

# Overview of field-testing of the revised, draft South African Paediatric Food-Based Dietary Guidelines amongst mothers/caregivers of children aged 0–5 years in the Western Cape and Mpumalanga, South Africa

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**Background:** This paper provides an overview of a series of studies undertaken to assess the appropriateness and understanding of the revised, draft South African Paediatric Food-Based Dietary Guidelines (SA-PFBDGs) amongst mothers/caregivers of children aged 0–5 years. Previous exposure to guidelines with similar messages, barriers and enablers to following the guidelines were also assessed.

**Design:** Qualitative methods were used to collect data from 38 focus-group discussions (isiXhosa = 11, Afrikaans = 11, English = 10 and siSwati = 6) resulting in 268 participants.

**Setting:** Breede Valley sub-district (Worcester), Stellenbosch Municipality (Stellenbosch, Pniel and Franschhoek) and Northern Metropole (Atlantis, Witsand, Du Noon and Blouberg), City of Cape Town, Western Cape province, as well as Ehlanzeni District (Kabokweni) in Mpumalanga province.

**Subjects:** Mothers/caregivers older than 18 years who provided informed consent to participate.

**Results:** The majority of participants had previous exposure to guidelines with similar messages to the SA-PFBDGs. Information sources included nurses, local clinics, family, friends and media. Possible barriers to following the guidelines included limited physical and financial access to resources; cultural/family practices, poor social support and time constraints. Outdated information, misconceptions, inconsistent messages and contrasting beliefs were evident. The vocabulary of some messages was not well understood. Education on infant and young child feeding and visual portrayal of the guidelines could aid understanding.

**Conclusion:** A degree of rewording should be considered for improved understanding of the revised, draft SA-PFBDGs. Once adopted, the guidelines can be used to educate various stakeholders, including parents, caregivers, healthcare providers and educators, on the correct nutritional advice for children aged 0–5 years ensuring the healthy growth and development of young children in South Africa.

**KEYWORDS** breastfeeding, complementary feeding, infants, young children, paediatric food-based dietary guidelines, South Africa, consumer testing

## Introduction

Childhood malnutrition remains a global challenge.<sup>1,2</sup> Although the worldwide prevalence of stunting in children younger than five years has decreased over the past 20 years, the figures are higher in certain parts of the world, notably Asia and sub-Saharan Africa. The impact of foetal growth restriction, stunting, wasting, vitamin A and zinc deficiencies, as well as sub-optimal breastfeeding, was calculated in a Lancet review. The authors concluded that it led to 45% of deaths in children globally in 2011.<sup>1</sup> Furthermore, overweight in children younger than five years is a rising contributor to childhood morbidity and may result in adult obesity, diabetes and non-communicable diseases.<sup>1,2</sup> Against this backdrop, the World Health Assembly set nutrition targets for 2025 to address childhood malnutrition.<sup>3</sup> These targets relate to reducing stunting, wasting and low birthweight in children and anaemia in women of reproductive age, increasing exclusive breastfeeding and halting the increase in childhood overweight.<sup>3</sup>

In South Africa, according to the 2016 South African Demographic and Health Survey (SA DHS, 2016), the mortality rate of children under the age of five years, in the five years preceding the survey, stood at 42 per 1 000 live births.<sup>4</sup> This number is higher than it should be for a middle-income country. For children under five years of age, 27% were found to have stunted

growth.<sup>4</sup> The stunting prevalence in South Africa is persistent, as very little improvement has been made in reducing stunting in the country over the past 40 years.<sup>5</sup> In contrast, 13% of children younger than five are overweight, putting South Africa at twice the global average (6.1%) of young child overweight.<sup>2</sup> The minimum acceptable diet indicator for children aged 6–23 months was also calculated in the DHS of 2016. A low 23% of children met the criteria for a minimum acceptable diet,<sup>4</sup> an indication of poor dietary diversity, which point to nutrient gaps,<sup>2</sup> including for micronutrients. With few conditions matching the scale of malnutrition in the world today, the need to address childhood malnutrition in all its forms has never been greater.<sup>2</sup>

There are various causes of sub-optimal nutrition, but one of the underlying causes is a lack of appropriate education with regard to optimal child feeding practices.<sup>6</sup> A deficit in knowledge can be addressed through educational tools. One such tool, developed to promote appropriate diets, is Food-Based Dietary Guidelines (FBDGs).<sup>7</sup> Country-specific FBDGs are evidence-based recommendations based on the country's local food availability and culture and serve as a guide to the broad public to consume a healthy, optimal diet, while simultaneously helping to protect against the development of lifestyle conditions or non-communicable diseases.<sup>7,8</sup>

