimStats 2019). Figure 2.4 illustrates Zimbabwe's population pyramid according to age group in 2019.

In 2019, 14,6% of the population were 0-4 years old, and 14,9% were 5-9 years old. Of the children, 42,2% were 0-14 years old. This study focused on caregivers of children aged 2-5 years old. Zimbabwe has an under-5 mortality rate of 46,2% per 1000 live births.

The under-5 mortality rate indicates a population's child health, development, and well-being **(**Zimbabwe Population Pyramid.net 2020). The rise in the cost of living and brain drain in all grades of health personnel eroded health systems in Zimbabwe, leading to an upsurge in health threats (National Health Strategy for Zimbabwe 2016-2020: 3).

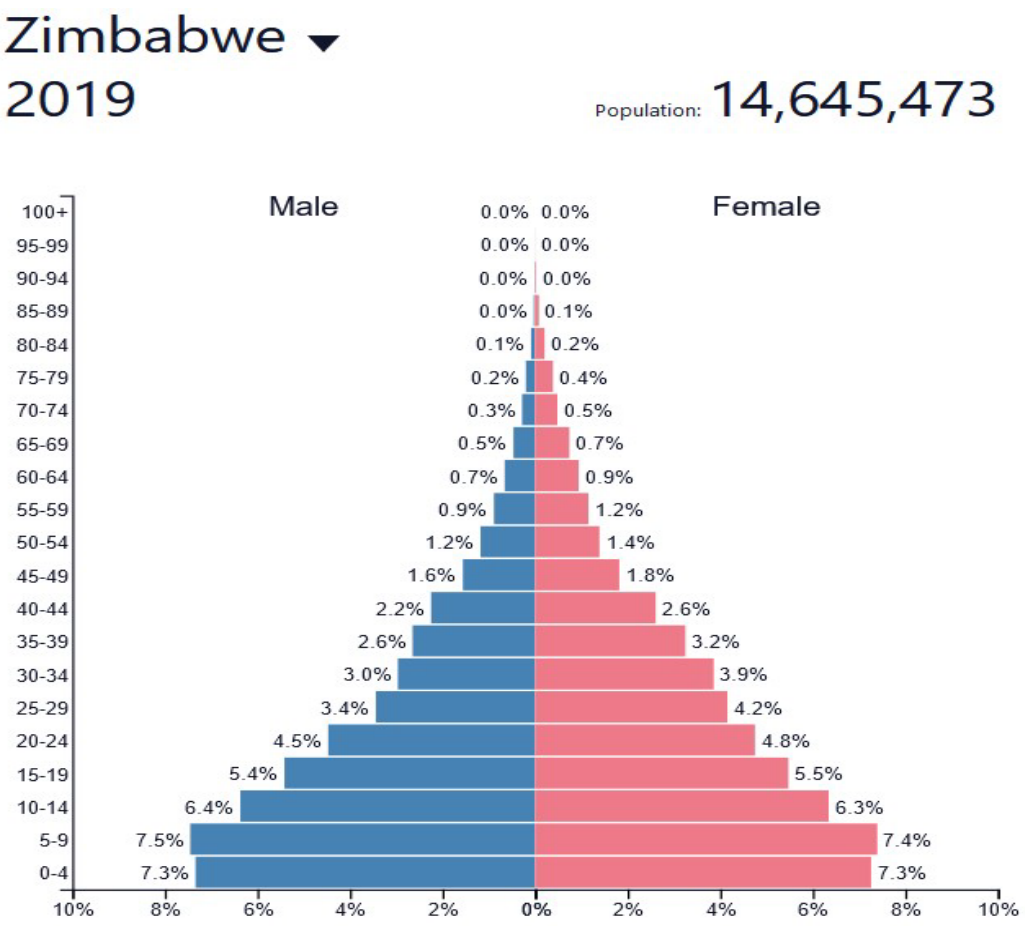

Figure 2.4 Zimbabwe's Population Pyramid, 2019

Source: Adopted from National Health Strategy for Zimbabwe 2016-2020:3

Table 2.2 Top ten causes of death in Zimbabwe 2018

1. HIV/AIDS
2. Lower respiratory infections
3. Tuberculosis
4. Ischaemic heart disease
5. Neonatal disorders
6. Diarrhoeal diseases
7. Stroke
8. Protein-energy malnutrition
9. Diabetes
10. Road injuries

Source: GBD Compare 2018, Zimbabwe

The top three health threats in Zimbabwe are Human Immunodeficiency Virus (HIV), lower respiratory infections and Tuberculosis (TB). These primary health threats adversely impact child mortality and morbidity in Zimbabwe. The conditions are exacerbated by an ailing economy which has crippled healthcare systems and structures in the Republic of Zimbabwe. HIV/Acquired Immunodeficiency Syndrome (AIDS) remains the leading cause of death among adults in Zimbabwe despite a decline in new cases. Tuberculosis remains among the top causes of death in Zimbabwe due to increasing drug-resistant TB. In children aged 2-5 years, pneumonia is the leading cause of death in Zimbabwe (35%), followed by neonatal disorders (25%), diarrhoeal diseases and malnutrition (23%) (Centres for Disease Control in Zimbabwe, 2020; National Health Strategy for Zimbabwe 2016-2020).

2.3 ZIMBABWE'S HEALTH CARE SYSTEM

In terms of the Public Health Act, No. 11 of 2018, Cap 15:17 Section 76 Sub-section 1-4 of the Zimbabwe Constitution, which states that (1) "every citizen, every permanent resident of Zimbabwe, has the right to access basic health care services including reproductive health." Section 81, Rights of Children, (1) cites that "every child, that is to say, every boy and or girl under the age of 18 years, has the right to (f) nutrition and shelter." The Act supports the idea that nutrition and good feeding practices are basic rights for every child in Zimbabwe.

Health care services in Zimbabwe fall under the Ministry of Health and Child Care and are divided into four care levels: quaternary, tertiary, secondary and primary. Each level of care serves as a referral system to the next level. There are six central hospitals at the quaternary level, including Mpilo Central Hospital, where the study was conducted; 8 provincial hospitals at the tertiary level; 63 district hospitals and mission hospitals at the secondary level; and rural health centres and municipal clinics, army, prisons and police clinics at primary level.

At the primary level are 25 mission hospitals, 96 council clinics, 69 private clinics and 1,444 Ministry of Health and Child Care clinics and hospitals. Mission hospitals and clinics contribute 35% of health care delivery in Zimbabwe; 14% of health facilities are in urban areas, while 86% are in rural areas. The public health care system is the largest provider of health care services in Zimbabwe.

Table 2.3 indicates the levels of healthcare services in Zimbabwe. Most specialist doctors are stationed at quaternary levels of care, such as Mpilo Central Hospital, and there are fewer specialists at tertiary care facilities.

Table 2.3 Zimbabwe's Health System Structure

Quaternary Level (Most specialist doctors are located at this level of care)	**Tertiary Level** (Few specialist doctors supported by nurses)	**Secondary Level** (Approximately two doctors supported by nurses)	**Primary Level** (Usually, there are no doctors. Only registered general nurses and primary care cadres)
Total: 6 Central Hospitals	**Total:** 8 Tertiary Hospitals in all provinces	**Total**: 63 Hospitals in Zimbabwe's Districts	Rural Hospitals, Rural Health Centres and Clinics
Parirenyatwa Group of Hospitals	Mashonaland- Mutare General Hospital	-	-
Harare Central Hospital	Mashonaland East- Marondera Provincial Hospital	-	-
Chitungwiza Central Hospital	Mashonaland West- Chinhoyi Provincial Hospital	-	-
Mpilo Central Hospital	Mashonaland Central- Bindura Provincial Hospital	-	-
United Bulawayo Hospitals	Masvingo- Masvingo Provincial Hospital	-	-
Ingutsheni Psychiatry Hospital	Matabeleland North- St Lukes Mission Hospital	-	-
Tertiary Level	Matabeleland South- Gwanda Provincial Hospital	-	-

Adapted from: Zimbabwe Service Authority and Readiness Assessment Report, (ZSARA) 2015.

Central hospitals, such as Mpilo Central Hospital, have the highest referral level in Zimbabwe and are where most specialist services are. Each level of care from the village/community health facility refers cases above their level of care to the next level up to the quaternary/central hospital level of care.

There are six central hospitals in Zimbabwe: Harare Central Hospital, Mpilo Central Hospital, Chitungwiza Central Hospital, Parirenyatwa Group of Hospitals Central Hospital, United Bulawayo Group of Hospitals, and Ingutsheni Central Hospital. The two major central hospitals are Harare Central Hospital in Harare province and Mpilo Central Hospital in Bulawayo province in the Matabeleland region, where the study was conducted.

Zimbabwe is far from the World Health Organization's minimum threshold of 23 doctors, nurses and midwives per every 10,000 population. By 2015, there were 1,6 physicians and 2,3 nurses per every 10,000 (Zimbabwe National Health Strategy 2016-2020). The government mainly funds healthcare services in Zimbabwe from taxes according to a budget from the Treasury.

Health care service is provided in public or government health care facilities, such as government hospitals, or privately funded health care facilities, such as mission hospitals and private hospitals. In public hospitals, fees are subsidised by the government, while medical aid can be utilised in both government and private facilities (Zimbabwe National Health Strategy 2016-2020).

2.4 NURSE EDUCATION AND TRAINING

The Nurses Council of Zimbabwe is the statutory body that regulates the training, practice, and registration of all professional nurses in Zimbabwe under the Health Professions Act, Chapter 27:19 Section 40, part vii. Nurse education and training are offered at basic and post-basic levels.

2.4.1 Basic training

In Zimbabwe, basic nurse training can be presented at a certificate level, such as a Primary Health Care Nursing Certificate, at a diploma level, where one can be awarded a diploma in General Nursing, Psychiatry Mental Health Nursing Diploma, or Diploma in Midwifery depending on what they were studying for and the duration of the programme, or at degree levels, where one can be awarded a degree in nursing, such as a Bachelor’s degree.

The diploma levels are attainable upon successful completion of a 3-year training programme. The entry regulations for the diploma programmes are the same, and the minimum entry requirements are a Zimbabwe General Certificate of Education attained at the Ordinary Level. The examinations to achieve this certificate are taken in the 11th year of school with Grades A to C in at least five subjects, including English Language and a Science subject (Health Professions Council Act Chapter 27:19, Nurses Council of Zimbabwe 2019).

Those who attain at least three ordinary level passes at Grades A to C become eligible to train for a Primary Care Nurses Certificate. After completing the 2-year course, they are deployed to work in rural clinics in Zimbabwe. Their nursing certificate is registered by the Nurses Council of Zimbabwe, just like those who graduate with a diploma or degree in nursing and/or midwifery.

This cadre of nurses is deployed to work in rural clinics in Zimbabwe only, while those with a diploma or degree work in any healthcare setting in Zimbabwe (Health Professions Council Act Chapter 27:19, Nurses Council of Zimbabwe 2019).

The nursing degree programme is a four-year nurse training programme at the university level after attaining pass grades at the Advanced Level. The pass grades lead to a Zimbabwe General Certificate of Education, whose examinations are taken in the 13th year of school. This means that to be eligible to sit for the advanced level examinations, candidates will also have passed the Ordinary Level examinations in the 11th year of school (Health Professions Council Act Chapter 27:19, Nurses Council of Zimbabwe 2019).

2.4.2 Post-basic training

In Zimbabwe, post-basic training for nurses consists of Diplomas in Midwifery, Community Nursing, Nursing Administration, Nurse Anaesthetist, Operating Theatre, Paediatrics, Intensive Care and Coronary Care. Candidates must have at least two years of working experience after completing basic general nurse training before embarking on any post-basic course. Yearly, 155,000 general nurses are trained (Health Professions Council Act Chapter 27:19, Nurses Council of Zimbabwe 2019). After completing a course, professional nurses must register their qualifications with the Nurses Council of Zimbabwe, upon which they will be issued a practising certificate. All professional nurses must renew their practising certificate annually with the Nurses Council of Zimbabwe. It is

illegal for a professional nurse to practice without a valid registration certificate (Health Professions Council Act Chapter 27:19, Nurses Council of Zimbabwe 2019).

To maintain professional competence, the Nurses Council of Zimbabwe requires every nurse to attain 12 credit points to be eligible for the mandatory annual registration to practise in Zimbabwe legally. The 12 points are achieved through continuing development practice (CPD) for updating their skills. The credits for CPD can be achieved through personal reading (articles/journals that are less than ten years), attending workshops, conducting research, and advancing oneself, for example, by attaining a doctorate in nursing (Health Professions Council Act Chapter 27:19, Nurses Council of Zimbabwe 2019).

2.5 REGULATION OF NURSING IN ZIMBABWE

Modern nursing in Zimbabwe began in 1890, pioneered by Dominican Roman Catholic Sisters. During the colonial era, in the erstwhile Southern Rhodesia, the central leadership of nurses was in the hands of European nurses who formed the Rhodesia Nurses Association in 1964. The nurses were registered under various professional bodies, with the final being the Health Professions Council in terms of the Medical, Dental and Allied Professions Act (Health Professions Council Act Chapter 27:19, Nurses Council of Zimbabwe 2019).

With the attainment of independence in 1980, the nursing profession started snowballing, leading to the formation of the Zimbabwe Nurses Association in 1981. The Zimbabwe Nurses Association lobbied for greater recognition of the nursing profession and wished to have a Nurses Council separate from the Medical, Dental and Allied Professions Council. This led to the formation of the Nurses Council of Zimbabwe on 2 April 2001 under the Health Professions Act, 6 of 2000 (Health Professions Council Act Chapter 27:19, Nurses Council of Zimbabwe 2019).

The Nurses Council of Zimbabwe is the statutory body that regulates all professional nurses' training, practice, and registration. It is responsible for the accreditation of health facilities, development of scope of practice, curricula approval, setting of education standards, monitoring of conduct and performance, and training regulations for nursing schools and national universities. The purpose is to protect the health and well-being of the public (Health Professions Council Act Chapter 27:19, Nurses Council of Zimbabwe 2019).

2.6 LINK OF CONTEXT OF STUDY WITH FEEDING PRACTICES

Zimbabwe, once the breadbasket of Africa, succumbed to an ailing economy, erratic weather patterns affecting harvests, poverty, unemployment and economic sanctions, leaving more than 60% of the population food insecure. Vulnerable groups such as children suffer the brunt of the crisis more as they fail to eat a minimum acceptable healthy diet. Cross-border trading and the rise of local manufacture of substandard foods such as “jiggies” has resulted in a change in pattern in what people eat. This has led to poor feeding practices as the country relies on food assistance (United Nations Human Rights, 2019).

2.7 CONCLUSION

This chapter described the study's context, including the country, population profile, health care system and facilities, disease burden, and nurses' education and training. Chapter 3 discusses the research design and methodology of the study.

CHAPTER 3

RESEARCH DESIGN AND METHODOLOGY

3.1 INTRODUCTION

Chapter 2 discussed the study's context, including Zimbabwe, population profile, health care system, disease burden, and nurses' education and training. It also discussed the research design and methodology.

Accordingly, the study wished to answer the following research questions:

3.2 RESEARCH QUESTIONS

1. What are the feeding practices currently utilised by caregivers for their children aged 2 - 5 years in Bulawayo province in Zimbabwe?
2. What are the views of stakeholders regarding current feeding practices for children aged 2 – 5 years in Bulawayo province in Zimbabwe?
3. What are the stakeholders' suggestions regarding feeding practices for children aged 2-5 years in Bulawayo province in Zimbabwe?
4. Which literature on feeding practices for children aged 2-5 years can be obtained through a scoping review?
5. Which content should be included in guidelines for feeding practices for children aged 2-5 years in Zimbabwe?

3.3 AIM AND OBJECTIVES OF THE STUDY

This study aimed to develop guidelines for feeding practices for children aged 2- 5 in Bulawayo province, Matabeleland, Zimbabwe.

Objectives of the study were to:

- Determine caregiver health literacy regarding current feeding practices for children aged 2-5 years in Bulawayo province in Zimbabwe.
- Explore stakeholder views regarding feeding practices for children aged 2-5 years.
- Obtain stakeholder suggestions for guidelines for feeding practices for children aged 2-5 years in Bulawayo province in Zimbabwe.
- To conduct a scoping review to obtain information on feeding practices utilised by caregivers of children aged 2-5.
- Develop guidelines for feeding practices for children aged 2-5 years in Bulawayo province in Zimbabwe.

3.4 RESEARCH DESIGN

Research design is a type of inquiry within quantitative, qualitative and mixed methods approaches that provide specific direction for procedures in a research study (Creswell & Creswell (2023:3, 4). Tan (2018: 5) and Bouchrika (2022:1) cite research design as a systematic way of deciding how to execute research to rule out alternative explanations. According to Polit and Beck (2017:12), a research design can be defined as an overall plan for addressing a research question, including the specifications to ensure the truthfulness of the study. In this study, a mixed methods research design was utilised.

Mixed methods, as cited by Creswell and Creswell (2023:4,5); Dawadi, Shrestha and Giri (2021:25); Creswell (2018:14), is an approach that involves the collection and mixing or integration of both quantitative and qualitative data in a study to have additional insight to a research problem and questions. The mixed method approach lies in the middle of the quantitative and qualitative continuum because it incorporates elements of both quantitative and qualitative approaches in one study. Collection and utilisation of both quantitative and qualitative data in one study neutralise the weaknesses of each form of data (Creswell & Creswell 2023:4,5, 13).

In this study, the researcher wanted better insight into the development of guidelines for feeding practices for children aged 2-5 years in Bulawayo province in Zimbabwe; hence, a sequential explanatory mixed method design was selected for the study. Sequential explanatory design involves collecting and analysing quantitative data first to determine findings that need further investigation, followed by a qualitative research approach and analysis (Skamagki, King, Carpenter & Wåhlin 2022:2; Plano Clark 2019:107).

Creswell and Creswell (2023:16) cite sequential explanatory design as a core design in which the researcher first collects quantitative data, analyses the results, and then builds on them to explain them in more detail with qualitative research. The design is considered sequential because the initial

quantitative phase is followed by the qualitative phase and data analysis. The explanatory sequential mixed methods design is illustrated in Figure 3.1.

Therefore, in this study, the researcher first collected and analysed quantitative data in phase 1 and then collected and analysed qualitative data in phase 2. The results from Phase 1 informed and guided Phase 2, as echoed by (Creswell & Creswell 2023: 16; Creswell & Creswell 2018: 3,5). This was followed by the integration of results of the 2 phases, leading to the development of draft guidelines for feeding practices for children aged 2-5 years in phase 3.

This was to have a clearer picture of the research problem. A sequential mixed method approach gave the researcher better insight and perspective (Molina-Azorin 2019:6) into developing guidelines for feeding practices for children aged 2-5 years in Bulawayo province in Zimbabwe. Mixed methods designs offer a broader scope to examine and present a more detailed account of the phenomenon under study (Creswell & Creswell 2023:xxii, 5; Creswell & Creswell:2018:5; Whitehead & Schneider 2013: 268). This enables researchers to gain profound insight into the phenomenon and participants' perceptions and experiences. The researcher considered a mixed methods research design appropriate for obtaining data from participant caregivers on their health literacy and feeding practices for children aged 2-5 years and securing participant professional nurses' and stakeholders' views and suggestions on methods to improve caregivers' feeding practices for children aged 2-5 years in Bulawayo province, Zimbabwe.

The researcher conducted the study in three phases. Quantitative data was collected in phase 1, and qualitative data in phase 2. The sequence followed in the mixed methods approach utilised in the study was related to the research objectives, as echoed by Molina-Azorin (2019: 6). In phase 3, the researcher integrated the quantitative and qualitative findings (results) to develop and refine the guidelines by achieving consensus, using the Delphi technique. Plano Clark (2019:108) refers to integration as "the explicit conversation between (or interrelating of) the quantitative and qualitative components of a mixed methods study". Figure 3.1 depicts the sequential mixed methods research design (Plano Clark 2019:107).

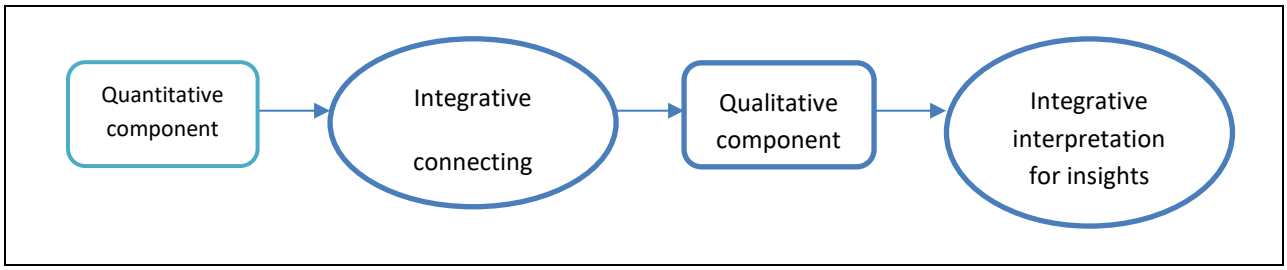

Figure 3.1 Sequential mixed methods design

Source: Plano Clark 2019:107

3.5 RESEARCH METHODOLOGY

Research methodology is a series of logical steps taken when conducting research, from formulating a research problem to concluding. Research methodology links theory and evidence, including using agreed standards to maintain rigour Tan (2018:4); Creswell & Creswell (2023:3,6). Ramroodi (2021:1) cites research methodology as a systematic way to solve a research problem by collecting data using various techniques, interpreting the collected data and drawing conclusions about the research data. It is the basis for research. Research methodology is the plan for conducting the specific steps of a study (Gray, Grove & Sutherland 2017: 683). Research methods are the techniques or tools researchers use to collect, structure and analyse data systematically. The research methodology includes the population, sample and sampling, data collection, analysis and interpretation (Polit & Beck 2017:743). The research methodology for each phase is discussed next.

3.5.1 Phase 1: Quantitative component

During Phase 1, the researcher wanted to determine the current feeding practices of caregivers of children aged 2- 5. The phase discussed the population, sampling, data collection, pilot study, data collection process, data analysis, and rigour.

3.5.1.1 Population

Turner (2020:8), Casteel and Bridier (2021:343), and Gray, Grove, and Sutherland (2017:687) cite the study population as the total set of relevant individuals/groups one seeks to understand and to whom or to which the study results may be generalised.

In phase 1, the population consisted of all caregivers of children aged 2-5 years who were admitted at Mpilo Children's Hospital in the past three months with malnutrition had children aged 25 years who were admitted to the nutrition unit in the hospital for nutritional rehabilitation before they could be discharged; had brought their children aged 2-5 years to the out-patients department for review after discharge from the hospital for malnutrition, or had come to Mpilo Children's Hospital for other services, such as immunisations, to determine the feeding practices they utilised.

3.5.1.2 Sampling and sample size

Sampling is the selection of a subset of the population of interest in a research study (Gray, Grove & Sutherland 2017:691; Turner 2020:8). The purpose of sampling is to increase the efficiency of a study by concentrating on a smaller number of subjects rather than the entire population (Brink, van der Walt & van Rensburg 2018:94). A sample refers to a subset of a population (individuals, elements or objects) or a group selected to act as representatives of the population as a whole (Polit & Beck 2017:275; Casteel & Bridier 2021:350). After obtaining the research ethics approval

and permission from Mpilo Hospital management, the Medical Research Council of Zimbabwe, and the University of Pretoria permission to conduct the study at Mpilo Central Hospital Children's Hospital, the researcher approached the nurses in charge of the medical wards, the outpatient department, and the nutrition unit to assist her with the recruitment of caregivers who complied with the inclusion criteria and who were willing to participate. In phase 1, the researcher used nonprobability convenience sampling to select a sample of 260 caregivers from the accessible population who met the inclusion criteria (Etikan, Musa & Alkassim 2016:3). Sample distribution of data collected is shown in Table 3.1.

Table 3.1 Sample distribution for data collection for Phase 1

UNIT	NUMBER OF CAREGIVERS	TOTAL
Medical wards	165	165
Out-patients department	30	30
Nutrition unit	65	65
Grand Total		**260**

Inclusion criteria

To be included in the study, the caregivers had to:

- Be 18 to 64 years of age. Sixty–five years is a vulnerable age group with potential confounding factors such as chronic health conditions. Many may have transitioned into retirement at this stage, which can alter daily routines and caregiving responsibilities. As such, the researcher opted for 64 years.
- Care for children aged 2 to 5 years who were admitted at Mpilo Children's Hospital with malnutrition; were admitted to the nutrition unit in the hospital for nutritional rehabilitation before being discharged; were brought to the out-patients department for review after discharge from the hospital for malnutrition, or were brought for other services, such as immunisations.
- Be willing to participate voluntarily.

- Be literate and able to understand English. If participants could not complete the questionnaire themselves, fieldworkers assisted them. The fieldworkers received training before being allowed to participate in the data collection process. Their training is elaborated below:

3.5.1.3 Training of fieldworkers

The researcher trained three fieldworkers before data collection to ensure uniformity, effectiveness, and quality and to assist the researcher. The field workers were nurses who worked in the medical wards and nutrition unit and volunteered to assist in data collection. The training lasted half a day and covered explaining the participant information leaflet and informed consent form, emphasising the importance of obtaining participant caregivers signed informed consent and reading through the questionnaire's three versions (English, Shona, and Ndebele).

The researcher told the fieldworkers to allow the caregivers to read and understand the purpose and nature of the study, what informed consent means, and ask any questions before signing the form. Adherence to ethical considerations such as voluntary participation and the right to withdraw from participation at any time without penalty, even after initially agreeing to participate in the study, was also emphasised.

3.5.1.4 Data-collection instrument

Data-collection instruments are the tools researchers use to collect data on a research topic (Polit & Beck 2017:726). In phase 1, the researcher used Dara Musher-Eizenman and Holub's (2007) Comprehensive Feeding Practices Questionnaire (CFPQ), which consisted of 12 subscales (composed of 49 items that cover feeding guidance, restriction and pressuring, using food to regulate behaviour and providing an appropriate environment [the availability of healthy food]). Permission to use the instrument was granted by the owner, Dara Musher-Eizenman (view Annexure B2).

The questionnaire was developed to measure parental feeding practices in the United States of America (USA). Musher-Eizenman and Holub (2007) state that the questionnaire is adaptable for use in any setting, including low-income countries; therefore, the researcher adapted some of the questions to apply to practices, cultures, and foods available in Bulawayo province, Matabeleland, Zimbabwe. This was done by consolidating the CFPQ with the WHO/UNICEF (MICS 2016-version 6) as per the recommendation of the Medical Research Council of Zimbabwe (MRCZ) before they could approve the study to be carried out in Zimbabwe. According to the information on the UNICEF MICS webpage (https://mics.unicef.org/faq), "MICS makes available a set of standard questionnaires that countries can customise to their needs." The "MICS tools can be downloaded and used – either

partially or completely – for the implementation of any survey." The changes were informed to the University of Pretoria Ethics Committee. (View Annexure B1) in February 2021 when the Amendment forms were filled in.

The questionnaire (CFPQ) was translated and reverse-translated into Shona and Ndebele by a colleague at the University of Zimbabwe, a collaboration that enhances the research's credibility. The questions from WHO/UNICEF (MICS 2016-version 6) were already translated into the two local languages from WHO/UNICEF. The correctness of the two languages was confirmed through pilot testing, in which the participants clearly understood the questions without problems.

✓ ***Pre-testing of the instrument***

A pre-test of a data collection instrument is done to determine whether the instrument is worded and free from significant biases and solicits the desired information (Polit & Beck 2017:740; Brink, van der Walt & van Rensburg 2018:94). Pre-testing provides an opportunity to try out the technique or instructions that will be used with an instrument, primarily if the instrument has not been used with a specific population, as in the case of this study. Pre-testing is done on a small scale before the primary research, and the participants of a pre-test should not be part of the main study (DZWIGO 2020:6; Pearson et al. 2020: 2,3; Gray, Grove & Sutherland 2017: 686). The researcher tested the questionnaire with three caregivers who met the inclusion criteria and were not part of the main study. The caregivers were approached by the staff in the medical wards, the outpatient department, and the nutrition unit. They were asked if they would be willing to complete the questionnaire to determine the clarity, design and style of the questions so that, if necessary, adjustments could be made and the time needed for completing the questionnaire (Plowright 2011:88). Once they agreed to complete the questionnaire, the researcher and fieldworkers met with them to explain the aim of the study and what is expected of them. All three signed consent before they completed the questionnaire. Based on their feedback, no changes to the questionnaire were required.

✓ ***Reliability of the instrument***

Burns and Grove 2015:510 cite reliability as how consistently an instrument measures the concept of interest. In this study, pre-testing was done to enhance reliability. This was to know if all the questions were understandable and could quickly be responded to. Field workers were also trained to ensure consistency in data collection. Musher-Eizenman and Holub (2007:969) indicated they know less about the CFPQ's reliability. "The internal consistency (coefficient alpha) of most of the scales was moderate to high, but this index of reliability was lower than desired for some of the scales in some of the samples."

✓ ***Validity of the instrument***

The study ensured the validity of the instrument by using a validated instrument such as the Comprehensive Feeding Practices Questionnaire (CFPQ). Musher-Eizenman and Holub (2007:966) validated the CFPQ by running a confirmatory factor analysis "to examine if the anticipated factor structure of the items was retained across the larger pool of items and constructs and the wider age span of children." The fit of the final model was good [w2 (1061)¼1580, RMSEA¼.057, CFI¼.98]." They furthermore calculated bivariate correlations to examine if the 12 subscales related to one another in theoretically expected ways. Bivariate correlations were also calculated to examine the external validity of the subscales. The questionnaire was relevant as it was used in other low-income countries. The validity of the MICS version 6 questionnaire was also established in several low-income countries. This rigorous validation process provides reassurance about the accuracy and reliability of the instrument.

3.5.1.5 Data collection

Data collection is the process of collecting information (data) related to research questions in a systematic way to address a research problem (Polit & Beck 2017:725). In phase 1, the researcher and three trained fieldworkers collected quantitative data using a structured questionnaire (view Annexure B1). The researcher trained the fieldworkers to ensure the same process for data collection. One field worker collected data in the nutrition unit, one in the outpatient department, and one in the medical wards. The researcher collected data in the second medical ward. The researcher also oversaw the data-collection process. Data collection took place between January and March 2020.

The researcher or the fieldworkers explained the purpose and nature of the study to the caregivers. They gave them a participant information leaflet and consent document (PICD) (see Annexures B3i and B3ii) to read and ask any questions for clarification, if necessary. The caregivers who indicated they wished to participate signed the informed consent form (see Annexure B4). The participants were then given a questionnaire to complete. The questionnaires were numbered, and no caregivers' or children's names were given. The fieldworkers assisted any caregivers who had difficulty completing the questionnaires themselves. The participants deposited the completed questionnaires in the sealed containers provided in the units where data was collected.

3.5.1.6 Data analysis

Data analysis is the process of organising and describing data. Data analysis is conducted to reduce, manage and give meaning to collected data (Gray, Grove & Sutherland 2017:675). In quantitative research, analysis techniques include descriptive and inferential analysis. A statistician analysed the quantitative data. The data were collected in Microsoft Office 2016. IBM SPSS Statistics version 26 was used to conduct the analysis. First, data cleaning was performed to check for anomalies in the data and correct them if necessary. Following data cleaning, the following analyses were conducted: Frequency table (counts and percentages), test for the association; depending on the number of expected counts and rows and columns, the chi-square test, Fisher's exact test or Fisher Freeman-Halton Exact test was performed, to test the association between demographic variables and the feeding practises items.

The items on feeding practice were evaluated to calculate the composite scores for the different feeding practices, and the descriptive statistics (mean, standard deviations) were performed for the composite scores. Finally, the Mann-Whitney non-parametric and Kruskal Wallis tests were performed to test whether the composite distribution for the feeding practices differed between the demographic variables.

3.5.2 Phase 2: Qualitative phase

In phase 2, the researcher used a qualitative approach to explore the participant stakeholders' views regarding feeding practices for children aged 2-5 and obtain their suggestions for guidelines

for feeding practices for children aged 2-5 in Bulawayo province, Matabeleland, Zimbabwe. This was done through group interviews.

3.5.2.1 Population

In this phase, the population consisted of stakeholders, including nurses, doctors, paediatricians and nutritionists in the hospital's medical wards, out-patients department and nutrition unit. The researcher informed the prospective participants of the aim and objectives of the study during regular staff meetings held in the wards and unit. During these meetings, the researcher invited all stakeholders to participate voluntarily.

3.5.2.2 Sampling and Sample

The researcher used purposive sampling to select information-rich participants because of their experience and knowledge (Etikan, Musa & Alkassim 2016:2). All the stakeholders who met the inclusion criteria were invited to participate. Casteel and Bridier (2021:350) cite purposive sampling as intentionally selecting participants based on their characteristics. To be included, the stakeholders had to have worked in the selected hospital's medical wards, out-patients department and/or nutrition unit for at least one year. Out of 15 stakeholders, 12 agreed to participate. The sample consisted of 12 stakeholders: one paediatrician, one doctor, two nutritionists, and eight nurses. Table 3.2 presents the stakeholders' demographic profile.

- ✓ ***Group formation***

This study utilised Tuckman and Jensen's (1977) stages of small group development as they are easy to follow and appropriate for application to qualitative inquiry with group interviews. There are five sequential stages: Forming, Storming, Norming, Performing, and Adjourning (Guthrie 2020:98). Small groups were formed to enhance participation and gather diverse perspectives, leading to comprehensive decision-making. The small groups consisted of a doctor, a nurse, and a nutritionist, while the larger group comprised the 12 stakeholders, the researcher, and the supervisor. This led to a total of 14 participants.

Table 3.2 Stakeholders' demographic profile

DESIGNATION	YEARS OF TRAINING	AGE CATEGORIES	QUALIFICATION	EXPERIENCE IN WORKING WITH CHILDREN	CURRENT POSITION
Nutritionist	Four years	36-45	Degree in Nutrition and Dietetics	15 years	Senior Nutritionist
Nutritionist	Four years	46 and above	Degree in Nutrition and Dietetics	35 years	Chief Nutritionist
Senior Assistant Registrar	Seven years	36-45	MBBS	Six years	Senior Registrar
Senior Assistant Registrar	Seven years	25-35	Degree MB ChB	Five years	Hospital Medical Officer (paediatrician)
Senior Registered General Nurse	Four years	36-45	Diploma in General Nursing and Midwifery	20 years	Senior Sister
Senior Nursing Officer 2 (Senior Matron)	Four years	46 and above	Diploma General Nursing, Nursing Administration, Midwifery and Paediatrics	33 years	Senior Matron
Registered General Nurse and Midwife	Four years	25-35	Diploma General Nursing and Midwifery	Ten years	Senior Sister
Registered General Nurse	Four years	25-30	Diploma General Nursing, Certificate in Paediatric Nursing	Eight years	Senior Sister
Registered General Nurse, Midwife	Four years	36-45	Diploma General Nursing, Certificate in Paediatric Nursing	15 years	Senior Sister
Registered General Nurse, Midwife	Four years	25-35	Diploma General Nursing, Certificate in Paediatric Nursing	Seven years	Senior Sister
Registered General Nurse, Midwife	Four years	25-35	Diploma General Nursing, Certificate in Paediatric Nursing	13 years	Senior Sister
Registered General Nurse, Midwife	Four years	36-45	Diploma General Nursing, Certificate in Paediatric Nursing	13 years	Senior Sister

- ✓ ***Forming Stage***

This stage occurred at the beginning of the group formation, where the researcher purposively selected the stakeholders and invited them. The researcher identified fifteen stakeholders and asked them to participate. The stakeholders were healthcare personnel working in the children's hospital chosen according to their professional expertise, years of experience in child feeding, and willingness to participate in the group interviews.

A total of 12 participants were recruited after they registered their willingness to participate by signing informed consent.

- ✓ ***Storming***

This is when the participants adjust to the environment conducive to the group interview. The tables were arranged in a semi-circle to encourage viewing of each other and ensure that the researcher and the group of participants could make easy eye contact with each other, thereby enhancing the frequency of interaction, friendliness, and cooperation (Johnson & Johnson, 2013). With the researcher leading, individual introductions were made to the participants, and the purpose of the group interview was given. Interview questions were distributed to the small groups who, after their discussions, gave feedback to the larger group. The stage enabled monitoring of discussions and modelling expected behaviours in the group (Guthrie 2020:98).

- ✓ ***Norming***

Through group norms, trust, and honesty, the small groups and the larger group instilled a feeling of cohesion. The participants created the group norms while the researcher wrote them down. The small groups comprised a nurse, dietician, and doctor, while the larger group included the 12 stakeholders, the researcher, and the research supervisor.

- ✓ ***Performing***

This was the working stage in which the actual discussions took place. The participants were comfortable and open to discussing feeding practices for children aged 2-5 years in Bulawayo province in Zimbabwe. This was evidenced by sharing in small groups after individual silent reflections and comparing the feedback to the larger group by each small group, thereby making rich meaning of the data from the participants' experiences and recommended foods for this age group.

- ✓ ***Adjourning***

This was the final stage, where the researcher summarised and informed the participants of the agreed-upon experiences and recommendations that came out of the group interview, as well as the next step of putting together the rich data to draft guidelines for feeding practices for children aged 2-5 years in Bulawayo province in Zimbabwe. The researcher also informed the participants that they would each get information on the final guidelines after the experts had reviewed and refined them. The participants were also given the researcher's contact details should they have any questions or additional information they wanted to add even if the group interviews were finished (Guthrie 2020:99). Following the stages enhanced group cohesion in this phase (Guthrie 2020: 100).

3.5.2.3 Data collection

Qualitative data was collected from the participants in group interviews during a one-day workshop. Focus groups allow experts to come together and discuss an issue, enabling complete responses (Matthews, Wallace & Robinson 2017:554). Group interviews in qualitative research refers to a data collection method that focuses on discussing and exchanging opinions and experiences with the participants (Muijeen, Kongvattananon & Somprasert 2020: 359; Brown 2018:1). The researcher selected group interviews because they are time and cost-effective (Polit & Beck 2012:341). The group interviews enabled the researcher to understand designated topics in-depth by drawing upon respondents' feelings, beliefs, experiences and knowledge. The participants were one large group of 14 participants, including the researcher and the research supervisor (Professor Isabel Coetzee-Prinsloo).

All 12 participants signed informed consent before participating in the group interviews (see Annexure D2). The venue was convenient as it was a boardroom usually used for meetings and was familiar to the participants. The spacious room allowed the participants a clear view of each other during the group interviews. It was large enough to provide social distancing, given that COVID-19 regulations were in place during the group interviews. Fostering a conducive environment in group interviews is essential for facilitating a rich collection of meaningful information from the stakeholders and enabling the group to establish group cohesion and trust (Guthrie 2020:94). Face masks and sanitisers were availed in line with COVID-19 regulations.

