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ARTICLE

Field testing of the revised, draft South African Paediatric Food-Based Dietary Guidelines among mothers/caregivers of children aged 12–36 months in the Stellenbosch Municipality in the Western Cape province, South Africa

S Strydom, LM du Plessis* and LC Daniels

Division of Human Nutrition, Department of Global Health, Faculty of Medicine and Health Sciences, Stellenbosch University, Stellenbosch, South Africa
**Correspondence: lmdup@sun.ac.za*

Objective: To assess the appropriateness and understanding of the revised, draft South African Paediatric Food-Based Dietary Guidelines (SA-PFBDGs) among mothers/caregivers of children aged 12–36 months. Exposure to guidelines with similar messages, barriers and enablers to following of the guidelines were also assessed.
Design: A descriptive cross-sectional qualitative study was conducted. Data were collected from nine focus-group discussions (FGDs) conducted in isiXhosa, English and Afrikaans, resulting in 65 participants, 20 from formal areas and 45 from informal areas.
Setting: Stellenbosch Municipality (Stellenbosch, Pniel and Franschhoek)
Subjects: The study population included mothers/caregivers older than 18 years, who consented to participate.
Results: This study revealed that participants expressed a general understanding of the core messages contained in the revised, draft SA-PFBDGs. Misinterpretation arose regarding certain guidelines as a result of ambiguity. Participants were familiar with and recognised the majority of the concepts conveyed owing to previous exposure, mostly from healthcare facilities and the media. Financial constraints were identified as the biggest barrier to following the guidelines, while perceived enablers included receiving education on the guidelines as well as visual portrayal thereof.
Conclusion: Following field-testing, it is clear that the draft, revised SA-PFBDGs for the age group 12–36 months are appropriate. Minor rewording is required to enhance understanding. Effective dissemination of the guidelines through multiple communication platforms is recommended.

Keywords: Paediatric Food-based Dietary Guidelines breastfeeding, complementary feeding, consumer testing, infants, paediatric food-based dietary guidelines, young children

Introduction

Malnutrition affects millions of individuals worldwide. Globally, undernourishment is of great concern, particularly in low- and middle-income countries. A large proportion of the individuals affected are women and young children.[1] Only 36 countries account for 90% of the world's stunted children.[1] In Africa alone, almost a third of all children are stunted.[2] Despite a reduction in the global rate of stunting among children under five,[2] stunting in South Africa remains high at 27%.[3] Among South African children aged 12–36 months, stunting rates are even higher at 35%.[3] Children between 18 and 23 months are also more likely to be underweight.[3] In contrast, overweight and obesity in children are also on the rise in South Africa , with the prevalence of overweight among children under five being more than double the global rate.[2,3] Furthermore, the dietary diversity and meal frequency of children under five is poor, with only 26% of children aged 12–23 months receiving a minimal acceptable diet.[3]

In order to address the nutritional status of children in South Africa, strategies promoting appropriate infant and young child feeding (IYCF) practices are fundamental. The Department of Health (DOH) has adopted various interventions in order to address malnutrition in South Africa. The IYCF Policy of the Nutrition Directorate, DOH specifically highlights the importance of prioritising interventions to focus on key life stages, particularly the first 1 000 days.[4] Another strategy undertaken to improve the nutritional health of young children is the development and revision of the South African Paediatric Food-Based Dietary Guidelines (SA-PFBDGs). These guidelines promote exclusive and continued breastfeeding, adequate complementary feeding, hygienic practices and regular activity among children under the age of five years.[5] The Food and Agriculture Organization (FAO) recommends field-testing of country-specific food-based dietary guidelines (FBDGs) to ensure practicality, understanding and cultural, social and economic appropriateness.[6] Once field-tested, the SA-PFBDGs can be used to address the nutrition situation in the country by educating South Africans on optimal feeding practices for children.