The Food and Agriculture Organization (FAO) together with the World Health Organization (WHO) developed the concept of FBDGs in 1995.<sup>7</sup> Two years later, in 1997, the Nutrition Society of South Africa (NSSA) formed a working group for the development of South African FBDGs for the general public. This was done in partnership with the Department of Health, Directorate Nutrition, the Medical Research Council (MRC) of South Africa, the Association for Dietetics in South Africa (ADSA) and several other stakeholders from the United Nations' agencies and food-producer organisations in South Africa.<sup>9</sup> In 2003 the South Africa FBDG for adults and children over the age of seven years were published and adopted by the Department of Health.<sup>8</sup>

In 2007, technical support papers for proposed South African Paediatric FBDGs (SA-PFBDGs) were published,<sup>10</sup> but the guidelines were not adopted by the Department of Health due to insufficient national field testing, and a lack of research resources and capacity.<sup>8</sup> In 2011, a paediatric working group was established to review the initial SA-PFBDGs according to the latest infant and young child feeding (IYCF) evidence and the unique South African context. The working group suggested that the age ranges of the revised SA-PFBDGs should be changed to include children between the ages of 0–5 years, rather than 0–7 years as proposed in the previous guidelines.<sup>8</sup> The motivation was that the SA-PFBDGs should correspond to age-appropriate milestones in feeding practices, congruent with international groupings of health indicators for these age groups. Also, children now start school at 5 years of age in South Africa (grade R), as opposed to age 6–7 when the first guidelines were developed. The subdivisions of guidelines for specific age groups were updated to: 0–6 months; 6–12 months; 12–36 months; and 3–5 years. The adult FBDGs were adapted accordingly, to focus on South Africans over the age of five years.<sup>8</sup>

In 2013, the technical support papers for the revised SA-PFBDGs were published, along with the revised FBDG, in a supplement of the South African Journal of Clinical Nutrition.<sup>8</sup> In order for the revised, draft SA-PFBDGs to be adopted and utilised by the Department of Health and other stakeholders, thorough field-testing on a national representative sample was necessary.<sup>8</sup> Once tested, the SA-PFBDGs can be implemented and used as an educational tool for improving child health in South Africa.<sup>8</sup> In response, researchers from the Division of Human Nutrition, Stellenbosch University, undertook consumer field-testing of the revised, draft SA-PFBDGs through a series of studies in different settings. This article provides an overview of the results from these research studies combined. Results from each of the four studies are published elsewhere in SAJCN.<sup>11–14</sup>

The aim of the series of studies was to assess the appropriateness and understanding of the revised, draft SA-PFBDGs amongst mothers/caregivers of children aged 0–5 years in the Western Cape and Mpumalanga provinces of South Africa. Furthermore, mothers/caregivers' previous exposure to guidelines with similar messages and the barriers and enablers to following the guidelines were determined.<sup>11–14</sup>

For the purpose of the series of research studies reported here, the specific terminology was used and interpreted as follows:

- **Appropriateness:** refers to the relevance of the guideline/s in the study setting and/or context.
- **Understanding/comprehension:** these words are used as synonyms in the context of this research and refer to a person's grasp of the meaning of the guideline(s).

- **Barrier:** refers to any obstacle to the understanding or following of the guideline(s).
- **Enabler:** refers to any support or empowerment for the understanding or following of the guideline(s).

## Methodology

### **Study design, setting, recruitment and sampling of participants**

The study followed a qualitative, descriptive, cross-sectional design that allowed the researchers to extract in-depth information from individuals in order to gain a better understanding of their thoughts on the guidelines.<sup>15</sup>

To assess the understanding of the guidelines, one of the important considerations was the language(s) in which the guidelines will be communicated. South Africa is a multilingual country with 11 official languages; i.e. English, Southern Sotho, Tsonga, Afrikaans, SeTswana, isiZulu, Northern Sotho, SiSwati, isiXhosa, Venda and isiNdebele.<sup>16</sup>

isiZulu is the mother tongue of 22.7% of South Africa's population. This is followed by isiXhosa at 16%, Afrikaans at 13.5%, English at 9.6%, SeTswana at 8% and Sesotho at 7.6%. The remaining official languages are spoken at home by less than 5% of the population. isiZulu, isiXhosa, SiSwati and isiNdebele are collectively referred to as the Nguni languages, and they have many similarities in syntax and grammar. The Sotho languages (Setswana, Sesotho sa Leboa and Sesotho) also have much in common.<sup>16</sup>

The authors were able to test the guidelines in isiXhosa, English, Afrikaans and SiSwati in the study sites. These sites included the following sub-districts and towns/settlements: the Breede Valley sub-district (Worcester),<sup>11</sup> Stellenbosch Municipal area (Stellenbosch, Pniel and Franschoek)<sup>12</sup> and the Northern Metropole (Atlantis, Witsand, Du Noon and Blouberg), City of Cape Town in the Western Cape province<sup>14</sup> as well as Ehlanzeni District (Kabokweni) in Mpumalanga province.<sup>13</sup> The Western Cape sites were purposively selected from communities that form part of Stellenbosch University, Faculty of Medicine and Health Sciences' rural service and community engagement areas. The Mpumalanga site was selected to include a Siswati-speaking population with a researcher in close proximity to this community.