According to Guthrie (2020: 94), group interviews fostered rich meaning-making in qualitative research and were utilised in this research. Richness is characterised by details, thick descriptions, and careful construction, which are essential for the credibility of a study's findings. The group interview was viewed in this study as a discourse between the interviewer and interviewee through the data collection method utilised. Group interviews also increase the rigour of the study. Through sharing and comparing their responses with each other, group interview participants create a shared understanding of the complexity of meaning through discourse and reflection. Silent individual reflection can help group members acknowledge their unique contributions to the interview (Guthrie 2020:104, 102).

The proceedings started at 09:00 hours. The researcher welcomed everyone present to the workshop and then introduced her supervisor, Professor Isabel Coetzee-Prinsloo, who was connected to the group via Zoom with a camera and facilitated the proceedings. Each participant brought their laptop and/or smartphone for this purpose.

The participants agreed to have their cameras on as well. The researcher then gave an overview of the aim and objectives of the study, the findings of phase 1, and the purpose of the group interviews.

The researcher divided the participants into three groups. Each group consisted of stakeholders by profession for the diversity of knowledge and experience in child nutrition. Hence, Group 1 consisted of one doctor, one nutritionist, and two nurses, including a senior

nurse. Group 2 consisted of 1 doctor and three nurses, and Group 3 consisted of one doctor, one nutritionist and two nurses, one of whom was a senior matron. The groups' composition allowed for various experiences and knowledge of feeding practices for children aged 2-5 years in each group. The researcher's supervisor facilitated the group interviews because of her more expansive knowledge and expertise in this data collection method, and the researcher took notes during the discussions. The group interviews were audio-recorded with the participant's permission. The group interviews lasted two and a half hours and included an introduction and refreshments. At the end of the group interviews, The researcher thanked the participants for participating. View the process of the group interviews below in 3.5.2.4

Figure 3.2 depicts the participants' reflections during the Mpilo Children's Hospital group interviews on 18 June 2021.

Figure 3.2 Group interview meeting at Mpilo Children's Hospital, 2021
[Photograph taken and displayed with participants' permission].

3.5.2.4 Data-collection instrument

The researcher compiled an interview guide (see Annexure D3) to explore the participants' views on current feeding practices and obtain suggestions for guideline statements for feeding practices. To encourage reflection, the questions were open-ended and brief enough for

participants not to experience fatigue or feel that they were completing an assignment (Guthrie 2020: 94). The same was applied in this study.

The interview guide consisted of three questions:

- ✓ What foods have you observed caregivers of children aged 2-5 years feed their children while admitted to the hospital?
- ✓ What are the ideal feeding practices caregivers should utilise when feeding their children aged 2-5 years?
- ✓ What content should be included in guidelines for feeding practices for children aged 2-5 years in Bulawayo province, Matabeleland, Zimbabwe?

The researcher distributed Question 1 to the three groups on manila sheets. The participants were then allowed the first five minutes of the group discussion for individual silent reflection on the question and what they had seen caregivers feed their children admitted for malnutrition. Individual silent reflection was essential because, as cited by Guthrie (2020:105), it bolsters data collection and encourages group cohesion by sharing thoughts, feelings, and experiences with the group and linking the responses.

After the five minutes, each group discussed their question for 30 minutes before convening with the rest of their group for discussion. Then, all the participants convened as one large group to present their findings and for further discussion. All the groups were free to move around. Feedback on the presentations was done on manila sheets, which were pasted on the wall. The facilitator followed the interviews closely and interacted with each presenter and the whole group. The exact process was repeated for questions 2 and 3.

3.5.2.5 Data analysis

Qualitative data analysis is the systematic organisation and synthesis of data to establish order, structure and meaning to the data collected (Polit & Beck 2017:725). The researcher used content analysis to analyse the data following the group interviews. The content analysis enables a systematic coding of data by organising data into categories to discover data patterns (Nyumba, Wilson, Derrick & Mukherjee 2017:24). The researcher transcribed and read the data collected during the group interviews. The researcher immersed herself in the data by reading and re-reading the transcripts to understand the whole.

Codes were used in data analysis to maintain confidentiality. All data was organised with date, time and code number allocated to maintain confidentiality. The researcher's supervisor was the co-coder. At the same time, the researcher wrote notes and headings in the margins of the transcripts (open coding) to emphasise similarities and differences in the data. Subcategories with similar events and incidents were grouped as categories. Each category was named, and similar categories were grouped as themes.

The researcher repeated the abstraction process until the number of categories had been reduced. Integration of the results of the two phases led to the drafting of guideline statements (see Table 3.3).

Table 3.3 Stakeholder guidelines for feeding practices for Question 1

GROUP 1	GROUP 2	GROUP 3	STAKEHOLDER CONSENSUS ON QUESTION 1
Maheu (bought in a variety of sachets and manufacturers	Homemade Maheu	Homemade Maheu	Maheu
Jiggies	Jiggies	Jiggies	Jiggies
Sadza/pap	Sadza	Sadza	Sadza
Soup	Soup	Mirinda (almost similar to Twizzer and Pepsi)	Soup
Rice	Chunks (soya mince)	Rice	Rice
Maputi (similar to popcorn)	Maputi	Maputi	Maputi
Instant porridge	Instant porridge Mealie meal porridge with peanut butter, Plain Mealie meal porridge	Plain porridge and Instant porridge, such as Ace	Instant porridge, Plain porridge, Mealie meal porridge with peanut butter
Pepsi	Pepsi	Pepsi	Pepsi
King curls	Sweet potatoes	Go-slow chips (almost similar to jiggies)	Chips
Bananas	Bananas	Bananas	Bananas
Oranges	Oranges	Oranges	Oranges
Freezits	Freezits	Freezits	Freezits

Jolly juice (sweetened powdered sugar with colouring, which is then mixed with cold water before drinking)	Jolly juice	Mazowe	Jolly juice
	Potatoes		
	Lacto (sour milk)	Lacto	Lacto
	Eggs	Eggs	Eggs
	Sugar beans	Beans	Beans
	Vegetables	Cabbage, Chomolia	Vegetables
	Fat cakes		
	Bread with peanut butter	Plain bread	Bread
	Beef	Beef	Beef
	Chicken	Chicken	Chicken
	Mincemeat	Soya mince	Soya mince/chunks
	Dried kapenta		
	Dried vegetables		
	Fresh chips		
	Butternut	Butternut	Butter nut

Table 3.4 Stakeholder Guidelines for Question 2

GROUP 1	GROUP 2	GROUP 3	CONSENSUS/MERGING FOR QUESTION 2
Eliminate non-nutritious foods from the diet, e.g. Jiggies, Maheu, Sweets, Maputi, Freezits, Fizzy drinks	Porridge with peanut butter or powdered matemba (fish)	Fortified porridge with peanut butter	Porridge with peanut butter Do not give non-nutritious foods like jiggies
Health educates caregivers on certain myths and misconceptions, e.g. children not to be given eggs for fear of getting epilepsy. Adults get more meat portions than children to the extent that, at times, children only get broth.	Macimbi (Mopani worms) Roasted powdered seeds/oil Margarine Fruits, e.g. bananas, oranges, mangoes, guavas	Supervise feeds Allow enough time to eat Assist in feeding Teach them to feed themselves	Prioritise children in feeding Assist in feeding, avoid myths and misconceptions in feeding of children Supervise feeds Teach independent feeding
Children 2-5 years to be fed a balanced diet of carbohydrates, proteins, minerals and fats	Milk Marula fruit milkshake Bread with peanut butter Melon or pumpkin porridge Eggs Sweet potatoes Fat cakes Include all food groups' variety with each meal	Healthy drinks, e.g. Milk, Fruit juices	A balanced diet with proteins and carbohydrates, fruits, vegetables
4-6 meals a day	5-6 meals a day	5-6 meals a day	5-6 meals a day
Avoid giving snacks before meal times.	<u>Lunch (Afternoon)</u> Sadza Rice Pasta, Potatoes Chicken Beef Mincemeat Sour milk Yoghurt Fruits	Balanced diet	Healthy drinks such as milk

	Mopane worms Dried fish/Fresh fish Pork Goat meat Ants Local insects Chunks Vegetables	Prioritise children in Feeding	Dairy products such as yoghurt Prioritise children in feeding
	Butternut mixed with milk. Maheu Maputi	Healthy snacks e.g. Peanuts	Role modelling good feeding practices
	<u>Evening</u> As for lunch but with variations from afternoon plus snack	Proteins in every meal, e.g. Meat Soya mince Beans	Healthy snacks
	Role modelling what they observe adults eating	Indigenous fruits in season	
		Dairy foods Lacto Yoghurt for micronutrients	
		Fruits and vegetables	

Table 3.5 Stakeholder Guidelines for Question 3

GROUP 1	GROUP 2	GROUP 3	CONSENSUS/MERGING FOR QUESTION 3
What a balanced diet consists of	Inclusion of Indigenous foods and their nutritional content	Balanced diet	A balanced diet and its components. Local food sources
Food sources of the required nutrients to make a balanced diet	Foods to give based on medical condition, e.g. diarrhoea, pneumonia	5-6 meals a day	Emphasis on Indigenous or locally available foods
Consequences of poor feeding	Government policy on fortified foods to be clear to all caregivers	Prioritise children in feeds	Prioritising children in feeds Government policy on fortified foods
Types of foods to avoid and why	Emphasis on 5-6 meals a day	Supervision of meals by caregivers	Supervising feeds
Safe food preparation practices	Government interventions on food subsidies	Fruits serving daily	Frequency of feeds, e.g. 5-6 times a day
Traditional and cultural feeding practices	Meal plans that cater for city, peri-urban and rural areas based on availability in the region	Indigenous foods	Types of foods to avoid in children
Misconceptions to be avoided	Health education to caregivers on naturally available foods	Health education to caregivers, i.e. Dietary counselling at entry points, e.g. Out Patients Department	Independent feeding
	Assistance with independent feeding	Staple foods fortification by manufacturers, e.g. bread, mealie meal, porridge	Safe food preparation practices
	Supervise feeds	Health education on food labelling	Health education at entry points
	When caregivers should worry about feeding habits		Traditional and cultural myths and misconceptions are to be avoided.
	Role modelling emphasis		Consequences of poor feeding
			Government policy on fortified foods

GROUP 1	GROUP 2	GROUP 3	CONSENSUS/MERGING FOR QUESTION 3
			Caregivers should be vigilant about food labels and the nutritional content of foods given to children.
			When to worry about child feeding practices
			Role modelling by caregivers
			Foods to give when a child has a medical condition

- ✓ **The group norms were:**

Respecting each other's views, being non-judgemental, active participation, de-rolling, respect for each other, and cell phones on silent.

The group norms encouraged group cohesion and trust, essential for the group interviews (Guthrie 2020:96).

3.5.2.6 Trustworthiness

The quality of the qualitative phase was determined through trustworthiness. Confidentiality was maintained throughout the group interviews to ensure participants felt free to share their views without fear of criticism. Sharing of thoughts, feelings, and experiences was done in a non-judgemental way. All the participants were treated with respect, and the environment was non-threatening to ensure they felt comfortable sharing their honest opinions and experiences. This was enhanced by formulating agreed-upon group norms to build rapport at the beginning of the group interviews. Trustworthiness was ensured through the following:

- ✓ ***Credibility***

Liamputtong (2017:521) cites credibility as confidence in the truth of the data and its analysis. In this study, the researcher explained the purpose of the group interviews at the beginning of the proceedings to ensure that all the stakeholders were conversant with the discussion and the proceedings. There was prolonged engagement with the stakeholders, as the talks were ongoing throughout the workshop. Feedback was given through presentations to the larger group of participants.

- ✓ **Transferability**

The stakeholders were selected through a purposive sampling of healthcare professionals with relevant experience and knowledge in feeding practices utilised by caregivers of children aged 2-5 years at the designated children's hospital. Information-rich participants enhance transferability by providing sufficient information for comparisons with other situations. The

researcher also provided a detailed description to contextualise the study, enabling readers to determine to what extent their context matches the research context (Merriam & Tisdell, 2016:258-259).

- ✓ **Dependability**

Nasa, Jain, and Juneja (2021:118) cite the need for diversity in selecting a panel of experts to enhance the generalisation of consensus. In this study, stakeholders comprised doctors, nurses, and nutritionists to get diverse information on feeding practices for children.

- ✓ **Confirmability**

In this study, data consistency was maintained by accurately capturing all information discussed by the stakeholders in each group and when they presented it to the larger group. The researcher did not influence the proceedings to allow the participants to discuss freely without bias. Liamputtong (2017:521) cites data consistency as essential in maintaining confirmability.

3.5.3 Phase 3: Development and refinement of guidelines

The results from phases 1 and 2 were integrated, as suggested by Creswell and Creswell (2023: 4) and Creswell and Plano (2018: 14), to draft, develop, and refine guideline statements for feeding practices for children aged 2-5 in Bulawayo province, Matabeleland, Zimbabwe. Plano Clark (2019:108) refers to integration as "the explicit conversation between (or interrelating of) the quantitative and qualitative components of a mixed methods study".

3.5.3.1 Development of guidelines

After integrating the results from phases 1 and 2, the researcher used the Preferred Reporting Items for Systematic Reviews and Meta-Analyses extension for the Scoping Review Checklist (PRISMA-ScR) and Arksey and O'Malley's (2005) framework in Phase 2 (Stage 1: identifying the research question Stage 2: identifying relevant studies Stage 3: study selection Stage 4: charting the data Stage 5: collating, summarising and reporting the results) to assist in gathering literature to achieve objective 3 of Phase 2. These stages are discussed in the article in Chapter 4.

The researcher used ERIC, MEDLINE, PubMed, CINAHL, PsycINFO, and Scielo electronic databases to identify and review articles published since 2010.

The search was restricted to articles regarding studies in which the Comprehensive Feeding Practice Questionnaire had been used, studies on feeding practices applied to children aged 2 to 5, and studies conducted in low—and middle-income countries.

The researcher then developed and drafted the guidelines based on the information from Phase 1 and Phase 2 and the stakeholders' inputs (view Annexure E3). As well as the guidance and

recommendations of the two supervisors. The experts then refined the guidelines in 3 rounds. View experts' profile in Table 3.6

3.5.3.2 e-Delphi techniques

3.5.3.2.1 Population

In this phase, the population consisted of three experts recruited electronically based on their expertise in guideline development. Two experts were from Zimbabwe, while the third one was from outside Zimbabwe. The experts were not aware of each other, as confidentiality and anonymity were maintained throughout. The researcher informed the participants of the study's aim and objectives in the invitation letters, and that participation was voluntary. Table 3.6 depicts the demographic profile of the experts.

Step 1: Sampling / Selection of experts

In this study, three experts participated to reach a consensus on the guideline statements. A panel of three experts was appointed electronically. The experts were selected purposively based on their knowledge and experience of the phenomenon under investigation, capacity and willingness to participate, sufficient time to participate, and practical communication skills. The participants were experts in the field of child feeding practices and/or guideline development, and each of them had more than 20 years of experience in their field of practice.

The experts were all health professionals with a minimum academic qualification of a Master's Degree in their field of speciality. Five experts met the inclusion criteria initially, but only three were available to participate in the study. View Table 3.6 for experts' profiles. The questions for expert opinion were in the form of guideline statements developed by the researcher based on the results of phases 1 and 2 and the literature reviewed. (View Chapter 6) for developed guideline statements). Each expert would then rate the guideline statements.

3.5.3.2.2 Summary of experts' inclusion criteria

- Healthcare professionals with at least five years of experience in service and willingness to participate in the e-Delphi process.
- Knowledge and experience in guideline review and paediatrics experience
- Have a minimum of a Master's Degree in Health Sciences
- Willing to participate

The e-Delphi technique is a systematic forecasting process using experts' collective opinions. The research approach is an effective method for collecting and synthesising informed opinion on a specific area or problem from a panel of members, and its strength is the anonymity of panellists (Nasa, Jain & Juneja 2021:116; Whitehead & Schneider 2013:269). The e-Delphi method aims to converge expert opinions, thereby extracting consensus on the investigated topic (Whitehead & Schneider 2013:270).

Table 3.6 Experts' demographic profile

Designation	Qualification	Expertise	Experience in guideline review/paediatrics	Current Position
Expert 1	Masters in Paediatric Medicine	Guideline reviewer	+20 years	Specialist Paediatrician Deputy Executive Dean, Senior Lecturer Paediatrics, Zimbabwe Council for Higher Education (ZIMCHE) academic programs reviewer, Expert Guideline reviewer, Paediatric nutrition consultant
Expert 2	Professor, PhD	Guideline reviewer	+20 years	Clinical Director, Professors Obstetrics & Gynaecology Queen Loziba Thebe Mpilo Maternity Wing, Founder & Chief Executive Officer Royal Women's Clinic and Children's Hospital, Statistician & Epidemiologist Expert Guideline reviewer Paediatric Nutrition Consultant
Expert 3	Associate Professor, Doctoral Degree	Guideline reviewer	+20 years	Associate Professor, Expert guideline reviewer,

The interactive nature of the e-Delphi technique and avoidance of group bias through the anonymity of the experts encourage critical debate and make it a reliable consensus method (Nasa, Jain & Juneja 2021:116, 118; Niederberger & Spranger 2020:1; Hasson & Keeny 2011:1698). According to Whitehead and Schneider (2013:275), the identity of the experts is not "usually revealed even after completion of the final report."

3.5.3.2.3 Data collection and analysis

The researcher used the method to refine the guidelines through consensus building among the panel of experts (Löfmark & Mårtensson 2017:82). It is characterised by four methodological features that enable the involvement of experts with diverse backgrounds irrespective of their geographical location (Nasa, Jain & Juneja 2021:118). The e-Delphi process involves rounds for expert opinion interspersed with controlled feedback. Nasa, Jain and Juneja (2021:116, 118), Niederberger and Spranger (2020:1), and Whitehead and Schneider (2013:275) state that the e-Delphi process is attained by extracting the viewpoints of all the experts, considering their responses to the views to achieve a degree of consensus in the end. Nasa and Juneja (2021:118) define an expert in the e-Delphi process as someone with the necessary knowledge and experience of a particular subject matter. Using experts in e-Delphi increases the qualitative strength of consensus (Nasa, Jain & Juneja 2021:118). The e-Delphi process in this study was conducted from September 2022- November 2022, when the experts reached a consensus.

Step 2: Guideline statement rating

The researcher invited each panel member electronically (View Annexure E1) and provided them with information about the nature, aim, and objectives of the study, as well as the procedure and what was required of them during their participation as panel members. The experts were given an overview of the study, informed and assured of confidentiality, and participation was voluntary. Giving the experts an overview of the study allowed them to know how to comment on each guideline statement as they had a picture of the study. A rationale for each guideline statement was given each time to enable a comprehensive review at each round. Each expert collected information individually; hence, the responses remained anonymous. Their consent to participate in the e-Delphi process was obtained electronically (see Annexure E5).

Step 3: Round 1

The researcher then sent the experts the draft guideline statements for rating. Each guideline statement had a rationale for the experts to review and comment on. The experts were to rate as (not applicable, accepted with minor revision, accepted as described and experts' comment), indicating if the statement should be included in the guidelines (view Annexure E2). The experts were also allowed to suggest additional guideline statements. The experts individually reviewed and commented on the guidelines. They all accepted the draft guidelines and refined the statements per each round as there was room for that.

After completion of the first round, the researcher categorised the statements as follows:

- *Endorsed.* The item received an 'essential' or 'important' rating from 80%–100% of the panel members (Licen & Plazar 2019:459).
- *Re-rate.* The item received an 'essential' or 'important' rating from 70%–79% of the members.
- *Rejected.* The item did not fall into the endorsed or the re-rate category (Bond, Jorm, Kitchener, Kelly & Chalmers, 2016).

The researcher then analysed the panel members' comments and redrafted the guideline statements according to the comments for round 2.

Step 4: Round 2

The same procedure was followed in rounds 2 and 3. Round 2 included the redrafted statements based on comments obtained in round 1. Suggested recommendations were incorporated before sending back the draft guideline statements for round 3.

Step 5: Round 3

Round 3 contained the re-rated statements from Round 2. No opportunity was given for comments during rounds 2 and 3, and if a statement did not receive an 'endorsed' or 're-rate' rating from all the members, it was rejected. The final draft of the guidelines was then given to the members for final comments, feedback, and endorsement.

The researcher implemented all the amendments and recommendations from the experts and the two supervisors. All the experts approved of the guideline statements and their rationales through consensus. There were 11 guidelines in all that were agreed upon, each with its rationale. Table 3.7 summarises the experts' final response to guideline statements.

Table 3.7 Summary of final responses for guideline statements

GUIDELINE STATEMENT	ENDORSED	REJECTED
Guideline Statement 1	3 (100%)	0
Guideline Statement 2	3 (100%)	0
Guideline Statement 3	3 (100%)	0
Guideline Statement 4	3 (100%)	0
Guideline Statement 5	3 (100%)	0
Guideline Statement 6	3 (100%)	0
Guideline Statement 7	3 (100%)	0
Guideline Statement 8	3 (100%)	0
Guideline Statement 9	3 (100%)	0
Guideline Statement 10	3 (100%)	0
Guideline Statement 11	3 (100%)	0

The experts' response rate was 100% for all 11 guideline statements. All three experts reached a consensus on the 11 guidelines.

3.5.3.3 Advantages of the e-Delphi technique

The e-Delphi technique can harness many opinions across geographical distances. Hence, the researcher considered it beneficial to use in the study as only one of the experts were not from Zimbabwe, where the study was conducted. The experts were free to express their honest opinions without being influenced by others, as the process was anonymous and online. The method allowed the experts to participate and review the guideline statements at their convenience, at relatively little expense and in a short period as the review was done electronically. The e-Delphi consensus method is a flexible technique that balances participation and consensus; therefore, the researcher considered it appropriate for the study. Each round builds on the previous round's results until consensus is reached through expert-based judgment, thereby ensuring the credibility of the findings. The strength of the e-Delphi technique is in the anonymity of panellists, thereby allowing them to express themselves freely (Niederberger & Spranger 2020:1; John, Adkin & Chauvin 2020:118; Nasa, Jain & Juneja 2021:116; Licen & Plaza 2019: 460; Brown 2018:7).

- ✓ **Rigour of the e-Delphi technique**

In this study, the rigour of e-Delphi was ensured through anonymous reports by each of the three experts. This enhanced honest opinions as it reduced bias. The three rounds that were conducted led to consensus, thereby refining the guidelines for children aged 2-5 years. The experts received feedback after each round, thereby promoting critical thinking and allowing revisiting of their responses. These measures were done to enhance the reliability and validity of the results.

3.5.3.4 Trustworthiness

The researcher established rigour in the e-Delphi technique by using qualitative data and corroborating the results using a literature review. The e-Delphi process was conducted precisely, consistently, and exhaustively over three rounds. The anonymity of experts was maintained to ensure no bias in the refinement of the guideline statements (Nowell, Norris, White & Moules 2020:1; Connelly 2016: 435; Hasson & Kenney 20111695). Steps utilised as e-Delphi rounds also ensured trustworthiness in this phase. Guideline statements were clear. The trustworthiness of the process and development of the guidelines in the e-Delphi technique was ensured as follows:

- ✓ ***Credibility***

The researcher enhanced the credibility by ongoing iteration and giving feedback to the panellists. This was viewed as member checks in this study according to Liamputtong (2017:521), credibility is confidence in the truth of the data and its analysis. In this study, the panel of experts were each allocated adequate time to go through the guidelines to ensure

their opinions' credibility. The process was repeated in 3 rounds, and expert consensus on the guidelines was reached.

- ✓ ***Dependability***

According to Hasson and Keeney (2011:1698), dependability can be enhanced if the researcher ensures that a range of experts is invited to participate. The expert panel was diverse to achieve a broader perspective, insight, and generalisation of consensus (Nasa, Jain & Juneja 2021:118). Accordingly, the researcher invited experts in maternal and child health, child feeding, malnutrition, and guideline development.

- ✓ ***Confirmability***

This study ensured confirmability by providing a detailed description of the e-Delphi process through the three successive rounds of e-Delphi. Liamputtong (2017:521) defines confirmability as the data's congruency, accuracy, and relevance to the study.

The researcher verified the guidelines by checking for semantic errors and inconsistencies in the formulation and confirming the content with the experts.

3.6 CONCLUSION

This chapter discussed the research design and methodology of the study. Chapter 4 presents article 1 on feeding practices for children aged 2-5 years based on findings of current feeding practices used by caregivers of children aged 2-5 years in Bulawayo province in Zimbabwe. Six databases were used to identify and review articles published since 2010. The objective was to understand caregivers' feeding practices for children of this age range through a scoping review given in Chapter Four.

CHAPTER 4

ARTICLE

4.1 INTRODUCTION

This chapter contains an article published in an accredited journal, Gender and Behaviour. The article addressed objective 4 of the study, 'To conduct a scoping review to obtain information on feeding practices utilised by caregivers of children aged 2-5'.

The scoping review was conducted based on Arksey and O'Malley's (2005) five-step framework in the article. A literature search was done to gain insight into feeding practices utilised by caregivers of children aged 2-5 years.

The article "Understanding Feeding Practices Utilized for Children Aged 2-5 Years: A Scoping Review" has been published in the journal Gender and Behaviour.

Article

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UNDERSTANDING FEEDING PRACTICES UTILIZED FOR CHILDREN AGED 2-5 YEARS: A SCOPING REVIEW

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Abstract

Background: While child dietary preferences and feeding habits are established in early childhood, inadequate feeding practices have been linked to poor child health outcomes such as stunting and obesity. Given the diversity of foods that may be available for children of this age range, understanding of the feeding practices utilized is critical.
Objective: A scoping review of literature to understand feeding practices utilized for children aged 2-5 years from 1990-2021 is presented. English written peer reviewed articles from a total of six databases were utilized for the scoping review.
Results: Searched articles that utilized qualitative, quantitative or mixed research methods were considered. Results indicated that inadequate feeding practices were rampant for children aged 2-5 years leading to increased child morbidity and mortality from malnutrition related illnesses.
Conclusion: Literature to understand feeding practices utilized for children aged 2-5 years was obtained through a scoping review. Inadequate feeding practices for children 2-5 year is a global challenge. Appropriate feeding practices for children aged 2-5 years are mandatory for improved child health outcomes especially in low - income countries.
Key words: Feeding practices, child aged 2-5 years, nutrition

Introduction

Feeding practices are behavioural strategies used by parents or caregivers, to regulate what, how much and when a child eats that have emerged as more readily modifiable risk factors for childhood malnutrition in many countries [1]. Millions of children are eating too little of what they need and too much of what they do not need making inadequate diets the main risk factor for the global disease burden of malnutrition amongst children. Inadequate feeding practices are theorized to impair a child's ability to self-regulate energy intake thereby affecting their weight negatively [2]. The world is witnessing an unprecedented epidemic of nutrition related diseases with co-existence of under and over - nutrition, leading to public health consequences such as under-nutrition in children, which severely limits human potential and life expectancy [3].

Globally, 35 percent of all child deaths and 11 percent of the total global disease burden is due to inadequate nutrition. Appropriate feeding practices promote good health and wellbeing, are safe, ensure provision of quality sustainable nutrition and are therefore crucial for child survival, growth and development [4]. Growth is the single measurement best defining health and nutritional status of children and nutrition is a basic human need that remains unmet for vast number of children, hence are unable to meet their genetic developmental potential [5]. The 2-5 years age range is a window of opportunity for establishing healthy weight trajectories, development of feeding independence and self - regulation that can continue through to adolescence and adulthood, as appropriate feeding practices are a promising target for interventions that can influence weight related eating habits for children of this age range. Therefore, selecting healthy foods that are available to a child and utilizing appropriate feeding practices is mandatory as they influence a child's eating and activity behaviour [6].

Increased visibility of unhealthy snacks, sweets in the home and lack of boundary in taking these foods increase a child's chance of adopting unhealthy foods behaviour. Therefore, educating children on healthy feeding practices is very important [7]. However, caregiver beliefs, attitudes and knowledge about food and feeding practices affect a child's food intake, food preferences and health status [4]. Practices such as pressuring a child to eat, restriction of certain foods, monitoring eating habits, controlling their dietary intake and role modelling are associated with a child's eating behaviour. Lack of time and interest in feeding a child also adversely affects the nutritional status of a child [8].

Consumption of sugar-sweetened beverages in children such as carbonated and non-carbonated drinks sweetened with sugar including fruit juices and milk drinks has increased globally leading to an upward trend of malnutrition in children under 5 years through cariogenic feeding practices, which lead to dental caries [9]. Malnutrition in children can progress into adulthood thereby increasing the risk of non-communicable diseases such as diabetes mellitus, hypertension and cardio vascular diseases [1]. Other negative effects of malnutrition of this age range are thinness and delayed milestones [10, 11]. Reducing sweet snack consumption in the first 5 years of life support the development of healthy child feeding

practices as they improve the health of children. Water consumption instead of sugary beverages is of great value. Frequent sugary consumption can also lead to dental caries [12, 13]. This scoping review aimed at understanding feeding practices utilized for children aged 2-5 years

Methods and Results

A systematic search of literature to understand what is known about feeding practices utilized for children aged 2-5 years was done. Key words, namely, caregiver, children aged 2-5 years, feeding practices, guidelines for child feeding, child feeding habits were utilized in the scoping review search. The Preferred Reporting Items for Systematic Reviews and Meta-Analyses extension for Scoping Review Checklist (PRISMA-ScR) were used in conjunction to Arksey and 0'Malley's framework to develop a priori scoping review protocol to undertake the review itself [12]). Five of the six stages of the methodological framework namely, 1) identifying the research question; 2) searching for relevant studies; 3) selecting relevant studies; 4) charting the data; and 5) collating, summarizing and reporting the results were utilized. The five stages are given below;

Stage 1: Identifying the research questions

The investigative inquiry was guided by the following research question: What is available/ understood in literature about feeding practices utilized for children aged 2-5 years?

Stage 2: Searching/ Identifying for relevant studies

Academic publications about feeding practices for children aged two to five years of age from 1990 - 2021 were searched. The search included articles published since 1990, in order to identify as many articles as possible. A systematic search was carried out on electronic databases such as CINAHL, SCIENCE DIRECT, MEDLINE, PUBMed, WEB of SCIENCE, and SCIELO and the reference lists of relevant studies. The search was restricted to articles applicable to the specific age group of interest (children two to five years). Search terms applied on the databases included among others: "Child feeding practices OR habits", "Parental OR caregiver feeding practices", "Guideline's for child feeding", "children aged 2-5 years" and "child feeding".

Articles selected for possible inclusion were based on the following criteria: (a) studies where the CFPQ has been used; (b) feeding practices applied to children two to five years of age; and (c) studies conducted in high, middle, and low-income countries (d) articles published in English.

Stage 3: Selecting relevant studies

This stage was the process followed to find the relevant articles, e.g. to first select the articles based on the title displayed on the search engine and to identify appropriate ones. Then to read the abstract and eliminate the ones who do not comply with the inclusion criteria/search words then the full article was read and the appropriate articles identified.

Stage 4: Charting the data

After applying the selection criteria, the retained articles were then examined. To facilitate ease of comprehension, the data extracted was tabulated (table of specification). This was in alignment with the aims and the scope of the review. A data charting form was developed and piloted on the first five studies included in the review and were availed in the proposal.

Stage 5: Collating, summarizing and reporting the results

The researcher then went on to collate and summarize the findings or data extracted in stage 4. No evidence grading was executed. The Preferred Reporting Systematic reviews and Meta-Analyses extension for Scoping Reviews (PRISMA-ScR) checklist were used.

Results

Six databases, namely, CINAHL, Science Direct, MEDLINE, PubMed, Web of Science, and Scielo were searched and utilized for the scoping review. All titles, abstracts, full texts and peer reviewed journal articles published since 1990-2021 were considered in order to identify as many articles that would lead to understanding of feeding practices utilized for children aged 2- 5 years. This age range is critical as it is the period when a child develops feeding independence and self- regulation that can influence health outcomes and nutrient intake later in life [14]. A systematic search on these electronic databases was therefore, carried out. Initially, 3,294 articles were recognized. Eligibility criteria such as age (2-5 years), references availability, abstract availability, peer reviewed articles, date and link to full text were applied in order to trim the recognized articles to a manageable number of 22 articles, which were utilized in this study.

Most of the articles 21 (80.77%) were published between 2014 and 2021. Majority of the studies were conducted in Europe, Australia and America. Researchers mostly leading the studies were from various disciplines such as Nutrition

and Dietetics, Nursing, Public Health and Research. The majority of the journals whose articles were considered were mo stly Nutrition and Dietetics 8 (30.77%). The studies utilized mostly cross-sectional quantitative studies although some were qualitative which used focus group discussions. Tools such as Comprehensive Feeding Practices Questionnaire (CFPQ) were utilized in most of the studies.

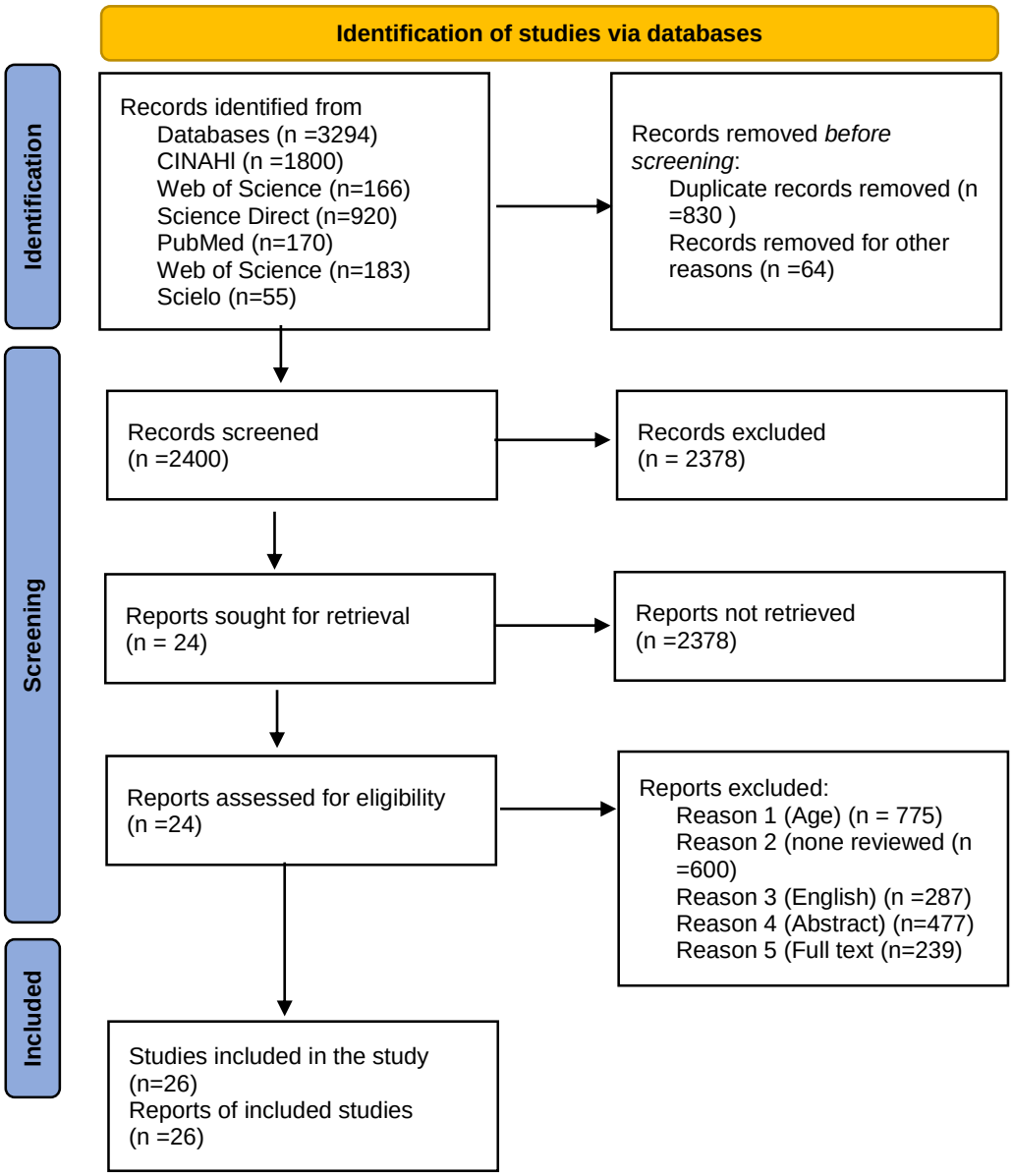
Worldwide, about 30% of children under 5 years are stunted due to inadequate feeding practices with the majority of the malnourished children and related mortality being in Sub Saharan Africa with Burundi ranking at 57,7%, Malawi 47,1%, Democratic Republic of Congo it is at 42,7% and Ghana 40%. In Rwanda, most child mortality is associated with inappropriate feeding practices that occur in the first 5 years of life. Around 30 % of the global stunted children under 5 years live in India. Eleven percent of children under 5 years in Ghana are underweight, 19 % are stunted, 5% are wasted and 3 % are overweight. In Ethiopia, 30% and in Zimbabwe 79%. Improper feeding practices are linked to this outcome [11]. Generally, Sub-Saharan Africa is experiencing momentous economic nutritional transitions, which are predictors of stunting which is a public health concern from increased morbidity and mortality [15]. Poor socio-economic status in Sub-Saharan Africa is due to prevalence of unemployment, dependence on government food handouts leading to inadequate food in many households. Maternal education level also has impact on feeding practices and subsequent malnutrition while thinness is associated with birth weight. Advocacy and education on feeding practices to start during the antenatal visits [11].

In most of the searched articles, most children aged 2-5 years were fed on non-nutritious processed snack foods. Pre-school children in Australia, consume more than a third of their daily energy from discretionary products such as snack foods, confectionery and sugar sweetened beverages. Intake of sugary sweetened beverages in children has increased globally. This is a cause for concern as these foods only provide ‘empty’ energy to children’s diets. Only 50% of pre-scholars meet the recommendation to limit consumption of sugar-sweetened beverages and such, consumption currently makes up to 8 % of children daily calorie intake.

Types of food and beverages available in a home and the food preferences of children and caregivers influence what a child consumes. Water consumption instead of sugary drinks is recommended. Caregivers should avoid giving their children sugary and non-nutritious processed foods [11,12].

In most of the searched articles, the most dominant caregivers were mothers. Children of mothers aged 30-39 years are 2.46 times more likely to have increased feeding practices. Mothers with one child under 5 years are more likely to have proper feeding practices during illness as compared to those with two or more under fife children. It is known that caregivers influence what a child eats and their choices shape a child’s eating habits in future. Maternal educational status has an impact on child feeding practices. It is vital for a caregiver to examine dietary quality of meals [15,16].

Figure 1: The PRISMA



From: Page MJ, McKenzie JE, Bossuyt PM, Boutron I, Hoffmann TC, Mulrow CD, et al. The PRISMA 2020 statement: an updated guideline for reporting systematic reviews. BMJ 2021;372:n71. doi: 10.1136/bmj.n71
For more information, visit: http://www.prisma-statement.org/

Conclusion

A scoping review to understand feeding practices utilized for children aged 2-5 years was conducted using six databases in order to systematically obtain recent literature. The 3,294 journals published in 1990-2021 that were initially considered were trimmed to a manageable number of 22 articles through utilization of eligibility criteria such as age of 2-5 years, peer reviewed articles, date, abstract availability and link to text. Studies utilized mostly cross-sectional quantitative studies although some were qualitative.