This study formed part of a larger study that aimed to field-test the revised, draft SA-PFBDGs amongst mothers/caregivers of children aged 0–5 years in the Western Cape and Mpumalanga provinces of South Africa.[7] The aim of this study was to determine the appropriateness and understanding of the revised, draft SA-PFBDGs and to gain insight into previous exposure to guidelines with similar messages, plus the perceived barriers to and enablers of the following thereof among mothers/caregivers of children aged 12–36 months, in the Stellenbosch municipal area, Western Cape province.

Methods

The methodology described in this section refers to the specific study reported here. An outline of the methodology for the larger study is reported in the overview paper.[7]

Study design, setting and population

A descriptive, cross-sectional, qualitative study was conducted. Focus-group discussions (FGDs) were the method of data collection. The study population consisted of mothers/caregivers responsible for the care of children between the ages of 12–36 months, residing in the Stellenbosch Municipal area during the data-collection period.

Sampling strategy

Non-random purposive stratified sampling was used in this study according to the type of settlement, namely formal or informal and home language. Formal and informal settlement types were regarded as areas with individuals of a medium to high or low socio-economic status, respectively. Areas for inclusion in the study were randomly selected.

Participants were recruited from local churches, support groups, crèches and other community-based organisations. Methods of recruitment were email, telephone, flyers and household and community recruitment forms.

Data collection

Before the commencement of the FGDs, participants completed a socio-demographic questionnaire. Data were collected on the participant's date of birth, ethnicity, home language, highest level of education, employment status and relation to the child being cared for.

FGDs were the main method of data collection. Discussions ranged from 60–90 minutes each and were held at convenient venues in the area. FGDs were divided according to settlement type and home language, which ensured a comfortable environment for all participants. English and Afrikaans FGDs were conducted by the investigator, while two fieldworkers were recruited and trained to facilitate the isiXhosa FGDs. An FGD schedule (English, Afrikaans, isiXhosa), posters and flash cards displaying the revised, draft SA-PFBDGs were used during all discussions. With permission from the participants, all the FGDs were audio recorded to enable thorough analysis.

Data analysis

Data were analysed using contextualised interpretive content analysis. All audio recordings were professionally translated and transcribed (from Afrikaans and isiXhosa) into English. Each transcript was coded manually to generate a set of themes and clusters, which were based on the predetermined study aims and objectives. Themes were summarised across all FGDs to gain insight into the overall findings.

Table 1: Participants' socio-demographic information

Factor	n (%)
Caregiver's age:	
19–25 years	7 (10.8%)
26–45 years	39 (60.0%)
Older than 46 years	15 (23.1%)
Missing data	4 (6.1%)
Level of education:	
Grade 1–7	7 (10.8%)
Grade 8–11	22 (33.8%)
Grade 12	12 (18.5%)
Post-matric education	24 (36.9%)
Employment status	
Employed	42 (64.6%)
Unemployed	23 (35.4%)

Ethical considerations

Ethical approval was received from the Human Research Ethics Committee, Stellenbosch University (HREC [SU]) (N14/09/122). All participants gave written informed consent and confidentiality and anonymity were ensured through the use of participant numbers for identification purposes.

Results

Socio-demographic information

A total of 9 FGDs were conducted and ranged from 4–11 participants each. Four FGDs were held in formal areas, while five were held in informal areas. A total of 65 mothers/caregivers participated in the study, 20 from formal areas and 45 from informal areas. The socio-demographic information on the participants is presented in Table 1.

Appropriateness and understanding of the revised, draft SA-PFBDGs

Guideline 1: 'Continue to breastfeed to two years and beyond'

This PFBDG was discussed extensively in each group. Common themes emerging included the benefits of breastfeeding, continued breastfeeding, breastfeeding in the workplace, breastfeeding in public, and breastfeeding support.