Research assistants/fieldworkers purposively recruited participants in various community settings (e.g. crèches, outside clinics, religious and support groups) using a snowball sampling technique. The inclusion criteria for the study participants were: mothers/caregivers over the age of 18 who have or have taken care of children from 0–5 years of age; were fluent and literate in either Afrikaans, isiXhosa, siSwati or English (depending on study site); provided informed consent; and were permanent residents of the study areas (lived in the area for longer than six months).

Participants were randomly assigned to homogeneous focus groups. The focus groups in this study were convened according to settlement type (formal and informal housing), which provided a broad indication of socio-economic status, as well as home language, to enhance homogeneity of the FGDs.

Women were chosen as the study population as they are the primary carers of young children and make decisions regarding infant and young child feeding.

### Development of the FGD guide

A generic FGD guide was developed, based on guidance from FAO/WHO (Appendix 1).<sup>7</sup> The guide included the procedure to be followed, as well as the questions to be asked and prompts to follow by the facilitators pertaining to all the revised, draft SA-PFBDGs. The FGD guide addressed the following discussion points:

- Previous exposure to messages similar to the revised, draft SA-PFBDGs.
- The mother's/caregiver's understanding and interpretation of each revised, draft SA-PFBDG.
- Barriers and enablers to following of the revised, draft SA-PFBDGs.

The guide was adapted and detailed with the specific wording from the specific set of guidelines that were tested in each of the studies.<sup>11–14</sup> The guide was translated from English into Afrikaans, isiXhosa and Siswati by trained professionals. These translations were back-translated into English for quality-control purposes. The same procedure was also used for the translation of the socio-demographic questionnaires and consent forms.

### Translation and verification of the translated guidelines

The revised, draft SA-PFBDGs were translated from English into Afrikaans, isiXhosa and Siswati by professional translators. The authors, research assistants and fieldworkers reviewed the translated guidelines to make sure they remained true to the English version of the guidelines. Each guideline was printed and enlarged onto A1 sized posters and displayed at every FGD. Flash cards with the individual messages were also printed and displayed.

### Training of research assistants/fieldworkers

The authors were all qualified and registered dietitians. The authors recruited research assistants/fieldworkers in each study setting and all members of the research team were trained on all aspects of data collection, including the aim of the research, the full protocol to be followed and focus-group discussion methodology. The research assistants were from the communities studied, who could speak the local languages and act as interpreters if needed. The fieldworkers for the Worcester study were final-year dietetic students. The authors conducted training sessions prior to the pilot studies and one refresher course nearer to the data-collection period to ensure that all assistants and fieldworkers were standardised.

### Validity and reliability

The data-collection process, as well as face validity, of the FGD guide was tested during pilot studies prior to the main data-collection periods. The participants chosen to take part in the pilot studies were representative of the study sample of each study setting.

The authors were all trained in qualitative methods and could lead the FGDs with prompts, reflection questions, questions of clarity and summaries in order to ensure thorough interrogation of each PFBDG under discussion. Reliability of the study was ensured through the use of a standard protocol and FGD guide, which was appropriately adapted and followed in every FGD.

### Data collection

Data collection was performed periodically between 2015 and 2018 in the different study settings. Accessible and available community facilities (e.g. crèches, libraries, church halls) were utilised for data collection and were visited in advance to arrange suitable dates and times for the FGDs.

### Process followed during the FGDs

Before commencement of each FGD in the different study settings, each participant completed a self-administered socio-demographic questionnaire, which consisted of the participant's date of birth, home language, highest level of education, employment status and relation to the child. All questionnaires were printed in either English, Afrikaans, isiXhosa or Siswati. The authors and trained research assistants assisted participants with completion of the questionnaires, where necessary, with specific reference to illiterate participants.

During the introduction of the FGDs, the facilitators welcomed the participants and explained the aim and expectations of the study. Participants were informed that all information would be treated with confidentiality by using unique classification codes. Participants were required to wear a number/sticker on their clothing for identification purposes. The names of the participants were therefore not documented. Separate consent was requested for the audio-recording of the FGDs and participants were assured of the confidential manner in which these recordings would be handled.

The facilitators read out all the guidelines one by one and allowed the participants to discuss these without biasing their opinions. When reading out the guidelines, the facilitators also presented a flash card of each revised, draft South Africa PFBDG to the participants, for ease of reference.

Group sizes varied between 4 and 11 participants. FGDs of 60–90 minutes were conducted by a researcher and a trained assistant with each group in their first language. The sample size (total number of FGDs) was determined by data saturation. All FGDs were audio-recorded for analysis purposes.