Appropriate feeding practices for children aged 2-5 years are important for good health and wellbeing of children of this age range. Inadequate feeding practices such as sugary and non-nutritious foods put a child at risk of malnutrition, which leads to morbidity and mortality in children of this age range. The global burden of nutrition related illnesses is driven by the poor quality of children's diet through poor feeding practices. Feeding interventions should address cultural, social and environmental influences on feeding practices. There is a pressing need for nutrition education to ensure that the what, when and how and by whom of children's food intake is developmentally appropriate, enjoyable and nutritionally adequate without being excessive.

Discussion

The World Health Organization tracks health indicators for children up to 5 years and promotes the use of young child feeding practices as a method of improving child health outcomes. Feeding practices for children aged 2-5 years are not widely reported, more peer-reviewed studies on international feeding guidelines for children aged 2 years and older are required especially in Sub Saharan Africa [4].

Globally, optimal feeding practices have been recognized as the most dominant intervention for improving child survival, nutrition and development. Appropriate feeding practices rank among the most effective interventions to improve child health. These feeding practices do not depend only on what the child is fed on but on how, when, where and by whom a child is fed [17]. Many growth-related factors at 2-5 years have been identified as risk factors for later obesity including body mass index. Research suggests that feeding practices may provide a promising target for interventions that influence weight and weight related eating habits for children (10). Unhealthy foods are easily accessible to children, which is a challenge in optimal feeding practices (20). Parental feeding practices are associated with children's food intake. Preschool children consume more than one third of their daily energy from discretionary products such as snack foods and sugar sweetened beverages [10,11].

Worldwide, about 30% of children are underdeveloped due to inadequate feeding practices. Improved feeding practices can lead to improved intakes of energy and nutrients leading to better nutritional status. Education of caregivers on feeding practices utilized for children aged 2-5 years can improve nutritional outcomes in children. Increased availability of unhealthy foods at home lead to child consumption of high sugar or high fat snack foods [18] Junk food is unhealthy for children as they lead to obesity and undernutrition [19]. Adequate feeding practices are predictors for child dietary intake and may promote healthy eating behaviours among children.

Many caregivers have difficulty in maintaining a healthy diet for children because the children demand unhealthy food choices. Traditional diet of meat/fish with soup broth, vegetables and rice are the preferred and healthiest diets for children under 6 years [20] Portion size and feeding frequency can lead to improved child feeding practices which have the potential to improve child growth and development outcomes in low income countries [20]. Easy access to unhealthy food is one of the major challenges in attaining adequate feeding practices in children [21]. Pre-school children consume, more than a third of their daily energy from discretionary products such as snack foods, confectionary, and sugar sweetened beverages. Parents feeding practices are associated with children food intake, mothers undertake more of the food provision for their children than fathers [22].

Culturally appropriate feeding strategies are mandatory. Integrating cultural beliefs in nutrition education could help support existing motivation and behaviour modification concerning feeding [23]. Only 52% of pre-scholars meet the recommendation to limit consumption of sugar sweetened beverages and such consumption currently makes up to 8% of children daily calorie intake. Types of food and beverages available in a home and the food preferences of children and providers influence what a child consumes [7].

In America, pre-scholars consume over 25% of their daily average calories during snacking [11,12]. Mostly from high energy density foods like potato chips and sugar sweetened beverages. Developmental research suggest that pre-scholars naturally prefer food high in fat and sugar which tend to be high in energy density and dislike foods with strong bitter flavour which tend to be lower in energy density such as green leafy vegetables [11,12]. Reoffering of vegetables to children is considered key to achieving more consumption of vegetables in children as well as hiding vegetables in other food [24].

Areas for further research

Further research is required in advocacy and health education of caregivers starting from preconception period, conception and post conception period.

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Ethics Approval

Permission to conduct this study at the designated hospital was obtained from the Medical Research Council of Zimbabwe (MRCZ) and University of Pretoria Ethics Committee. Ethical reference numbers for MRCZ and University of Pretoria Ethics Committee are MRCZ/A2692 and 749/2020 respectively.

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Table 1:

Article demographics for eligible studies

	N (%)	26
1990-2000	1(4.17%)	
2001-2013	4(16.67%)	
2014-2021	21(80.77%)	

Journals

	N (%)	26
Nutrition and Dietetics	8(30.77%)	
Research	3(11.54%)	
Public health	2(7.69%)	
International Breastfeeding	1(3.85%)	
Maternal and child health	2(7.69%)	
Dental hygiene	1(3.85%)	
Others	9(34.62%)	

Department of authors

	N (%)	26
Nutrition and Dietetics	2(7.69%)	
Paediatrics	2(7.69%)	
Public Health	3 (11.54%)	
Others	19(73.08%)	

Table 2

Age of the children

	N (%)	26
0-24 months	3(12.5%)	
2-5 years	20(76.92%)	
6-12 years	3(12.5%))	

Study methodologies

	N (%)	26
Qualitative	14 (58.33%)	
Quantitative	10 (38.46%)	
Others	2(8.33%)	

Country of study

	N (%)	26
Sub-Saharan Africa	4(15.38%)	
United States of America	1(4.17%)	
Australia	2(7.69%)	
Malaysia	1(4.17)%	
Others	18(75%)	

Language

	N (%)	26
English	26 (100%)	

CHAPTER 5

ARTICLE

5.1 INTRODUCTION

This chapter is presented in article format to discuss further caregiver-feeding practices and food group consumption of children aged 2-5 years. The article gives insight into the various non-nutritious foods given to children of this age range at the designated referral children's hospital whose outcome has been admissions for malnutrition-related illnesses.

The information contributed to knowledge of feeding practices for children of this age range.

The article follows:

Article

Caregiver feeding practices and food group consumption of children aged 2-5 years in Bulawayo province in Zimbabwe

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Objectives: This study was carried out to determine the feeding practices and food group consumption utilized by caregivers for children aged 2-5 years at a tertiary institution in Bulawayo province in Zimbabwe.

Design: A quantitative descriptive study design was utilised.

Methods: Two hundred and sixty caregivers**,** aged 18-64 years completed a questionnaire relating to the feeding practices and food group consumption they utilized for their children aged 2-5 years. The feeding practices utilized by caregivers were determined through categorizing the various foods given by the caregivers into food groups and the frequencies within which they gave the foods in order to gain better understanding of the current feeding practices.

Subjects: Caregivers of children aged 2-5 years. Caregivers of children aged 2-5 years admitted at the designated tertiary hospital for malnutrition or related illness participated in the study. As well as caregivers who had brought their children to Out-Patients for review and those whose children were not sick but had brought them to the hospital for other services.

Results: The majority (73%, n = 190) of the caregivers were female. This confirms that females are the most dominant caregivers especially when a child under 5 years is sick. In this study, this is evidenced by the fact that the majority (63%, n= 164) of the primary caregivers were also female. One hundred and five (40%) were aged 25-34 years and (53%, n= 140) attained some high school meaning that they had knowledge about feeding their children. However, the majority of the caregivers (54%, n= 139) were unemployed and this could have had an impact on availability of foods given. Only (57%, n= 141) caregivers gave dark green leafy vegetables while starch foods like pap, rice, macaroni were given by (46%, n= 120) of the caregivers. There was however a low consumption of dairy products as it was not offered by (82%, n= 214) of the caregivers. A total of (44%, n= 115) caregivers exposed their children to beverages such as carbonated soft drinks and snacks such as sweetened, flavoured fizzy drinks, freezits and jiggies that are not recommended for children.

Conclusion: This study indicates that caregiver feeding practices for children aged 2-5 years in Bulawayo province in Zimbabwe are sub-optimal and can put children in this age category at risk of malnutrition. There is a need for caregivers to adopt optimal feeding practices if Sustainable Development Goals (SDGs) 2 and 3 which cite that there should be zero hunger and good health and well-being for all ages are to be attained by 2030

Keywords: caregiver, children 2-5 years, feeding practices, food groups, malnutrition

Introduction

Optimal food consumption is the foundation for good nutrition in children. In children, food must come from a variety of food groups such as grains, roots and tubers, legumes and nuts, dairy products, meat foods, and eggs. This will enable them to get all the necessary vitamins, minerals and nutrients to grow to their full potential [1]. Poor quality of food and a lack in the variety of the food groups consumed are a greater determinant of malnutrition in children under 5 years than the lack of food and puts a child at risk of increased morbidity and mortality [1, 2, 3, 4,5]. Globally, only a few children receive nutritionally adequate diversified foods and more than two thirds of malnutrition related child mortality is associated with inappropriate feeding practices [1].

Feeding practices

Feeding practices are parental-feeding interactions that determine how, when and why children are fed and may potentially be modifiable determinants of a child's weight status through dietary intakes [6]. Inappropriate feeding practices is one of the major reasons for undernutrition in children aged 2-5 years in many developing countries where diets focus on starchy staples and seasonal fruits and vegetables with few or no animal products thereby putting a child at increased risk of morbidity and mortality. Improved feeding practices by provision of adequately diversified foods can lead to better nutritional status [1, 7]. Even in resource poor countries such as in Sub-Saharan Africa, improved feeding practices can lead to better nutritional status and growth in children under 5 years. Nutrition is a crucial universally recognized component of children's rights to the enjoyment of the highest attainable standard of health [4, 8]. Sustainable Development Goals (SDGs) 2 and 3 cite zero hunger and health for all by 2030 and this includes children. Growth is the most widely used measure for determining a child's nutritional status. Inappropriate feeding practices are major obstacles to sustainable socio-economic development and poverty reduction [7,8,9,10]. Poor nutrition in children under 5 years has irreversible consequences on growth and learning capacity. About 20 million children under the age of 5 years worldwide are malnourished and malnutrition accounts for at least 50% of all childhood deaths globally [11,12]. In Zimbabwe, around 650 000 (27%) children suffer from chronic malnutrition and 92% of all deaths in children under five years in Zimbabwe is attributed to malnutrition associated causes such as poor feeding practices [13,14,15,16].

Numerous food strategies such as the Community Food and Nutrition Program (CFNP) and National Food and Nutrition Security Programme (FNSP) have been put in place by international organizations

such as Food for Africa Organization (FAO) and the World Food Program (WFP) and implemented in Zimbabwe with the aim of alleviating malnutrition in children under 5 years [17]. Diversified approaches such as foods containing micronutrients from local indigenous foods and culture specific nutrition counselling to caregivers are essential to prevent malnutrition in children [14, 18]. A minimum dietary diversity consisting of at least four food groups per day is required for children under 5 years in order for them to grow to their full potential [1,8,12]. However, not much success has been achieved in alleviating malnutrition [18] indicating the need for other interventions such as investigating feeding practices utilized by caregivers. Dietary diversity has also been recognized as a key element of high-quality diets [1].

A critical look at feeding practices utilized by caregivers of children aged 2-5 years in Bulawayo province in Zimbabwe is essential in order to prevent malnutrition in children of this age range. This is also supported by the high admission (45%) and mortality rates (10%) in children under five years for malnutrition associated causes at the designated referral hospital in Bulawayo province in Zimbabwe. A mortality rate of 10% due to malnutrition in children under five years is considered as unacceptably high [19]. Optimal feeding practices rank among the most effective interventions to improve child health. These feeding practices do not depend only on what the child is fed on but on how, when, where, and by whom a child is fed [5,18]. This study investigated the feeding practices utilized by caregivers of children aged 2-5 years and consumption of food groups by these children in Bulawayo province in Zimbabwe.

Methods

Participants and setting

This descriptive cross-sectional study was carried out in an urban tertiary referral hospital in Bulawayo province in Zimbabwe. Permission to conduct this study was obtained from the Medical Research Council of Zimbabwe (MRCZ/A2692), the designated hospital and the Research Ethics Committee of the University of Pretoria, Faculty of Health Sciences (749/2020). Each caregiver signed informed consent prior to data collection. Data were collected from 25 January 2021 to 25 March 2021.

Census sampling population was utilized to select 260 caregivers aged 18-64 years who met the inclusion criteria. Caregivers whose children aged 2-5 years were admitted at the designated tertiary hospital for malnutrition related illness, or were brought to Out-Patients for review after being discharged from the hospital with malnutrition related illness, or brought them to the hospital for other services, voluntarily participated in the study. The study setting was chosen as it serves as a major tertiary referral hospital for children from Matabeleland North, Matabeleland South and Bulawayo provinces in Zimbabwe.

Data collection

For the purposes of this study, and with recommendation of the Medical Research Council of Zimbabwe (MRCZ) in order to suit the Zimbabwe context, a combination of two validated and pretested questionnaires were utilized. Namely, the Comprehensive Feeding Practices Questionnaire (CFPQ) [20] and the Multiple Indicator Cluster Survey (MICS) 2016 Version 6 Under 5 Baseline Survey questionnaire by the United Nations Children's Fund (UNICEF) and World Health Organization (WHO)

[21]. The CFPQ was used for collecting data on headings such as Child monitoring and Restriction for weight control. On child monitoring, 4 questions, namely; “How much do you keep track of the sweets (Stumbo, which is a sweet that is round in shape and comes in different fruit flavours. It is attached to an orange stick and has a bubble gum at the centre, candy, lollipop) that your child eats, “How much do you keep track of snack food (jiggies, which are snack chips made from corn, oil and are flavoured in different spices. Most are imitations and have a rubbery high salty taste, are manufactured in households and then sold in homemade sachets, zap snaks, which have only a different name from jiggies but are manufactured the same way, niknaks, whose components and taste are similar to jiggies but flavoured and coloured differently, that your child eats, “How much do you keep track of high fat foods that your child eats, “How much do you keep track of the sugary drinks (freezits, which are coloured water that is mixed with varying amounts of sugar, which is then packed in sachets and frozen for sale, jolly juice, which is sweetened flavoured powder that is packed in sachets and sold for one to dilute with water and consume as a soft drink, kool-aid, which is similar to freezits but with a different name and packaging this child drinks? “were asked Restriction, where 2 questions; “If my child eats more than usual at one meal, I try to restrict his/her eating at the next meal and If my child eats only a small helping, I try to get him/her to eat more” were utilized. Encouraging, where one question; “When he/she says he/she is finished eating, I try to get my child to eat one more (two more, etc.) bites of food”, Pressure to eat, where 2 questions “If my child says ’I am not hungry’ I try to get him/her to eat anyway” and “My child should always eat all of the food on his/her plate” were utilized and Child control, where 2 questions “Do you let your child eat whatever s/he wants” and “I have to make sure that my child does not eat too many sweets, lollipop, freezits” were utilized in the study.

Child control, where two questions “Do you let your child eat whatever s/he wants” and “I have to make sure that my child does not eat too many sweets, lollipop, freezits” were utilized in the study and Environment, “I keep a lot of sweets (lollipop, stumbo candy) in my house.” The (MICS) 2016 Version 6 sections BD7 and BD8 was used to provide data on the selected foods for food group consumption. The questionnaire was approved by the MRCZ whose recommendations were approved by the University of Pretoria’s Faculty of Health Sciences’ Research Ethics Committee. Only questions in the (MICS 2016 Version 6) namely BD7 and BD8 were utilized as the focus of the study was on caregiver feeding children for children aged 2-5 years. The researcher and three trained field workers collected data in the surgical ward, the outpatient’s department, the medical wards, and the nutrition unit of the designated hospital. Covid 19 regulations were adhered to throughout the data collection process, namely, use of face masks, gloves, sanitizers and social distancing.

Statistical analysis

Data were analysed by a statistician of the University of Pretoria using SAS version 9.4 software. Descriptive statistics such as means and standard deviations for continuous variables and frequency tables for categorical variables were used to describe the data.

Results

The aim of the study was to determine caregiver feeding practices they utilized for children aged 2-5 years hence demographic data was only collected from the caregivers. A total of 260 caregivers participated in the study, with the majority being women (73%, n=190). The demographic profile of the

caregivers is presented in Table 1. Most of the caregivers (40%, n=105) were aged 25-34 years and the majority were married (49%, n=128). Although the majority attained some high school education (54%, n=140), 54% of the caregivers (n=139) were unemployed.

Table 1 Demographic profile of caregivers (n=260)

Gender	**n (%)**
Male	**70 (27%)**
Female	**190 (73%)**
Total	**260**
Age groups	**n (%)**
18-24	**42 (16%)**
25-34	**105 (40%)**
35-44	**67 (26%)**
45-54	**22 (9%)**
55-64	**24 (9%)**
Total	**260**
Marital status	**n (%)**
Married	**128 (49%)**
Single	**64 (25%)**
Divorced	**29 (11%)**
Living together	**33 (13%)**
Other	**6 (3%)**
Total	**260**
Primary caregiver	**n (%)**
Mother	**164 (63%)**
Father	**40 (15%)**
Grandparent	**34 (13%)**
Other	**22 (9%)**
Total	**260**
Education level	
Primary	**33 (13%)**
Completed high school	**85 (33%)**
Some high school	**140 (54%)**
Tertiary level	**2 (1%)**
Total	**260**
Number of children in the household	**n (%)**
1	**33 (13%)**
2	**90 (35%)**
3	**92 (35%)**
4+	**45 (17%)**
Number of children in the household aged 2-5 years	**n (%)**
1	**122 (47%)**
2	**116 (45%)**
3	**22 (9%)**
Employment status	**n (%)**
Employed full time	**67 (26%)**
Employed part time	**54 (21%)**
Unemployed	**139 (54%)**
Total	**260**

Feeding practices of caregivers

The feeding practices as reported by caregivers of children aged 2-5 years are summarized in Table 2. With regards to child monitoring, 27%, (n=70) caregivers rarely kept track of the sweets, candy, lollipop that their child eats, while 45%, (n=116) sometimes kept track of the sugary drinks such as freezits, jolly juice, kool aid their child drinks.

On restriction as feeding practice, 24%, (n=63) of caregivers always tried to get him/her to eat more if their child eats only a small helping and 18%, (n=47) of caregivers always tried to get their child to eat

one more (two more etc) bites of food even if he/she says they have finished eating. Twenty four percent (n=62) of caregivers indicated that they always tried to get their child to eat anyway even if they say they are not hungry while 20% (n=53) caregivers always made sure that their child finishes all of the food on his/her plate under the "Pressure to eat" subscale. Under the Child Control and Environment subscales, 11%, (n=30) caregivers always let their child eat whatever they want while 10% (n=25) caregivers indicated that they rarely kept healthy foods in their home.

Table 2 Feeding practices of caregivers (n=260)

Subscale and their respective items	Never		Rarely		Sometimes		Mostly		Always	
	n	%	n	%	n	%	n	%	n	%
Child monitoring										
How much do you keep track of the sweets (stumbo, candy, lollipop) that your child eats?	18	7	70	27	97	37	46	17	29	11
How much do you keep track of the snack food (jiggies, zap snacks, nik naks) that your child eats?	15	6	62	24	121	47	43	16	19	7
How much do you keep track of the high-fat foods that your child eats?	58	22	74	29	68	26	40	15	20	8
How much do you keep track of the sugary drinks (freezits, jolly juice, kool-aid) this child drinks?	13	5	58	22	116	45	42	16	31	12
Restriction for weight control										
If my child eats more than usual at one meal, I try to restrict his/her eating at the next meal	30	12	45	18	90	35	50	19	45	17
If my child eats only a small helping, I try to get him/her to eat more	21	8	40	15	73	28	63	24	63	24
Encouraging										
When he/she says he/she is finished eating, I try to get my child to eat one more (two more, etc.) bites of food.	17	6.5	43	17	102	39	51	20	47	18
Pressure to eat										
If my child says "I am not hungry," I try to get him/her to eat anyway.	20	8	28	11	80	31	70	27	62	24
My child should always eat all of the food on his/her plate.	27	10	30	11	80	31	70	27	53	20
Child control										
Do you let your child eat whatever s/he wants	29	11	50	19	92	35	59	23	30	11
I have to make sure that my child does not eat too many sweets, lollipop, freezits	45	18	30	12	90	35	50	19	45	17
Environment										
Most of the food I keep in the house is healthy.	22	9	25	10	68	26	72	28	73	28
I keep a lot of sweets (lollipop, stumbo candy) in my house	25	10	26	10	58	23	62	24	89	34

Consumption of food items per food group

Table 3 summarizes the consumption of food items per food group per day as indicated by caregivers. Dairy products such as yoghurt was not offered by the majority (60%) of caregivers while protein foods such as liver, heart or other organ meats were only offered by 13% (n-33) caregivers. Majority, 62% (n=160) of caregivers did not offer eggs and 17% (n=43) offered their child beans, peas, lentils while

dark green leafy vegetables such as spinach, pumpkin, and okra leaves were given by 35% (n=92) caregivers and fruit such as bananas and oranges were only given by 12%(n=31) caregivers.

Almost half (n=114) of caregivers gave their child grain foods such as pap [porridge], rice, macaroni, spaghetti, maheu. Pap porridge is considered a must in child feeding in Zimbabwe while maheu is being used as a staple food by some caregivers when there is risk of diarrhoea from too much sugar that can be added by some caregivers. Starchy foods such as white potatoes, white yams, cassava were offered by (28%, n=72) caregivers. Thirty nine percent (n=102) of caregivers did not offer their child plain water, while milk was only offered by 18% (n=48) caregivers. Other beverages like carbonated soft drinks such as (fanta), which is a fruit flavoured branded drink and jolly juice were offered by 14% (n=36) of the caregivers per day.

Table 3 Daily Frequencies of selected foods per food group (n=260)

Food groups and respective food items	Frequency per day							
	0		1		2		≥3	
	n	%	n	%	n	%	n	%
Dairy								
Cheese or other food made from milk	218	84	32	12	3	1	7	3
Yoghurt	156	60	55	21	26	10	20	8
Protein foods								
I Liver, kidney, heart or other organ meats?	209	80	33	13	8	3	10	4
Eggs	160	62	69	27	10	4	21	8
Fresh or dried fish or shellfish	208	80	36	14	7	3	9	3
Any meat, such as beef, pork, lamb, goat, chicken, or duck	124	48	97	37	17	7	22	8
Beans, peas, lentils	17	7	43	17	102	39	51	20
Any foods made from beans, peas, lentils, or nuts	166	64	71	27	8	3	15	6
Grains								
Starch foods (pap [porridge], rice, macaroni, spaghetti and maheu)	140	54	115	44	5	2	0	0
Baby cereals (Cerelac, Pronutro, Cerevita) and other fortified baby foods	178	68	55	21	14	5	13	5
Non-Starchy Vegetables								
Dark green, leafy vegetables such as spinach, pumpkin or okra leaves	113	43	92	35	34	13	21	8
Starchy vegetables								
Pumpkin, carrots, squash or sweet potatoes	172	66	65	25	14	5	9	3
Fruit								
Ripe mangoes, paw paws, papayas	181	70	53	20	15	6	11	4
Other fruits such as bananas, oranges	198	76	31	12	11	4	20	8
Beverages								
Juice/juice drinks	121	47	83	32	101	39	76	29
Plain water	102	39	122	47	30	12	6	2
Clear broth/ clear soup	57	22	79	30	103	40	21	8
Milk	110	42	48	18	54	21	48	18
Infant formula	235	90	12	5	9	3	4	2
Other Beverages								
Carbonated soft drinks (e.g. Coke, fanta, jolly-juice, etc)	145	56	36	14	30	12	7	3

Discussion

Feeding practices of caregivers

Feeding practices utilized by caregivers of children aged 2-5 years were determined through use of six comprehensive feeding practices questions namely: Child Monitoring, Restriction for weight control, Encouraging, Pressure to eat, Child Control, and Environment. Appropriate feeding practices are

essential for attaining and maintaining proper nutrition and health. Poor nutrition in children of this age range leads to repeated infectious diseases, reduces learning capacity and increases risk of morbidity and mortality [1,2]. Feeding practices therefore play a crucial role in achieving optimal health outcomes [8]. Despite dietary recommendations that consumption of free sugars through carbonated and non-carbonated drinks, sweets, and powder concentrates should be avoided in children, in this study, only a third of the caregivers sometimes kept track of the of the sweets that their child eats. Even sugary drinks were sometimes given by almost half (45%) of the caregivers. Sweets, sugary drinks and milk drinks have added sugars that can also lead to diarrhoea, cariogenic feeding practices, dental carries, and an upward trend of obesity in children under 5 years. Obesity can progress into adulthood increasing the risk of non-communicable diseases such as diabetes mellitus, hypertension and cardio vascular diseases. Interventions such as reduction in sweet snack consumption in the first years of life support the development of healthy feeding practices as they improve the health of children [22,23,24,25,26].

Forcing a child to eat is not appropriate, as it is associated with caregiver lack of knowledge about the ideal foods to feed their child and it may lead to sub-optimal feeding and malnutrition [7]. However, in this study, a significant number of caregivers (24%) indicated that they always got their child to eat anyway even if they say they are not hungry and (20%) cited that their child should always eat all the food on his/her plate. While pressuring a child to eat is done with best intentions, it can have unintended consequences such as development of negative associations with the food and ultimately dislike and avoidance. It can also stop children from recognizing and responding appropriately to internal signals of hunger and fullness which can make them overeat in later life. A similar study done in Nigeria, indicated that harmful feeding practices such as force feeding was also a common practice in Nigeria especially among the Yoruba tribe. Forcing a spoon into the mouth, distraction, nose pinching and flogging were methods employed in force feeding that often led to respiratory effects like failure to breathe [27].

Regarding the environment, (10%) caregivers indicated that they rarely kept healthy foods in their homes while a significant number (34%) cited that they always kept lots of sweets in their homes. Lack of financial resources and a lower caregiver level of education may serve as barriers to accessing nutritious foods. Caregivers from low-income households are less likely to give their children appropriate diets thereby predisposing them to malnutrition [1]. Caregivers should role model the types of food their child should eat [28]. However, in this study thirty five percent of the caregivers indicated that they sometimes let their child eat food not recommended for children (unhealthy) due to the availability of such foods in their homes; thereby predisposing them to malnutrition. Increased availability of unhealthy foods in the home leads to consumption of food high in sugar and fat [29].

Frequencies and limitations of selected foods per food group

It is essential for a caregiver to feed their child a well-balanced diet in-order to ensure optimum growth and development to full potential [1]. Diversified approaches are required to ensure access to foods that will adequately meet energy and nutrient needs of growing children [8].

However, in this study, asking caregivers about what was consumed by their child per day was a limitation as opposed to weekly or monthly consumption because what a child consumes in a day may

not quite describe a typical diet for a child aged 2-5 years. In this study the caregivers were cooperative and knowledgeable about what was consumed in a day by their children. Caregivers were able to specify the foods their child actually ate per day and how many times.

Milk and other dairy products such as yoghurt contain protein, calcium, vitamins A, D and zinc which all are essential for bone mineralization and linear growth in children. However, in this study, milk was not given daily by almost half (42%) of the caregivers while yoghurt was given daily by only 21% of the caregivers indicating a low daily consumption of dairy products when two to three cups of milk are a recommended consumption for the 2-5 years age group per day [30]. One cup of yoghurt is recommended in order to meet the daily dairy requirements in children of this age range. Calcium, vitamins A, D and zinc deficit in children may affect growth and development of bones [1,30,31].

In this study, the least consumed protein foods were organ meats such as liver, kidney, heart, and other organ meats (13%) which concurs with findings in a study done in North West province in South Africa by Mukwevho et al. [32]. Eggs were offered by only 27% of the caregivers in this study. However, not giving eggs to children could be due to cultural reasons as some cultures in Zimbabwe do not give eggs to children in case they develop epilepsy [40,41]. Animal products contribute to macro and micro-nutrients provision in children [33] and are essential for the provision of iron, omega 3s, zinc, B vitamins, Vitamin D (oily fish, eggs), calcium and selenium. These properties promote growth, maintain and repair a child's body so that they develop to their full potential. A child should, therefore, get at least one protein food a day [30]. However, in this study, only 37% of the caregivers managed to give their child animal proteins daily such as beef, pork, lamb, goat, chicken or duck when the dietary recommendation is one serving (65 g) of cooked lean beef, lamb, veal or pork; or 80 gm cooked lean chicken or turkey; or one cup cooked lentils, chickpeas or canned beans per day [30]. At least 27% of the caregivers gave plant proteins such as beans, peas, lentils. The dietary recommendation for fruit and vegetables for children of this age range per day is one serving, where a serving can be in the form of half a medium potato (or sweet potato or corn); or half a cup cooked vegetable such as broccoli, spinach, carrots, pumpkin or one cup green leafy or raw salad vegetables; or half a cup cooked, dried or canned beans or lentils. Up to four and a half servings a day can be given depending on the age of the child [29, 34,35]. However, in this study, non- starchy vegetables were only offered by 35% of the caregivers. Forty-four percent of the caregivers did not offer them at all. This puts this child at risk of malnutrition as dark green leafy vegetables, fruits, carrots are essential for the provision of vitamins, iron and immunity which is necessary for healthy growth of children [29,34,35].

The recommended fruit intake for children aged 2-5 years is one serving. Fruits and vegetables provide children with vitamins, minerals, fibre and anti-oxidants which are essential for the promotion of good health, protection against diseases, healthy growth and development. It is essential for a caregiver to give their child fruit and vegetables at least once a day for them to grow to their full potential [36, 37,38]. However, in this study, the majority of the caregivers, did not offer their child aged 2-5 years, fruits on a daily basis thereby putting them at risk of malnutrition increasing the possibility of them failing to grow to their full potential.

Starchy foods were given daily by over a third of the caregivers. Although starchy foods including maize and maize products are staple foods in Zimbabwe, caregivers often provide their children with a plain

fermented maize diet in the form of maheu only. This is done at the expense of other nutritious foods which a child of this age range should be provided with on a daily basis. This is associated with malnutrition and diarrhoea as some caregivers tend to feed their children entirely on it [10]. Some of the maheu is home-made but most of it is bought from registered and unregistered manufacturers and vendors [10]. This is supported by the fact that millions of children are eating too little of what they need, and too much of what they do not need making poor diets the main risk factor for the global burden of disease [11]. Similar findings were found in a study done in Kenya where maize and rice is also regarded as a staple food and is less expensive compared to other foods [36]. Half a cup of cooked rice, pasta, or half a cup porridge is recommended per day for children in this age range. Carbohydrates are essential for the provision of glucose, which provides a child with energy for weight maintenance [23]. Inappropriate feeding practices result in significant threats to the health of children resulting in impaired cognitive development, compromised educational achievement and low economic productivity, which becomes difficult to reverse later in life [1].

Plain water was not offered daily by 39% of the caregivers. The consumption of plain water instead of sugary beverages is recommended as water aids in digestion thereby facilitating growth and development. Water is the best healthy drink as it also quenches thirst [37]. A small number of the caregivers (10%), still offered their children infant formula. This could be because of the 2-5 age range where most of the children were expected to have stopped formula feeding.

Conclusion

Findings from the study reflect the need for optimal feeding of children of this age group on all the essential food groups in order to prevent malnutrition as well as more tailored cultural preferences and the rights of the child to good nutrition [1, 38].

This study indicates that caregiver feeding practices such as child monitoring, child control, environment by caregivers of children aged 2-5 years in Bulawayo province Zimbabwe do not meet the recommended dietary standards of feeding thereby putting children of this age range at risk of malnutrition. If SDGs 2 and 3, which cite zero hunger and good health and well-being for all ages are to be attained by 2030, there is a need for caregivers to adopt optimal feeding practices in order to end malnutrition. The feeding practices utilized by caregivers of children aged 2-5 years in this province in Zimbabwe are sub-optimal, hence, the need to develop feeding guidelines for children of this age range in order to decrease the incidence of malnutrition. Appropriate feeding is important to improve nutrition and child survival [39]. Optimal frequencies of selected foods incorporating at least four food groups are essential for optimal health for children aged 2-5 years as malnutrition can hamper their growth and development thereby impacting negatively on academic performance later in life. Inappropriate feeding practices with insufficient quantities, inadequate quality is a threat to a child's health and nutrition [10]. Children need the right foods at the right time and a diet consisting of at least four food groups per day for them to grow to full potential [12 ,8] as dietary diversity has long been recognized as a key element of high-quality diets [1].

Recommendations

Guidelines on feeding practices, including dietary guidelines on food group consumption, for children aged 2-5 years should be developed for caregivers to prevent malnutrition in Bulawayo province in Zimbabwe.

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The authors have no conflict of interest to declare

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CHAPTER 6

THE DEVELOPMENT OF GUIDELINES FOR FEEDING PRACTICES FOR CHILDREN AGED 2-5 YEARS

6.1 INTRODUCTION

In the previous chapter, the researcher described the findings of Phase 1, which focused on current feeding practices utilised by caregivers of children aged 2-5 years in Bulawayo province in Zimbabwe. The description was done in an article format currently under review in the South African Journal of Clinical Nutrition. Findings from this phase were responses from 260 caregivers through questionnaires distributed to them to determine current feeding practices utilised for their children aged 2-5 years.

6.2 MOTIVATION FOR GUIDELINE DEVELOPMENT

Findings prompted the researcher to formulate guidelines for feeding practices for children of this age range to prevent malnutrition, which is a significant cause of morbidity and mortality in children of this age range. Malnutrition contributes to 45% of child mortality globally, and poor feeding, among other causes, is implicated as a contributing factor for mortality (Chanani, Wacksman, Deshmukh, Pantvaidya, Fernandez & Jayaraman, 2016:505; Aheto, Keegan, Taylor & Diggle, 2015:552). Malnutrition is a state of nutrition in which a deficiency, excess or imbalance of energy, protein and other nutrients cause measurable adverse effects on tissue/body form, shape, size, composition, body function and clinical outcome (Soeters, Bozzetti, Cynober, Forbes, Shenkin & Sobotka, 2016;2). Therefore, in these guidelines, malnutrition refers to under or overnutrition in children 2 - 5 years.

6.3 PRINCIPLES OF GUIDELINES DEVELOPMENT

Guidelines developed for healthcare practitioners are perceived to date as the best evidence for managing clinical matters, including conditions and are upheld as the golden standard to ensure quality care (Louw et al., 2017:745). Guidelines offer a mechanism for packaging evidence and presenting recommendations to healthcare providers (Kredo et al., 2016:23). According to De Leo et al. (2023:37), the following principles are relevant:

- Guidelines should be outcomes-focused and involve a cycle of interdependent activities.
- Guidelines should be flexible and capable of adapting to varying local and global audiences.

- Guidelines should be based on the best available evidence.
- Guidelines should demonstrate essential qualities such as validity, reliability, clinical applicability, flexibility and clarity.
- Collaboration between local and national organisations and expert opinion is preferable.

6.4 DEVELOPMENT OF GUIDELINES

The guidelines were developed based on the steps suggested by De Leo et al. (2023:23) as well as Garbi (2021:949; Kredo et al., 2016: 22; WHO 2014: 1), namely:

1) Planning and defining the scope of the guidelines
2) Formation of inter-disciplinary guideline development panel
3) Defining the purpose of the guideline and intended audience
4) Reviewing of the literature and developing recommendations for practice
5) Presenting and publication of the guidelines.

Guidelines are systematically developed, evidence-based written statements used in clinical practice and/or recommendations for quality care that optimise the benefits and harms of alternative care options for optimal decision-making, thereby decreasing costs and preventable mistakes in health. This optimises patient care and presents recommendations to healthcare decision-makers to improve the effectiveness and quality of care rendered to patients (Kredo et al., 2016: 122,123).

For this study, guidelines are written statements developed to inform caregivers on optimal feeding practices for children aged 2 – 5 years in the Zimbabwean context to improve the quality of life of children aged 2 – 5 years in Zimbabwe.

In this study, guidelines contain recommendations and other helpful information that inform caregiver decisions about feeding their children. The guidelines were developed through findings of phase 1, stakeholder views on feeding practices for children aged 2-5 years in Bulawayo province in Zimbabwe, as well as their consensus on content to be included in guidelines for children of this age range and relevant literature obtained from the scoping review. Figure 6.1 depicts the flow diagram of the guideline development process.

Figure 6.1 Flow diagram of the guideline development process

To give a clear picture of how the guidelines in this study were developed, the researcher describes the process in this chapter. Following phase 1, group interviews were conducted on 18 June 2021 at the designated children's hospital. This was done through a 1-day workshop that the researcher organised. The participants of the group interviews were 12 stakeholders, comprising one paediatrician, one doctor, two nutritionists and eight nurses working in the designated children's hospital for the past two years; the research supervisor, Professor Isabel Coetzee-Prinsloo, who was on Zoom from the University of Pretoria and the researcher. The group interviews utilised a blended format due to COVID-19 restrictions. The research supervisor, through Zoom, coordinated proceedings while the researcher and the stakeholders were physically present. The researcher was the scribe. Sanitisers, face- masks and social distancing were utilised throughout the workshop in line with COVID-19 regulations.

Proceedings started at 09h00 and ended at 13h00. Refreshments were served after the workshop, as the stakeholders preferred to do the workshop first and have refreshments afterwards. However, working tea and biscuits were served, and water was available at all tables throughout the workshop. Below is the stakeholders' profile.

Table 6.1 Stakeholders' Profile

Designation	Years of training	Age	Qualification	Experience with children	Current position
Nutritionist	Four years	36-45	Degree in Nutrition and Dietetics	15 years	Senior Nutritionist
Nutritionist	Four years	46 and above	Degree in Nutrition and Dietetics	35 years	Chief Nutritionist
Senior Assistant Registrar	Seven years	36-45	MBBS	Six years	Senior Registrar
Senior Assistant Registrar	Seven years	25-35	Degree MB ChB	Five years	Hospital Medical officer
Senior Registered General Nurse	Four years	36-45	Diploma in General Nursing and Midwifery	20 years	Senior sister
Senior Nursing Officer 2 (Senior Matron)	Four years	46 and above	Diploma in General Nursing, Nursing Administration, Midwifery and Paediatrics	33 years	Senior Matron
Registered General Nurse and Midwife	Four years	25-35	Diploma in General Nursing and Midwifery	Ten years	Senior sister
Registered General Nurse	Four years	36-45	Diploma General Nursing, Diploma Midwifery, Certificate in Paediatric Nursing	Five years	Senior Sister
Registered General Nurse	Four years	25-35	Diploma General Nursing, Certificate in Paediatric Nutrition	Nine years	Sister in Charge

Designation	Years of training	Age	Qualification	Experience with children	Current position
Registered General Nurse	Four years	36-45	Diploma in General Nursing, Diploma in Midwifery and Certificate in Paediatric Nutrition	15 years	Sister in Charge
Registered General Nurse	Four years	36-45 years	Diploma in General Nursing, Diploma in Midwifery and Certificate in Paediatric Nutrition	26 years	Matron
Registered General Nurse	Four years	36-45 years	Diploma in General Nursing, Diploma in Midwifery and Certificate in Paediatric Nutrition	Ten years	Senior Sister

6.4.1 Process of guideline development

The process started with the researcher welcoming all the participants to the workshop and giving them a brief but comprehensive overview of the study and its purpose. This was so that the stakeholders could clearly understand the entire process and why they were having this workshop.