Breastfeeding was described as important and linked to a number of health benefits for both mothers and children. When referring to breast milk one participant stated:

> '… there is a reason they call it white gold.' (FGD 3, Participant 4, Formal, English)

Despite lengthy discussions around the advantages of breastfeeding, many challenges faced by mothers were highlighted. A recurring issue included returning to work, which made breastfeeding difficult and impractical. Expressing breast milk at work was also frowned upon:

> '… every time someone came in I used to flush the toilet all the time so they couldn't hear the pump noise, which was ridiculous.' (FGD 3, Participant 4, Formal, English)

Other challenges discussed included the perception of insufficient breast milk, breast and nipple problems, falling pregnant with another child, and a lack of breastfeeding information for first-time mothers.

Continued breastfeeding was described by many participants as being unachievable and impractical. Some participants stopped breastfeeding at an early stage to avoid being judged:

> 'I would have continued breastfeeding if it was socially acceptable, but it is unacceptable for a child to be able to open up his mother's shirt and start drinking.' (FGD 1, Participant 5, Formal, Afrikaans)

Some participants also reported a stigma attached to breastfeeding in public and it was often not well received:

> ' … there's a general expectation that people expect you to hide away in the toilets when you breastfeed your child … .' (FGD 4, Participant 3, Formal, Afrikaans)

Breastfeeding in public as a cultural issue was also discussed. Some participants noted that breastfeeding in public was more acceptable in certain cultures than in others. Some Caucasian participants explained that mixed-ancestry or African cultures were more open to and accepting of breastfeeding in public compared with more Western cultures. This was confirmed by an African participant from an informal area:

> 'I don't see any problem when you are breastfeeding, you are breastfeeding your baby because s/he needs it, even if you are on a taxi, you just take out your breast and feed your baby.' (FGD 9, Participant 2, Informal, isiXhosa)

A recurring subject that surfaced included the importance of breastfeeding support. Many participants stressed that a support system was critical for a positive breastfeeding experience and that a lack thereof from family and friends made breastfeeding challenging:

> 'People are very quick to come and say, 'But why are you still struggling with that? Just give the child a bottle'. And that's the last thing that you want to hear at that stage. You just want someone to say, 'Hang in there, in a week or two it will be better'.' (FGD 4, Participant 2, Formal, Afrikaans)

Guideline 2: 'Gradually increase the amount of food, number of feedings and variety as your child gets older'

Participants described their understanding of the term 'variety' as: 'different types of food', 'a combination', 'something from each food group' and 'a bit of everything'. The term was, however, not fully understood by all participants of one FGD in an informal area.

The process of increasing the amount of food, number of feedings and variety was found to be important in order to support optimal growth and to provide sufficient nutrients as children become older. Participants also discussed that the process of increasing the amount of food depended largely on the child. A participant working at a crèche explained:

> 'You start with one big spoon of food. Sometimes they finish it, sometimes they don't. And the day you see they finished it, then you start feeding the next baby and he comes standing by you and he's opening his mouth and you know that wasn't enough, he wants more.' (FGD 8, Participant 2, Formal, English)

Guideline 3: 'Give your child meat, chicken, fish or egg every day, or as often as possible'

Meat, chicken, fish and egg were interpreted by participants as sources of protein and iron. A concern raised in both formal and informal FGDs was that many sources of protein were omitted and the guideline was limiting in that it did not include vegetarian or economical protein sources.

With regard to the interpretation of the guideline, participants' understanding was to provide one of the protein sources listed in the guideline daily; however, some participants from informal areas were unsure:

> ' … what I don't understand is, does she have to eat all of these things in one day, the three of them?' (FGD 9, Participant 3, Informal, isiXhosa)

Guideline 4: 'Give your child dark-green leafy vegetables and orange-coloured vegetables and fruit every day'

Participants reported that fruit and vegetables were important sources of vitamins and minerals, and were healthy food choices that assisted with growth and development in children. When assessing the importance of dark-green leafy and orange-coloured vegetables specifically, participants explained that different coloured vegetables contained different nutrients and it was necessary to eat from both groups:

> 'I know different coloured vegetables have different nutritional values or nutrients and that sort of thing, so it is good to get them all in.' (FGD 1, Participant 4, Formal, Afrikaans)

Guideline 5: 'Avoid giving tea, coffee and sugary drinks and high-sugar, high-fat salty snacks to your child'

A discussion around the avoidance of tea revealed some uncertainty. Participants agreed that 'normal' tea (Ceylon) should be avoided, as it contained caffeine and resulted in a loss of appetite. However, participants from both formal and informal areas felt that rooibos tea was in fact good for children:

> 'You don't even need to add sugar to rooibos tea. Because it's almost like a herb, it's good for your body … ' (FGD 5, Participant 4, Informal, Afrikaans)

All participants agreed on the benefit of not giving children sugary drinks and high-sugar, high-fat salty snacks, as they were considered 'junk food'. Participants also reported that the consumption thereof resulted in hyperactivity, tooth decay, obesity and high blood pressure.

Guideline 6: 'Hands should be washed with soap and clean water before preparing or eating food'

The importance of hand-washing was discussed extensively. Good hygiene was found to be important for the avoidance of germs and the prevention of disease. In practice, some participants stated that hand-washing and hygiene came naturally to them and were part of their daily routine, while others explained that although they understood the importance thereof, they did not always do it due to a lack of time or a lack of facilities in public.

Interpretation of the phrase 'clean water' included: 'water from a tap', 'running water' and 'boiled water'.

Guideline 7: 'Encourage your child to be active'

Activity was described as vital for children's health, the development of fine and gross motor skills, cognitive and muscle development, coordination, and self-confidence. 'Active' was interpreted as: 'moving their body', 'running', 'playing', 'jumping' and 'not sitting in front of the television'.

Guideline 8: 'Feed your child five small meals during the day'

When asked how they would follow 'five small meals', participants explained that they would provide their children with three meals and two snacks. Despite this, most participants

agreed that it was not what the guideline suggested. The term 'meals' thus caused much uncertainty:

> 'The meals, like these meals, it's telling me that it must be big plates of food, big portions of food, maybe a plate of food. Because that's how I would understand it, I must give my child five plates of food … ' (FGD 2, Participant 5, Informal, Afrikaans)

Other interpretations included: 'offering your child food five times a day', 'providing small portions of food to your child five times a day' and 'providing five equal sized meals, not snacks, to your child'.

Guideline 9: 'Make starchy foods part of most meals'

This PFBDG elicited much discussion, particularly around the importance of starchy foods in the diet. Participants from both formal and informal areas described starchy foods as being rice, pasta, potatoes and bread. Additionally, formal areas mentioned sweet potatoes and cereals, while informal areas mentioned maize meal, pap and samp.

With regard to the importance thereof, participants explained that starchy foods contained energy, making them important for children, due to their high energy requirements. It was, however, discussed that the intake of too much starch could result in negative effects such as weight gain. It was also emphasised by some participants that the number of starches per meal should be limited and that two starches should not be combined in one meal:

> 'But I can't put the rice and the potato in the same meal.' (FGD no. 7, Participant 10, Informal, English)

In respect of the interpretation of the guideline, participants felt that too much emphasis was placed on starchy foods and, taking the previous PFBDG encouraging five small meals into account, it could result in a starch-heavy diet.

Guideline 10: 'Give your child milk, maas or yoghurt every day'

When discussing the final guideline, participants explained that the intake of milk, maas or yoghurt was important for children owing to the calcium content thereof. Calcium was described as being an essential component in the development of stronger bones and teeth.

Previous exposure to guidelines with similar messages to the revised, draft SA-PFBDGs

Participants from both formal and informal areas were most familiar with breastfeeding and hand-washing guidelines. Most common sources of exposure to the guidelines included magazines, books, pamphlets, friends, family, schools and crèches. Participants from formal groups specifically reported the Internet, books and breastfeeding clinics, while participants from informal groups cited clinics, hospitals and nurses as sources of information.