The different study sites, year of data collection, number of participants, number of FGDs, languages tested, number of SES groups in the FGDs and the revised, draft SA PFBDG messages per age group, in the field-testing of the revised, draft South Africa PFBDG are outlined in Table 1. A total of 44 FGDs were conducted: 11 in isiXhosa, 11 in Afrikaans, 10 in English and 12 in siSwati, of which 21 were representative of informal settlements and 23 of formal settlements, resulting in 268 participants overall.<sup>11–14</sup>

Refreshments were served at all FGDs, during comfort breaks, in order to prevent fatigue. The participants also each received a parcel consisting of healthy snacks (e.g. fresh/dried fruit and yoghurt) as a token of appreciation for participation in the study.

### Data analysis

The English FGD audio-recordings were transcribed, and the Afrikaans, Siswati and isiXhosa FGD audio-recordings were transcribed and simultaneously translated into English. The FGD transcriptions were analysed using the Atlas.ti software program (<https://atlasti.com/>) or by manual analysis. For manual analysis the data were imported into Microsoft Excel 2013 spreadsheets (Microsoft Corp, Redmond, WA, USA).

**Table 1:** Different study sites, year of data collection, number of participants, number of FGDs, languages tested, number of settlement types in the FGDs and the revised, draft South Africa PFBDG messages per age group, tested in the field-testing of the revised PFBDGs

Study sites	Year of data collection	No. of participants/ no. of FGDs	Languages	No. of different settlement types represented in FGDs	Message tested in age groups
Worcester, Breede Valley, Western Cape	2015	<i>n</i> = 23 (4)	English	6 formal	0–12 months
		<i>n</i> = 27 (5)	Afrikaans	8 informal	
		<i>n</i> = 23 (5)	isiXhosa		
Stellenbosch Municipality, Western Cape	2016	<i>n</i> = 20 (3)	English	4 formal	12–36 months
		<i>n</i> = 24 (4)	Afrikaans	5 informal	
		<i>n</i> = 21 (2)	isiXhosa		
Kabokweni, Mpumalanga	2017	<i>n</i> = 41 (6)	Siswati	3 informal	0–12 months
				3 formal	12–36 months
		<i>n</i> = 34 (6)		3 informal	
				3 formal	
City of Cape Town, Northern Metropole Western Cape	2018	<i>n</i> = 13 (3)	English	5 formal	3–5 years
		<i>n</i> = 21 (3)	Afrikaans	4 informal	
		<i>n</i> = 21 (3)	isiXhosa		
<b>Total number of participants/total number of FGDs</b>		<b>N = 268</b>		<b>21 formal</b>	
		<b>FGDs = 44</b>		<b>23 informal</b>	

The authors, research assistants and/or fieldworkers (depending on the language of the audio-recording) reviewed the data by listening to the recordings while reading the transcripts to ensure that information was captured accurately. This was done as soon as possible following data collection and capturing, for quality control purposes.

Contextualised interpretive content analysis was the method used to analyse the data in this study.<sup>15</sup> Data were inspected for common themes, which were then grouped together into codes. Themes were organised according to broader clusters, based on the predetermined study aims and objectives. Once the data from each transcript were coded and organised, the authors summarised the themes across all FGDs to gain insight into the overall findings of the study in each research setting. Data analysis was done by at least two investigators.

The data collected from the socio-demographic questionnaires were recorded and analysed in Microsoft Excel 2013 and summarised as descriptive statistics.

### Ethical considerations

The Health Research Ethics Committee of Stellenbosch University approved the research protocols (Reference numbers: N14/09/122; S16/02/028; N14/09/122).<sup>11–14</sup>

All mothers/caregivers who were eligible for inclusion in the study were required to provide written informed consent. Researchers and facilitators explained the nature of the study to the participants as well as the purpose of audio-recording of the discussions. All informed consent forms were available in English, Afrikaans, isiXhosa and Siswati, according to the specific study setting.

### Main findings

#### **Appropriateness and understanding of the revised draft SA-PFBDGs**

Overall, participants displayed a fair understanding and knowledge of infant and young child nutrition concepts.<sup>11–14</sup> Some

concepts, however, were not well understood. The lack of understanding or poor knowledge was mostly due to myths, outdated or inconsistent information or, in some instances, the wording of some of the guidelines caused uncertainty.<sup>11–14</sup> The latter provided an indication that a degree of rewording should be considered to facilitate the comprehension of the guidelines. Some participants commented that illustration of the messages would aid understanding.<sup>11,12</sup>

#### **Previous exposure to guidelines with similar messages to the revised draft SA-PFBDG messages**

A general finding of the overall field-testing of the PFBDG across the various research settings was that the majority of participants had previous exposure to guidelines with similar messages. The sources of information on the guidelines included nurses, local clinics, family members, hospitals, posters, pamphlets and radio. Higher socio-economic status (SES) groups also reported exposure from paediatricians, books, magazines and television programmes.<sup>11–14</sup>

#### **Age-specific guidelines and suggestions for changes**

Suggestions for rewording of certain guidelines, as proposed during the FGDs and during interpretation of the results, are displayed in Table 2. The rationale for the suggestions is detailed in the sections to follow.