This was followed by self-introductions by the names and designations of the stakeholders, my supervisor, and the researcher. The researcher summarised the findings of phase 1 as reported by the caregivers. The stakeholders were then divided into three groups—group 1 comprised of one doctor, one nutritionist and two nurses. Group 2 had one nutritionist and three nurses, while group 3 had one doctor and three nurses for the diversity of views and suggestions from all cadres of the health professions in the workshop. The researcher was the scribe, while the supervisor coordinated the process. Each question was presented to the groups on manila paper for them to deliberate on as follows: First, question 1 was presented to all three groups, each on a separate manila sheet. They would then discuss as a group and choose a presenter to present their findings.

Question 1. "Which foods have you observed caregivers of children aged 2-5 years feed their children while admitted to the hospital?"

The stakeholders were given the first 5 minutes of the group discussion for individual silent reflection, where each stakeholder reflected on the question and thought of what they had seen caregivers feed their child admitted for malnutrition. ~~So~~on after the 5 minutes, the stakeholders convened with the rest of their group for further discussions.

They were allowed 30 minutes to deliberate on the question in their group, after which they convened with the larger group to present their findings and further discussion. Merging of the findings from the three groups was then done by the researcher as follows:

Table 6.2 Foods observed by stakeholders being fed to children aged 2-5 years

Group 1	Group 2	Group 3	Consensus for Question 1
Maheu (bought in a variety of sachets and manufacturers	Maheu	Maheu	Maheu
Jiggies	Jiggies	Jiggies	Jiggies
Sadza/pap	Sadza	Sadza	Sadza
Soup	Soup	Mirinda (almost similar to Twizzer and Pepsi)	Soup
Rice	Chunks (soya mince)	Rice	Rice
Maputi (similar to popcorn)	Maputi	Maputi	Maputi
Instant porridge	Instant porridge Mealie meal porridge with peanut butter, plain mealie meal porridge	Plain porridge and instant porridge, such as Ace	Instant porridge, plain porridge, mealie meal porridge with peanut butter
Pepsi	Pepsi	Pepsi	Pepsi
King curls	Sweet potatoes	Go-slow chips (almost similar to jiggies)	Chips
Bananas	Bananas	Bananas	Bananas
Oranges	Oranges	Oranges	Oranges
Freezits	Freezits	Freezits	Freezits
Jolly juice (sweetened powdered sugar with colouring, which is then mixed with cold water before drinking)	Jolly juice	Mazowe	Jolly juice
	Potatoes		
	Lacto (sour milk)	Lacto	Lacto
	Eggs	Eggs	Eggs
	Sugar beans	Beans	Beans
	Vegetables	Cabbage, Chomolia	Vegetables

Group 1	Group 2	Group 3	Consensus for Question 1
	Fat Cakes		
	Bread with Peanut Butter	Plain bread	Bread
	Beef	Beef	Beef
	Chicken	Chicken	Chicken
	Mince Meat	Soya mince	Soya Mince/Chunks
	Dried Kapenta		
	Dried Vegetables		
	Fresh Chips		
	Butter Nut	Butter Nut	Butter Nut

The first question's answers showed that several non-nutritious foods such as jiggies, maputi, Pepsi, chips and freezits were observed being given to children aged 2-5 years by their caregivers. Far too many children are eating too little healthy foods and too many unhealthy foods (Dwyer, 2016:19). Increased availability of such foods that are high in energy and low in nutrient content puts a child at risk of malnutrition (Haines, Haycraft, Lytle, Nicklaus, Kok, Medji, Fisberg, Mereno & Hughs 2019:127).

After the presentation and discussion of the first question, the researcher presented again to each of the three groups the second question:

Question 2. "What are the ideal feeding practices caregivers should utilise when feeding their children aged 2-5 years?"

The three groups followed the same process as with the first question.

Table 6.3 Ideal feeding practices to be utilised by caregivers

Group 1	Group 2	Group 3	Consensus for Question 2
Eliminate non-nutritious foods from the diet, e.g., Jiggies, Maheu, Sweets, Maputi, Freezits, Fizzy drinks	Morning Porridge with peanut butter or powdered matemba (fish)	Fortified porridge with peanut butter	Porridge with peanut butter Do not give non-nutritious foods like jiggies

Group 1	Group 2	Group 3	Consensus for Question 2
Health educates caregivers on certain myths and misconceptions, e.g., children not to be given eggs for fear of getting epilepsy. Adults get more meat portions than children to the extent that, at times, children only get broth.	Macimbi (Mopani worms) Roasted powdered seeds/oil Margarine Fruits, e.g., bananas, oranges, mangoes, guavas	Supervise feeds Allow enough time to eat Assist in feeding Teach them to feed themselves	Prioritise children in feeding Assist in feeding, avoid myths and misconceptions in feeding of children Supervise feeds Teach independent feeding
Children 2-5 years to be fed a balanced diet of carbohydrates, proteins, minerals and fats	Milk Marula fruit milkshake Bread with peanut butter Melon or pumpkin porridge Eggs Sweet potatoes Fat cakes Include all food groups' variety with each meal	Healthy drinks e.g. Milk, Fruit juices	A balanced diet with proteins and carbohydrates, fruits, vegetables
4-6 meals a day	5-6 meals a day	5-6 meals a day	5-6 meals a day
Avoid giving snacks before meal times.	Lunch (Afternoon) Sadza Rice Pasta Potatoes Chicken Beef Mincemeat Sour milk Yoghurt Fruits	Balanced diet	Healthy drinks such as milk
	Mopane worms Dried fish/Fresh fish Pork Goat meat Ants Local insects Chunks Vegetables	Prioritise children in Feeding	Dairy products such as yoghurt Prioritise children in feeding

Group 1	Group 2	Group 3	Consensus for Question 2
	Butternut mixed with milk. Maheu, Maputi	Healthy snacks e.g. Peanuts	Role modelling good feeding practices
	Evening As for lunch but with variations from afternoon plus snack	Proteins in every meal, e.g., Meat Soya mince Beans	Healthy snacks
	Role modelling what they observe adults eating	Indigenous fruits in season	
		Dairy foods Lacto Yoghurt for micronutrients	
		Fruits and vegetables	

After the presentation and discussion of question 2, findings indicated what children are supposed to have as part of their diet. A balanced diet is crucial in children to enhance growth and development. According to Dwyer 2016:1575S, good nutrition lays the foundation for later health and reduces the risks of inappropriate eating habits. The three groups then discussed question 3, which was:

Question 3 Which content should be included in guidelines for feeding practices for children aged 2-5 years in Bulawayo province in Zimbabwe?

The results of the discussions are presented below in Table 6.4 as follows:

Table 6.4: Content to be included in guidelines for feeding practices for children aged 2-5 years.

Group 1	Group 2	Group 3	Consensus for Question 3
What a balanced diet consists of	Inclusion of Indigenous foods and their nutritional content	Balanced diet	A balanced diet and its components. Local food sources
Food sources of the required nutrients to make a balanced diet	Foods to give based on medical condition, e.g. diarrhoea, pneumonia	5-6 meals a day	Emphasis on Indigenous or locally available foods

Consequences of poor feeding	Government policy on fortified foods to be clear to all caregivers	Prioritise children in feeds	Prioritising children in feeds Government policy on fortified foods
Types of foods to avoid and why	Emphasis on 5-6 meals a day	Supervision of meals by caregivers	Supervising feeds
Safe food preparation practices	Government interventions on food subsidies	Fruits serving daily	Frequency of feeds, e.g. 5-6 times a day
Traditional and cultural feeding practices	Meal plans that cater for city, peri-urban and rural areas based on availability in the region	Indigenous foods	Types of foods to avoid in children
Misconceptions to be avoided	Health education to caregivers on naturally available foods	Health education to caregivers, i.e. Dietary counselling at entry points, e.g. the Outpatients Department	Independent feeding
	Assistance with independent feeding	Staple foods fortification by manufacturers, e.g. bread, mealie meal, porridge	Safe food preparation practices
	Supervise feeds	Health education on food labelling	Health education at entry points
	When caregivers should worry about feeding habits		Traditional and cultural myths and misconceptions are to be avoided.
	Role modelling emphasis		Consequences of poor feeding
			Government policy on fortified foods
			Caregivers should be vigilant about food labels and the nutritional content of foods given to children.
			When to worry about child feeding practices
			Role modelling by caregivers
			Foods to give when a child has a medical condition

After the presentation and discussion of question 3, findings indicated that the stakeholders had a consensus on the following, which they suggested to be included in the guidelines for feeding practices for children aged 2-5 years in Bulawayo province in Zimbabwe:

- Indigenous and locally available foods
- Government policy on fortified foods to be observed by caregivers
- Safe food preparation practices
- Supervision of feeds
- Frequency of feeds
- Consequences of poor feeding
- Myths and misconceptions to be disregarded

These themes emerged from the three groups' discussions, as shown in the tables above.

Therefore, in this study, the researcher used stakeholder suggestions, their consensus, and literature to develop guidelines for feeding practices for children aged 2-5 in Bulawayo province in Zimbabwe. These guidelines were designed for caregivers of children aged 2-5 Feeding guidelines for children are necessary as they address the “what” and “how” of feeding practices (Escamilla, Sengura-Perez & Lott, 2017:8) to prevent malnutrition.

Guideline 1: Caregivers ensure that their children receive a balanced diet consisting of all essential food groups to optimise their growth and development.

a. Rationale

A balanced diet consists of all the essential food groups such as vegetables, fruits, grains, proteins and dairy products and is necessary for a child’s growth and development. This includes carbohydrates, fats, vitamins, minerals, and water that are to be made available in the correct quantity and frequency, as well as going over the recommended daily calories. A balanced diet also includes indigenous foods as they have health benefits for a child and are a significant source of nutrients essential for addressing micro and macronutrient deficiencies. Micro and macronutrients are crucial to children’s good nutritional outcomes, such as enhancing growth (Nepfumbada, Tlou and Mashamba-Thompson, 2021:2, 9-10; Kasimba, Covic, Motswagole, Laubcher & Cloase 2019: 293).

Giving a child a balanced diet ensures that a child receives all the essential nutrients necessary for optimal growth and development. Malnutrition impacts negatively on the growth and development of children, and hence, giving them a balanced diet protects them from malnutrition. Animal products contribute to macro and micronutrient provision in children. Proteins are essential for providing iron, omega-3s, zinc, B vitamins, Vitamin D, calcium and selenium. These properties promote growth and maintain and repair a child’s body so that

they develop to their full potential. Therefore, ensure your child eats at least a daily protein (Kasimba, Covic, Motswagole, Laubcher & Cloase, 2019: 293).

b. Actions

Caregiver:

- Takes it upon themselves to give their child a balanced diet utilising locally available indigenous foods within their reach.
- Utilises information available to them by health care workers about the foods that constitute a balanced diet their child should receive while in hospital and at home to prevent malnutrition. Dwyer (2016:1575S) echoes a pressing need for nutrition education to ensure children's food intakes are developmentally appropriate, enjoyable and nutritionally adequate without being excessive.
- Feeds their child 5-6 times a day with a balanced diet and snacks such as roast peanuts in between for them to grow to full potential. The appropriate frequency and portion sizes ensure a child is fed appropriately (Dwyer, 2016:1578S).
- Joins nutritious gardens club available in areas where they live, providing vitamins from vegetables they grow.
- Gives their child dairy products such as goat and cow's milk to provide fats and essential nutrients. Fats are necessary for developing a child's brain and maximum growth attainment.
- Provide carbohydrates from small grains like rapoko and mabele as pap or fermented "Maheu" as a snack between main meals for their child to have energy.
- Offers meat from chicken, cow, or kapenta, if available, to provide protein for tissue growth, which is essential in child development.
- Gives child at least a fruit a day. Fruits and vegetables provide a child with vitamins, minerals, fibre, and antioxidants, essential for promoting good health, protecting against diseases, and promoting healthy growth and development.
- Provides all essential nutrients in a child's diet.
- Ensures that each meal or snack a child receives includes foods from a balanced diet in amounts suited for their age and appetite. Increase serving sizes according to age.
- Provide whole grains such as bread, pasta, and brown rice, which are rich in fibre and essential for easy digestion (Escamilla, Sengura-Perez, & Lott, 2017: 35,39).

Table 6.5 Recommended balanced diet for good nutrition in children.

Recommended Daily Food Intake for Good Nutrition

	2-TO 3-YEAR-OLDS		4-TO 6-YEAR-OLDS		
FOOD	**Portion size**	**No of servings**	**Portion size**	**No of servings**	**COMMENTS**
Milk and dairy products	½ cup	4-5	½-¾ cup	3-4	**The following may be exchanged** : ½ cup of milk, ½ cup yogurt , 15-20 g of cheese , 2½T nonfat dry milk powder
Meat, fish, poultry, legumes	30 - 60 g	2	30 - 60 g	2	**The following may be exchanged** :1 egg , 2T peanut butter , 4-5 T cooked legumes
Fruit and Vegetables		4 - 5		4 - 5	
Vegetables	2-3T cooked or few pieces raw		3-4 T or few pieces raw		Include one green leafy or yellow vegetable for vitamin A (spinach, carrots, broccoli)
Fruit	½-1 fresh or 2 - 4 teaspoon canned or 125 ml juice (pure)	1	½-1 fresh or 2 - 4 teaspoon canned or 125 ml juice (pure)		Include one vitamin C-rich fruit or juice : citrus, strawberries, melon tomato
Total of bread and grain products: Choose:		3		3	
Bread: whole grain or enriched	½-1 slice		1 slice		**The following may be exchanged**:1/2 cup spaghetti, macaroni, noodles or rice
Cooked cereal	¼-1/2- cup		½ cup		
Dry cereal	½-1 cup		1 cup		
Fats and Oils	30 - 40 ml*				
Sweets and snacks: Sugar, jam, honey, sweets, sweetened cooldrinks, chocolates, crisps cookies, ice cream, etc.	In addition to **and not as a substitute of nutrient dense foods.** To be consumed according to level of physical activity and nutritional status of the child.				

Adapted from Krause and Mahan, 11th edition
T: tablespoon
* Guideline: 25 -30% fat of total energy roughly equals 30-40 ml in addition to fat from low fat milk and meat.

Table 6.5, adopted from Krause and Mahan, 11th edition, shows the recommended balanced diet for children aged 2-5.

UNICEF (2019:9) cites poor diet as a significant risk factor for the global burden of malnutrition.

Guideline 2: Caregivers consider the frequency of meals when feeding their child to ensure adequate provision of nutrition to their child in correct amounts according to age

a. Rationale

Feeding practices are parental-feeding interactions that determine what, how, when, where and why children are fed and may be potentially modifiable determinants of a child's weight status through dietary intakes (Quah, Syuhada, Fries, Chan & Toh, 2018:2; Serrano & Powell, 2013:1 & UNICEF, 2014:15). For these guidelines, feeding practices are the constituents of the diet a child is offered by a caregiver including the timing, frequency and how the child is provided the food. The frequency of meals provided to a child is essential to ensure the child is fed appropriately and on time to prevent malnutrition. Malnutrition is a significant cause of mortality and morbidity in children under 5, where globally, about 40% of children die from malnutrition (WHO, 2019:1; Dusingizimana, Weber, Ramilan, Iversen & Brough, 2020:2).

b. Actions

Caregiver:

- Feeds their child at least 5-6 times daily with a balanced diet to prevent malnutrition. Globally, at least 1 in every three children under five years is not growing well due to malnutrition (UNICEF 2019:8).
- Gives child food amounts that tally with their child's age to ensure optimum growth. UNICEF (2019:9) cites that at least 2 in every three children are not fed the minimum recommended diverse diet for healthy growth and development.
- Times meal frequencies with nutritious foods.
- Supervises feeding frequencies to ensure optimum feeding.
- Evaluate the nutritional health of the child through weighing at health centres.

Guideline 3: Caregivers implement supervision of feeds by allowing their child enough time to feed adequately for them to feed sufficiently.

a. Rationale

Supervising a child when they are eating is a mandatory role for a caregiver to ensure the child feeds sufficiently. Teach and allow children to feed themselves to develop motor skills and foster independence.

b. Actions

Caregiver:

- Teaches their child to feed themselves to develop their motor skills. Motor skills are essential because they are part of the development of a child (Escamilla, SenguraPerez & Lott, 2017: 45)
- Supervises their child as they eat to ensure their child has eaten adequately
- Allows their child to feed themselves to create independence in feeding as part of their development.
- Monitors the way the child feeds to prevent hazards such as choking
- Supervises amounts of food the child eats to prevent over-feeding and under-feeding

Guideline 4: Prioritise children in feeds, avoiding myths and misconceptions in child feeding

a. Rationale

Prioritising children at meals is critical to ensure that children get adequate portions of food per meal and avoid myths and misconceptions in feeding a child, such as that an adult should eat first before children can eat and that an adult should get bigger and better portions of food than children. Always ensure that children get an adequate share of their plate according to their age. Disregard the myth that children should not eat eggs so they do not develop epilepsy. Ensure that eggs are part of a child's diet, as they are essential for providing proteins.

b. Actions

Caregiver:

- Disregard myths and misconceptions that adults should eat first before children can eat to ensure that the child also gets enough food.
- Ensures children eat first and are well fed before adults so that they can be adequately fed and supervised in their feeding. If possible, the caregiver can eat together with the child to ensure that the child eats well.
- Guarantees that children get adequate portions of food in line with their age to ensure growth and provision of adequate nutrition.
- Avoids myths that children should not eat eggs if they get epilepsy by giving them eggs as part of their meal to ensure growth and provision of proteins.

Guideline 5: Eliminate non-nutritious foods from a child's diet, such as fizzy drinks

a. Rationale

Non-nutritious foods are foods that are not of any nutritional value to a child and, hence, should be limited in a child's diet. This is because a child will not benefit nutritionally from the food.

b. Actions

Caregiver:

- Avoids giving their child foods that are of no nutritional value, such as jiggies, ama-zepi, and maputi.
- Avoid foods with very high sugar content, such as freezits (coloured water mixed with lots of sugar that are then sold in frozen sachets) and fizzy drinks such as jolly juice and Maheu, which are bought in sachets with very high sugar content and have no labels. The labels indicate the ingredients used in the product, such as the sugar content.
- Avoids sweetened food stuff are of no nutritional value and can lead to malnutrition (under or overnutrition).

Guideline 6: Caregivers give their children healthy drinks after main meals as food and snacks

a. Rationale

Healthy drinks are drinks that are given after a meal to quench thirst and also provide nutrition. These include water and other nutritious drinks like Amarula fruit milkshake. Nutritious snacks are very important for children aged 2-5 years because they shape eating behaviours and are essential for growth and development. Avoid snacks with high sugar and sodium content, as they can put a child at risk of developing strong preferences for salt and sugar. The snacks should be from all food groups that comprise a balanced diet (Escamilla, Sengura-Perez & Lott, 2017:46).

b. Actions

Caregiver:

- Provide their child with healthy drinks after meals, such as water. Water quenches thirst and is vital for nutrition. It should be given after a child finishes their meal, as water also helps cover body fluid needs.
- Avoids adding sugar to milk to prevent diarrhoea, which slows the growth and development of a child.
- If available, offer healthy fruit juices such as watermelon and orange juice to enhance food preferences and taste.
- Avoids sugary beverages like Coca-Cola, Miranda, and jolly juice. Children's food and beverage intake depends primarily on their caregivers (Escamilla, Sengura-Perez, & Lott, 2017: 35,39).

Guideline 7: Caregiver's role model good feeding practices at all times so that their children come to appreciate such practice

a. Rationale

Role modelling good feeding practices enhances the likelihood of a child adopting similar behaviour, as children learn from what they see. This helps shape a child's eating habits. Good feeding practices reduce a child's risk of malnutrition, infectious diseases, and related mortality (Ayana, Tariku, & Woldie, 2017).

b. Actions

Caregiver:

- Models good eating habits and behaviour before their children so that their children also eat healthily. This is because children like to eat what they see their caregivers eat.
- Encourages their children to eat healthy to prevent malnutrition.
- Eats various healthy foods in front of their children to create positive feeding behaviours towards healthy foods (Escamilla, Sengura-Perez & Lott, 2017:44).
- Avoids force-feeding a child as it can lead to choking.
- Do not force their child to finish all the food on their plate.
- Keeps healthier food choices in the home, such as vegetables and fruits (FITS, 2019: 1578S).
- Possesses less high-calorie sugary/sweet foods and savoury snacks in the home to develop healthy eating styles in their child (FITS, 2019:1578S).

Guideline 8: Caregivers take note of government policy on mandatory fortification of all processed staple foods with micronutrients to avoid buying their children non-nutritious foods

a. Rationale

Government policy on food items in Zimbabwe is that all food must be fortified with micronutrients. Hence, food labels indicate the manufacturer's name, the date of manufacture, the expiry date, and the components of the food item so that caregivers buy foods that are still within their shelf life to prevent food poisoning and poor nutrition.

b. Actions

Caregiver:

- Practice vigilance on food labels before buying to avoid expired foods, which may lead to illnesses such as food poisoning.
- If literate, read nutritional content on food labels before buying to avoid unhealthy foods.
- Avoids buying non-fortified foods with no food labels so as not to buy unhealthy foods.
- Avoids buying foods with high sugar content to prevent diarrhoea and other consequences of poor feeding practices.
- Read food labels for food components before buying for their children's health, safety, and well-being (Escamilla, Sengura-Perez, & Lott, 2017: 28, 46).

Guideline 9: Caregivers to implement safe food preparation practices at all times to prevent morbidity

a. Rationale

Safe food preparation is vital in child care, and all caregivers must be vigilant to prevent child mortality and morbidity. Safe food preparation practices are essential as they prevent foodborne diseases such as salmonella and shigella bacteria, to which children under five years are most vulnerable due to their immune systems which are still developing and also that they still have less hydrochloric acid in their stomachs to be able to kill these bacteria which then manifest as diarrhoea. Diarrhoea in children of this age range has a negative impact on the feeding patterns of children aged 2-5 years (Escamilla, Sengura-Perez & Lott, 2017:28).

b. Actions

Caregiver:

- Washes hands thoroughly with soap/ash under running water ~~before handling food~~ before and after handling food to prevent contamination of food.
- Ensures a clean environment to prevent flies.
- Washes hands before feeding the child to avoid introducing bacteria.

- Kitchen utensils should be cleaned immediately to prevent contamination with flies, which can lead to diarrhoea.
- Washes hands and the hands of their child before eating to prevent food contamination, which can lead to diarrheal diseases.
- Thoroughly wash fruits and vegetables under running water before eating.
- Cooks' food thoroughly to kill germs (Escamilla, Sengura-Perez & Lott, 2017:47).
- Cooked food should not be kept for more than 1-2 days in hot climates unless there is a facility to store it.
- Save and store some food appropriately for future use.
- Cove containers to protect them from flies and dust.
- Avoid mixing cooked and uncooked food by all means.
- Always discard leftovers of food (Escamilla, Sengura-Perez & Lott, 2017:47).
- Cut food into small pieces before feeding your child to prevent them from choking from eating large pieces of food.
- Avoid spicy foods to prevent diarrhoea.
- De-bones fish thoroughly before giving your child to eat (Escamilla, Sengura-Perez & Lott, 2017:48).

6.5 e-DELPHI PANEL

In this study, the guidelines were refined through expert consensus via the e-Delphi technique. Five experts were initially invited to validate the guidelines; three voluntarily accepted the invitation, while two declined due to work-related responsibilities. One expert is an international expert with thirty (30) years of guideline development experience, and two are national experts with twenty-five (25) and fifteen (15) years of guidelines development and paediatric backgrounds.

The experts were selected based on their expertise in child care and guideline development experience. Diversity in an expert group can enhance innovative and creative discussion processes, which are essential for forming a judgment on the individual abilities and expertise of the experts (Niederberger & Spranger, 2020: 3). Table 6.6 presents the experts' profiles.

Table 6.6 Experts Profile

Experts	Designation	Qualification	Year of experience
1	Professor *[National expert]*	MBBS. Expert in Guideline review	25 years
2	Associate Professor *[International expert]*	PhD, Nurse by profession, Expert in Guideline review	30 years
3	Senior Lecturer, Paediatrician *[National expert]*	MBBS, Masters in Pediatrics. Expert in Guideline review	+20 years

6.5.1 e-Delphi technique

The e-Delphi technique is a structured decision-making process in which experts' complete questionnaires, a facilitator summarises and shares responses and the respondents reconsider their perspectives after reflecting on the opinions expressed by others (Jacobsen, 2020:421; Niederberger & Springer, 2020:2; Tintori & Ciancimino, 2022:393). e-Delphi is a structured communication technique or method initially developed as a systematic, interactive predicting method that relies on a panel of experts (Agarwal, Sehgal and Ogra, 2021:12). Unlike ordinary survey research, e-Delphi's strength lies in the iterative process (rounds of questioning/inputs) used. The e-Delphi technique was employed to collect data from identified experts in different geographical settings to reach a consensus on the validity of the guidelines for feeding practices for children 2-5 years (McNabb, 2021:375). The e-Delphi provides an opportunity for initial feedback, collecting responses, and circulating collective responses to experts for further review and feedback (Tengan & Aigbavboa, 2017:1970).

The experts were asked to answer a series of questions regarding each of the nine guidelines about the feeding practices of children 2-5 years old. This is usually done anonymously; the experts are in contact with the researcher but not each other (Staykova, 2019:220). The e-Delphi technique was specifically chosen for this study as it allowed the researcher to collect data (inputs on guidelines) from a variety of independent experts in different geographical settings to reach a consensus on refining the guidelines (Nieswiadomy & Bailey, 2018:221).

6.5.2 Characteristics of the e-Delphi Technique

The e-Delphi technique has three general characteristics that make it different from any other group interaction methods: (1) anonymous group interactions and responses, (2) multiple rounds of questioning, and (3) the provision of feedback to the group between each round (Chalmers & Armour, 2019:715-735; Staykova, 2019:220; Barrett & Heale, 2020:68). These three characteristics were applied to the study by making use of individual emails to ensure experts remain anonymous. Three rounds of the e-Delphi technique were conducted to allow inputs and consensus on the guidelines to emerge. The three experts provided feedback after each round through email communication. The e-Delphi technique ends when

consensus is reached, the research question is answered, saturation is achieved, or sufficient information is exchanged (Glasper & Rees, 2017:88). The guidelines were refined and finalised based on the inputs provided by the expert following each e-Delphi round. Consensus was reached after three (3) rounds of e-Delphi with the experts (view Annexure X).

6.5.3 Advantages of the e-Delphi technique

One of the advantages of the e-Delphi technique is that the feedback provides a mechanism for integrating different stakeholder opinions and, as such, avoids the effect of dominant individuals. It offers an opportunity for initial feedback, assembling responses, and the circulation of assembled responses to experts for further review (Tengan & Aigbavboa, 2017:1970). In addition, dependence is placed on the e-Delphi technique to reduce costs, increase respondent targets, and broaden research's outreach beyond national borders (Hall et al., 2018:3). The e-Delphi was the most timely and cost-effective way to obtain consensus (Nasa et al., 2021:116). In this study, the researcher utilised two national experts and one international expert to review and refine the guidelines that had been developed.

6.6 REVIEW PROCESS OF THE GUIDELINES

Data were collected during three e-Delphi rounds. The first two rounds were completed within four weeks, two weeks per round, as suggested by Niederberger, Köberich and DeWiss (2021:693). Experts were reminded weekly to complete the e-Delphi as recommended by Fink-Hafner et al. (2019:16). Data were collected anonymously. During the first round of the e-Delphi, the experts were e-mailed a summary of the guideline document (view Annexure E6). Detailed instructions on what was expected during the guideline review were sent to each expert reviewer. During the second round, the experts received a summary of the revised guidelines based on the inputs from all three experts from round 1. During the third round, the revised guidelines based on the inputs from the previous two rounds were e-mailed to the experts for final feedback. The final Delphi round was completed within one week, and a 100% consensus was reached. For the final round of the guideline review process, the experts used this assessment tool adapted from the AGREE II instrument.

The domains of the AGREE II instrument guided the review process to ensure the guidelines' validity and reliability (AGREE Next Steps Consortium, 2017) (see Table 6.7).

Table 6.7 Questionnaire criteria to refine the guidelines

CRITERIA Rating scale	Strongly Disagree	Disagree	Agree	Strongly Agree
	1	2	3	4
Purpose The purpose was to develop guidelines to support caregivers in enhancing feeding practices for children 2-5.				
Scope The guidelines are developed for caregivers to enhance feeding practices for children 2-5 years.				
Stakeholders' involvement Quantitative study: Determine the current feeding practices of caregivers of children aged 2-5 years. Guideline development: Workshop with consensus meeting: Primary healthcare nurse, nutritionist and doctors. Delphi experts: Primary healthcare nurses, paediatricians.				
Reliability The guidelines are expected to produce the desired results.				
Validity If implemented, the guidelines will produce the desired results and are generalizable to the Zimbabwe context.				
Clarity The guidelines are clear, easily understandable, unambiguous, and logical. They will support caregivers in implementing optimal feeding practices for children ages 2 to 5.				
Applicability The guidelines are clear and easy to understand, and they can be used by caregivers of children ages 2 to 5.				
The target population is clearly stated Caregivers of children 2-5 years.				

Adapted from AGREE II (Brouwers et al., 2017: 1-2)

6.7 FINAL GUIDELINES FOR FEEDING PRACTICES FOR CHILDREN 2-5 YEARS

The final guidelines for feeding practices for children 2-5 years are presented in Table 6.8

Table 6.8: Final guidelines for feeding practices for children aged 2-5 years

Guideline	Rationale	Actions
Guideline 1: The caregiver ensures that the child receives a balanced diet that includes indigenous foods that are locally available.	A balanced diet is essential for optimal growth and development of a child. A balanced diet should include all primary food groups, such as locally available fruits and vegetables in season, such as oranges and okra, proteins, fats, and carbohydrates, as well as foods like “amiable” and “rapoko.”	**Caregiver:** • Give child locally available indigenous foods within their reach. • Dry fresh, locally available indigenous fruits, such as baobab fruit, for use when off-season. These can be stored as a powder and used as soup when water is added or added to porridge. • Bottle locally available indigenous drinks in season for use when off-season. Utilise information available to them by health care workers on which foods to give their child. Join nutrition garden clubs in their area. • Parents should give their children dairy products such as goat and cow’s milk to provide fats and essential nutrients. • Provide carbohydrates from small grains like “rapoko” and “amabele” as pap or traditional fermented "Maheu" as a snack between main meals for energy. • Avoid using “Maheu” in place of milk. • Avoid giving the child commercial “Maheu” as it may predispose the child to malnutrition

		• For protein, offer chicken, beef, “kapenta,” or beans. • Give the child at least one fruit a day. • Provide all essential nutrients in a child’s diet. • The child should eat whole-fibre grains such as bread, pasta, and brown rice for easy digestion.
Guideline 2: Caregiver considers the frequency of meals when feeding their child.	The frequency of meals guarantees that the child is fed adequately and on time to ensure optimum growth. Children have small stomachs, and insufficient frequencies harm the child's health and development. Age-specific meals ensure that children are not over- or underfed and can grow to their full potential, laying the foundation for long-term health outcomes.	**Caregiver:** • Feed the child at least 5-6 times a day, including snacks between meals from the age of 2. • Supervise feeding frequencies to ensure adequate intake of food. • Evaluate the nutritional health of the child through weighing at health centres. • Train caregivers on the importance of feeding the child at least 5-6 times a day if they are working class to ensure the child is adequately fed throughout the day.

Guideline	Rationale	Actions
Guideline 3: Give age-specific amounts of meals to ensure that the child is well-fed.	Age-specific amounts of meals ensure that a child is not over or under-fed.	**Caregiver:** • Give the child the correct portion sizes of food to ensure adequate and appropriate feeding by not over-feeding or under-feeding. • Provide children with food amounts that tally with their age to ensure optimum growth. At least two in three children are not fed the minimum recommended diverse diet and quantities for healthy growth and development. • Ensure meals and amounts of food the child eats are nutritious to ensure optimal health. • Provide caregivers (if they are working class) with pictorial charts with diets and age-specific meals the child should eat daily. This will enable the carer to remember when, how and how much to feed the child.

Guideline	Rationale	Actions
Guideline 4: Supervision of feeds allows the child enough time to feed sufficiently.	Supervising the child during meals is a vital role of the caregiver to ensure adequate feeding.	**Caregiver:** • Supervise their child as they eat to prevent hazards such as choking. • Give the child adequate time to feed to ensure their child has eaten adequately. • Teach their child to feed themselves to develop their motor skills. • Monitor the way the child feeds to prevent hazards such as vomiting and aspiration. • Take the child to the health care centre monthly for anthropometric measurements, such as weighing, to assess whether the child is feeding well. • A food diary can be utilised to check if a child eats all the essential foods from all food groups. • Consider a daily dietary recall for the child if they are working class. The child can talk to check which foods they eat if they are away.

Guideline	Rationale	Actions
Guideline 5 Teach and allow children to feed themselves to foster feeding independence.	Teaching and allowing children to feed themselves fosters feeding independence and the development of motor skills. The development of motor skills is essential because it is part of a child's growth.	**Caregiver:** • Teach and encourage their child to feed themselves to foster feeding independence. • Monitor the way the child eats to prevent hazards such as choking, hot foods, wastage and contamination of food. • If available, provide and allow children to watch video cartoons of children feeding themselves to encourage them to feed themselves. • Model healthy eating to encourage the child to eat. • Praise children when they feed themselves to do even better in the next meal.

Guideline	Rationale	Actions
Guideline 6: Prioritising child feeding in family meals avoids cultural practices that limit child intake of nutritious foods such as eggs.	Prioritising children in family meals ensures that the child gets enough food and dispels some cultural practices that range from food for adults and food to be fed to children	**Caregiver:** • Ensure the child is well fed before adults feed so that the child can adequately feed and be supervised in feeding. • Counsel the father about the need to feed the child first, as in some cultures, father is fed first. • First, make sure that the child gets an adequate portion of food in line with their age to ensure growth and provision of proper nutrition. • Avoid practices such as children not eating eggs, which may predispose them to malnutrition. • Give alternatives instead of eggs, such as milk, when the caregiver prefers to adhere to the practice. Giving the child eggs or an alternative as part of their meal ensures the growth and provision of proteins.

Guideline	Rationale	Actions
Guideline 7: Elimination of non-nutritious foods and drinks from the child's diet.	Non-nutritious foods should be limited in a child's diet. This is because they can predispose a child to malnutrition. Non-nutritious foods and drinks can also negatively alter a child's preference for healthy foods, leading to malnutrition.	**Caregiver:** • Avoid giving children non-nutritious foods such as "jiggies, ama zepi, and maputi." • Avoid foods of high sugar content, such as "freezits" (coloured water mixed with lots of sugar that are then sold in frozen sachets), fizzy drinks like jolly juice and low-calorie "Maheu" with lots of sugar.
Guideline 8: Healthy drinks are given after main meals as food and snacks.	Healthy drinks such as water and other nutritious beverages like Amarula fruit milkshakes are nutritious and help shape children's eating behaviours. Snacks with high sugar and sodium content predispose a child to developing strong salt and sugar preferences later in life. They can also cause diarrhoea, which slows a child's growth and development. Snacks should come from all food groups that constitute a balanced diet.	**Caregiver:** • Parents should provide their children with healthy drinks after meals, such as water, as it quenches thirst and is vital for nutrition and body fluids. • Avoid adding sugar to milk. • If available, offer healthy fruit juices such as watermelon and orange juice to enhance food preferences and taste. • Avoid sugary beverages like Coca-Cola, "Miranda, and jolly juice."

Guideline	Rationale	Actions
Guideline 9: Role modelling of good feeding practices by caregiver at all times.	Children like to eat what they see their caregivers eat. It can help children develop healthy eating habits as they appreciate such practices. Creates positive feeding behaviours towards healthy foods. Develops healthy eating styles in a child.	**Caregiver:** • Role model good feeding practices. • Eat a variety of healthy foods in front of their children. • Avoid force-feeding as it can lead to choking. • Do not force their child to finish all the food on their plate. • Keep healthier food choices in the home, such as vegetables and fruits. • Keep less high-calorie sugary/sweet foods and savoury snacks at home.
Guideline 10: Take note of the mandatory national fortification policy on processed staple foods to avoid buying non-nutritious foods	Buying foods with labels indicating the manufacturer's name, date of manufacture, expiry date, and components that may show what their child is allergic to can help caregivers avoid buying unhealthy foods and purchase foods that are still within shelf life to prevent food poisoning and malnutrition.	**Caregiver:** • Practice vigilance when buying food • Read nutritional content on food labels before buying • Avoid buying non-fortified foods with no food labels • Avoid buying foods with high sugar content

Guideline	Rationale	Actions
Guideline 11: Implement safe food preparation practices at all times to prevent morbidity	Prevents food-borne diseases such as salmonella and shigella bacteria, which children under five years are most vulnerable to due to their immune systems, which are still developing and can manifest as diarrhoea. Diarrhoea in children of this age range has a negative impact on feeding patterns of children aged 2-5.	**Caregiver:** • Wash hands thoroughly with soap/ash under running water before and after handling food to prevent contamination of food • Ensure a clean environment to prevent flies • Wash hands before feeding the child to avoid introducing bacteria • Clean kitchen utensils immediately after use to prevent contamination with flies, which can lead to diarrhoea • Wash the child's hands before eating to prevent food contamination, which can lead to diarrheal diseases • Thoroughly wash fruits and vegetables under running water before eating • Cook food thoroughly to kill germs

6.8 CONCLUSION

This chapter discussed the development of the guidelines for feeding practices for children 2-5 years old. The final guidelines were developed based on caregivers' feeding practices, healthcare providers' input, information from the scoping review, and the collaborative efforts of the stakeholders to integrate all findings into the final eleven (11) guidelines. In Chapter 7, the study's conclusions, recommendations, and limitations will be highlighted.

CHAPTER 7: FINDINGS, SIGNIFICANCE, LIMITATIONS AND RECOMMENDATIONS

7.1 INTRODUCTION

Chapter 6 discussed the development of guideline statements for feeding practices for children aged 2-5 in Bulawayo province in Zimbabwe. This chapter discusses the study's findings, significance, and limitations and makes recommendations.

7.2 AIM AND OBJECTIVES

The study aimed to explore current feeding practices for children aged 2-5 years old and to develop guidelines for feeding practices for children aged 2-5 years in Bulawayo province, Matabeleland in Zimbabwe. To achieve the aim, the objectives were to:

- To determine feeding practices caregivers currently use for their children aged 2 – 5 years in Bulawayo province in Zimbabwe.
- To explore stakeholders' views regarding current feeding practices for children aged 2 – 5 years in Bulawayo province in Zimbabwe.
- To obtain suggestions from stakeholders regarding guidelines for feeding practices for children aged 2 – 5 years in Bulawayo province in Zimbabwe.
- To conduct a scoping review to obtain information on feeding practices utilised by caregivers of children aged 2-5 years.
- To develop and refine guidelines for feeding practices for children aged 2 – 5 years in Zimbabwe.

7.3 RESEARCH QUESTIONS

The study wished to answer the following research questions:

- What are the feeding practices currently utilised by caregivers for their children aged 2-5? years in Bulawayo province in Zimbabwe?
- What are the views of stakeholders regarding current feeding practices for children aged 2-5 years in Bulawayo province in Zimbabwe?

- What are stakeholders' suggestions regarding feeding practices for children aged 2-5 years in Bulawayo province in Zimbabwe?
- What information on feeding practices utilised by caregivers of children aged 2-5 years can be included in a scoping review?

- What content should be included in guidelines for feeding practices for children aged 2-5 years in Zimbabwe?

7.4 FINDINGS

The study aimed to develop guidelines for feeding practices for children aged 2-5 in Bulawayo province in Zimbabwe. It was conducted in three phases, which led to the development of the guideline statements.

7.4.1 Phase 1: Determine current feeding practices

To determine the feeding practices in Bulawayo province, the researcher used a structured questionnaire distributed to 260 caregivers of children aged 2 to 5 years at Mpilo Children's Hospital. The study found in Phase One that caregivers' feeding practices for children of this age group while in the hospital were suboptimal and could reflect a continuation of home feeding habits. Suboptimal feeding practices are a problem because they put children at risk of malnutrition. Globally, malnutrition in children accounts for at least half of all childhood mortality (Khan, Turab, Khan, Rizvi, Shaheen et al. 2016:70). In this study, the children were given foods of little nutritional value, hence the frequent admissions with malnutrition-related illnesses at the hospital.

Most foods did not meet the minimal daily requirements of a balanced diet, indicating a problem in the nutritional outcomes for children of this age. The participant caregivers stated that they gave the children sachets of frozen fizzy drinks, called *freezits,* a mixture of water, high sugar concentrations and different forms of colouring. No expiration date or manufacturing date was indicated, depending on the manufacturer. In addition, the safety of the water used can also not be determined. The caregivers gave the children various maize or potato crisps such as *jiggies, Niknaks,* and *maputi (Maputi* is a type of popcorn sold by street vendors).

The researcher thinks that the findings are of concern to nursing practice for the following reasons:

- Their caregivers' feeding practices compromise the health of children aged 2-5 years. This is a problem because children are admitted for malnutrition and/or malnutrition-related illnesses,

which creates a vicious cycle of admission and readmission for malnutrition due to suboptimal feeding practices.

- It will be difficult, if not impossible, to attain SDG 2 – Zero hunger and SDG 3 – Good health and well-being by prevention of needless suffering from preventable diseases and premature death in the selected province or Zimbabwe if proper follow-up of caregiver feeding practices for children is not put in place.
- The feeding practices in the selected hospital setting indicate a gap in health care professionals' feeding instructions to caregivers regarding the foods to give their children to prevent malnutrition.
- The finding indicates a gap in the foods bought and brought into the hospital by caregivers could have hygiene consequences, such as outbreaks of diarrhoea.
- The caregivers' feeding practices could be a continuation of their home feeding practices, which means that it may be challenging to eradicate malnutrition in children of this age in Bulawayo province. This, in turn, emphasises the need for more education for caregivers.
- The findings indicate the need for messages to be displayed in the children's hospital informing caregivers and visitors that no food should be given to children aged 2-5 years in the hospital except the food and nutrition provided by the hospital.
- Illustrations, pictures and information which caregivers should read and take home with them to be placed in the wards.
- Hand hygiene needs reinforcing as children are vulnerable to various illnesses, and hospitals are a potential source of food-borne diseases. More stringent measures, such as intensifying health education for caregivers on feeding practices at every opportunity, should be implemented to ensure that only hospital food is fed to the children in the hospital.
- Results are a cause for concern regarding how, what, and when the caregivers feed their children while in the hospital.

7.4.2 Phase 2: Stakeholder views regarding feeding practices

The researcher explored the participant stakeholders' views regarding feeding practices for children of this age range with two questions:

- What have you observed caregivers feed their children while in hospital?
- What should the ideal feeding practices for children aged 2-5 years be?

The participant stakeholders, namely nurses, doctors, paediatricians and nutritionists working in the hospital's medical wards, out-patients department and nutrition unit, indicated that they had

observed caregivers giving their children foods of no nutritional value in the hospital, such as the following:

Table 7.1 Examples of foods of no nutritional value given by caregivers to children in hospital

Food	Group 1	Group 2	Group 3
Powdered drinks - Jolly juice	Yes	Yes	No
Frozen drinks-Freezits	Yes	Yes	Yes
Maputi is almost similar to popcorn but much bigger	Yes	Yes	Yes
Maize-based traditional African drink – Maheu Depending on the manufacturer, other types of Maheu are bought in various sachets.	Yes	Yes	Yes
Soft drinks, namely Mirinda and Coca - Cola	No	Yes	No
Twizzer	Yes	Yes	Yes
Pepsi	Yes	Yes	Yes
Instant porridge such as Ace	Yes	Yes	Yes
Corn curls	Yes	No	No
Go - slow snacks	No	No	Yes
Jolly Juice (powder that is sweetened with sugar, then mixed with water before drinking. Has different colourings)	Yes	Yes	No
Jiggies	Yes	Yes	Yes

In their study in South Africa, Sayed and Schönfeldt (2020:36) cited those complementary foods given to children up to 24 months old did not meet the criteria for a minimally acceptable diet. Early introduction of foods and liquids other than breast milk was common. Moreover, some indications that processed meats, sweets, salty crisps, and soft drinks were regularly given to infants between 6 months and 1 year (Sayed & Schönfeldt 2020:37).

The feeding practices found in the selected hospital setting possibly indicate a gap in health care professionals' caregiver education regarding the foods to give their children to prevent malnutrition.

The researcher considers this a problem for nursing practice for the following reasons:

- The results show a possible gap in the nursing professionals' monitoring of feeding practices utilised by caregivers in the hospital.
- There is a need for a behaviour change in caregivers regarding their children's feeding.

What should the ideal feeding practices be for children aged 2-5 years?

- The stakeholders suggested the following as the ideal feeding practices for children aged 2-5 years: A balanced diet consisting of proteins, carbohydrates, fruits and vegetables.
- Caregivers should be encouraged to give the children foods like mealie meal porridge with peanut butter.
- Children should be prioritised in feeding.
- Children should be supervised as they eat to ensure they get enough nutrients.
- Independent feeding should be encouraged.
- Children should be fed at least 5-6 times a day.
- Healthy drinks such as 100% fruit juice and marula fruit milkshake to be given
- Dairy products such as yoghurt to be included in the daily diet.

7.4.3 Phase 2: Stakeholders' suggestions for content of guidelines

The main suggestions of the participant stakeholders were a balanced diet with an emphasis on indigenous foods, which are locally and readily available in the province.

The researcher believes that food gardens, as well as locally and readily available indigenous foods, are essential for good nutrition in children. They are cheap and easily within reach of caregivers, so they can be utilised. With more education on the benefits of these foods, malnutrition in children of this age range can be mitigated in Bulawayo province.

These suggestions are presented in the developed guideline statements.

- There is a possible gap in the education of caregivers on good feeding practices that they should utilise both in the hospital and at home.

7.4.4 Phase 3: Development of guidelines for feeding practices

According to Herforth, Arimond, Alvarez-Sanchez, Coates, Christianson and Muehlholff (2020:590), feeding guidelines are a translation of a vast (and always incomplete) evidence base regarding inter-relationship between foods, diet patterns, and health into culturally sensitive, and actionable recommendations to influence consumer behaviour. In this study, guidelines were developed through the utilisation of three phases, namely:

Phase 1: Questionnaires were distributed to caregivers of children aged 2-5 at a tertiary referral hospital in Bulawayo province in Zimbabwe to elicit their feeding practices for these children.

Phase 2: Group interviews by stakeholders such as paediatricians, nurses, nutritionists, and doctors were conducted. The first was to discuss foods they had observed caregivers give their children aged 2-5 years who were admitted for malnutrition-related illnesses. This was important to assess their food and nutrient intake, which is essential in the guideline development process (Herforth, Arimond, Alvarez-Sanchez, Coates, Christianson & Muehlholff 2020: 590). After that, the stakeholders discussed ideal foods to be fed to children aged 2-5 years and suggested content of feeding guidelines for children of this age range in Bulawayo province in Zimbabwe.

The researcher then drafted the guidelines using literature on feeding practices for children aged 2 - 5 years and stakeholders' perspectives. Incorporating stakeholder perspectives in guideline development is also supported by Domain 2 of AGREE II instruments, Herforth, Arimond, Alvarez-Sanchez, Coates, Christianson and Muehlholff (2020:590) as important in guideline development.

In Phase 3: Draft guidelines were refined in three eDelphi rounds by three experts in guideline development and child feeding. The experts were provided with an instrument they utilised to refine the guidelines to allow them to judge the quality of the guidelines. Hence, the developed guidelines focused on the results of caregivers' current feeding practices, stakeholders' recommendations and suggestions for feeding practices for children of this age group. Phase 1 findings fed into phase 2 and literature leading to drafting of the guidelines.

The researcher is of the opinion that:

- The developed guidelines should assist caregivers in considering feeding their children aged 2-5 foods of nutritional value. Nurses can add the information in the guidelines to their existing knowledge of children's feeding. This would help add value to what children eat, thereby ending malnutrition in children of this age.
- Nutrition modelling by caregivers is significant so children can adopt good feeding practices.

7.5 SIGNIFICANCE OF THE STUDY

A research study should be significant to the nursing profession and contribute to the body of knowledge (Brink, van der Walt & van Rensburg 2018:61). The findings of this study add to the body of knowledge on feeding practices for children aged 2-5 years old in Bulawayo province, Matabeleland in Zimbabwe. Feeding guidelines are an essential tool in the development of children, whether ill or healthy. The guidelines developed in this study are evidence-based, add further knowledge on the nutritional well-being of children under five years old, and are cost-effective. Their implementation should improve patient outcomes through fewer admissions for malnutrition, which is one of the major causes of morbidity and mortality in children under five in Zimbabwe.

The findings of this study could be of significance for policymakers, nurses, and nursing education.

7.5.1 Policymakers

The Department of Health should review, develop, and introduce policies that include cost-effective interventions centred on nutrition education to reduce malnutrition in Bulawayo province in Zimbabwe.

The hospital management should not allow caregivers to bring food from outside the hospital while children are admitted for any illness.

There is a need for media sensitisation that emphasises that required dietary intakes for children could be afforded from indigenous and other food that is available to them in an affordable manner.

A multi-sectoral, inter-organizational, and inter-agency approach is important in educating communities on good feeding practices to promote food security, proper nutrition for children, and poverty reduction.

7.5.2 Nursing profession

The findings emphasise the need to closely monitor caregiver feeding practices by healthcare workers looking after children in the hospital and follow-up on discharge. Children have increased nutritional risk when admitted to the hospital, which necessitates unnecessarily prolonged hospital stays and more significant complications such as hospital-acquired infections. Nurses must know and monitor what children under their care eat in the hospital. The findings further highlight the need for training all healthcare personnel working with children under the supervision of caregivers while they are in the hospital with admitted children. Regular in-service training should be provided for healthcare professionals working with children. Nutrition education should be given to caregivers at clinics and hospitals.

7.6 LIMITATIONS

The study was conducted in one selected referral children's hospital, which serves three provinces, namely Bulawayo Province, Matabeleland North and Matabeleland South, and not all ten provinces in Zimbabwe. The findings may thus not be generalisable to other hospitals and provinces.

COVID-19 was also a limitation as the study was conducted under stringent Covid-19 regulations.

The experts who assisted with refining the guidelines were also few, and hence, their recommendations and opinions may not be generalisable.

The majority of the experts were doctors with paediatric nutrition expertise and a nurse with knowledge of nutrition and guideline review.

7.7 FURTHER RESEARCH

Based on the findings, the researcher recommends that further research be conducted on the following topics:

- An investigation into caregiver health literacy regarding current feeding practices for children aged 2-5 years in Zimbabwe.
- Conducting a living review in five years is advisable to explore whether behavioural change has occurred in caregivers' feeding practices.
- Research to assist with developing guidelines for children in age groups other than the current study.

7.8 CONCLUSION

The focus of the study was to develop guidelines for feeding practices for children aged 2-5 years in Bulawayo province in Zimbabwe. The findings indicated that caregivers' feeding practices for children aged 2-5 years were suboptimal. Good feeding practices improve child survival and promote healthy growth and development. The study substantiates the importance of close monitoring of what caregivers feed their children admitted to a hospital to prevent foods of no nutritional value for children who are already malnourished and have been admitted for that cause. Malnutrition is a major cause of morbidity and mortality in children aged 2-5 years and also affects their growth, development and learning capacity. Reducing child malnutrition through appropriate feeding practices remains a significant global health goal.

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ANNEXURE A

ETHICAL CLEARANCE

ANNEXURE A1

UNIVERSITY OF PRETORIA

ETHICS CLEARANCE

UNIVERSITEIT VAN PRETORIA
UNIVERSITY OF PRETORIA
YUNIBESITHI YA PRETORIA

Faculty of Health Sciences

Institution: The Research Ethics Committee, Faculty Health Sciences, University of Pretoria complies with ICH-GCP guidelines and has US Federal wide Assurance.

- FWA 00002567, Approved dd 22 May 2002 and Expires 03/20/2022.
- IORG #: IORG0001762 OMB No. 0990-0279 Approved for use through February 28, 2022 and Expires: 03/04/2023.

13 April 2021

Mrs Y Chauraya
Department of Nursing Science
Faculty of Health Science
University of Pretoria

Dear Mrs Y Chauraya

RE: Submitted document for Protocol Number Other Docs

Number	**749/2020 – Line 1**
Title	**Development of guidelines for feeding practices for children aged 2-5 years in Bulawayo province in Zimbabwe**
Investigator	**Mrs Y Chauraya**
Supervisor	**Prof IM Coetzee**
Sponsor	**-**
Document(s)	**Other Docs - MRCZ Approval**

We hereby acknowledge receipt of the documents received on 2021-02-04 and note the content thereof. They were considered on 2021-03-31 as resolved by its quorate meeting and found acceptable.

Yours sincerely

Professor Werdie (CW) Van Staden
MBChB MMed(Psych) MD FCPsych(SA) FTCL UPLM
***Chairperson**: Faculty of Health Sciences Research Ethics Committee*

The Faculty of Health Sciences Research Ethics Committee complies with the SA National Act 61 of 2003 as it pertains to health research and the United States Code of Federal Regulations Title 45 and 46. This committee abides by the ethical norms and principles for research, established by the Declaration of Helsinki, the South African Medical Research Council Guidelines as well as the Guidelines for Ethical Research: Principles Structures and Processes, Second Edition 2015 (Department of Health)

Research Ethics Committee
Room 4-60, Level 4, Tswelopele Building
University of Pretoria, Private Bag x323
Gezina 0031, South Africa
Tel +27 (0)12 356 3084
Email: deepeka.behari@up.ac.za
www.up.ac.za

Fakulteit Gesondheidswetenskappe
Lefapha la Disaense tša Maphelo

ANNEXURE A2

INSTITUTIONAL ETHICS PERMISSION PROTOCOL

INSTITUTIONAL ETHICAL REVIEW BOARD REVIEW AND ENDORSEMENT REQUIRED

Statement from the Institutional Ethics Review Board:
The MRCZ will only accept for review and approval research proposals that have been found both scientifically and ethically acceptable by an Institutional Ethics Review Board (IERB) recognized and operating in accordance with the Guidelines on Institutional Ethical Review Boards set by the MRCZ. In the case of institutions without IERBs, investigators are advised to seek advise from the MRCZ Office.

We the **Institutional Ethics Review Committee** established by

.....Mpilo Central Hospital Children's Hospital.....
(Name of Institution conducting the research/in which the research is to be conducted)

do certify that we have reviewed the research proposal titled

Development of guidelines for feeding practices for children aged 2 – 5 years in Bulawayo province in Zimbabwe.....

.....
submitted by

.....Yevonnie Chauraya.....

We attest to the scientific and ethical merit of this study and the competency of the investigator(s) to conduct the project and do hereby recommend the proposal to the MRCZ for approval.

SIGNATURES

Signature Ethics Committee representative* .....
Name (Please Print) PROFESSOR SOLWAYO NGWENYA
Date 20/10/20

Signature : Head of Ethics Committee (or other authorized signatory)
Name (Please Print) Professor Solwayo Ngwenya

MPILO CENTRAL HOSPITAL
CHIEF EXECUTIVE OFFICER
20 OCT 2020
P.O. BOX 2096, BULAWAYO
ZIMBABWE

Contact Tel. Number : 09-205078

E-mail address : drsolngwe@gmail.com

OFFICIAL STAMP OF INSTITUTION

**Institution includes Universities, Hospitals, Research Institutes or Companies.*

Telephone:09-212011
Fax: 09-205078
Email: mpilohospital.org

MINISTRY OF HEALTH
AND CHILD CARE
MPILO CENTRAL HOSPITAL
P O BOX 2096
Vera Road
Mzilikazi
BULAWAYO

ZIMBABWE

20 October 2020

University of Pretoria
Private Bag X323
ARCADIA

Attention: Yevonnie Chauraya

RE: REQUEST FOR PERMISSION TO CARRY OUT RESEARCH STUDY ON DEVELOPMENT OF GUIDELINES FOR FEEDING PRACTICES FOR CHILDREN AGED 2-5 YEARS IN BULAWAYO PROVINCE IN ZIMBABWE AT MPILO CENTRAL HOSPITAL

Reference is made to your minute in connection with the above matter.

The Institution has no objection in you undertaking the study.

May you give us the results of your study.

Thank you.

MPILO CENTRAL HOSPITAL
CHIEF EXECUTIVE OFFICER
20 OCT 2020
P.O. BOX 2096, BULAWAYO
ZIMBABWE

Professor Solwayo Ngwenya
MBChB (UZ), DFSRH (UK), FCOG(ECSACOG), FRCOG (UK)
ACTING CHIEF EXECUTIVE OFFICER
MPILO CENTRAL HOSPITAL

ANNEXURE A3

MEDICAL RESEARCH COUNCIL OF ZIMBABWE ETHICS APPROVAL

Telephone: 791193/08644073772
E-mail: mrcz@mrcz.org.zw
Website: http://www.mrcz.org.zw

edical Research Council of Zimbabwe
osiah Tongogara / Mazowe Street
P. O. Box CY 573
Causeway
Harare

APPROVAL

25 January, 2021

MRCZ/A/2692

Yvonne Chauraya
16199 Parklands Extensions
Bulawayo

RE: - Development of Guidelines for Sustainable Feeding Practices for Children Aged 2-5 Years in Bulawayo Province in Zimbabwe

Thank you for the application for review of Research Activity that you submitted to the Medical Research Council of Zimbabwe (MRCZ). Please be advised that the Medical Research Council of Zimbabwe has **reviewed** and **approved** your application to conduct the above titled study.

This approval is based on the review and approval of the following documents that were submitted to MRCZ for review:-

1. Completed MRCZ 101 new study application form
2. Full protocol version 1.0 dated July, 2020
3. Data collection tools

- **APPROVAL NUMBER : MRCZ/A/2692**

This number should be used on all correspondence, consent forms and documents as appropriate.

- **TYPE OF MEETING : Full Board**
- **MEETING DATE : 31 December, 2020**
- **APPROVAL DATE : 25 January, 2021**
- **EXPIRATION DATE : 24 January, 2022**

After this date, this project may only continue upon renewal. For purposes of renewal, a progress report on a standard form obtainable from the MRCZ Offices should be submitted three months before the expiration date for continuing review.

•**SERIOUS ADVERSE EVENT REPORTING**: All serious problems having to do with subject safety must be reported to the Institutional Ethical Review Committee (IERC) as well as the MRCZ within 3 working days using standard forms obtainable from the MRCZ Offices or website.
•**MODIFICATIONS**: Prior MRCZ and IERC approval using standard forms obtainable from the MRCZ Offices is required before implementing any changes in the Protocol (including changes in the consent documents).
•**TERMINATION OF STUDY**: On termination of a study, a report has to be submitted to the MRCZ using standard forms obtainable from the MRCZ Offices or website.
•**QUESTIONS**: Please contact the MRCZ on Telephone No. (04) 791792, 791193 or by e-mail on mrcz@mrcz.org.zw

Other

- Please be reminded to send in copies of your research results for our records as well as for Health Research Database.
- You're also encouraged to submit electronic copies of your publications in peer-reviewed journals that may emanate from this study.
- In addition to this approval, all clinical trials involving drugs, devices and biologics (including other studies focusing on registered drugs) require approval of Medicines Control Authority of Zimbabwe (MCAZ) before commencement.

Yours Faithfully

.....

MRCZ SECRETARIAT
FOR CHAIRPERSON
MEDICAL RESEARCH COUNCIL OF ZIMBABWE

MEDICAL RESEARCH COUNCIL OF ZIMBABWE
2021 -01- 25
APPROVED
P.O. Box CY 573 CAUSEWAY, HARARE

PROMOTING THE ETHICAL CONDUCT OF HEALTH RESEARCH

ANNEXURE B

PHASE 1

SECTION A DEMOGRAPHIC DATA
MRCZ/A/2692

STUDY IDENTIFICATION NUMBER	
PARTICIPANT IDENTIFICATION NUMBER	

Questionnaire

You will have to fill in the following questionnaire if you decide to join the study. Please do not complete the section if you are unsure of the required information. The researcher, or her assistants, is available to explain all sections.

Essential information (required)
Answering the questions is voluntary and you may leave out any questions that make you feel uncomfortable. This data will be used anonymously and your privacy will be protected to the best of my ability.

Section A	Please circle your answer.	Other (specify)
1. Gender	a. Female b. Male	
2. Age (years)		
3. Marital status	a. Married b. Single c. Divorced d. Living together e. Other (specify)	
4. Primary caregiver	a. Mother b. Father c. Grandparent d. Other (specify)	
5. Level of education	a. Some high school b. Completed high school c. Other (specify)	
6. Number of children in the household	a. 1 b. 2 c. 3 d. 4+	
7. Number of children in the household aged 2-5 years	a. 1 b. 2 c. 3+	

8. Employment status	a. Employed full time b. Employed part time c. Unemployed	

SECTION B CFPQ/UNICEF QUESTIONNAIRE

Parents take many different approaches to feeding their children and may have different concerns about feeding depending on their child. **Please answer the following questions as honestly as possible with this child in mind.** **MRCZ 2692**	Never	Rarely	Sometimes	Mostly	Always
1. How much do you keep track of the sweets (stumbo, candy, lollipop) that your child eats? Unanzelela hini ukudla komthanakho eziwitsi (ezimnandi, candy, lollipop) okudhliwa lomtanakho? Unoongorora here madyiro anoita mwana wako (masiwiti, candy, lollipop)?	1	2	3	4	5
2. How much do you keep track of the snack food (jiggies, zap snacks, nik naks) that your child eats? Unanzelela hini ukudla komthanako ukudya nje (ngama jiggies, zap snacks, nik naks okudhliwa lomtanakho? Unoongorora zvakadii madyiro emwana wako zvikafu zvinenge (ma jiggies, zap snacks, nik naks) zvinodyiwa nemwana wako?	1	2	3	4	5
3. How much do you keep track of the high-fat foods that your child eats? Unanzelela hini umnthanako ukudla kwake ukudya okuphekwe ngamafuta amanenge? Unoongorora zvakadii madyiro emwana wako kudya kwemhando dzezvekudya zvakabikwa nemafuta akawanda?	1	2	3	4	5
4. How much do you keep track of the sugary drinks (freezits, jolly juice, kool-aid) this child drinks? Unanzelela hinii umthanakho ukunata kwake imihlobo yokunatwayo iletshukela okufana nje ngama “freezit, jolly juice, kool aid”? Unoongorora zvakadii manwiro emwana uyu mhando dze zvinwiwa zvinotapira zvakaita sema “firiziti, jolly juice, kool- aid?	1	2	3	4	5
5. NOW I WOULD LIKE TO ASK YOU ABOUT (OTHER) LIQUIDS THAT YOUR CHILD MAY HAVE HAD YESTERDAY DURING THE DAY OR THE NIGHT. I AM INTERESTED TO KNOW WHETHER YOUR CHILD HAD THE ITEM EVEN IF COMBINED WITH OTHER FOODS. ZVINO NDAVAKUDA KUKUBVUNZAI PAMUSORO PEZVINWIWA ZVAMAKAPA MWANA WENYU NEZURO MASIKATI KANA MANHERU.NDINODA KUZIVA KANA MAKAMUPA ZVINHU IZVI, NYANGWE ZVAKASANGANISWA NECHIMWE CHIKAFU. NJALO SENGIFUNA KUKUBUZA LOKHUNYE OKWANATWAYO LO MTHANAKHO IZOLO EMINI KUMBE NTAMBAMA NOMA KWA KUHLANGANISWE LOKHUNYE UKUDYA PLEASE INCLUDE LIQUIDS CONSUMED OUTSIDE OF YOUR HOME/WARD. TAURAI ZVIMWE KUSANGANISIRA ZVAAKANWA MUSIRI MUMBA MUNO/MU WARD. KULUMANINI KONKE LALOKHO WAKUNATA PANDLE KOMUZI WAKHO/WARD.					

DID YOUR CHILD DRINK (*NAME OF ITEM*) YESTERDAY DURING THE DAY OR THE NIGHT: MWANA WENYU AKAMWA(*name of item*)NEZURO MASIKATI KANA MANHERU HERE? UMTHANAKHO WANATHA (BIZO LALOKHO WANATHA) IZOLO EMINI KUMBE NTAMBAMA.					
		Yes	No		
[A] PLAIN WATER?	[A] Plain water	1	2		
[B] JUICE OR JUICE DRINKS?	[B] Juice or juice drinks	1	2		
[C] CLEAR BROTH/ CLEAR SOUP?	[C] Clear broth/clear soup	1	2		
[D] MILK FOR EXAMPLE TINNED, POWDERED, FRESH OR SOUR ANIMAL MILK?	[D] Milk	1	2		
IF YES: HOW MANY TIMES DID YOU GIVE YOUR CHILD DRINK MILK? *IF 5 OR MORE TIMES, RECORD '5'.* *If unknown, record '8'.*	*If yes:* Number of times drank milk ..... __	1 1	2 2	3	4
[E] INFANT FORMULA?	[E] Infant formula	1	2		
IF YES: HOW MANY TIMES DID YOU GIVE YOUR CHILD INFANT FORMULA? *IF 5 OR MORE TIMES, RECORD '5'.* *If unknown, record '8'.*	*If yes:* Number of times drank infant formula __	1	2	3	4
[F] ANY OTHER LIQUIDS? PLEASE INDICATE.	[F] Other liquids (specify)_____ _____	1	2		

6.Do you let your child eat whatever s/he wants? 1 2 3 4 5
Uyekeli umthanako esidla okufunayo hini?
Unoregera mwana wako achidya chese chaanoda here ?

		Disagree	Slightly disagree	Neutral	Slightly agree	Agree
7.Most of the food I keep in the house is healthy. Ukudya okunenge engikuqina endlini kuyakhi umziba. Kudya kuzhinji kwandinochengeta mumba kunehutano		1	2	3	4	5
8.NOW I WOULD LIKE TO ASK YOU ABOUT (OTHER) FOODS THAT YOUR CHILD MAY HAVE HAD YESTERDAY DURING THE DAY OR THE NIGHT. AGAIN, I AM INTERESTED TO KNOW WHETHER YOUR CHILD HAD THE ITEM EVEN IF COMBINED WITH OTHER FOODS. ZVINO NDINODA KUKUBVUNZAI PAMUSORO PEZVIKAFU ZVAKADYIWA NA*(zita)*NEZURO MASIKATI KANA MANHERU? NDINODA KUZIVA KANA *(zita)* AKAPIWA ZVINHU IZVI, NYANGWE ZVAKASANGANISWA NECHIMWE CHIKAFU? KATESI SENGIFUNA KUKUBUZA NGOKUDHLA KWADHLIWA NGUNTANAKO IZOLO EMINI KUMBE NTAMBAMA? NGIFUNA UKUKWAZI UKUTHI UMNTANAKO WANIKWA HINI UKUDHLA LOKHU, NOMA KWAKHUHLANGANISWE LOKHUNYE UKHUDHLA? PLEASE INCLUDE FOODS CONSUMED OUTSIDE OF YOUR HOME. TAURAI NEZVIMWE MUCHISANGANISIRA ZVAAKADYAWO KUMWE. KULUMA KONKE LOKHUNYE WADHLA KULEZINYE INDAWO ZINGASO EMZINI WAKHO. DID YOUR EAT (*NAME OF FOOD*) YESTERDAY DURING THE DAY OR THE NIGHT: (BIZO) WADHLA (BIZO LOKUDHLA) IZOLO EMINI KUMBE NTAMBAMA						
MWANA WENYU AKADYA (*zita rechikafu*) NEZURO MASIKATI KANA MANHERU HERE?			Yes	No		
[A] YOGHURT?	[A] Yoghurt		1	2		
IF YES: HOW MANY TIMES DID YOUR CHILD DRINK OR EAT YOGHURT? *IF 5 OR MORE TIMES, RECORD '5'. If unknown, record '8'.*	*If yes:* Number of times drank/ate yoghurt.....		1	2	3	4
[B] ANY CERELAC, PRONUTRO, CEREVITA OR ANY COMMERCIALLY FORTIFIED BABY FOOD?	[B] Commercially fortified foods		1	2		

IF YES: HOW MANY TIMES DID YOUR CHILD EAT ANY CERELAC, PRONUTRO, CEREVITA OR ANY OTHER COMMERCIALLY FORTIFIED FOODS? *IF 5 OR MORE TIMES, RECORD '5'. If unknown, record '8'.*		1	2	3	4
[C] CLEAR BROTH/CLEAR SOUP?		1	2		
IF YES: HOW MANY TIMES DID YOUR CHILD DRINK OR EAT CLEAR BROTH/CLEAR SOUP? *IF 5 OR MORE TIMES, RECORD '5'. If unknown, record '8'.*	*If yes:* Number of times drank/ate yoghurt..... __	1	2	3	4
[D] PUMPKIN, CARROTS, SQUASH OR SWEET POTATOES THAT ARE YELLOW OR ORANGE INSIDE?		1	2		
[D] PUMPKIN, CARROTS, SQUASH, ETC.					
IF YES: HOW MANY TIMES DID YOUR CHILD EAT PUMPKIN, CARROTS, SQUASH OR SWEET POTATOES THAT ARE YELLOW OR ORANGE INSIDE? *IF 5 OR MORE TIMES, RECORD '5'. If unknown, record '8'.*		1	2	3	4
[E] WHITE POTATOES, WHITE YAMS, CASSAVA, OR ANY OTHER FOODS MADE FROM ROOTS? *IF YES:* HOW MANY TIMES DID YOU GIVE YOUR CHILD WHITE POTATOES, WHITE YAMS, CASSAVA, OR ANY OTHER FOODS MADE FROM ROOTS? *IF 5 OR MORE TIMES, RECORD '5'. If unknown, record '8'.*	[E] White potatoes, white yams, manioc, cassava, etc.	1	2		
		1	2	3	4

[F] ANY DARK GREEN, LEAFY VEGETABLES SUCH AS SPINACH, PUMPKIN OR OKRA LEAVES? *IF YES:* HOW MANY TIMES DID YOUR CHILD EAT ANY DARK GREEN, LEAFY VEGETABLES SUCH AS SPINACH, PUMPKIN OR OKRA LEAVES? *IF 5 OR MORE TIMES, RECORD '5'. If unknown, record '8'.*	[F] Dark green, leafy vegetables	1 1	2 2	3	4
[G] RIPE MANGOES, PAW PAWS, PAPAYAS? *IF YES:* HOW MANY TIMES DID YOU GIVE YOUR CHILD RIPE MANGOES, PAW PAWS, PAPAYAS? ? *IF 5 OR MORE TIMES, RECORD '5'. If unknown, record '8'.*	[G] Ripe mangoes	1 1	2 2	3	4
[H] ANY OTHER FRUITS OR VEGETABLES? *IF YES:* HOW MANY TIMES DID YOUR CHILD EAT ANY OTHER FRUITS OR VEGETABLES? *IF 5 OR MORE TIMES, RECORD '5'. If unknown, record '8'.*	[H] Other fruits or vegetables	1 1	2 2	3	4
[I] LIVER, KIDNEY, HEART OR OTHER ORGAN MEATS? *IF YES:* HOW MANY TIMES DID YOUR CHILD EAT LIVER, KIDNEY, HEART OR OTHER ORGAN MEATS? *IF 5 OR MORE TIMES, RECORD '5'. If unknown, record '8'.*	[I] Liver, kidney, heart or other organ meats	1	2		

		1	2	3	4
[J] ANY MEAT, SUCH AS BEEF, PORK, LAMB, GOAT, CHICKEN, OR DUCK? *IF YES*: HOW MANY TIMES DID YOUR CHILD EAT MEAT, SUCH AS BEEF, PORK, LAMB, GOAT, CHICKEN, OR DUCK? ? *IF 5 OR MORE TIMES, RECORD '5'. If unknown, record '8'.*	[J] Meat, such as beef, pork, lamb, goat, etc.	1 1	2 2	3	4
[K] EGGS? *IF YES*: HOW MANY TIMES DID YOUR CHILD EAT EGGS? *IF 5 OR MORE TIMES, RECORD '5'. If unknown, record '8'.*		1 1	2 2	3	4
[L] FRESH OR DRIED FISH OR SHELLFISH? *IF YES*: HOW MANY TIMES DID YOUR CHILD EAT EGGS? *IF 5 OR MORE TIMES, RECORD '5'. If unknown, record '8'.*	[L] Fresh or dried fish	1 1	2 2	3	4

[M] ANY FOODS MADE FROM BEANS, PEAS, LENTILS, OR NUTS? *IF YES:* HOW MANY TIMES DID YOUR CHILD EAT ANY FOODS MADE FROM BEANS, PEAS, LENTILS, OR NUTS? *IF 5 OR MORE TIMES, RECORD '5'. If unknown, record '8'.*	[M] Foods made from beans, peas, etc.	1	2	3	4
[N] CHEESE OR OTHER FOOD MADE FROM MILK? *IF YES:* HOW MANY TIMES DID YOUR CHILD EAT CHEESE OR OTHER FOOD MADE FROM MILK? *IF 5 OR MORE TIMES, RECORD '5'. If unknown, record '8'.*	[N] Cheese or other food made from milk	1 1	2 2	3	4
[O] ANY OTHER SOLID, SEMI-SOLID, OR SOFT FOOD THAT I HAVE NOT MENTIONED? PLEASE INDICATE	[O] Other solid, semi-solid, or soft food	1	2		

	(*Specify*)				
	1	2	3	4	5
9. If my child eats more than usual at one meal, I try to restrict his/her eating at the next meal. Umtanami engadla kakulu nxa sisidla, ngiyamnika ukudya ukulutswane ekudleni okulandelayo Kana mwana wangu akadya zvakaraudzira panguva imwe chete, ndinozama kudzora madyiro ake pakudya kunotevera.	1	2	3	4	5
10. I keep a lot of sweets (lollipop, stumbo candy) in my house. Ngiya gcina ukudla okufana nje nge ziwitsi, stumbo, candy lama lollipop emzini wami. Ndinochengeta ma sweets, lollipop, stumbo, candy) mumba mangu	1	2	3	4	5
	1	2	3	4	5
10. If my child eats only a small helping, I try to get him/her to eat more. Umtanami engadla ukudla okulutshwane, ngiyamncenga ukuti edle okunenge. Kana mwana wangu akadya zvishoma, ndinozama kuti adye zvakare	1	2	3	4	5
11. If my child says “I am not hungry,”I try to get him/her to eat anyway. Umtanami engathi kalambanga, ngiyazama ukuthi edhle kupela. Kana mwana wangu akati aguta, ndinozama kuti adye zvakare.	1	2	3	4	5
12. I have to make sure that my child does not eat too many sweets, lollipop, freezits Kumele ngibe leqciniso ukuti umtanami kadli ukudla okufana nje ngemihlobo yeziwitsi, ice cream, ama freezits, lollipop Ndinofanira kuve nechokwadi chokuti mwana wangu haadyi zviwitsi, lollipop, freezits zvakawandisa.	1	2	3	4	5
13. My child should always eat all of the food on his/her plate. Umtanami kumele adye konke ngiyabe ngimupakulele emganwini wakhe nsukuzonke. Mwana wangu anofanira kupedza zvese zvandinenge ndamupakurira.	1	2	3	4	5

14. When he/she says he/she is finished eating, I try to get my child to eat one more (two more, etc.) bites of food. Umtanami engaceda ukudla ngiyazama ukuti edle futi (kanye, kumbe kabili kusiye pambili). Kana mwana wangu akati aguta, ndinoyedza kuti adye kamwe kamwechete (kavirim zvichienda mberi).	1	2	3	4	5

THANK YOU

MRCZ/A/2692

ANNEXURE B1

COMPREHENSIVE FEEDING PRACTICES QUESTIONNAIRE

Yevonnie Chauraya

SECTION A DEMOGRAPHIC DATA
MRCZ/A/2692

STUDY IDENTIFICATION NUMBER	
PARTICIPANT IDENTIFICATION NUMBER	

Questionnaire

You will have to fill in the following questionnaire if you decide to join the study. Please do not complete the section if you are unsure of the required information. The researcher, or her assistants, is available to explain all sections.

Essential information (required)
Answering the questions is voluntary and you may leave out any questions that make you feel uncomfortable. This data will be used anonymously and your privacy will be protected to the best of my ability.