#### **Revised, draft SA-PFBDGs 0–6 months**

The participants were familiar with the 0–6 month exclusive breastfeeding (EBF) guideline, but some raised concern about the practicality of the guideline.<sup>11,13</sup> In some instances, suggestions for changes to this guideline were based on incorrect information and myths (e.g. that breastmilk dries up; mothers do not have enough milk; breastmilk alone is not sufficient for a baby younger than six months; babies need water; EBF should be practised until four months).<sup>11,13</sup>

These suggestions can therefore not be incorporated as proposed changes to the current guideline on EBF. The researchers propose a change in word order for this guideline to improve message construction and flow, as indicated in Table 2.



Table 2: Revised, draft SA-PFBDGs and suggested changes to the wording following field-testing of the guidelines

Revised draft South Africa PFBDGs (2013)	Suggested changes to the revised draft South Africa PFBDGs after completion of field-testing <sup>11–14</sup>
<b>0–6 months:</b>	
<ul style="list-style-type: none"> <li>Give only breast milk, and no other foods or liquids, to your baby for the first six months of life</li> </ul>	<ul style="list-style-type: none"> <li>Give your baby only breastmilk and no water, other liquids or foods, for the first six months of life</li> </ul>
<b>6–12 months:</b>	
<ul style="list-style-type: none"> <li>At six months, start giving your baby small amounts of complementary foods, while continuing to breastfeed to two years and beyond</li> <li>Gradually increase the amount of food, number of feeds and variety as your baby gets older</li> <li>Start spoon-feeding your baby with thick foods, and gradually increase to the consistency of family food</li> <li>Feed slowly and patiently and encourage your baby to eat, but do not force him or her</li> <li>From six months of age, give your baby meat, chicken, fish or egg every day, or as often as possible</li> <li>Give your baby dark-green leafy vegetables and orange-coloured vegetables and fruit every day</li> <li>Hands should be washed with soap and clean water before preparing or eating food</li> <li>Avoid giving tea, coffee and sugary drinks and high-sugar, high-fat salty snacks to your baby</li> </ul>	<ul style="list-style-type: none"> <li>From six months, start giving your baby small amounts of complementary foods, while continuing to breastfeed to two years and beyond</li> <li>Gradually increase the amount of food, number of meals and variety as your baby gets older</li> <li>Gradually change the consistency of your baby's food from soft, mashed food to family food</li> <li>Feed slowly and patiently and encourage your baby to eat, but do not force him or her</li> <li>From six months of age, give your baby meat or chicken or fish or egg or beans or peanut butter every day, or as often as possible.</li> <li>Give your baby dark-green leafy vegetables and orange-coloured vegetables and fruit every day</li> <li>Hands should be washed with soap and clean water before preparing or eating food</li> <li>Avoid giving tea, coffee and sugary drinks and high-sugar, high-fat salty snacks to your baby</li> </ul>
<b>12–36 months:</b>	
<ul style="list-style-type: none"> <li>Continue to breastfeed to two years and beyond</li> <li>Gradually increase the amount of food, number of feedings and variety as your child gets older</li> <li>Give your child meat, chicken, fish or egg every day, or as often as possible</li> <li>Give your child dark-green leafy vegetables and orange-coloured vegetables and fruit every day</li> <li>Avoid giving tea, coffee and sugary drinks and high-sugar, high-fat salty snacks to your child</li> <li>Hands should be washed with soap and clean water before preparing or eating food</li> <li>Encourage your child to be active</li> <li>Feed your child five small meals during the day</li> <li>Make starchy foods part of most meals</li> <li>Give your child milk, maas or yoghurt every day</li> </ul>	<ul style="list-style-type: none"> <li>Continue to breastfeed to two years and beyond</li> <li>Gradually increase the amount of food, number of meals and variety as your child gets older</li> <li>Give your child either meat or chicken or fish or eggs or beans or peanut butter every day, or as often as possible</li> <li>Give your child dark-green leafy vegetables and orange-coloured vegetables and fruit every day</li> <li>Avoid giving tea, coffee and sugary drinks and high-sugar, high-fat salty snacks to your child</li> <li>Hands should be washed with soap and clean water before preparing or eating food</li> <li>Encourage your child to be active</li> <li>Feed your child three small meals and two healthy snacks during the day</li> <li>Make starchy foods part of most meals</li> <li>Give your child either milk or maas or plain, unsweetened yoghurt every day</li> </ul>
<b>3–5 years:</b>	
<ul style="list-style-type: none"> <li>Enjoy a variety of foods</li> <li>Make starchy foods part of most meals</li> <li>Lean chicken or lean meat or fish or eggs can be eaten every day</li> <li>Eat plenty of vegetables and fruit every day</li> <li>Eat dry beans, split peas, lentils and soya regularly</li> <li>Consume milk, maas or yoghurt every day</li> <li>Feed your child regular small meals and healthy snacks</li> <li>Use salt and foods high in salt sparingly</li> <li>Use fats sparingly. Choose vegetable oils, rather than hard fats</li> <li>Use sugar and food and drinks high in sugar sparingly</li> <li>Drink lots of clean, safe water and make it your beverage of choice</li> <li>Be active!</li> <li>Hands should be washed with soap and clean water before preparing or eating food</li> </ul>	<ul style="list-style-type: none"> <li>Enjoy a variety of foods</li> <li>Make starchy foods part of most meals</li> <li>Lean chicken or lean meat or fish or eggs can be eaten every day</li> <li>Eat plenty of vegetables and fruit every day</li> <li>Eat dry beans, split peas, lentils and soya regularly</li> <li>Give your child either milk or maas or plain, unsweetened yoghurt every day</li> <li>Feed your child three small meals and two healthy snacks during the day</li> <li>If you use salt and foods high in salt, use it sparingly</li> <li>Use fats sparingly. Choose vegetable oils, rather than hard fats</li> <li>If you use sugar and food and drinks high in sugar, use it sparingly</li> <li>Drink lots of clean, safe water and make it your beverage of choice</li> <li>Be active!</li> <li>Hands should be washed with soap and clean water before preparing or eating food</li> </ul>