Section A	Please circle your answer.	Other (specify)
1. Gender	a. Female b. Male	
2. Age (years)		
3. Marital status	a. Married b. Single c. Divorced d. Living together e. Other (specify)	
4. Primary caregiver	a. Mother b. Father c. Grandparent d. Other (specify)	
5. Level of education	a. Some high school b. Completed high school c. Other (specify)	
6. Number of children in the household	a. 1 b. 2 c. 3 d. 4+	
7. Number of children in the household aged 2-5 years	a. 1 b. 2 c. 3+	

8. Employment status	a. Employed full time b. Employed part time c. Unemployed	

SECTION B CFPQ/UNICEF QUESTIONNAIRE

Parents take many different approaches to feeding their children and may have different concerns about feeding depending on their child. **Please answer the following questions as honestly as possible with this child in mind.** **MRCZ 2692**	Never	Rarely	Sometimes	Mostly	Always
1. How much do you keep track of the sweets (stumbo, candy, lollipop) that your child eats? Unanzelela hini ukudla komthanakho eziwitsi (ezimnandi, candy, lollipop) okudhliwa lomtanakho? Unoongorora here madyiro anoita mwana wako (masiwiti, candy, lollipop)?	1	2	3	4	5
2. How much do you keep track of the snack food (jiggies, zap snacks, nik naks) that your child eats? Unanzelela hini ukudla komthanako ukudya nje (ngama jiggies, zap snacks, nik naks okudhliwa lomtanakho? Unoongorora zvakadii madyiro emwana wako zvikafu zvinenge (ma jiggies, zap snacks, nik naks) zvinodyiwa nemwana wako?	1	2	3	4	5
3. How much do you keep track of the high-fat foods that your child eats? Unanzelela hini umnthanako ukudla kwake ukudya okuphekwe ngamafuta amanenge? Unoongorora zvakadii madyiro emwana wako kudya kwemhando dzezvekudya zvakabikwa nemafuta akawanda?	1	2	3	4	5
4. How much do you keep track of the sugary drinks (freezits, jolly juice, kool-aid) this child drinks? Unanzelela hinii umthanakho ukunata kwake imihlobo yokunatwayo iletshukela okufana nje ngama "freezit, jolly juice, kool aid"? Unoongorora zvakadii manwiro emwana uyu mhando dze zvinwiwa zvinotapira zvakaita sema "firiziti, jolly juice, kool- aid?	1	2	3	4	5
5. NOW I WOULD LIKE TO ASK YOU ABOUT (OTHER) LIQUIDS THAT YOUR CHILD MAY HAVE HAD YESTERDAY DURING THE DAY OR THE NIGHT. I AM INTERESTED TO KNOW WHETHER YOUR CHILD HAD THE ITEM EVEN IF COMBINED WITH OTHER FOODS. ZVINO NDAVAKUDA KUKUBVUNZAI PAMUSORO PEZVINWIWA ZVAMAKAPA MWANA WENYU NEZURO MASIKATI KANA MANHERU.NDINODA KUZIVA KANA MAKAMUPA ZVINHU IZVI, NYANGWE ZVAKASANGANISWA NECHIMWE CHIKAFU. NJALO SENGIFUNA KUKUBUZA LOKHUNYE OKWANATWAYO LO MTHANAKHO IZOLO EMINI KUMBE NTAMBAMA NOMA KWA KUHLANGANISWE LOKHUNYE UKUDYA PLEASE INCLUDE LIQUIDS CONSUMED OUTSIDE OF YOUR HOME/WARD. TAURAI ZVIMWE KUSANGANISIRA ZVAAKANWA MUSIRI MUMBA MUNO/MU WARD. KULUMANINI KONKE LALOKHO WAKUNATA PANDLE KOMUZI WAKHO/WARD.					

DID YOUR CHILD DRINK (*NAME OF ITEM*) YESTERDAY DURING THE DAY OR THE NIGHT: MWANA WENYU AKAMWA(*name of item*)NEZURO MASIKATI KANA MANHERU HERE? UMTHANAKHO WANATHA (BIZO LALOKHO WANATHA) IZOLO EMINI KUMBE NTAMBAMA.					
		Yes	No		
[A] PLAIN WATER?	[A] Plain water	1	2		
[B] JUICE OR JUICE DRINKS?	[B] Juice or juice drinks	1	2		
[C] CLEAR BROTH/ CLEAR SOUP?	[C] Clear broth/clear soup	1	2		
[D] MILK FOR EXAMPLE TINNED, POWDERED, FRESH OR SOUR ANIMAL MILK?	[D] Milk	1	2		
IF YES: HOW MANY TIMES DID YOU GIVE YOUR CHILD DRINK MILK? *IF 5 OR MORE TIMES, RECORD '5'.* *If unknown, record '8'.*	*If yes:* Number of times drank milk ..... __	1 1	2 2	3	4
[E] INFANT FORMULA?	[E] Infant formula	1	2		
IF YES: HOW MANY TIMES DID YOU GIVE YOUR CHILD INFANT FORMULA? *IF 5 OR MORE TIMES, RECORD '5'.* *If unknown, record '8'.*	*If yes:* Number of times drank infant formula __	1	2	3	4
[F] ANY OTHER LIQUIDS? PLEASE INDICATE.	[F] Other liquids (specify)_____ _____	1	2		

6.Do you let your child eat whatever s/he wants? 1 2 3 4 5
Uyekeli umthanako esidla okufunayo hini?
Unoregera mwana wako achidya chese chaanoda here ?

		Disagree	Slightly disagree	Neutral	Slightly agree	Agree
7.Most of the food I keep in the house is healthy. Ukudya okunenge engikuqina endlini kuyakhi umziba. Kudya kuzhinji kwandinochengeta mumba kunehutano		1	2	3	4	5
8.NOW I WOULD LIKE TO ASK YOU ABOUT (OTHER) FOODS THAT YOUR CHILD MAY HAVE HAD YESTERDAY DURING THE DAY OR THE NIGHT. AGAIN, I AM INTERESTED TO KNOW WHETHER YOUR CHILD HAD THE ITEM EVEN IF COMBINED WITH OTHER FOODS. ZVINO NDINODA KUKUBVUNZAI PAMUSORO PEZVIKAFU ZVAKADYIWA NA*(zita)*NEZURO MASIKATI KANA MANHERU? NDINODA KUZIVA KANA *(zita)* AKAPIWA ZVINHU IZVI, NYANGWE ZVAKASANGANISWA NECHIMWE CHIKAFU? KATESI SENGIFUNA KUKUBUZA NGOKUDHLA KWADHLIWA NGUNTANAKO IZOLO EMINI KUMBE NTAMBAMA? NGIFUNA UKUKWAZI UKUTHI UMNTANAKO WANIKWA HINI UKUDHLA LOKHU, NOMA KWAKHUHLANGANISWE LOKHUNYE UKHUDHLA? PLEASE INCLUDE FOODS CONSUMED OUTSIDE OF YOUR HOME. TAURAI NEZVIMWE MUCHISANGANISIRA ZVAAKADYAWO KUMWE. KULUMA KONKE LOKHUNYE WADHLA KULEZINYE INDAWO ZINGASO EMZINI WAKHO. DID YOUR EAT (*NAME OF FOOD*) YESTERDAY DURING THE DAY OR THE NIGHT: (BIZO) WADHLA (BIZO LOKUDHLA) IZOLO EMINI KUMBE NTAMBAMA						
MWANA WENYU AKADYA (*zita rechikafu*) NEZURO MASIKATI KANA MANHERU HERE?			Yes	No		
[A] YOGHURT?	[A] Yoghurt		1	2		
IF YES: HOW MANY TIMES DID YOUR CHILD DRINK OR EAT YOGHURT? *IF 5 OR MORE TIMES, RECORD '5'. If unknown, record '8'.*	*If yes:* Number of times drank/ate yoghurt.....		1	2	3	4
[B] ANY CERELAC, PRONUTRO, CEREVITA OR ANY COMMERCIALLY FORTIFIED BABY FOOD?	[B] Commercially fortified foods		1	2		

IF YES: HOW MANY TIMES DID YOUR CHILD EAT ANY CERELAC, PRONUTRO, CEREVITA OR ANY OTHER COMMERCIALLY FORTIFIED FOODS? *IF 5 OR MORE TIMES, RECORD '5'. If unknown, record '8'.*		1	2	3	4
[C] CLEAR BROTH/CLEAR SOUP?		1	2		
IF YES: HOW MANY TIMES DID YOUR CHILD DRINK OR EAT CLEAR BROTH/CLEAR SOUP? *IF 5 OR MORE TIMES, RECORD '5'. If unknown, record '8'.*	*If yes:* Number of times drank/ate yoghurt..... __	1	2	3	4
[D] PUMPKIN, CARROTS, SQUASH OR SWEET POTATOES THAT ARE YELLOW OR ORANGE INSIDE?		1	2		
[D] PUMPKIN, CARROTS, SQUASH, ETC.					
IF YES: HOW MANY TIMES DID YOUR CHILD EAT PUMPKIN, CARROTS, SQUASH OR SWEET POTATOES THAT ARE YELLOW OR ORANGE INSIDE? *IF 5 OR MORE TIMES, RECORD '5'. If unknown, record '8'.*		1	2	3	4
[E] WHITE POTATOES, WHITE YAMS, CASSAVA, OR ANY OTHER FOODS MADE FROM ROOTS? *IF YES:* HOW MANY TIMES DID YOU GIVE YOUR CHILD WHITE POTATOES, WHITE YAMS, CASSAVA, OR ANY OTHER FOODS MADE FROM ROOTS? *IF 5 OR MORE TIMES, RECORD '5'. If unknown, record '8'.*	[E] White potatoes, white yams, manioc, cassava, etc.	1	2		
		1	2	3	4

[F] ANY DARK GREEN, LEAFY VEGETABLES SUCH AS SPINACH, PUMPKIN OR OKRA LEAVES? *IF YES:* HOW MANY TIMES DID YOUR CHILD EAT ANY DARK GREEN, LEAFY VEGETABLES SUCH AS SPINACH, PUMPKIN OR OKRA LEAVES? *IF 5 OR MORE TIMES, RECORD '5'. If unknown, record '8'.*	[F] Dark green, leafy vegetables	1 1	2 2	3	4
[G] RIPE MANGOES, PAW PAWS, PAPAYAS? *IF YES:* HOW MANY TIMES DID YOU GIVE YOUR CHILD RIPE MANGOES, PAW PAWS, PAPAYAS? ? *IF 5 OR MORE TIMES, RECORD '5'. If unknown, record '8'.*	[G] Ripe mangoes	1 1	2 2	3	4
[H] ANY OTHER FRUITS OR VEGETABLES? *IF YES:* HOW MANY TIMES DID YOUR CHILD EAT ANY OTHER FRUITS OR VEGETABLES? *IF 5 OR MORE TIMES, RECORD '5'. If unknown, record '8'.*	[H] Other fruits or vegetables	1 1	2 2	3	4
[I] LIVER, KIDNEY, HEART OR OTHER ORGAN MEATS? *IF YES:* HOW MANY TIMES DID YOUR CHILD EAT LIVER, KIDNEY, HEART OR OTHER ORGAN MEATS? *IF 5 OR MORE TIMES, RECORD '5'. If unknown, record '8'.*	[I] Liver, kidney, heart or other organ meats	1	2		

		1	2	3	4
[J] ANY MEAT, SUCH AS BEEF, PORK, LAMB, GOAT, CHICKEN, OR DUCK? *IF YES*: HOW MANY TIMES DID YOUR CHILD EAT MEAT, SUCH AS BEEF, PORK, LAMB, GOAT, CHICKEN, OR DUCK? ? *IF 5 OR MORE TIMES, RECORD '5'. If unknown, record '8'.*	[J] Meat, such as beef, pork, lamb, goat, etc.	1 1	2 2	3	4
[K] EGGS? *IF YES*: HOW MANY TIMES DID YOUR CHILD EAT EGGS? *IF 5 OR MORE TIMES, RECORD '5'. If unknown, record '8'.*		1 1	2 2	3	4
[L] FRESH OR DRIED FISH OR SHELLFISH? *IF YES*: HOW MANY TIMES DID YOUR CHILD EAT EGGS? *IF 5 OR MORE TIMES, RECORD '5'. If unknown, record '8'.*	[L] Fresh or dried fish	1 1	2 2	3	4

[M] ANY FOODS MADE FROM BEANS, PEAS, LENTILS, OR NUTS? *IF YES:* HOW MANY TIMES DID YOUR CHILD EAT ANY FOODS MADE FROM BEANS, PEAS, LENTILS, OR NUTS? *IF 5 OR MORE TIMES, RECORD '5'. If unknown, record '8'.*	[M] Foods made from beans, peas, etc.	1	2	3	4
[N] CHEESE OR OTHER FOOD MADE FROM MILK? *IF YES:* HOW MANY TIMES DID YOUR CHILD EAT CHEESE OR OTHER FOOD MADE FROM MILK? *IF 5 OR MORE TIMES, RECORD '5'. If unknown, record '8'.*	[N] Cheese or other food made from milk	1 1	2 2	3	4
[O] ANY OTHER SOLID, SEMI-SOLID, OR SOFT FOOD THAT I HAVE NOT MENTIONED? PLEASE INDICATE	[O] Other solid, semi-solid, or soft food	1	2		

	(*Specify*)				
	1	2	3	4	5
9. If my child eats more than usual at one meal, I try to restrict his/her eating at the next meal. Umtanami engadla kakulu nxa sisidla, ngiyamnika ukudya ukulutswane ekudleni okulandelayo Kana mwana wangu akadya zvakaraudzira panguva imwe chete, ndinozama kudzora madyiro ake pakudya kunotevera.	1	2	3	4	5
10. I keep a lot of sweets (lollipop, stumbo candy) in my house. Ngiya gcina ukudla okufana nje nge ziwitsi, stumbo, candy lama lollipop emzini wami. Ndinochengeta ma sweets, lollipop, stumbo, candy) mumba mangu	1	2	3	4	5
	1	2	3	4	5
10. If my child eats only a small helping, I try to get him/her to eat more. Umtanami engadla ukudla okulutshwane, ngiyamncenga ukuti edle okunenge. Kana mwana wangu akadya zvishoma, ndinozama kuti adye zvakare	1	2	3	4	5
11. If my child says “I am not hungry,”I try to get him/her to eat anyway. Umtanami engathi kalambanga, ngiyazama ukuthi edhle kupela. Kana mwana wangu akati aguta, ndinozama kuti adye zvakare.	1	2	3	4	5
12. I have to make sure that my child does not eat too many sweets, lollipop, freezits Kumele ngibe leqciniso ukuti umtanami kadli ukudla okufana nje ngemihlobo yeziwitsi, ice cream, ama freezits, lollipop Ndinofanira kuve nechokwadi chokuti mwana wangu haadyi zviwitsi, lollipop, freezits zvakawandisa.	1	2	3	4	5
13. My child should always eat all of the food on his/her plate. Umtanami kumele adye konke ngiyabe ngimupakulele emganwini wakhe nsukuzonke. Mwana wangu anofanira kupedza zvese zvandinenge ndamupakurira.	1	2	3	4	5

14. When he/she says he/she is finished eating, I try to get my child to eat one more (two more, etc.) bites of food. Umtanami engaceda ukudla ngiyazama ukuti edle futi (kanye, kumbe kabili kusiye pambili). Kana mwana wangu akati aguta, ndinoyedza kuti adye kamwe kamwechete (kavirim zvichienda mberi).	1	2	3	4	5

THANK YOU

MRCZ/A/2692

ANNEXURE B2

PERMISSION LETTER FOR COMPREHENSIVE FEEDING PRACTICES QUESTIONNAIRE

Yevonnie Chauraya

Re: [EXTERNAL] Permission To Use Comprehensive Feeding Practices Questionnaire Inbox

Dara Musher-Eizenman<mushere@bgnet.bgsu.edu> Tue, Aug 6, 2019 at 3:43 PM
To: Yvonne Chauraya <ychauraya@gmail.com>

Dear Yvonne,

Yes, you are welcome to use this instrument in your work. I wish you the best of luck with your project.

DME

****
Dara Musher-Eizenman
Professor/Vice Chair for Undergraduate Instruction
Department of Psychology
Bowling Green State University
(419) 372 - 2948
mushere@bgsu.edu

On Tue, Aug 6, 2019 at 4:18 AM Yvonne Chauraya <ychauraya@gmail.com> wrote:

> Greetings Musher-Eizenman. I kindly acknowledge the usefulness of the above and am requesting for your permission to use the tool. I am a Health Educator and am conducting a research which requires use of the above instrument. Thank you. Best regards
>
> --
> Yevonnie Chauraya
> Lecturer, Department of Nursing & Midwifery Sciences
> National University of Science and Technology
> Faculty of Medicine
> Mpilo Hospital Complex
> Vera Road, Mzilikazi
> Box AC 939. Ascot
> Bulawayo
> Zimbabwe
> Tel: +263 292 203336-9
> Mobile: +263773515312
> ychauraya@gmail.com

ANNEXURE B3

CONSENT FOR CAREGIVERS (PHASE 1)

Benefits and/Compensation

There are no monetary benefits associated with participating in the study. Participation is voluntary. There is no provision of food or medical treatment that will be given to your child for participating in this study. The study may help in development of guidelines for feeding practices for children aged 2-5 years in Bulawayo province in Zimbabwe.

Confidentiality

If you indicate your willingness to participate in this study by signing this document, no information linked to you or your child will be disclosed. Confidentiality is ensured as your name or that of your child will appear anywhere in the study

Additional Costs

There are no costs attached to you for participating in the study

In The Event of Injury

There are no foreseeable risk of injury associated with taking part in the study

Voluntary Participation

Participation in this study is voluntary. If you decide not to participate in this study, your decision will not affect your future relations with Mpilo Central Hospital.

OFFER TO ANSWER QUESTIONS

Before you sign this form, please ask any questions on any aspect of this study that is unclear to you. You may take as much time as necessary to think it over.

AUTHORIZATION

You are making a decision whether or not to participate in this study. Your signature indicates that you have read and understood the information provided above, have had all your questions answered, and have decided to participate.

Name of Research Participant (please print) GUGULETHU NCUBE Date 27/01

Signature of Participant / Thumb Print GNcube Date

Relationship to the child FATHER

Name of Staff Obtaining Consent Lihle Moyo Signature Moyo Date 27/01/21

Name of Witness (*if required*) Signature Date

YOU WILL BE OFFERED A COPY OF THIS CONSENT FORM TO KEEP.

If you have any questions concerning this study or consent form beyond those answered by the investigator, including questions about the research, your rights as a research participant or research-related injuries; or if you feel that you have been treated unfairly and would like to talk to someone other than a member of the research team, please feel free to contact the Medical Research Council of Zimbabwe (MRCZ) on telephone 242791792 or 242791193 and cell phone lines 0784 956 128. The MRCZ Offices are located at the National Institute of Health Research premises at Corner Josiah Tongogara and Mazoe Avenue in Harare.

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ANNEXURE B3

EXAMPLE OF A SIGNED CONSENT FORM FOR CAREGIVERS

UNIVERSITEIT VAN PRETORIA
UNIVERSITY OF PRETORIA
YUNIBESITHI YA PRETORIA

ANNEXURE B3 (PHASE 1) CONSENT FOR CAREGIVERS

Information leaflet and information consent to be completed and signed by caregiver who voluntarily participates in completing a questionnaire on development of guidelines for feeding practices for children aged 2-5 years in Bulawayo province in Zimbabwe

Faculty of Health Sciences
SCHOOL OF HEALTH CARE SCIENCES
Department of Nursing Science

Title: Development of guidelines for feeding practices for children aged 2-5 years in Bulawayo province in Zimbabwe

Principal Investigator: ……Yevonnie Chauraya.
……

Supervisor: Professor Isabel M. Coetzee.
……

Institution: University of Pretoria.
……

Daytime telephone number:
…+263773515312……..DATE AND

TIME OF INFORMED CONSENT DISCUSSION:

			:
dd	**month**	**year**	**Time**

Dear Prospective Research Participant

Dear Mr / Mrs/ Ms .....date of consent procedure /____..
/…... /……..

1) INTRODUCTION

You are invited to volunteer for a research study. This information leaflet is to assist you to decide if you would like to participate. Before you agree to take part in this study you should fully understand what is involved. You should not agree to take part unless you are completely satisfied about all the procedures involved. If you have any questions, which are not fully explained in this leaflet, do not hesitate to ask the principal investigator, Mrs. Yevonnie Chauraya or supervisor, Prof I Coetzee on 012 356 3173 or Dr R Leech on 012 356 3161. Please note that your participation is voluntary and no compensation will be given for your participation.

2) THE NATURE AND PURPOSE OF THIS STUDY

The aim of this study is to develop guidelines for feeding practices for children aged 2-5 years in Bulawayo province in Zimbabwe. You are an invaluable source of information in this study.

3) EXPLANATION OF PROCEDURES AND WHAT WILL BE EXPEXTED FROM PARTICIPANTS.

Phase 1

The questionnaire is used to determine current feeding practices utilized by caregivers of children aged 2-5 years in Bulawayo province in Zimbabwe in order to identify components to include in guidelines for feeding practices for children aged 2-5 years in Bulawayo province in Zimbabwe.

4) POSSIBLE RISKS AND DISCOMFORTS INVOLVED

There is a no risk participating in this study and there is no experiment involved. The questionnaire can take up to 20 minutes to complete.

5) POSSIBLE BENEFITS OF THIS STUDY

Your contribution in this study will contribute in development of guidelines for feeding practices for children aged 2-5 years in Bulawayo province in Zimbabwe.

6) COMPENSATION

You will not be paid to take part in this study. There are no costs involved for you to be part of this study.

7) YOUR RIGHTS AS A RESEARCH PARTICIPANT

Your participation in this study is entirely voluntary. You can refuse to participate or stop at any time during the completion of the questionnaire without giving any reason or penalty.

8) ETHICS APPROVAL

This study has received written approval from the ethics committee of the faculty of Health Sciences at the University of Pretoria. A copy of the approval letter is available if you wish to have one. The contact person at the ethics committee of the University of Pretoria is Ms. Deepeka Behari and she can be contacted on 012 356 3084 or e-mail her at deepeka.behari@up.ac.za

9) INFORMATION

The contact person for this study is Mrs Yevonnie Chauraya. In case you have any questions about the study please contact her at 798328203 or + 263773515312 or ychauraya@gmail.com

10) CONFIDENTIALITY

Your name and other identifiable information will be kept strictly confidential. Research reports and articles in accredited scientific journals will not include any information that may identify you or your child.

11) CONSENT TO PARTICIPATE IN THIS STUDY

I confirm that the person asking my consent to take part in this study has told me about nature, process, risks, discomforts and benefits of the study. I have also received, read and understood the above written information (Information Leaflet and Informed Consent) regarding the study. I am aware that the results of the study, including personal details, will be anonymously processed into research reports. I am

participating willingly. I have had time to ask questions and have no objection to participate in the study. I understand that there is no penalty should I wish to discontinue with the study and my withdrawal will not affect me in any way. I hereby volunteer to take part in this research.

I have received a signed copy of this consent agreement.

_____	_____
Participant's name (Please print)	Date
_____	_____
Participant's signature	Date
_____	_____
Researcher's name (Please print)	Date
_____	_____
Researcher's signature	Date

Thank you for your participation

ANNEXURE B4

EXAMPLE OF A COMPLETED CFPQ (PHASE 1)

STUDY IDENTIFICATION NUMBER	134
PARTICIPANT IDENTIFICATION NUMBER	

Questionnaire

You will have to fill in the following questionnaire if you decide to join the study. Please do not complete the section if you are unsure of the required information. The researcher, or her assistants, is available to explain all sections.

Essential information (required)
Answering the questions is voluntary and you may leave out any questions that make you feel uncomfortable. This data will be used anonymously and your privacy will be protected to the best of my ability.

Section A	Please circle your answer.	Other (specify)
1. Gender	a. Female (b) Male	
2. Age (years)	45	
3. Marital status	a. Married (b) Single c. Divorced d. Living together e. Other (specify)	
4. Primary caregiver	a. Mother (b) Father c. Grandparent d. Other (specify)	
5. Level of education	a. Some high school (b) Completed high school c. Other (specify)	
6. Number of children in the household	a. 1 b. 2 (c) 3 d. 4+	
7. Number of children in the household aged 2-5 years	a. 1 (b) 2 c. 3+	
8. Employment status	a. Employed full time b. Employed part time (c) Unemployed	

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Parents take many different approaches to feeding their children and may have different concerns about feeding depending on their child. **Please answer the following questions as honestly as possible with this child in mind.** **MRCZ 2692**

	Never	Rarely	Sometimes	Mostly	Always
How much do you keep track of the sweets (stumbo, candy, lollipop) that your child eats? Unanzelela hini ukudya komthanakho eziwitsi (ezimnandi, candy, lollipop) okudhliwa lomtanakho? Unoongorora here madyiro anoita mwana wako (masiwiti, candy, lollipop)?	1	2	(3)	4	5
How much do you keep track of the snack food (jiggies, zap snacks, nik naks) that your child eats? Unanzelela hini ukudya komthanako ukudya nje (ngama jiggies, zap snacks, nik naks okudhliwa lomtanakho? Unoongorora zvakadii madyiro emwana wako zvikafu zvinenge (ma jiggies, zap snacks, nik naks) zvinodyiwa nemwana wako?	1	2	3	(4)	5
How much do you keep track of the high-fat foods that your child eats? Unanzelela hini umnthanako ukudya kwake ukudya okuphekwe ngamafuta amanenge? Unoongorora zvakadii madyiro emwana wako kudya kwemhando dzezvekudya zvakabikwa nemafuta akawanda?	(1)	2	3	4	5
How much do you keep track of the sugary drinks (freezits, jolly juice, kool-aid) this child drinks? Unanzelela hinii umthanakho ukunata kwake imihlobo yokunatwayo iletshukela okufana nje ngama "freezit, jolly juice, kool aid"? Unoongorora zvakadii manwiro emwana uyu mhando dze zvinwiwa zvinotapira zvakaita sema "firiziti, jolly juice, kool- aid?	1	(2)	3	4	5

NOW I WOULD LIKE TO ASK YOU ABOUT (OTHER) LIQUIDS THAT YOUR CHILD MAY AVE HAD YESTERDAY DURING THE DAY OR THE NIGHT. I AM INTERESTED TO KNOW HETHER YOUR CHILD HAD THE ITEM EVEN IF COMBINED WITH OTHER FOODS.
VINO NDAVAKUDA KUKUBVUNZAI PAMUSORO PEZVINWIWA ZVAMAKAPA MWANA ENYU NEZURO MASIKATI KANA MANHERU.NDINODA KUZIVA KANA MAKAMUPA 'INHU IZVI, NYANGWE ZVAKASANGANISWA NECHIMWE CHIKAFU.
ALO SENGIFUNA KUKUBUZA LOKHUNYE OKWANATWAYO LO MTHANAKHO IZOLO 1INI KUMBE NTAMBAMA NOMA KWA KUHLANGANISWE LOKHUNYE UKUDYA EASE INCLUDE LIQUIDS CONSUMED OUTSIDE OF YOUR HOME/WARD.
URAI ZVIMWE KUSANGANISIRA ZVAAKANWA MUSIRI MUMBA MUNO/MU WARD.
JLUMANINI KONKE LALOKHO WAKUNATA PANDLE KOMUZI WAKHO/WARD.
D YOUR CHILD DRINK (*NAME OF ITEM*) YESTERDAY DURING THE DAY OR THE NIGHT:
WANA WENYU AKAMWA(*name of item*)NEZURO MASIKATI KANA MANHERU HERE?
NAKHO WANATHA (BIZO LALOKHO WANATHA) IZOLO EMINI KUMBE NTAMBAMA.

		Yes	No		
[A] PLAIN WATER?	[A] Plain water	1	(2)		
[B] JUICE OR JUICE DRINKS?	[B] Juice or juice drinks	(1)	2		
[C] CLEAR BROTH/ CLEAR SOUP?	[C] Clear broth/clear soup	(1)	2		
[D] MILK FOR EXAMPLE TINNED, POWDERED, FRESH OR SOUR ANIMAL MILK?	[D] Milk	1	(2)		
IF YES: HOW MANY TIMES DID YOU GIVE YOUR CHILD DRINK MILK? *IF 5 OR MORE TIMES, RECORD '5'.* *If unknown, record '8'.*	*If yes:* Number of times drank milk...	1 1	2 2	3	4

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[E] INFANT FORMULA?	[E] Infant formula	1	②		
IF YES: HOW MANY TIMES DID YOU GIVE YOUR CHILD INFANT FORMULA? *IF 5 OR MORE TIMES, RECORD '5'. If unknown, record '8'.*	*If yes:* Number of times drank infant formula.....	1	2	3	4
[F] ANY OTHER LIQUIDS? PLEASE INDICATE.	[F] Other liquids (specify) fayolsip	①	2		

5.Do you let your child eat whatever s/he wants? 1 2 3 ④ 5
Ifyekeli umthanako esidya okufunayo hini?
Unoregera mwana wako achidya chese chaanoda here ?

	Disagree	Slightly disagree	Neutral	Slightly agree	Agree
Most of the food I keep in the house is healthy. kudya okunenge engikuqina endlini kuyakhi umziba. udya kuzhinji kwandinochengeta mumba kunehutano	1	2	3	4	⑤

NOW I WOULD LIKE TO ASK YOU ABOUT (OTHER) FOODS THAT YOUR CHILD MAY HAVE HAD YESTERDAY DURING THE DAY OR THE NIGHT. AGAIN, I AM INTERESTED TO KNOW WHETHER YOUR CHILD HAD THE ITEM EVEN IF COMBINED WITH OTHER FOODS.

ZVINO NDINODA KUKUBVUNZAI PAMUSORO PEZVIKAFU ZVAKADYIWA NA*(zita)*NEZURO MASIKATI KANA MANHERU? NDINODA KUZIVA KANA *(zita)* AKAPIWA ZVINHU IZVI, NYANGWE ZVAKASANGANISWA NECHIMWE CHIKAFU?
KATESI SENGIFUNA KUKUBUZA NGOKUDHLA KWADHLIWA NGUNTANAKO IZOLO EMINI KUMBE NTAMBAMA? NGIFUNA UKUKWAZI UKUTHI UMNTANAKO WANIKWA HINI UKUDHLA LOKHU, NOMA KWAKHUHLANGANISWE LOKHUNYE UKHUDHLA?
PLEASE INCLUDE FOODS CONSUMED OUTSIDE OF YOUR HOME.

TAURAI NEZVIMWE MUCHISANGANISIRA ZVAAKADYAWO KUMWE. KULUMA KONKE HUNYE WADHLA KULEZINYE INDAWO ZINGASO EMZINI WAKHO.

DID YOUR EAT (*NAME OF FOOD*) YESTERDAY DURING THE DAY OR THE NIGHT:

(BIZO) WADHLA (BIZO LOKUDHLA) IZOLO EMINI KUMBE NTAMBAMA

MWANA WENYU AKADYA (*zita rechikafu*) NEZURO MASIKATI KANA MANHERU HERE?		Yes	No		
[A] YOGHURT?	[A] Yoghurt	1	②		
IF YES: HOW MANY TIMES DID YOUR CHILD DRINK OR EAT YOGHURT? *IF 5 OR MORE TIMES, RECORD '5'. If unknown, record '8'.*	*If yes:* Number of times drank/ate yoghurt	1	2	3	4
B] ANY CERELAC, PRONUTRO, CEREVITA OR ANY COMMERCIALLY FORTIFIED BABY FOOD?	[B] Commercially fortified foods	1	②		
S: HOW MANY TIMES DID YOUR CHILD EAT ANY CERELAC, PRONUTRO, CEREVITA OR ANY					

OTHER COMMERCIALLY FORTIFIED FOODS? *IF 5 OR MORE TIMES, RECORD '5'. If unknown, record '8'.*		1	2	3	4
[C] CLEAR BROTH/CLEAR SOUP?		1	(2)		
IF YES: HOW MANY TIMES DID YOUR CHILD DRINK OR EAT CLEAR BROTH/CLEAR SOUP? *IF 5 OR MORE TIMES, RECORD '5'. If unknown, record '8'.*	*If yes:* Number of times drank/ate yoghurt.....	1	2	3	4
[D] PUMPKIN, CARROTS, SQUASH OR SWEET POTATOES THAT ARE YELLOW OR ORANGE INSIDE?		1	(2)		
[D] PUMPKIN, CARROTS, SQUASH, ETC. *IF YES:* HOW MANY TIMES DID YOUR CHILD EAT PUMPKIN, CARROTS, SQUASH OR SWEET POTATOES THAT ARE YELLOW OR ORANGE INSIDE? *IF 5 OR MORE TIMES, RECORD '5'. If unknown, record '8'.*		1	2	3	4
[E] WHITE POTATOES, WHITE YAMS, CASSAVA, OR ANY OTHER FOODS MADE FROM ROOTS? *IF YES:* HOW MANY TIMES DID YOU GIVE YOUR CHILD WHITE POTATOES, WHITE YAMS, CASSAVA, OR ANY OTHER FOODS MADE FROM ROOTS? *IF 5 OR MORE TIMES, RECORD '5'. If unknown, record '8'.*	[E] White potatoes, white yams, manioc, cassava, etc.	(1)	2		
		1	2	(3)	4
[F] ANY DARK GREEN, LEAFY VEGETABLES SUCH AS SPINACH, PUMPKIN OR OKRA LEAVES? *IF YES:* HOW MANY TIMES DID YOUR CHILD EAT ANY DARK GREEN, LEAFY VEGETABLES SUCH AS SPINACH, PUMPKIN OR OKRA LEAVES? *IF 5 OR MORE TIMES, RECORD '5'. If unknown, record '8'.*	[F] Dark green, leafy vegetables	1	(2)		
		1	2	3	4
[G] RIPE MANGOES, PAW PAWS, PAPAYAS? *IF YES:* HOW MANY TIMES DID YOU GIVE YOUR CHILD RIPE MANGOES, PAW PAWS, PAPAYAS? *IF 5 OR MORE TIMES, RECORD '5'. If unknown, record '8'.*	[G] Ripe mangoes	1	(2)		
		1	2	3	4
] ANY OTHER FRUITS OR VEGETABLES?	[H] Other fruits or vegetables	(1)	2		

		1	2	3	4
IF YES: HOW MANY TIMES DID YOUR CHILD EAT ANY OTHER FRUITS OR VEGETABLES? *IF 5 OR MORE TIMES, RECORD '5'. If unknown, record '8'.*					
[I] LIVER, KIDNEY, HEART OR OTHER ORGAN MEATS?	[I] Liver, kidney, heart or other organ meats	1	②		
YES: HOW MANY TIMES DID YOUR CHILD EAT LIVER, KIDNEY, HEART OR OTHER ORGAN MEATS? *IF 5 OR MORE TIMES, RECORD '5'. If unknown, record '8'.*		1	2	3	4
[J] ANY MEAT, SUCH AS BEEF, PORK, LAMB, GOAT, CHICKEN, OR DUCK?	[J] Meat, such as beef, pork, lamb, goat, etc.	1	②		
YES: HOW MANY TIMES DID YOUR CHILD EAT MEAT, SUCH AS BEEF, PORK, LAMB, GOAT, CHICKEN, OR DUCK? ? *IF 5 OR MORE TIMES, RECORD '5'. If unknown, record '8'.*		1	2	3	4
[K] EGGS?		1	②		
YES: HOW MANY TIMES DID YOUR CHILD EAT EGGS? *IF 5 OR MORE TIMES, RECORD '5'. If unknown, record '8'.*		1	2	3	4
[L] FRESH OR DRIED FISH OR SHELLFISH?	[L] Fresh or dried fish	1	②		
YES: HOW MANY TIMES DID YOUR CHILD EAT EGGS? *IF 5 OR MORE TIMES, RECORD '5'. If unknown, record '8'.*		1	2	3	4

[M] ANY FOODS MADE FROM BEANS, PEAS, LENTILS, OR NUTS? *IF YES:* HOW MANY TIMES DID YOUR CHILD EAT ANY FOODS MADE FROM BEANS, PEAS, LENTILS, OR NUTS? *IF 5 OR MORE TIMES, RECORD '5'. If unknown, record '8'.*	[M] Foods made from beans, peas, etc.	(1)	(2)	3	4
[N] CHEESE OR OTHER FOOD MADE FROM MILK? *IF YES:* HOW MANY TIMES DID YOUR CHILD EAT CHEESE OR OTHER FOOD MADE FROM MILK? *IF 5 OR MORE TIMES, RECORD '5'. If unknown, record '8'.*	[N] Cheese or other food made from milk	(1)	2		
[O] ANY OTHER SOLID, SEMI-SOLID, OR SOFT FOOD THAT I HAVE NOT MENTIONED? PLEASE INDICATE macaroni	[O] Other solid, semi-solid, or soft food (*Specify*) _____	(1)	2		
	1	2	3	4	5
If my child eats more than usual at one meal, I try to restrict his/her eating at the next meal. ntanami engadla kakulu nxa sisidla, ngiyamnika ukudya ukulutswane ekudleni okulandelayo ina mwana wangu akadya zvakaraudzira panguva imwe chete, ndinozama kudzora madyiro e pakudya kunotevera.	(1)	2	3	4	5
10. I keep a lot of sweets (lollipop, stumbo candy) in my house. Ngiya gcina ukudla okufana nje nge ziwitsi, stumbo, candy lama lollipop emzini wami, Ndinochengeta ma sweets, lollipop, stumbo, candy) mumba mangu	1	2	3	(4)	5
	1	2	3	4	5

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10. If my child eats only a small helping, I try to get him/her to eat more. Umtanami engadla ukudla okulutshwane, ngiyamncenga ukuti edle okunenge. Kana mwana wangu akadya zvishoma, ndinozama kuti adye zvakare	(1)	2	3	4	5
11. If my child says "I am not hungry," I try to get him/her to eat anyway. Umtanami engathi kalambanga, ngiyazama ukuthi edhle kupela. Kana mwana wangu akati aguta, ndinozama kuti adye zvakare.	1	2	3	4	(5)
12. I have to make sure that my child does not eat too many sweets, lollipop, freezits Kumele ngibe leqciniso ukuti umtanami kadli ukudla okufana nje ngemihlobo yeziwitsi, ice cream, ama freezits, lollipop Ndinofanira kuve nechokwadi chokuti mwana wangu haadyi zviwitsi, lollipop, freezits zvakawandisa.	1	2	3	4	(5)
13. My child should always eat all of the food on his/her plate. Umtanami kumele adye konke ngiyabe ngimupakulele emganwini wakhe nsukuzonke. Mwana wangu anofanira kupedza zvese zvandinenge ndamupakurira.	(1)	2	3	4	5
14. When he/she says he/she is finished eating, I try to get my child to eat one more (two more, etc.) bites of food. Umtanami engaceda ukudla ngiyazama ukuti edle futi (kanye, kumbe kabili kusiye pambili). Kana mwana wangu akati aguta, ndinoyedza kuti adye kamwe kamwechete (kavirim zvichienda mberi).	1	2	3	4	(5)

ANNEXURE C

GUIDELINES

ADVANCES IN NUTRITION: AINTERNATIONAL REVIEW

Review Article Style and Format

Manuscripts not revised and returned within 120 days will be treated as new submissions.

- Papers must be completely double-spaced.
- Papers must have consecutively numbered lines from the first line, first manuscript page throughout the last line, last manuscript page. Do not number lines in the References section. If you are uncertain about how to do this, please consult the "Help" feature in Word.
- Figures and tables should be clearly labeled (Fig, 1, Fig 2, etc. or Table 1, Table 2,etc).