### Revised, draft SA-PFBDGs 6–12 months

For the 6–12 months complementary feeding guidelines, a few suggestions for changes were offered.

Participants did not understand the word 'feeds' in the guideline stating to 'gradually increase the amount of food, number of

meals and variety ...'. A suggestion was made to change the word 'feeds' to 'meals'.<sup>11</sup>

The researchers suggest that the word 'at' in the first guideline (introduction to complementary foods) be changed to 'from' to be aligned with the international guideline.

There was misunderstanding across the groups regarding the meaning of certain words in the guideline on spoon-feeding a baby, such as 'thick foods' and 'consistency'.<sup>11–13</sup> Also, certain quantities, such as what type or size of spoon to use; what the consistency of 'thick' foods was; and how to quantify 'gradually' raised questions from participants. The word 'increase' was also not understood in this context and the sense from participants was that it should be replaced with the word 'change'.<sup>11</sup> The authors therefore suggest the wording on spoon-feeding in this guideline should be dropped. Also, participants understood what family foods were and that first foods for babies should be soft in texture.<sup>11,13</sup> The authors suggest that the guideline be modified to read: 'Gradually change the consistency of your baby's food from soft, mashed foods to family foods.'

The animal source foods/protein guideline was found to be confusing, since participants were under the impression they had to provide the full list of meat, chicken, fish and egg every day.<sup>11,13</sup> They suggested inserting the word 'or' between the different examples, to indicate that it could be one of these foods. Many participants recognised the nutritional value of these foods, but voiced their concern about this guideline due to the high cost of the listed foods.<sup>11,13</sup>

Many participants indicated that they are not able to follow this guideline at all. They mentioned that they use beans and peanut butter as more economical alternatives to meat.<sup>11,13</sup>

The authors suggest that beans and peanut butter should be added to the list of protein-rich foods. Although these foods are not sources of animal proteins and do not contain similar micronutrient profiles, the authors' reasoning for its inclusion relates to the cultural acceptability, accessibility and affordability of these foods. By adding these foods to the list, consumers could feel a sense of being able to follow the guideline and know they could provide the animal source proteins when they can afford to, instead of not being able to follow this guideline at all. Furthermore, the 3–5-year guidelines contain a message on pulses, albeit in a separate guideline from the animal source foods, in accordance with the adult guidelines.<sup>8</sup>

### **Revised, draft SA-PFBDGs 12–36 months**

In the 12–36 months guidelines no changes were suggested for the guideline on continued breastfeeding, despite the fact that some participants questioned the value of continuation until 2 years of age.<sup>12,13</sup> Other participants were comfortable with this guideline. Similar comments on the protein guideline for infants 6–12 months were raised in discussions on this age group.<sup>12,13</sup> Therefore, the addition of the word 'or' after each food listed was also suggested here.

### **Revised, draft SA-PFBDG 3–5 years**

For the 3–5-year guidelines, no changes were suggested for the first five listed guidelines, relating to enjoyment of a variety of foods, starchy foods, animal food sources, regular eating of pulses, and fruit and vegetables.<sup>14</sup>

The animal protein guideline for this age group already contained the word 'or', separating the different listed foods, so participants did not raise the issues as for the 6–36-month age group. This confirmed that the similar guideline for the 6–36 months guideline should be changed as indicated (Table 2). Similarly, the addition of the word 'or' to the list was also suggested for the milk and milk products guideline.<sup>14</sup>

Participants were of the opinion that five small meals a day was too much. They suggested that the guideline should read: 'Feed your child three small meals and two healthy snacks during the day'.<sup>14</sup>

For the salt and sugar guideline, the participants felt that the wording ('use') was instructive and suggested the guidelines should read 'If you use ...'. The same was not suggested for the fat guideline, since fat was seen as part of a healthy diet, whereas salt and sugar should be used sparingly.<sup>14</sup>

### **Barriers and enablers to following the guidelines**

Barriers to following the guidelines related to limited physical and financial access to resources, i.e. poor infrastructure impeding access to healthy food, cost of food in general and healthy foods in particular, and time constraints to prepare food.<sup>11–14</sup> Marketing of foods was also highlighted as a barrier in some FGDs.<sup>11,12</sup> In the 3–5 year guidelines, cultural differences and taste preferences were cited as reasons for poor implementation.<sup>14</sup>

Enablers to following the guidelines included the perceived importance of the messages and understanding its contribution to health benefits to children.<sup>11–14</sup> Participants acknowledged the need for education on IYCF in all communities. Furthermore, participants felt that examples or visual portrayal of the messages would aid understanding.<sup>11,12</sup>

### **Discussion**

According to FAO, there are currently seven countries in Africa with FBDGs. These countries include Benin, Kenya, Namibia, Nigeria, Seychelles, Sierra Leone, and South Africa.<sup>17</sup> With the increasing prevalence of the double burden of malnutrition in the region, a significant number of countries are currently developing their first set of FBDGs. In support of these efforts, the FAO states the following invitation on its website: 'We invite governments to send us their new or revised dietary guidelines and to notify updates on the information pertaining to their countries'.<sup>17</sup>

Of the listed African countries, none have PFBDG. Only the Seychelles has a message on IYCF included in the country's set of FBDGs ('Breastfeed your child exclusively up to 6 months').<sup>18</sup> South Africa's PFBDGs are listed by name and the intended audience of the proposed guidelines ('paediatric FBDGs target children 0–5 years') is mentioned.<sup>19</sup> This opens the opportunity for South Africa to be the first African country to have adopted PFBDGs.

To this effect, the overarching aim of the research reported in this overview was to assess the appropriateness and understanding of the revised, draft SA-PFBDG amongst mothers/caregivers of children aged 0–5 years in selected provinces of South Africa.

It was evident from the overall findings of the series of studies that participants displayed some understanding and knowledge of IYCF concepts. Also, guidelines with similar messages to the revised, draft SA-PFBDGs have been widely disseminated and communicated.<sup>11–14</sup> These findings are encouraging and could possibly contribute to various efforts from the NDoH and other non-governmental organisations to promote, protect and support breastfeeding.<sup>20</sup> Also, the focus on IYCF in general, including the MOMConnect programme<sup>21</sup> and the Road to Health booklet (RtHB),<sup>22</sup> could also have strengthened

awareness on the topic. However, misinformation and lack of information on some aspects of IYCF is still evident from the results of the studies.<sup>11–14</sup> The participants were not well informed about the guidelines relating to the appropriate age for introduction of complementary food,<sup>11,13</sup> and the continuation of breastfeeding.<sup>11–13</sup> Furthermore, the lack of appropriate and nutritious complementary foods, particularly the inclusion of a variety of foods and protein sources, was apparent. This sub-optimal complementary feeding diet was attributed to the following barriers: cost, cultural/family practices, poor social support and time constraints.<sup>11–13</sup> These findings are consistent with prevailing financial constraints, poor household food security and low SES in many areas in South Africa,<sup>23–25</sup> despite economic growth, and political and social transition.<sup>5</sup>

Healthcare workers (HCWs) and healthcare platforms were cited as the most common sources of IYCF information. However, previous research indicated that nutrition support, education and counselling is not offered as part of normal service delivery, specifically at primary health care facilities, owing to staff shortages, heavy workload and a lack of nutrition-trained personnel.<sup>22,26</sup> These barriers to optimal IYCF information sharing should be addressed by NDoH. Furthermore, updates, continuous training and retraining of HCWs, specifically skills training in communication and health promotion, are critical to improve IYCF knowledge.<sup>27</sup> But training of HCWs in nutrition, specifically in IYCF, is a contentious issue, despite international and national research studies and guiding documents indicating the need for refresher courses and retraining of HCWs in basic nutrition messages.<sup>28–31</sup> Therefore, service standards and norms for, among others, nutrition education and counselling should be developed and implemented to scale up services and communication to improve IYCF.<sup>31</sup>