Manuscript Preparation

- Title page(s)
- Abstract
- Introduction
- Current status of knowledge
- Conclusions
- Acknowledgments
- References

A. *Title page(s):* The title page must include:

- A title.
- The names of all authors (first name, middle initial, last name) and their departmental and institutional affiliations. Indicate which authors are associated with which institutions by numbered footnotes.
- The name of the corresponding author and a mailing address, telephone number, and email address.
- The word count for the entire manuscript (title through Acknowledgments, limit 7500 words).
- The number of figures.
- The number of tables.
- A running title of 48 characters or less.
- List all sources of financial support, if applicable.
- List all potential conflicts of interest (see below). If no conflicts of interest exist for 1 or more authors, please state this explicitly. *Conflict of Interest and Funding Disclosure*: Any existing financial arrangements between an author and a company whose product figures prominently in the submitted manuscript or between the author and any company or organization sponsoring the research reported in the submitted manuscript should be brought to the attention of the Editor in the cover letter that accompanies the manuscript

submission. If an author has no conflicts of interest, the footnote should list the author's name, followed by "no conflicts of interest". For detailed guidelines on possible conflicts of interest, see the OUP Journals Conflict of Interest Guidelines.

B. *Abstract:* The abstract must be a single paragraph of no more than 300 words summarizing the current status of the knowledge within the area of nutrition reviewed.

Below the abstract, provide and identify 5–10 keywords or short phrases, including the subject group, that will help to increase the discoverability of your manuscript; do not use adjectives. Terms that are fundamental to your manuscript but are not included in your manuscript title or abstract are especially important to include to increase discoverability by indexing services such as PubMed.

Please note that during manuscript submission, you will be asked to supply keywords to assist the editors in locating suitable reviewers for your manuscript. Keywords for reviewer searches should include the terms most fundamental to your manuscript, and may differ from your list of keywords for publication.

After the Abstract and Keywords, add a 1-2 sentence Statement of Significance indicating explicitly what is truly new in the present work compared to work already published in the field.

C. *Introduction:* This should be the portion of the manuscript providing the background for a review which focuses on work published over the last few years that has advanced our understanding of the issue under consideration.

D. *Current status of knowledge or Methods and Results:* Narrative reviews should include a "Current status of knowledge" section. This section of the review should focus on research efforts that have advanced our knowledge of this aspect of nutritional science and should carefully deal with divergent hypotheses when they exist.

Systematic reviews should be registered in PROSPERO and should include a Methods and Results section. A completed PRISMA (4) flow diagram must be submitted as a figure for publication in the review article. For meta-analyses and systematic reviews, a PRISMA checklist must be uploaded as a supplemental file for peer review.

E. *Conclusions:* Conclusions, discussion, problems, or areas for future research may be included.

F. *Acknowledgments:* Advice may be acknowledged in a section at the end of the text. Authors are responsible for obtaining written permission from everyone providing a personal communication or acknowledged by name and for providing to the Editor a copy of the permission, if requested. Please include the statement, 'All authors have read and approved the final manuscript.'

G. *References:* Number references, including web citations, consecutively in the order in which they are first mentioned in the text. References cited in tables, figures, or figure legends should be numbered according to the first citation of the table or figure in the text. Identify references in the text, tables, figures, and figure legends by Arabic numbers in parentheses.

The *AN* reference format is modified to be consistent with the International Committee of

Medical Journal Editors (ICMJE) recommended format for bibliographic citations (5) with the following exception: references should include the names of all authors, unless there are more than 10, in which case list the first 10 plus "et al." The list of references must begin on a new page. Abbreviate journal names according to the National Library of Medicine (NLM) journal abbreviations format (6). References should be numbered consecutively in the order in which they are first mentioned in the text.

Authors may add to a reference, the DOI ("digital object identifier" number unique to the publication) for articles in press. It should be included immediately after the citation in References.

Personal communications, submitted manuscripts, and unpublished data cannot be included in the References section, but the full name of the person providing the information should appear parenthetically in the text. *References in tables and figures:* References cited for the first time in tables or figure legends should be numbered in order, based on the placement of the table or figure in text. Identify references in text, tables, and figure legends by Arabic numbers in parentheses.

Units of Measure

It is preferable that measurements conform to le Systeme Internationale d'Unites (SI) (7). The metric system and the Celsius scale (º C) are the preferred units of measurement, and where possible concentrations should be expressed on a molar basis.

SI conversions:
OnlineConversion
Wikipedia
Clinical SI conversions:
JCS Clinical Laboratory Units Conversion

Abbreviations

Use standard abbreviations in *AN* papers without definition. An abridged list is in Appendix 1. Other common standard abbreviations are listed in Scientific Style and Format (8).

Each nonstandard (author-defined) abbreviation should be defined in the text at first mention. If three or more nonstandard abbreviations are used in the text, prepare an abbreviation footnote. The footnote should be associated with the first abbreviated term in the text and should be an alphabetized listing of all author-defined abbreviations and their definitions. Define all group designations parenthetically at first mention [for example, “control (CON) and high-fat (HF) groups”] Include definitions for these abbreviations in the abbreviation footnote.

All nonstandard abbreviations, including group designations, used in a table or table title must be defined alphabetically in a footnote to the table title. If the footnote to the table title contains multiple items, the definitions of the abbreviations should be the last item. If a table contains only one abbreviated term in the body of the table, then a separate footnote placed after that abbreviation should be used to define that term. Similarly, all nonstandard abbreviations, including group designations, used in a figure or figure legend must be defined alphabetically at the end of the figure legend.

Abbreviations should not be followed by a period. Use the standard abbreviations for SI prefixes found in Young (7) and in Appendix 2 and those for units of measure in Appendix 3.

All gene and protein abbreviations should be defined at first use in the abstract, text, figures, and tables, and the abbreviations footnote on the title page should include definitions for them as well. Detailed information on formatting gene and protein symbols is available from *The Journal of Nutrition's* Instructions for Authors: Genes and Proteins (9).

Nomenclature

Chemical and biochemical terms and abbreviations and identification of enzymes must conform to the recommended usage of the International Union of Biochemistry and Molecular Biology (10). Names for vitamins, related compounds, and abbreviations for amino acids should follow the ASN nomenclature policy (11, 12).

Tables and Figures

Cite tables and figures sequentially in the text with the first citation of each table and figure in bold font. Tables or figures adapted or reproduced from another source must acknowledge that source in a table footnote or the figure legend and be accompanied by written proof that the copyright bearer has granted permission to reproduce or adapt the table or figure. For additional information on using previously published tables or figures see Republishing Copyrighted Content.

Tables

Tables should be included at the end of the manuscript file and each table should begin on a new page. Please do not upload tables as separate files. Clearly indicate units of measure after the variable in rows, above the first value in each column, or centered over all columns to which the unit applies. For an illustrated guide to designing tables, visit the Table Checklist (13).

Figures

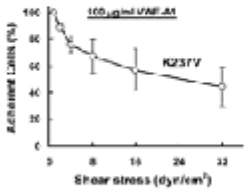
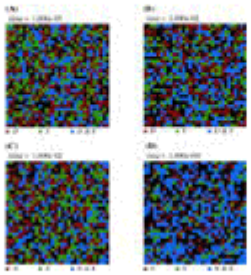
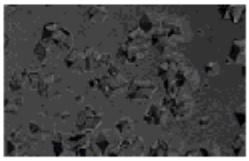
Figure titles and legends should be compiled on one or more pages in the manuscript's DOC file and should not be on the figure itself. For figures with 2 or more panels, describe each panel in the legend, beginning with the panel letter. Each legend should contain enough detail to ensure that the figure is interpretable without reference to the text.

Each figure must be submitted as a separate image file. Submit all panels of a multipanel figure on a single page, aligning the panels horizontally and/or vertically with one another. Minimize white space within and between panels. Label each panel, A, B, C, D, etc., without the word, "figure," or the figure number, in the upper left corner of the panel. Label axes clearly with variables and where appropriate, units of measure. Include figure keys on figures, within the bounds of the graphs or on X- axes, not in legends. Remove outer boxes from figures and figure panels.

Submit each figure in a separate file. Image files (TIF, EPS) and Microsoft PowerPoint (PPT,) are acceptable figure files. Figures prepared as Word, PNG, or JPEG will not be accepted.

Image Resolution Files must conform to the following minimum resolution specifications:
Line art: 1000 dpi

Combination Halftones: 600 dpi (grayscale or color images and type)
Halftones: 300 dpi (grayscale or color with no type or lettering)

Line art	Combination Halftones (grayscale or color images and type)	Halftones (grayscale or color with no type or lettering)
		
1000 dpi	600 dpi	300 dpi

Size all text on figures proportionately. Lettering and symbols must be large enough to be readable when the figure is reduced to 1 column width (< 8.5 cm) or, in rare cases, to 2 column widths. Preferred text size is 7 points.

- 1 column: 18p0 / 3 inches / 7.6 cm
- 1.5 column: 27p0 / 4.5 inches / 11.5 cm
- Maximum width (to span 2 columns): 34p0/ 5.7 inches / 14.4 cm
- Maximum height: 53p0 / 8.8 inches / 22.4 cm

For an illustrated figure quality checklist, visit the Figure Quality Checklist (14). For a video on preparing digital images for publication, visit the Preparing Digital Images for Publication series (15).

Supplementary Data

At the editor's request, unusually lengthy descriptions of experimental procedures, extensive data, extra figures, etc. may be published as online-only attachments to published articles.

These files will not appear in printed copies of the article or journal issue, and will not be edited by the press. References to the availability of supplemental data on authors' websites will not be included in published articles. Material to be published as Supplementary data should be included only at the editor's request and should be uploaded with the revised manuscript. Please follow these instructions:

- Include the Supplementary data as a separate file, as a Word document or PDF. These files will be posted online without editing or revision if the manuscript is accepted for publication.
- The manuscript title must include a footnote that gives information on the availability of Supplementary data with the online posting of the published article on the journal website. For example:

- (INSERT FIGURE NUMBER) is available from the "Supplementary data" link in the online posting of the article and from the same link in the online table of contents on the *AN* journal site.
- The top of all Supplementary data pages should have a "Supplementary data" header.
- Supplementary data pages should NOT have line numbers.
- All Supplementary data must be called out parenthetically in the text. Tables and figures should be designated Supplemental Table 1, Supplemental Table 2, Supplemental Figure 1, etc.
- Supplemental text and tables should be single spaced but otherwise in *AN* format.
- Supplemental figure legends should be single spaced and placed immediately under the supplemental figure but otherwise in *AN* format.
- If the citations in the Supplementary data do not appear elsewhere in the printed paper, they should NOT be added to the paper's References section. Instead, prepare a Supplemental References section [beginning with (1), (2), etc.] and include it at the end of supplemental materials.

Supplementary data video files should be submitted in the native format. To avoid excessive delays in downloading the files, videos should be no more than 5 MB in size and 60 seconds in length. Authors are encouraged to use QuickTime's "compress" option when preparing files to help control file size.

If you have supplementary data for your article, please ensure every supplementary material file contains the phrase “supplementary data” as part of the actual file name. For example, “Figure A1_Supplementary Data.” This is important for production purposes so the files are published in the correct place.

Availability of Data and Materials

Where ethically feasible, *AN* strongly encourages authors to make all data and software code on which the conclusions of the paper rely available to readers. We suggest that data be presented in the main manuscript or additional supporting files, or deposited in a public repository whenever possible. For information on general repositories for all data types, and a list of recommended repositories by subject area, please see Choosing where to archive your data.

Data Citation

AN supports the Force 11 Data Citation Principles and requires that all publicly available datasets be fully referenced in the reference list with an accession number or unique identifier such as a digital object identifier (DOI). Data citations should include the minimum information recommended by DataCite:

- [dataset]* Authors, Year, Title, Publisher (repository or archive name), Identifier

*The inclusion of the [dataset] tag at the beginning of the citation helps us to correctly identify and tag the citation. This tag will be removed from the citation published in the reference list.

Preprint policy

Authors retain the right to make an Author's Original Version (preprint) available through various channels. The ASN journals will allow the submission of manuscripts that have been previously posted on preprint servers as long as the site does not require authors to transfer copyright to the preprint server, or sign a closed license. Authors should read the copyright policies of the preprint server prior to depositing. Manuscripts that have been submitted to a pre-print server and submitted to the journal will undergo the same rigorous peer review as manuscripts that were not posted on preprint servers. In addition to meeting the standard requirements for submitted manuscripts (e.g., that the manuscript not be under editorial consideration for publication elsewhere), preprint submissions must satisfy the following conditions:

1. Upon first submission to an ASN journal, the author must inform the journal that the manuscript has been posted to a preprint server by providing a direct link to the preprint.
2. No additional versions of the manuscript may be posted to preprint servers at any time after initial submission to an ASN journal.
3. The copyright terms of the preprint must not be changed after submission of the manuscript to an ASN journal.
4. A preprint DOI must be assigned to the preprint.
5. Once the article has been published in its final form on the journal website, the preprint server on which the preprint is hosted must link to the article on the journal's website (the link should appear as follows: This article has been accepted for publication in [Journal Title] Published by Oxford University Press.) View the Author Self-Archiving policy page for more information.
6. Upon publication in an OUP title, the authors will sign an exclusive license to publish with the society but retain copyright.

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ANNEXURE C1

AUTHOR GUIDELINES

ARTICLE 1

Yevonnie Chauraya

ANNEXURE C2

AUTHOR GUIDELINES

ARTICLE 2

Yevonnie Chauraya

Author Guidelines

Pediatric Obesity is a peer-reviewed, monthly journal devoted to research into obesity and its co-morbidities during neonatal development, infancy, childhood and adolescence. We are interested in papers that cover the broad spectrum of issues related to pediatric obesity including the following categories: Treatment & Prevention; Epidemiology and Global Prevalence; Measurement & Assessment; Disease Outcomes; Mechanisms; Behavior & Environment; Diet and Physical Activity. *Pediatric Obesity* is an official journal of the **World Obesity Federation**.

Submission is considered on the conditions that papers are previously unpublished, and are not offered simultaneously elsewhere; that all authors have read and approved the content, and all authors have also declared all competing interests; and that the work complies with the **Ethical Policies of the journal**, and has been conducted under internationally accepted ethical standards after relevant ethical review. It is highly recommended you read this policy and complete any necessary documentation prior to your submission.

This journal employs a plagiarism detection system. By submitting your manuscript to this journal you accept that your manuscript may be screened for plagiarism against previously published works.

EDITORIAL POLICIES AND PROCEDURES

Acceptance of papers is based on the originality of the observation or investigation, the quality of the work described, the clarity of presentation, and the relevance to our readership. When submitting a manuscript it is with the understanding that the manuscript (or its essential substance) has not been published other than as an abstract in any language or format and has not been submitted elsewhere for print or electronic publication consideration.

The journal operates a stringent peer review process. All manuscripts will be reviewed by the Editor, members of the Editorial Board, or other expert reviewers. At the discretion of the Editor, the manuscript may be returned immediately without full review, if deemed not competitive or outside the realm of interests of the majority of the readership of the Journal. The decision (reject, invite revision, accept) letter will be conveyed through *Pediatric Obesity* ScholarOne Manuscripts, coming directly from the Editor who has assumed responsibility for the manuscript's review. Editorial decisions are based not just on technical merit of the work, but also on other factors such as the priority for publication and the relevance to the Journal's general readership. All papers are judged in relation to other submissions currently under consideration. Rebuttals to rejected manuscripts are strongly discouraged and requests for resubmission of rejected manuscripts are generally not granted.

ORCID ID Requirement

Please note that as of January 2018, *Pediatric Obesity* requires the submitting author (only) to provide an **ORCID ID** when submitting a manuscript in ScholarOne. By supplying unique and

persistent identifiers, ORCID ensures that researchers can be easily and correctly connected to their research activities, outputs and affiliations. For information on how to associate your ScholarOne account with your ORCID ID, please click **here**.

Preprint Servers

Pediatric Obesity will consider for review articles previously available as preprints. Authors may also post the submitted version of a manuscript to a preprint server at any time. Authors are requested to update any pre-publication versions with a link to the final published article.

Encourages Data Sharing

Pediatric Obesity encourages authors to share the data and other artefacts supporting the results in the paper by archiving it in an appropriate public repository. Authors should include a data accessibility statement, including a link to the repository they have used, in order that this statement can be published alongside their paper.

Publication Ethics

Pediatric Obesity is a member of the UK Committee on Publication Ethics and subscribes to its recommendations (Committee on Publication Ethics [COPE]: guidelines on good publication practice, **www.publicationethics.org.uk**). Our Best Practice Guidelines on Publication Ethics: A Publisher's Perspective. Second Edition are available at **http://exchanges.wiley.com/ethicsguidelines**. The Editors reserve the right to reject a paper on ethical grounds. All authors are responsible for adhering to guidelines on good publication practice.

No paper can be published in the Journal unless it meets all of these requirements.

The corresponding author must provide an e-mail address for communication with the Editors and the Publisher.

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This journal now uses eLocators. eLocators are unique identifies for an article that service the same function page numbers have traditionally served in the print world. When citing this article, please insert the eLocator in place of the page number. For more information, please visit the Author Services eLocator page **here**.

Manuscript Types

Original Articles which report on clinical, population health and laboratory investigations and observations from both human and animal studies in all areas relevant to the broad area of child and adolescent obesity including its critical periods of development from the neonatal period to young adulthood. Manuscripts should be between 2,500 and 5,000 words in length, not including

tables, figure legends, and references necessary to support the data and their interpretation. Manuscripts should generally follow the IMRAD (Introduction, Methods, Results, Discussion) format. They should include hypothesis testing, appropriate statistical methods, a clear reporting of results, and conclusions that are supported by the results.

Review Articles can only be submitted at the request of the Editor-in-Chief. We are unable to accept unsolicited review papers for consideration. Reviews should be a maximum of 6000 words, excluding references.

Short Communications Studies that fall short of the criteria for full research papers (e.g. preliminary experiments limited by sample size or duration, novel hypotheses, commentaries) may be submitted as Short Communications. They should generally contain no more than 1,500 words of text, a maximum of two display items (tables and/or figures) and a maximum of 20 references. Apart from the Abstract (one paragraph of maximum 150 words) and Keywords, the text does not need to be divided into sections. In all other respects, the directions for full papers should be followed.

Letters to the Editor are considered for publication (subject to editing and abridgment) provided they do not contain material that has been submitted or published elsewhere. The text, not including references, must not exceed 400 words if it is in reference to a recent Journal article, or 1,000 words in all other cases. A letter must have no more than five references and one figure or table. Letters referring to a recent Journal article must be received within one month of its publication.

Manuscript Length Overview

Manuscript Type	Words (excluding cover page, abstract, references, tables, and figures)	Number of references	Number of figures/tables combined
Original Articles	2,500-5,000	30-50	3-6
Review Articles	3,000-6,000	40-60	3-6
Short Communications	1,000-1,500	15-20	1-2

Letters to the Editor	400-1,000	3-5	1

Please note that the following papers will not be considered high priority for publication in Pediatric Obesity:

- Simple prevalence studies involving a single country at a single time-point.
- Studies that replicate the findings of previously published paper
- Studies that report the absence of links between obesity and a specific genotype or polymorphism
- Studies that simply describe associations between anthropometric indices of obesity and basic plasma markers of co-morbidities
- Intervention studies that do not have a control group and/or are not randomized

Specific Types of Studies

Epidemiological reports

Authors should include the following information in their reports:

Details of study

• Population sampled. National, regional, or specific selected group. Indicate if the sample population is representative of a national or regional population. If neither, state from what population the sample was drawn (e.g. children from an ethnic minority group, children from lower socio-economic status families, children from an urban obesity clinic), giving details and stating why this group may be of significance.

• Time of data collection. Indicate the time period when data were collected (e.g. at school entry autumn 2003, or recruited between January 2002 and July 2002).

• Anthropometric data recorded. Indicate what measures were taken and how (e.g. self reported in interview, reported by parents, measured by school nurse). If measured, indicate whether weight included clothing, shoes etc, height was in shoes or not, waist circumference included clothing, and also indicate definitions of waist, hip, thigh etc). Skinfold measures should also be described carefully.

Defining overweight and obesity

• The prevalence of overweight and obesity should be defined according to cut-off criteria.

• If using national or local definitions, a reference to the source tables giving the cut-off criteria should be provided (also cite this in the Reference list).

• For studies reporting the prevalence of childhood overweight and/or obesity in their population characteristics, the journal requests that these are shown using both the IOTF and WHO definitions. Although these definitions produce somewhat different prevalence rates, both definitions are being used for international comparisons at this stage and sufficient numbers of published studies which report both prevalence values will be needed to generate the algorithms to estimate one from the other.

The IOTF reference for children aged 2-18 years is: Cole TJ, Bellizzi MC, Flegal KM, Dietz WH. Establishing a standard definition for child overweight and obesity worldwide: international survey. BMJ 2000; 320: 1240-5. Available at **http://bmj.bmjjournals.com/cgi/reprint/320/7244/1240**

The WHO reference for children aged 0-5 years is: WHO Child Growth Standards: Length/height-for-age, weight-for-age, weight-for-length, weight-for-height and body mass index-for-age: Methods and development. Geneva: World Health Organization, 2006. Available at: **http://www.who.int/childgrowth/standards/en/**

The WHO reference for children aged 5-19 years is: de Onis M, Onyango AW, Borghi E, Siyam A, Nishida C, Siekmann J. Development of a WHO growth reference for school-aged children and adolescents. Bulletin of the World Health Organization 2007; 85: 660-7. Available at: **http://www.who.int/growthref/growthref_who_bull/en/index.html**

• In all cases, please state clearly whether or not the figures for 'overweight' include those for 'obese'.

Study results

The presentation of results should include, where appropriate, age- and sex-specific results and an indication of sample size in sub-groups.

Clinical Trials

Trial registration

•All clinical trials published in the Journal must have been prospectively registered in a public trials registry. The details of this policy are contained in the "Uniform Requirements for Manuscripts Submitted to Biomedical Journals" (**http://www.ICMJE.org/**)

Reporting of trials

Trials should be reported in accordance with the CONSORT (Consolidated Standards of Reporting Trials) statement (**http://www.consort-statement.org/**). Please also submit a checklist for editors and reviewers (not for publication) showing that you have covered each of the main CONSORT reporting points within the text of the manuscript (**http://www.consort-statement.org/download/Media/Default/Downloads/CONSORT 2010 Checklist.doc**)

Manuscript format

Authors must provide their entire manuscript (in English) in electronic format.

General advice about the presentation of manuscripts:

- Provide a clear, concise and interesting title, and abstract, this helps readers quickly see the value of your work.
- The full contact details of the corresponding author must be included on the title page and the covering letter.
- All pages should be numbered.
- Avoid, as much as possible, the use of abbreviations.
- All scientific units should be expressed in SI units.

- Authors should use person first language: e.g., "individuals with obesity" rather than "obese individuals". See http://www.obesityaction.org/weight-bias-and-stigma/people-first-language-for-obesity for further information.
- Read these Author Guidelines carefully and follow them as closely as you can.

Title Page

The title page should contain: (1) the title of the article, (2) the name of each author (first name and surname preferred), (3) the name of the department(s) and institution(s) to which the authors belong, (4) three to six keywords, (5) a running title, (6) full address including e-mail of the corresponding author.

Main text

Original research papers should be divided into (1) structured abstract (200 words) comprising Background; Objectives; Methods; Results; Conclusions, (2) introduction, (3) methods, (4) results, (5) discussion, (6) conflicts of interest statement, (7) acknowledgements (including author contributions), (8) references.

For guidance on the content and style of the introduction, materials and methods, results and discussion, please follow the International Committee of Medical Journal Editors (ICJME) Uniform Requirements for Manuscripts Submitted to Biomedical Journals: **http://www.icmje.org/recommendations/browse/manuscript-preparation/**

Reviews should be divided into: (1) structured abstract (200 words), (2) introduction, (3) text subdivided into paragraphs, (4) conclusion or discussion, (5) conflicts of interest statement, (6) author contributions, (7) acknowledgements, (8) references. Review authors are particularly encouraged to use tables, diagrams and figures. Personal conclusions and practical applications are welcome.

Abbreviations

Abbreviations should be explained at the beginning of the manuscript and listed in the order in which they appear. Avoid abbreviations in the title and in the abstract.

Drug Names

Generic names should, in general, be used. If an author so desires, brand names may be inserted in parentheses.

Acknowledgements

This section should outline the contribution of each author to the manuscript e.g.: study design, data collection, data analysis, data interpretation, literature search, generation of figures, writing of the manuscript. An example that authors might like to follow is:

XY and NM conceived and carried out experiments, AB and GH conceived experiments and analysed data. OP carried out experiments. All authors were involved in writing the paper and had final approval of the submitted and published versions.

Any contributors who did not meet the authorship criteria should also be listed, such as colleagues who provided only technical support, writing assistance or general support. Financial and material support must always be acknowledged, with a clear statement defining all funding sources. This should include grants, equipment, drugs and other reagents, or gifts of materials.

References

AMA Reference items are listed numerically in the order they are cited in the text. Please include up to 6 authors. For more than six, provide the names of the first three authors and then add et al. If there is no author, start with the title. Periodicals (journals, magazines, and newspapers) should have abbreviated titles; to check for the proper abbreviation, search for the Journal Title through **LocatorPlus** at the National Library of Medicine website. Please refer to a quick guide on AMA **here**.

Tables

Type each table on a separate page following on from the main text; number tables consecutively and supply a brief title and legend for each. Cite each table in the text in consecutive order, using Arabic numbers.

Figures

Artwork must be supplied in electronic form, as separate files per figure. Please save vector graphics (e.g. line artwork) in Encapsulated Postscript Format (EPS), and bitmap files (e.g. half-tones) in Tagged Image File Format (TIFF). Detailed information on our digital illustration standards is available at: **http://media.wiley.com/assets/7323/92/electronic_artwork_guidelines.pdf**. Letters, numbers and symbols should be clear and even throughout, and of sufficient size so that when reduced for publication the item will still be legible; titles and detailed explanations should be included in the legends, not in the illustrations themselves. Cite each figure in the text in consecutive order.

Table and figure legends

Legends for tables and figures should be typed on a separate page following on from the main text, with Arabic numbers corresponding to the numbers assigned to the matching figure or table (Table 1: …, Table 2: …, Figure 1: … etc.). When symbols, arrows, numbers or letters are used to identify parts of the illustrations, explain each one in the legend. Explain the internal scale and identify the method of staining in photomicrographs.

Supporting information

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ANNEXURE D

GUIDELINE DEVELOPMENT PHASE 2

Yevonnie Chauraya

ANNEXURE D1

EXAMPLE OF INVITATION TO STAKEHOLDER WORKSHOP

UNIVERSITEIT VAN PRETORIA
UNIVERSITY OF PRETORIA
YUNIBESITHI YA PRETORIA

Faculty of Health Sciences

School of Health Care Sciences

Department of Nursing Sciences

INVITATION TO FOCUS GROUP DISCUSSION
DATE; *18TH June 2021*
DURATION OF DISCUSSION*; 2 hours*
VENUE*; Mpilo Children's Hospital Boardroom*

Topic of Discussion; Suggestions for guidelines for feeding practices for children aged 2-5 years in Bulawayo Province in Zimbabwe.

Inviters; Professor Isabel Coetzee, University of Pretoria, South Africa
Professor Ronell Leech, University of Pretoria, South Africa
Yevonnie Chauraya, PhD student, University of Pretoria, South Africa

Invitees

1. Dr Thabani Thatha (Paediatrician) Mpilo Children's Hospital thabani.thatha@nust.ac.zw
2. Mrs Kashiri-Ndlovu (Chief Nutritionist) Mpilo Children's Hospital ziniandhlovu@gmail.com
3. Mrs Sikangezile Moyo (Matron) Mpilo Children's Hospital; **sikhangezilemoyo@gmail.com**
4. Mrs Ncube PMZ (Sister In Charge) Mpilo Children's Hospital; **pmzodwa@gmail.com**
5. Mr Bare B. (Sister In Charge) Mpilo Children's Hospital; **barblessooo@gmail.com**
6. Mr Matenga A.T. (Sister In Charge) Mpilo Children's Hospital amatenga67@gmail.com
7. Moyo Moiteli (Sister In Charge) Mpilo Children's Hospital; **moitelimoyo@gmail.com**
8. Mabena N. (Registered General Nurse) Mpilo Children's Hospital; **munimynorma@gmail.com**
9. Phiri Christina (Registered General Nurse, Nutrition Unit) Mpilo Children's Hospital; **namicky6624@gmail.com**
10. Precious Sibanda (Registered General Nurse, Paeds Out-Patients Mpilo Children's Hospital; tanymbengo@gmail.com
11. Deborah Banni (Nutritionist) Mpilo Children's Hospital bannibeauty@gmail.com
12. Dr Emmanuel Chagondah Chaipa (Paediatrician) Mpilo Children's Hospital; chagondae@yahoo.com ; manuchadz@gmail.com

Your suggestions on guidelines for feeding practices for children aged 2-5 years in Bulawayo Province in Zimbabwe are greatly valued, hence you are being cordially invited to this very important on-line Focus Group Discussion. You will be required to sign a consent form indicating your voluntary agreement to participate in this Focus Group Discussion. If you have any questions to do with this discussion, please do not hesitate to contact me (Yevonnie Chauraya) on +263 773515312 or ychauraya@gmail.com

Thank you

ychauraya

Yevonnie Chauraya
PhD student University of Pretoria, South Africa

ANNEXURE D2

EXAMPLE OF SIGNED INFORMED CONSENT FORM FOR STAKEHOLDERS

Yevonnie Chauraya

UNIVERSITEIT VAN PRETORIA
UNIVERSITY OF PRETORIA
YUNIBESITHI YA PRETORIA

ANNEXURE B STAKEHOLDERS PHASE 2 MRCZ 2692

Information leaflet and information consent to be completed and signed by stakeholder who voluntarily participates in Focus Group Discussion for giving suggestions for draft guidelines for feeding practices for children aged 2-5 years in Bulawayo province in Zimbabwe

Faculty of Health Sciences
SCHOOL OF HEALTH CARE SCIENCES
Department of Nursing Science

Title: Development of guidelines for feeding practices for children aged 2-5 years in Bulawayo province in Zimbabwe

Dear Participant

Dear Mr / Mrs/ Ms THABANI THATHA **..date of consent procedure /____.. /..... /.....**

1) INTRODUCTION

You are invited to volunteer for a research study. This information leaflet is to assist you to decide if you would like to participate. Before you agree to take part in this study you should fully understand what is involved. You should not agree to take part unless you are completely satisfied about all the procedures involved. If you have any questions, which are not fully explained in this leaflet, do not hesitate to ask the principal investigator, Mrs. Yevonnie Chauraya or supervisor, Prof I Coetzee on 012

356 3173 or Dr R Leech on 012 356 3161. Please note that your participation is voluntary and no compensation will be given for your participation.

2) THE NATURE AND PURPOSE OF THIS STUDY

The aim of this study is to develop guidelines for feeding practices for children aged 2-5 years in Bulawayo province in Zimbabwe. You are an invaluable source of information in this study.

3) EXPLANATION OF PROCEDURES AND WHAT WILL BE EXPEXTED FROM PARTICIPANTS.

Phase 1

The Focus Group Discussion facilitates you to give your suggestions for draft guidelines for feeding practices for children aged 2-5 years in Bulawayo province in Zimbabwe. Hence you are requested to voluntarily participate in the Focus Group Discussion.

4) POSSIBLE RISKS AND DISCOMFORTS INVOLVED

There is a no risk in participating in this study and there is no experiment involved. The Focus Group Discussion will take approximately 2 hours of your time.

5) POSSIBLE BENEFITS OF THIS STUDY

Your contribution in this study will contribute in the final guidelines for feeding practices for children aged 2-5 years in Bulawayo province in Zimbabwe.

6) COMPENSATION

You will not be paid to take part in this study. There are no costs involved for you to be part of this study.

7) YOUR RIGHTS AS A RESEARCH PARTICIPANT

Your participation in this study is entirely voluntary. You can refuse to participate or stop at any time during the Focus Group Discussion without giving any reason or penalty.

8) ETHICS APPROVAL

This study has received written approval from the ethics committee of the Faculty of Health Sciences at the University of Pretoria. A copy of the approval letter is available if you wish to have one. The contact person at the ethics committee of the University of Pretoria is Ms. Deepeka Behari and she can be contacted on 012 356 3084 or e-mail her at deepeka.behari@up.ac.za, Medical Research Council of Zimbabwe (MRCZ) on +263 8644073772, +263 024791792 and Mpilo Central Hospital Chief Executive Officer, Professor Solwayo Ngwenya on +263 09 212011.

9) INFORMATION

The contact person for this study is Mrs Yevonnie Chauraya. In case you have any questions about the study please contact her at 798328203 or + 263773515312 or ychauraya@gmail.com

10) CONFIDENTIALITY

Your name and other identifiable information will be kept strictly confidential. Research reports and articles in accredited scientific journals will not include any information that may identify you.

11) CONSENT TO PARTICIPATE IN THIS STUDY

I confirm that the person asking my consent to take part in this study has told me about nature, process, risks, discomforts and benefits of the study. I have also received, read and understood the above written information (Information Leaflet and Informed Consent) regarding the study. I am aware that the results of the study, including personal details, will be anonymously processed into research reports. I am participating willingly. I have had time to ask questions and have no objection to participate in the study. I understand that there is no penalty should I wish to discontinue with the study and my withdrawal will not affect me in any way. I hereby volunteer to take part in this research.

I have received a signed copy of this consent agreement.

THABANI THATHA

Participant's name (Please print)

19/05/2021

Date

Participant's signature

19/05/2021

Date

YVONNIE CHAURAYA

Researcher's name (Please print)

19/05/21

Date

Researcher's signature

19/05/21

Date

Thank you for your participation

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UNIVERSITY OF PRETORIA
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ANNEXURE B STAKEHOLDERS PHASE 2 MRCZ 2692

Information leaflet and information consent to be completed and signed by stakeholder who voluntarily participates in Focus Group Discussion for giving suggestions for draft guidelines for feeding practices for children aged 2-5 years in Bulawayo province in Zimbabwe

Faculty of Health Sciences
SCHOOL OF HEALTH CARE SCIENCES
Department of Nursing Science

Title: Development of guidelines for feeding practices for children aged 2-5 years in Bulawayo province in Zimbabwe

Dear Participant

Dear Mr / Mrs/ Ms Silcangezile Mayo **date of consent procedure /____.. /..... /.....**

1) INTRODUCTION

You are invited to volunteer for a research study. This information leaflet is to assist you to decide if you would like to participate. Before you agree to take part in this study you should fully understand what is involved. You should not agree to take part unless you are completely satisfied about all the procedures involved. If you have any questions, which are not fully explained in this leaflet, do not hesitate to ask the principal investigator, Mrs. Yevonnie Chauraya or supervisor, Prof I Coetzee on 012

356 3173 or Dr R Leech on 012 356 3161. Please note that your participation is voluntary and no compensation will be given for your participation.

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The aim of this study is to develop guidelines for feeding practices for children aged 2-5 years in Bulawayo province in Zimbabwe. You are an invaluable source of information in this study.

3) EXPLANATION OF PROCEDURES AND WHAT WILL BE EXPEXTED FROM PARTICIPANTS.

Phase 1

The Focus Group Discussion facilitates you to give your suggestions for draft guidelines for feeding practices for children aged 2-5 years in Bulawayo province in Zimbabwe. Hence you are requested to voluntarily participate in the Focus Group Discussion.

4) POSSIBLE RISKS AND DISCOMFORTS INVOLVED

There is a no risk in participating in this study and there is no experiment involved. The Focus Group Discussion will take approximately 2 hours of your time.

5) POSSIBLE BENEFITS OF THIS STUDY

Your contribution in this study will contribute in the final guidelines for feeding practices for children aged 2-5 years in Bulawayo province in Zimbabwe.

6) COMPENSATION

You will not be paid to take part in this study. There are no costs involved for you to be part of this study.

7) YOUR RIGHTS AS A RESEARCH PARTICIPANT

Your participation in this study is entirely voluntary. You can refuse to participate or stop at any time during the Focus Group Discussion without giving any reason or penalty.

8) ETHICS APPROVAL

This study has received written approval from the ethics committee of the Faculty of Health Sciences at the University of Pretoria. A copy of the approval letter is available if you wish to have one. The contact person at the ethics committee of the University of Pretoria is Ms. Deepeka Behari and she can be contacted on 012 356 3084 or e-mail her at deepeka.behari@up.ac.za, Medical Research Council of Zimbabwe (MRCZ) on +263 8644073772, +263 024791792 and Mpilo Central Hospital Chief Executive Officer, Professor Solwayo Ngwenya on +263 09 212011.

9) INFORMATION

The contact person for this study is Mrs Yevonnie Chauraya. In case you have any questions about the study please contact her at 798328203 or + 263773515312 or ychauraya@gmail.com

10) CONFIDENTIALITY

Your name and other identifiable information will be kept strictly confidential. Research reports and articles in accredited scientific journals will not include any information that may identify you.

11) CONSENT TO PARTICIPATE IN THIS STUDY

I confirm that the person asking my consent to take part in this study has told me about nature, process, risks, discomforts and benefits of the study. I have also received, read and understood the above written information (Information Leaflet and Informed Consent) regarding the study. I am aware that the results of the study, including personal details, will be anonymously processed into research reports. I am participating willingly. I have had time to ask questions and have no objection to participate in the study. I understand that there is no penalty should I wish to discontinue with the study and my withdrawal will not affect me in any way. I hereby volunteer to take part in this research.

I have received a signed copy of this consent agreement.

Sikangezile Moyo — 21/05/21
Participant's name (Please print) — Date

[signature] — 21/05/21
Participant's signature — Date

Yevonnie Chauraya. — 21/05/21
Researcher's name (Please print) — Date

[signature] — 21/05/21
Researcher's signature — Date

Thank you for your participation

ANNEXURE D3

INTERVIEW GUIDE FOR STAKEHOLDERS

Yevonnie Chauraya

INTERVIEW GUIDE (Phase 2)

Stakeholder views on feeding practices for children aged 2 – 5 years in Bulawayo province in Zimbabwe

1. What are the current feeding practices utilized by caregivers of children aged 2 – 5 years in Bulawayo province in Zimbabwe?
2. What are the ideal feeding practices for children aged 2 – 5 years in Bulawayo province in Zimbabwe ?
3. Which content should be included in guidelines for feeding practices for children aged 2 – 5 years in Bulawayo province in Zimbabwe.

ANNEXURE D4

EXAMPLE OF STAKEHOLDER PROFILE

UNIVERSITEIT VAN PRETORIA
UNIVERSITY OF PRETORIA
YUNIBESITHI YA PRETORIA

Faculty of Health Sciences
School of Health Care Sciences
Department of Nursing Sciences

FOCUS GROUP INTERVIEW

Topic; Development of guidelines for feeding practices for children aged 2-5 years in Bulawayo province in Zimbabwe

DEMOGRAPHIC DATA FOR STAKEHOLDERS (Phase 2)

Date; 18th June 2021

Name	ZINIA NDHLOVU
Age Range	25-35 ears 36-45 years 46 years and above ✓
Sex	FEmale
Highest professional qualification	Please specify Degree in BSc Food Science and Nutrition.
Current position	NUTRITIONIST
Years of experience in current position	10 years

ANNEXURE D5

EXAMPLE OF STAKEHOLDER PROFILE

Yevonnie Chauraya

UNIVERSITEIT VAN PRETORIA
UNIVERSITY OF PRETORIA
YUNIBESITHI YA PRETORIA

Faculty of Health Sciences
School of Health Care Sciences
Department of Nursing Sciences

FOCUS GROUP INTERVIEW

Topic; Development of guidelines for feeding practices for children aged 2-5 years in Bulawayo province in Zimbabwe

DEMOGRAPHIC DATA FOR STAKEHOLDERS (Phase 2)

Date: 18th June 2021

Name DR KUDZAI LEONA	MUSINAWINI
Age Range 25-35	25-35 ears 36-45 years 46 years and above
Sex F	FEMALE
Highest professional qualification	Please specify DEGREE MB ChB
Current position	HOSPITAL MEDICAL OFFICER
Years of experience in current position	2 YEARS

ANNEXURE D5

QUESTION 1: FOODS OBSERVED BY STAKEHOLDERS BEING FED TO CHILDREN AGED 2-5 YEARS

Yevonnie Chauraya

Question 1 Which foods have you observed caregivers feed their children aged 2-5 years on?