Academics and dietetic/nutrition associations and societies, particularly ADSA and NSSA, contribute substantially to addressing inconsistent and inaccurate IYCF messages in the media, including social media. These efforts should continue in the strive to bridge the knowledge gap in IYCF to the public. In addition, the current efforts of NDoH, notably the Side-by-Side campaign,<sup>32</sup> should be strengthened. This campaign is designed for pregnant women and caregivers of children under five years of age and is aimed at ensuring nurturing care and optimal development of children in South Africa. A revised Road-to-Health booklet (RtHB) was launched by the NDoH as part of the Side-by-Side campaign.<sup>32</sup> The revised RtHB contains much new information compared with the previous booklet, including detailed nutrition education messages. In general, the messages in the revised RtHB and those of the South Africa PFBDGs agree on most guidelines in principle, i.e. exclusive breastfeeding and continuation of breastfeeding, the timing of introduction to solids, provision of starchy foods, protein sources, vegetables and fruit, increasing amount and variety with age, hygiene, encouragement of eating and avoidance of tea, coffee and sugary and salty snacks. When compared more closely though, the revised RtHB messages are more detailed, and contain more examples of foods and amount of food that should be provided. The age categories in the revised RtHB messages (0–6 months; 6–8 months; 11–12 months; 12 months to 5 years)<sup>32</sup> differ from those advised for the revised, draft SA-PFBDGs. The revised RtHB messages also advise water from 6 months of age and whole, full-cream cow's milk from 12 months. Although continued breastfeeding is promoted, it is not clear from the RtHB messages that cow's milk should not replace breastmilk as a drink from 12 months.

Furthermore, the messages in the revised RtHB may be too lengthy and could cause confusion with the use of some terminology, e.g. micronutrient names. The revised RtHB is only available in English, but a supplementary booklet, 'How to Raise a Happy and Healthy Child', is available from the Side-by-Side campaign website, in all 11 official languages. It contains the same educational content for caregivers as the RtHB, but without the health records, immunisation schedule and growth charts. There is, however, no evidence in the scientific literature or on the campaign website that indicates whether the revised RtHB and the supplementary material were tested for understanding on a representative sample of end-users. It is generally known and recommended by the WHO/FAO that FBDGs and other types of educational materials should be field-tested before they are published for the general public.<sup>33</sup> NDoH should therefore decide on the process of adoption and use of the tested revised, draft SA-PFBDGs to support the messages in the revised RtHB.

Lastly, the FAO recommends graphic representations of all or some of the messages of the dietary guidelines. Subsequent to the field-testing of the revised, draft SA-PFBDGs, Digital MeDIC South Africa illustrated the messages. This organisation is a programme of the Stanford Center for Health Education, Digital Medical Education International Collaborative (Digital MeDIC), dedicated to expanding health knowledge to communities across the world (<https://digitalmedic.stanford.edu>). These illustrations have been presented to NDoH, since this could aid further understanding of the revised, draft SA-PFBDGs.

### Limitations

Although the revised, draft SA-PFBDGs were not tested in all 11 official languages and all 9 provinces in the country, the testing at least covered the four most spoken and understood languages in the country.<sup>16</sup> Some of the recommendations may therefore not be applicable to all settings and groups in South Africa. The aim of PFBDGs, however, should be kept in mind: i.e. that they are aimed at the general population and are not intended to satisfy the specific needs of every province or group.<sup>8</sup>

The researchers acknowledge that it was not possible in all FGDs to group participants in terms of settlement type, therefore the assignment of formal versus informal settlement was based on the majority results of the socio-demographic forms of each FGD. Audio-recordings of FGDs were translated and transcribed in English. This could have resulted in the loss of some nuances of understanding or interpretation in the different languages.

### Conclusion and recommendations

The draft, revised SA-PFBDGs have been field-tested for understanding and appropriateness. The study results indicate a general awareness of IYCF messages, but a degree of rewording should be considered to facilitate the comprehension of the guidelines.

In response to the FAO's request, the NDoH, South Africa, needs to decide on the process of adoption and use of the guidelines. We recommend that the NDoH adopt the tested revised, draft SA-PFBDGs with the suggested changes for improved understanding, as indicated in [Table 2](#).

Once adopted, the South Africa PFBDGs can be used to educate various stakeholders, including parents, caregivers, healthcare providers and educators on the correct nutritional practices for children aged 0–5 years. These guidelines can be used to guide implementation of nutrition education to promote

appropriate diets while simultaneously addressing the abundance of misinformation on IYCF.<sup>8</sup> The messages can also be incorporated in the MOMConnect programme<sup>21</sup> and other social media platforms, and can be used to strengthen the health-promotion messages in the RthB Side-by-Side campaign.<sup>32</sup> The PFBGD messages can also be incorporated in publications of national and provincial government departments to ensure consistent messages to support the healthy growth and development of young children in South Africa.

### Sources of support

- (1) Fund for Research in Rural Health (FIRRH, Stellenbosch University);
- (2) Stellenbosch University Rural Medical Education Partnership Initiative (SURMEPI).

**Acknowledgement** – The authors would like to thank the research assistants and field workers who supported the research.

**Disclosure statement** – No potential conflict of interest was reported by the author(s).

**Supplemental data** – Supplemental data for this article can be accessed at <https://doi.org/10.1080/16070658.2020.1769334> description of location.

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Received: 30-08-2019 Accepted: 11-05-2020