Group 1	Group 2	Group 3	Stakeholder Consensus on Question 1
Maheu(bought in variety of sachets and manufacturers	Homemade Maheu	Homemade maheu	maheu
jiggies	Jiggies	jiggies	jiggies
Sadza/pap	Sadza	sadza	sadza
Soup	Soup	Mirinda (almost similar to Twizzer and Pepsi)	soup
Rice	Chunks (soya mince)	rice	rice
Maputi(similar to popcorn)	Maputi	maputi	maputi
Instant porridge	Instant porridge Mealie meal porridge with peanut butter, plain mealie meal porridge	Plain porridge and instant porridge such as Ace	instant porridge, plain porridge, mealie meal porridge with peanut butter
Pepsi	Pepsi	pepsi	pepsi
King curls	Sweet potatoes	Go-slow chips(almost similar to jiggies)	chips
Bananas	Bananas	bananas	bananas
Oranges	Oranges	oranges	oranges
Freezits	Freezits	freezits	freezits
Jolly juice (sweetened powered sugar with colouring which is then mixed with cold water before drinking)	jolly juice	mazowe	jolly juice

	Potatoes		
	Lacto (sour milk)	lacto	lacto
	Eggs	eggs	eggs
	Sugar beans	beans	beans
	Vegetables	Cabbage, chomolia	vegetables
	Fat cakes		
	Bread with peanut butter	Plain bread	bread
	Beef	beef	beef
	Chicken	chicken	chicken
	Mince meat	Soya mince	Soya mince/chunks
	Dried kapenta		
	Dried vegetables		
	Fresh chips		
	Butter nut	Butter nut	Butter nut

ANNEXURE D6

QUESTION 2: WHAT ARE THE IDEAL FOODS TO BE UTILIZED ON CHILDREN AGED 2-5 YEARS

Yevonnie Chauraya

Question 2 "What are the ideal feeding practices caregivers should utilize when feeding their children aged 2-5 years?".

Group 1	**Group 2**	**Group 3**	**Consensus/Merging for question 2**
Eliminate non nutritious foods from the diet eg Jiggies, Maheu, Sweets, Maputi, Freezits, Fizzy drinks	<u>Morning</u> Porridge with peanut butter or powdered matemba (fish)	Fortified porridge with peanut butter	Porridge with peanut butter Do not give non nutritious foods like jiggies
Health educate caregivers on certain myths and misconceptions eg children not to be given eggs for fear of getting epilepsy Adults to get more meat portions than children to the extent that at times children only get broth	Macimbi (Mopani worms) Roasted powdered seeds/oil Margarine Fruits eg banana, oranges, mangoes, guavas	Supervise feeds Allow enough time to eat Assist in feeding Teach them to feed themselves	Prioritize children in feeding Assist in feeding, Avoid myths and misconceptions in feeding of children Supervise feeds Teach on independent feeding
Children 2-5 years to be fed on a balanced diet of carbohydrates, proteins, minerals and fats	Milk Marula fruit milk shake Bread with peanut butter Melon or pumpkin porridge Eggs Sweet potatoes Fat cakes Include all food groups variety with each meal	Healthy drinks eg Milk, Fruit juices	Balanced diet with proteins and carbohydrates, fruits, vegetables
4-6 meals a day	5-6 meals a day	5-6 meals a day	5-6 meals a day
Avoid giving snacks before meal times	<u>Lunch (Afternoon)</u> Sadza Rice Pasta Potatoes Chicken Beef Mince meat Sour milk Yoghurt Fruits	Balanced diet	Healthy drinks such as milk
	Mopane worms Dried fish/Fresh fish Pork Goat meat	Prioritize children in Feeding	Dairy products such as yoghurt Prioritize children in feeding

	Ants Local insects Chunks Vegetables		
	Butter nut mixed with milk Maheu Maputi	Healthy snacks eg Peanuts	Role modelling good feeding practices
	<u>Evening</u> As for lunch but with variations from afternoon plus snack	Proteins in every meal eg Meat Soya mince Beans	Healthy snacks
	Role modelling what they observe adults eating	Indigenous fruits in season	
		Dairy foods Lacto Yoghurt for micro nutrients	
		Fruits and vegetables	

ANNEXURE D7

QUESTION 3 WHICH FOODS SHOULD BE INCLUDED IN GUIDELINES FOR CHILDREN AGED 2-5 YEARS

Yevonnie Chauraya

Question 3 "Which content should be included in guidelines for feeding practices for children aged 2-5 years in Bulawayo province in Zimbabwe".

Group 1	**Group 2**	**Group 3**	**Consensus/Merging for question 3**	
What a balanced diet consist of	Inclusion of indigenous foods and their nutritional content	Balanced diet	Balanced diet and its components. Local food sources	
Food sources of the required nutrients to make a balanced diet	Foods to give based on medical condition eg diarrhea, pneumonia	5-6 meals a day	Emphasis on indigenous or locally available foods	
Consequences of poor feeding	Government policy on fortified foods to be clear to all caregivers	Prioritize children in feeds	Prioritizing children in feeds Government policy on fortified foods	
Types of foods to avoid and why	Emphasis on 5-6 meals a day	Supervision of meals by caregivers	Supervising feeds	
Safe food preparation practices	Government interventions on food subsidies	Fruits serving daily	Frequency of feeds eg 5-6 times a day	
Traditional and cultural feeding practices	Meal plans that cater for city, peri-urban and rural areas based on availability in the region	Indigenous foods	Types of foods to avoid in children	
Misconceptions to be avoided	Health education to caregivers on naturally available foods	Health education to caregivers ie Dietary counselling at entry points eg Out Patients Department	Independent feeding	
	Assistance on independent feeding	Staple foods fortification by manufacturers eg bread, mealie meal, porridge	Safe food preparation practices	
	Supervise feeds	Health education on food labelling	Health education at entry points	
	When caregivers should worry about feeding habits		Traditional and cultural myths and misconceptions to be avoided	

	Role modelling emphasis		Consequences of poor feeding	
			Government policy on fortified foods	
			Caregivers to be vigilant on food labels and nutritional content of foods given to children	
			When to worry about child feeding practices	
			Role modelling by caregivers	
			Foods to give when a child has a medical condition	

ANNEXURE E

PHASE 3: PROCESS OF GUIDELINE DEVELOPMENT

Yevonnie Chauraya

ANNEXURE E1

EXPERT REVIEW INVITE

Experts' assessment tool for guidelines

Best Expert,

Please indicate with a (X) in the appropriate block on each of the different assessment criteria for each Guideline. Please add positive comments on the ***Acceptable as described*** as well as comment to assist me to improve the ***guidelines that's need revision***.

Guideline 1	Criteria	Not applicable	Accepted with minor revision	Acceptable as described	Experts comments
Caregiver ensures provision of a balanced diet for their child including indigenous foods that are locally available.	Clarity		X		Kindly write 'amabele' and 'mahewu@
	Applicable			X	
	Adoptability			X	
	Comprehensiveness			X	
	Credibility			X	
	Validity			X	

Guideline 2	Criteria	Not applicable	Accepted with minor revision	Acceptable as described	Experts comments
Caregiver considers frequency of meals when feeding their child.	Clarity			X	
	Applicable			X	
	Adoptability			X	
	Comprehensiveness			X	
	Credibility			X	
	Validity			X	

Guideline 3	Criteria	Not applicable	Accepted with minor revision	Acceptable as described	Experts comments
Giving age specific amounts of meals	Clarity			X	
	Applicable			X	
	Adoptability			X	
	Comprehensiveness			X	
	Credibility			X	
	Validity			X	

Guideline 4	Criteria	Not applicable	Accepted with minor revision	Acceptable as described	Experts comments
Supervision of feeds allowing their child enough time to feed sufficiently.	Clarity			X	
	Applicable			X	
	Adoptability			X	
	Comprehensiveness			X	
	Credibility			X	
	Validity			X	

Guideline 5	Criteria	Not applicable	Accepted with minor revision	Acceptable as described	Experts comments
Teach and allow child to feed themselves.	Clarity			X	
	Applicable			X	
	Adoptability			X	
	Comprehensiveness			X	
	Credibility			X	
	Validity			X	

Guideline 6	Criteria	Not applicable	Accepted with minor revision	Acceptable as described	Experts comments
Prioritization of child feeding in family meals	Clarity		X		Add 'Must counsel the father about the need to feed the child first as some culture the father is fed first'
	Applicable			X	
	Adoptability			X	
	Comprehensiveness			X	
	Credibility			X	
	Validity			X	

Guideline 7	Criteria	Not applicable	Accepted with minor revision	Acceptable as described	Experts comments
Elimination of non- nutritious foods and drinks from the child's diet.	Clarity			X	
	Applicable			X	
	Adoptability			X	
	Comprehensiveness			X	
	Credibility			X	
	Validity			X	

Guideline 8	Criteria	Not applicable	Accepted with minor revision	Acceptable as described	Experts comments
Giving of healthy drinks after main meals as food and snacks	Clarity			X	
	Applicable			X	
	Adoptability			X	
	Comprehensiveness			X	
	Credibility			X	
	Validity			X	

Guideline 9	Criteria	Not applicable	Accepted with minor revision	Acceptable as described	Experts comments
Role modelling of good feeding practices by caregiver at all times.	Clarity			X	
	Applicable			X	
	Adoptability			X	
	Comprehensiveness			X	
	Credibility			X	
	Validity			X	

Guideline 10	Criteria	Not applicable	Accepted with minor revision	Acceptable as described	Experts comments
Taking note of mandatory national fortification policy on processed staple foods to avoid buying non nutritious foods	Clarity			X	
	Applicable			X	
	Adoptability			X	
	Comprehensiveness			X	
	Credibility			X	
	Validity			X	

Guideline 11	Criteria	Not applicable	Accepted with minor revision	Acceptable as described	Experts comments
Implement safe food preparation practices at all times to prevent morbidity	Clarity			X	
	Applicable			X	
	Adoptability			X	
	Comprehensiveness			X	
	Credibility			X	
	Validity			X	

Thank you very much for the valuable inputs and you time and efforts. It is highly appreciated

ANNEXURE E1

EXPERTS' ASSESSMENT TOOL FOR GUIDELINES

Yevonnie Chauraya

UNIVERSITEIT VAN PRETORIA
UNIVERSITY OF PRETORIA
YUNIBESITHI YA PRETORIA

Faculty of Health Sciences
School of Health Care Sciences
Department of Nursing Sciences

Official Invite for Expert Reviewers

Method: On-line Delphi Technique
Purpose: Review of Guidelines for feeding practices for children aged 2-5 years in Bulawayo province in Zimbabwe.
Duration of review: 2 Rounds
Number of experts: 3

Inviters; Professor Isabel Coetzee-Prinsloo, University of Pretoria, South Africa
Professor Ronell Leech, University of Pretoria, South Africa
Yevonnie Chauraya, PhD student, University of Pretoria, South Africa

Dear Sir/Madam

You are cordially invited to review guidelines for feeding practices for children aged 2-5 years in Bulawayo province in Zimbabwe. You were selected to participate in this expert review due to your expertise in child health and experience in guideline development.
Your suggestions on the guidelines as you do the review are greatly valued. You will be required to sign a consent form which will be sent to you in the very near future, to indicate your voluntary agreement to participate in this Expert guideline review. The guidelines will be sent to you after signing of the consent form. Once endorsed, we endeavor to publish the guidelines.
If you have any questions to do with the review, please do not hesitate to contact Professor Isabel Coetzee-Prinsloo on +27 711589045, Professor Ronnel Leech on +27 824414576 or me (Yevonnie Chauraya) on 0773515312 or ychauraya@gmail.com
Thank you

ychauraya

Yevonnie Chauraya
PhD student University of Pretoria, South Africa

ANNEXURE E2

REVIEW TOOL FOR EXPERTS

Yevonnie Chauraya

Experts' assessment tool for guidelines

Best Expert,

Please indicate with a (X) in the appropriate block on each of the different assessment criteria for each Guideline. Please add positive comments on the ***Acceptable as described*** as well as comment to assist me to improve the ***guidelines that's need revision***.

Guideline 1	Criteria	Not applicable	Accepted with minor revision	Acceptable as described	Experts comments
Caregiver ensures provision of a balanced diet for their child including indigenous foods that are locally available.	Clarity				
	Applicable				
	Adoptability				
	Comprehensiveness				
	Credibility				
	Validity				

Guideline 2	Criteria	Not applicable	Accepted with minor revision	Acceptable as described	Experts comments
Caregiver considers frequency of meals when feeding their child.	Clarity				
	Applicable				
	Adoptability				
	Comprehensiveness				
	Credibility				
	Validity				

Guideline 3	Criteria	Not applicable	Accepted with minor revision	Acceptable as described	Experts comments
Giving age specific amounts of meals	Clarity				
	Applicable				
	Adoptability				
	Comprehensiveness				
	Credibility				
	Validity				

Guideline 4	Criteria	Not applicable	Accepted with minor revision	Acceptable as described	Experts comments
Supervision of feeds allowing their child enough time to feed sufficiently.	Clarity				
	Applicable				
	Adoptability				
	Comprehensiveness				
	Credibility				
	Validity				

Guideline 5	Criteria	Not applicable	Accepted with minor revision	Acceptable as described	Experts comments
Teach and allow child to feed themselves.	Clarity				
	Applicable				
	Adoptability				
	Comprehensiveness				
	Credibility				
	Validity				

Guideline 6	Criteria	Not applicable	Accepted with minor revision	Acceptable as described	Experts comments
Prioritization of child feeding in family meals	Clarity				
	Applicable				
	Adoptability				
	Comprehensiveness				
	Credibility				
	Validity				

Guideline 7	Criteria	Not applicable	Accepted with minor revision	Acceptable as described	Experts comments
Elimination of non- nutritious foods and drinks from the child's diet.	Clarity				
	Applicable				
	Adoptability				
	Comprehensiveness				
	Credibility				
	Validity				

Guideline 8	Criteria	Not applicable	Accepted with minor revision	Acceptable as described	Experts comments
Giving of healthy drinks after main meals as food and snacks	Clarity				
	Applicable				
	Adoptability				
	Comprehensiveness				
	Credibility				
	Validity				

Guideline 9	Criteria	Not applicable	Accepted with minor revision	Acceptable as described	Experts comments
Role modelling of good feeding practices by caregiver at all times.	Clarity				
	Applicable				
	Adoptability				
	Comprehensiveness				
	Credibility				
	Validity				

Guideline 10	Criteria	Not applicable	Accepted with minor revision	Acceptable as described	Experts comments
Taking note of mandatory national fortification policy on processed staple foods to avoid buying non nutritious foods	Clarity				
	Applicable				
	Adoptability				
	Comprehensiveness				
	Credibility				
	Validity				

Guideline 11	Criteria	Not applicable	Accepted with minor revision	Acceptable as described	Experts comments
Implement safe food preparation practices at all times to prevent morbidity	Clarity				
	Applicable				
	Adoptability				
	Comprehensiveness				
	Credibility				
	Validity				

Thank you very much for the valuable inputs and you time and efforts. It is highly appreciated

ANNEXURE E3

SUMMARIZED TABLE FOR REVIEW BY EXPERTS

Yevonnie Chauraya

Expert review: Guideline for feeding practices for children aged 2-5 years

Best Expert,

Thank you very much for your willingness to participate as an expert reviewer of the above-mentioned guidelines. Your time, knowledge and inputs is highly appreciated.

Guideline	Rationale	Actions
Guideline 1: Caregiver ensures provision of a balanced diet for their child including indigenous foods that are locally available.	A balanced diet is essential for optimal growth and development of a child	Caregiver: • Gives child locally available indigenous foods within their reach. • Utilizes information availed to them by health care workers on which foods to give their child. • Joins available nutrition gardens clubs available in their area. • Gives their child dairy products such as goat milk and cow's milk for the provision of fats and essential nutrients. • Provides carbohydrates from small grains like rapoko and mabele as pap or in fermented ''maheu'' as snack in between main meals for energy

		• Offers if available chicken, beef or kapenta, for the provision of protein • Gives child at least a fruit a day. • Provides all essential nutrients in a child's diet. • Gives whole grains such as bread, pasta and brown rice are rich in fiber for easy digestion (Escamilla, Sengura-Perez and Lott, 2017: 35, 39).
Guideline 2: Caregiver considers frequency of meals when feeding their child.	Considering frequency of meals guarantees that child is fed adequately and on time to ensure optimum growth.	Caregiver: • Feeds child at least 5-6 times a day including snacks in between meals • Supervises feeding frequencies to ensure adequate intake of food • Evaluates nutritional health of the child through weighing at health centers

Guideline 3: Giving age specific amounts of meals	Age specific amounts of meals ensure that a child is not over or under fed (Dwyer,2016: 1578S).	Caregiver: • Gives child correct portion sizes of food to ensure adequate and appropriate feeding
Guideline 4: Supervision of feeds allowing their child enough time to feed sufficiently.	It is a mandatory role of a caregiver to ensure child feeds adequately.	Caregiver: • Supervises their child as they eat.
Guideline 5 Teach and allow child to feed themselves.	Teaching and allowing child to feed themselves fosters feeding independence and development of motor skills.	Caregiver: • Teaches, encourages and allows their child to feed themselves • Monitors the way the child feeds to prevent hazards such as choking and hot foods

Guideline 6: Prioritization of child feeding in family meals	Prioritizing children in family meals ensures that the child gets enough food.	Caregiver: • Ensures child is well fed first before adults feed.
Guideline 7: Elimination of non- nutritious foods and drinks from the child's diet.	Non-nutritious foods and drinks can negatively alter a child preference for healthy foods leading to malnutrition.	Caregiver: • Avoids giving child non nutritious foods such as jiggies, ama zepi, maputi. • Avoids foods of high sugar content such as freezits (colored water mixed with lots of sugar that is then sold in frozen sachets) and fizzy drinks like jolly juice.
Guideline 8: Giving of healthy drinks after main meals as food and snacks	Healthy drinks such as water and other nutritious drinks like amarula fruit milkshake are nutritious and help in shaping eating behaviours of children.	• Provides their child with healthy drinks after meals such as water as it quenches thirst and is vital for nutrition and body fluids needs.

	Snacks with high sugar and sodium content predispose a child to development of strong salt and sugar preferences later in life and can cause diarrhoea which slows growth and development of a child.	• Avoids adding sugar to milk. • Offers healthy fruit juices such as watermelon juice, orange juice if available to enhance food preferences and taste • Avoids sugary beverages like coca cola, miranda, jolly juice. Food and beverages children take depend primarily on their caregivers (Escamilla, Sengura-Perez and Lott, 2017: 35,39).
Guideline 9: Role modelling of good feeding practices by caregiver at all times.	Children like to eat what they see their caregivers eating. Can help develop healthy eating habits in children as they grow to appreciate such practices Creates positive feeding behaviours towards healthy foods Escamilla, Sengura-Perez and Lott, 2017:44 Develops healthy eating styles in a child (FITS 2019:1578S).	Caregiver: • Role models good feeding practices. • Eats a variety of healthy foods in front of their children. • Avoids force feeding as it can lead to choking. • Does not force their child to finish all the food in their plate • Serves and eats healthy foods for their child to develop such practices

		• Keeps healthier food choices in the home such as vegetables and fruits (FITS 2019: 1578S). • Keeps less high calorie sugary/sweet foods and savory snacks in the home
Guideline 10: Taking note of mandatory national fortification policy on processed staple foods to avoid buying non nutritious foods	Buying foods with labels indicating name of manufacturer, date of manufacture, expiry date and components help caregiver not to buy unhealthy foods and to purchase foods that are still within shelf life to prevent food poisoning and malnutrition.	Caregiver: • Practices vigilance when buying food • Reads nutritional content on food label before buying • Avoids buying non fortified foods with no food labels • Avoids buying foods with high sugar content
Guideline 11: Implement safe food preparation practices at all times to prevent morbidity	Prevents food-borne diseases such as salmonella and shigella bacteria to which children under 5 years are most vulnerable to due to their immune systems which are still developing and can manifest as diarrhoea.	Caregiver: • Washes hands thoroughly with soap/ash under running water before and after handling food to prevent contamination of food • Ensures a clean environment to prevent flies • Washes hands before feeding the child to avoid introducing bacteria

		• Cleans kitchen utensils immediately after use to prevent contamination with flies which can lead to diarrhea • Washes child's hands before eating to prevent food contamination which can lead to diarrheal diseases • Thoroughly washes fruits and vegetables under running water before eating • Cooks food thoroughly to kill germs (Escamilla, Sengura-Perez and Lott, 2017:47).

Thank you very much for reviewing these guidelines.

ANNEXURE E4

EXAMPLE OF SIGNED EXPERTS CONSENT FORM AUG 2021

Yevonnie Chauraya

UNIVERSITEIT VAN PRETORIA
UNIVERSITY OF PRETORIA
YUNIBESITHI YA PRETORIA

(PHASE 3) PICD (EXPERT REVIEWERS)

Information leaflet and information consent to be completed and signed by expert who voluntarily participates in the eDelphi technique for evaluating and refining draft guidelines for feeding practices for children aged 2-5 years in Bulawayo province in Zimbabwe

Faculty of Health Sciences
SCHOOL OF HEALTH CARE SCIENCES
Department of Nursing Science

Title: Development of guidelines for feeding practices for children aged 2-5 years in Bulawayo province in Zimbabwe

Dear Doriccah Peu… **..date of consent 24 /08/2021**

1)INTRODUCTION

You are cordially invited to volunteer to be an expert review panelist. This information leaflet is to assist you to decide if you would like to participate. Before you agree to take part in this expert panel review, you should fully understand what is involved. You should not agree to take part unless you are completely satisfied about all the procedures involved. If you have any questions, which are not fully explained in this leaflet, do not hesitate to ask the principal investigator, Mrs. Yevonnie Chauraya or

supervisor, Professor Isabel Coetzee-Prinsloo on +27 012 356 3173 or Professor Ronell Leech on +27 012 356 3161. Please note that your participation is voluntary and no compensation will be given for your participation.

2)THE NATURE AND PURPOSE OF THIS STUDY

The aim of this study is to develop guidelines for feeding practices for children aged 2-5 years in Bulawayo province in Zimbabwe. You are an invaluable source of information in this expert review.

3)EXPLANATION OF PROCEDURES AND WHAT WILL BE EXPECTED FROM EXPERTS.

Phase 3

The draft guidelines on feeding practices for children aged 2-5 years in Bulawayo province in Zimbabwe are for you to evaluate and refine through Delphi technique in order to have a final draft of guidelines for feeding practices for children aged 2-5 years in Bulawayo province in Zimbabwe. The Delphi technique may take up to 2 rounds.

4)POSSIBLE RISKS AND DISCOMFORTS INVOLVED

There is a no foreseeable risk in participating in this expert review and there is no experiment involved. The draft guidelines can take up to 2 rounds to evaluate and refine.

5)POSSIBLE BENEFITS OF THIS STUDY

Your contribution in this study will assist in the final guidelines for feeding practices for children aged 2-5 years in Bulawayo province in Zimbabwe.

6)COMPENSATION

You will not be paid for taking part in this expert review of the guidelines.

7)YOUR RIGHTS AS A RESEARCH PARTICIPANT

Your participation in this study is entirely voluntary. You can refuse to participate or stop at any time during evaluation or refinement of the guidelines without giving any reason or penalty.

8)ETHICS APPROVAL

This study has received written approval from the ethics committee of the Faculty of Health Sciences at the University of Pretoria. A copy of the approval letter is available if you wish to have one. The contact person at the ethics committee of the University of Pretoria is Ms. Deepeka Behari and she can be contacted on +27 012 356 3084 or e-mail her at deepeka.behari@up.ac.za

Permission to conduct this study at Mpilo Central Hospital was also obtained from Chief Executive Officer of Mpilo Central Hospital, Professor Solwayo Ngwenya and the Medical Research Council of Zimbabwe both of which are contactable on +263 09212011/+263 0772292391/email mpilohospital.org and +263 (4)791792/791193 or by email on mrcz@mrcz.org.zw respectively.

9)INFORMATION

The contact person for this study is Mrs Yevonnie Chauraya. In case you have any questions about the study please contact her at +263 0773515312 or ychauraya@gmail.com

10)CONFIDENTIALITY

Research reports and articles in accredited scientific journals may include your name as an expert reviewer of the guidelines for feeding practices for children aged 2-5 years in Bulawayo province in Zimbabwe.

11)CONSENT TO PARTICIPATE IN THIS STUDY

I confirm that the person asking for my consent to take part in this expert panel review has told me about nature, process, risks, discomforts and benefits of the study. I have also received, read and understood the above written information (Information Leaflet and Informed Consent) regarding the study. I am aware that the results of the study, including personal details, will be anonymously processed into research reports. I am participating willingly. I have had time to ask questions and have no objection to participate in the study. I understand that there is no penalty should I wish to discontinue with the study and my withdrawal will not affect me in any way. I hereby volunteer to take part in this research.

I have received a signed copy of this consent agreement.

_____Doriccah_____ ____24 August 2021

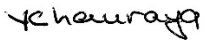
Participant's name (Please print) Date

_____24 August 2021

Participant's signature Date

Yevonnie Chauraya Date: 24th August 2021

Researcher's name (Please print)



_____ Date: 24th August 2021

Researcher's signature

Thank you for your participation

ANNEXURE E5

(PHASE 3) PICD

(EXPERT REVIEWERS)

UNIVERSITEIT VAN PRETORIA
UNIVERSITY OF PRETORIA
YUNIBESITHI YA PRETORIA

ANNEXURE E5 (PHASE 3) PICD (EXPERT REVIEWERS)

Information leaflet and information consent to be completed and signed by expert who voluntarily participates in the eDelphi technique for evaluating and refining draft guidelines for feeding practices for children aged 2-5 years in Bulawayo province in Zimbabwe

Faculty of Health Sciences
SCHOOL OF HEALTH CARE SCIENCES
Department of Nursing Science

Title: Development of guidelines for feeding practices for children aged 2-5 years in Bulawayo province in Zimbabwe

Dear Doriccah Peu… **..date of consent 24 /08/2021**

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supervisor, Professor Isabel Coetzee-Prinsloo on +27 012 356 3173 or Professor Ronell Leech on +27 012 356 3161. Please note that your participation is voluntary and no compensation will be given for your participation.

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The aim of this study is to develop guidelines for feeding practices for children aged 2-5 years in Bulawayo province in Zimbabwe. You are an invaluable source of information in this expert review.

3)EXPLANATION OF PROCEDURES AND WHAT WILL BE EXPECTED FROM EXPERTS.

Phase 3

The draft guidelines on feeding practices for children aged 2-5 years in Bulawayo province in Zimbabwe are for you to evaluate and refine through Delphi technique in order to have a final draft of guidelines for feeding practices for children aged 2-5 years in Bulawayo province in Zimbabwe. The Delphi technique may take up to 2 rounds.

4)POSSIBLE RISKS AND DISCOMFORTS INVOLVED

There is a no foreseeable risk in participating in this expert review and there is no experiment involved. The draft guidelines can take up to 2 rounds to evaluate and refine.

5)POSSIBLE BENEFITS OF THIS STUDY

Your contribution in this study will assist in the final guidelines for feeding practices for children aged 2-5 years in Bulawayo province in Zimbabwe.

6)COMPENSATION

You will not be paid for taking part in this expert review of the guidelines.

7)YOUR RIGHTS AS A RESEARCH PARTICIPANT

Your participation in this study is entirely voluntary. You can refuse to participate or stop at any time during evaluation or refinement of the guidelines without giving any reason or penalty.

8)ETHICS APPROVAL

This study has received written approval from the ethics committee of the Faculty of Health Sciences at the University of Pretoria. A copy of the approval letter is available if you wish to have one. The contact person at the ethics committee of the University of Pretoria is Ms. Deepeka Behari and she can be contacted on +27 012 356 3084 or e-mail her at deepeka.behari@up.ac.za

Permission to conduct this study at Mpilo Central Hospital was also obtained from Chief Executive Officer of Mpilo Central Hospital, Professor Solwayo Ngwenya and the Medical Research Council of Zimbabwe both of which are contactable on +263 09212011/+263 0772292391/email mpilohospital.org and +263 (4)791792/791193 or by email on mrcz@mrcz.org.zw respectively.

9)INFORMATION

The contact person for this study is Mrs Yevonnie Chauraya. In case you have any questions about the study please contact her at +263 0773515312 or ychauraya@gmail.com

10)CONFIDENTIALITY

Research reports and articles in accredited scientific journals may include your name as an expert reviewer of the guidelines for feeding practices for children aged 2-5 years in Bulawayo province in Zimbabwe.

11)CONSENT TO PARTICIPATE IN THIS STUDY

I confirm that the person asking for my consent to take part in this expert panel review has told me about nature, process, risks, discomforts and benefits of the study. I have also received, read and understood the above written information (Information Leaflet and Informed Consent) regarding the study. I am aware that the results of the study, including personal details, will be anonymously processed into research reports. I am participating willingly. I have had time to ask questions and have no objection to participate in the study. I understand that there is no penalty should I wish to discontinue with the study and my withdrawal will not affect me in any way. I hereby volunteer to take part in this research.

I have received a signed copy of this consent agreement.

_____Doriccah_____ ____24 August 2021

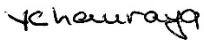
Participant's name (Please print) Date

_____24 August 2021

Participant's signature Date

Yevonnie Chauraya Date: 24th August 2021

Researcher's name (Please print)



_____ Date: 24th August 2021

Researcher's signature

Thank you for your participation

ANNEXURE E6

GUIDELINE FOR FEEDING PRACTICES FOR CHILDREN AGED 2-5

Yevonnie Chauraya

Guideline for feeding practices for children aged 2-5

Guideline	Rationale	Actions
Guideline 1: Caregiver ensures provision of a balanced diet for their child including indigenous foods that are locally available.	A balanced diet is essential for optimal growth and development of a child. The balanced diet should include all essential food groups such as locally available fruits and vegetables in season like oranges, okra, proteins, fats and carbohydrates that include foods like “amabele” and “rapoko”.	**Caregiver:** • Give child locally available indigenous foods within their reach. • Dry fresh locally available indigenous fruits for use when they are off season such as baobab fruit which can be stored as a powder and used as soup when water is added or added to porridge. • Bottle locally available indigenous drinks in season for use when off season • Utilize information availed to them by health care workers on which foods to give their child. • Join available nutrition gardens clubs available in their area. • Give their child dairy products such as goat milk and cow’s milk for the provision of fats and essential nutrients.

		• Provide carbohydrates from small grains like “rapoko” and “amabele” as pap or in traditional fermented ‘’mahewu’’ as snack in between main meals for energy. • Avoid using “mahewu” in place of milk. • Avoid giving the child commercial “mahewu” as it may predispose the child to malnutrition • Offer if available chicken, beef or kapenta or beans, for the provision of protein • Give child at least one fruit a day. • Provide all essential nutrients in a child’s diet. • Give whole grains such as bread, pasta and brown rice are rich in fiber for easy digestion

Guideline	Rationale	Actions
Guideline 2: Caregiver considers frequency of meals when feeding their child.	Considering frequency of meals guarantees that child is fed adequately and on time to ensure optimum growth as children have small stomachs and insuffient frequencies have negative effect on child health and growth Age specific amounts of meals ensure that a child is not over or under fed and can grow to full potential thereby laying the foundation for long term health outcomes	**Caregiver:** • Feed child at least 5-6 times a day including snacks in between meals from the age of 2. • Supervise feeding frequencies to ensure adequate intake of food. • Evaluate nutritional health of the child through weighing at health centers • Train care givers on importance of feeding the child at least 5-6 times a day if they are a working class in order to ensure child is adequately fed throughout the day • Facilitate that caregiver is trained by health care personnel on frequency of meals if they are a working class •

Guideline	Rationale	Actions
Guideline 3: Giving age specific amounts of meals to ensure that the child is well fed	Age specific amounts of meals ensure that a child is not over or under fed	**Caregiver:** • Give child correct portion sizes of food to ensure adequate and appropriate feeding by not over-feeding or under-feeding • Give child food amounts that tally with their age, to ensure optimum growth. At least 2 in every 3 children are not fed the minimum recommended diverse diet and amounts for healthy growth and development. • Ensure meals and amounts of food the child eat are nutritious to ensure optimal health • Provide care (if they are working class) with pictorial charts with diets and age specific meals the child is supposed to eat per day if they are a working class. This will enable the carer to remember when, how and how much to feed the child.

Guideline	Rationale	Actions
Guideline 4: Supervision of feeds allowing the child enough time to feed sufficiently.	Supervision of the child during meals is a vital role of the caregiver to ensure adequate feeding.	**Caregiver:** • Supervise their child as they eat to prevent hazards such as choking. • Give child adequate time to feed to ensure their child has eaten adequately • Teach their child to feed themselves, in-order to develop their motor skills. • Monitor the way the child feeds to prevent hazards such as vomiting and aspiration. • Take child to health care center monthly for anthropometric measurements such as weighing in order to assess if child is feeding well. • Food diary can be utilized to check if child eats all the essential foods from all food groups • Consider child daily dietary recall if they are working class and the child can talk to check which foods the child eats if they are away

Guideline	Rationale	Actions
Guideline 5 Teach and allow child to feed themselves to foster feeding independence.	Teaching and allowing child to feed themselves fosters feeding independence and development of motor skills. Development of motor skills is important because it is part of growth of a child	**Caregiver:** • Teach and encourage their child to feed themselves to foster feeding independence. • Monitor the way the child eats to prevent hazards such as choking, hot foods, wastage and contamination of food • Allow child to feed themselves to develop motor skills • Provide and allow child to watch video cartoons of children feeding themselves if available to encourage child to feed themselves as well as eat. • Sing for child to eat and models healthy eating to encourage child to eat. • Praise child when they feed themselves so that they do even better in the next meal.

Guideline	Rationale	Actions
Guideline 6: Prioritization of child feeding in family meals avoiding some cultural practices that limit child intake of nutritious foods such as eggs.	Prioritizing children in family meals ensures that the child gets enough food and dispels some cultural practices that range from food for adults and food to be fed to children	**Caregiver:** • Ensure child is well fed first before adults feed so that child gets chance to adequately feed and be supervised in their feeding • Counsel the father about the need to feed the child first as in some cultures the father is fed • First make sure that child gets adequate portion of food in line with their age to ensure growth and provision of adequate nutrition • Avoid practices such as that children should not eat eggs as this may predispose them to malnutrition. • Give alternative of eggs such as milk. By giving their child eggs or an alternative as part of their meal ensures growth and provision of proteins

Guideline	Rationale	Actions
Guideline 7: Elimination of non- nutritious foods and drinks from the child's diet.	Non-nutritious foods are foods that are not of any nutrition value to a child, and hence should be limited in a child's diet. This is because they can predispose a child to malnutrition. Non-nutritious foods and drinks can also negatively alter a child preference for healthy foods leading to malnutrition.	**Caregiver:** • Avoid giving child non-nutritious foods such as jiggies, ama zepi, maputi. • Avoid foods of high sugar content such as freezits (colored water mixed with lots of sugar that is then sold in frozen sachets), fizzy drinks like jolly juice and low calorie mahewu with lots of sugar.
Guideline 8: Giving of healthy drinks after main meals as food and snacks	Healthy drinks such as water and other nutritious drinks like amarula fruit milkshake are nutritious and help in shaping eating behaviours of children. Snacks with high sugar and sodium content predispose a child to development of strong salt and sugar preferences later in life and can cause diarrhoea which slows growth and development of a child. Snacks should be from all food groups that make up a balanced diet	**Caregiver:** • Provide their child with healthy drinks after meals such as water as it quenches thirst and is vital for nutrition and body fluids needs. • Avoid adding sugar to milk. • Offer healthy fruit juices such as watermelon juice, orange juice if available to enhance food preferences and taste • Avoid sugary beverages like coca cola, miranda, jolly juice.

Guideline	Rationale	Actions
Guideline 9: Role modelling of good feeding practices by caregiver at all times.	Children like to eat what they see their caregivers eating. Can help develop healthy eating habits in children as they grow to appreciate such practices Creates positive feeding behaviours towards healthy foods Develops healthy eating styles in a child	**Caregiver:** • Role model good feeding practices. • Eat a variety of healthy foods in front of their children. • Avoid force feeding as it can lead to choking. • Does not force their child to finish all the food in their plate • Serve and eat healthy foods for their child to develop such practices • Keep healthier food choices in the home such as vegetables and fruits • Keep less high calorie sugary/sweet foods and savory snacks in the home

Guideline	Rationale	Actions
Guideline 10: Taking note of mandatory national fortification policy on processed staple foods to avoid buying non-nutritious foods	Buying foods with labels indicating name of manufacturer, date of manufacture, expiry date and components which may show what their child is allergic to help caregiver not to buy unhealthy foods and to purchase foods that are still within shelf life to prevent food poisoning and malnutrition	**Caregiver:** • Practice vigilance when buying food • Read nutritional content on food label before buying • Avoid buying non-fortified foods with no food labels • Avoid buying foods with high sugar content
Guideline 11: Implement safe food preparation practices at all times to prevent morbidity	Prevents food-borne diseases such as salmonella and shigella bacteria to which children under 5 years are most vulnerable to due to their immune systems which are still developing and can manifest as diarrhoea. Diarrhoea in children of this age range has a negative impact on feeding patterns of children aged 2-5 years	**Caregiver:** • Wash hands thoroughly with soap/ash under running water before and after handling food to prevent contamination of food • Ensure a clean environment to prevent flies • Wash hands before feeding the child to avoid introducing bacteria • Clean kitchen utensils immediately after use to prevent contamination with flies which can lead to diarrhea

		• Wash child's hands before eating to prevent food contamination which can lead to diarrheal diseases • Thoroughly wash fruits and vegetables under running water before eating • Cook food thoroughly to kill germs

ANNEXURE F

THE EDITOR –

LETTER FROM THE EDITOR

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13 December 2022

TO WHOM IT MAY CONCERN

I hereby certify that I have edited Yvonne Chauraya's doctoral dissertation, **Development of guidelines for feeding practices for children aged 2-5 years in Bulawayo province in Zimbabwe**, for language and content.

Iauma M Cooper
192-290-4