Possible barriers to the following of the revised, draft SA-PFBDGs

Financial constraints were discussed as being the biggest barrier influencing a family's ability to follow the revised, draft SA-PFBDGs:

> ' … if you don't have money to buy these things, it's not that you don't want to, it's just that the things are expensive.' (FGD 5, Participant 6, Informal, Afrikaans)

Guidelines promoting a variety of foods, protein-rich foods, fruit and vegetables, five small meals, and dairy intake were all highlighted as being expensive and thus difficult to follow.

Possible enabling factors for the following of the revised, draft SA-PFBDGs

Two strong themes were discussed that could aid following the revised, draft SA-PFBDGs: education and visual effects.

Participants from both informal and formal areas reported that many people were not educated about healthy eating and that the provision of knowledge could improve practices. Participants discussed that information on PFBDGs should not be limited to mothers, but also shared with partners, schools, health professionals and communities:

> 'It must be announced in the communities where we live.' (FGD 6, Participant 6, Informal, isiXhosa)

Participants also suggested that posters displaying the revised, draft SA-PFBDGs should include pictures to encourage the public to read them.

Discussion

This study assessed the appropriateness and understanding of the revised, draft SA-PFBDGs among mothers/caregivers of children between the ages of 12 and 36 months. From the results of this study, it was evident that the revised, draft SA-PFBDGs are appropriate for the age group 12–36 months and are generally understood.

Participants demonstrated a clear understanding of the importance of the guideline encouraging continued breastfeeding and the benefits thereof. Fundamental barriers to continued breastfeeding formed a large part of discussions. The presence of these challenges is, however, not merely a manifestation of recent years and current pressures. A South African article published more than 30 years ago on breastfeeding described many factors affecting breastfeeding, which closely resonated with the sentiments expressed in this study. These factors included the perception of not having enough breast milk, a lack of confidence and support for breastfeeding, amongst others.[8]

A lack of support and the stigma around breastfeeding in public remain issues influencing successful and continued breastfeeding. Efforts to 'normalise' breastfeeding within the country and the promotion of a breastfeeding-friendly society and environments are necessary to address common breastfeeding challenges and protect this ideal mode of feeding babies.

The workplace remains one of the major barriers to breastfeeding. Although some measures are in place to protect and promote breastfeeding in the South African formal workplace, mothers continue to experience challenges due to a lack of implementation of consistent guidelines. Without the support of the workplace, these challenges will continue to affect breastfeeding rates in the country as well as the implementation of the revised, draft PFBDG on continued breastfeeding.

The overall comprehension of the animal source-foods revised, draft SA-PFBDG was not consistent amongst all participants.

This indicates that the guideline requires rewording, specifically with the addition of the word 'or' after each food listed. Also, more needs to be done to promote economical sources of protein foods. Including inexpensive or plant-based protein sources, such as legumes (dry beans, split peas, lentils and soya) and peanut butter, should be considered.

Conversations around the revised, draft SA-PFBDGs relating to the introduction of a variety of foods, fruit and vegetable consumption, the intake of dairy products, hand-washing and physical activity revealed an overall understanding of the importance of these practices in promoting general health.

For the revised, draft SA-PFBDGs on the avoidance of tea, coffee and sugary drinks, participants expressed a strong belief in the health effects of rooibos tea, specifically. Although a better alternative to black/Ceylon tea, coffee and sugary drinks, due to its low tannin content and caffeine-free properties, rooibos tea remains a non-nutritive beverage. This beverage should therefore be avoided as it could replace the intake of breastmilk and nutrient-rich food.[9]

The revised, draft SA-PFBDG on regular small meals resulted in the most confusion. Two studies investigating the understanding of the previous set of SA-PFBDGs found similar results when assessing the guideline, 'gradually increase your baby's meals to five times a day'.[10,11] Although the guideline has since been updated, it continues to cause confusion. The authors suggest that the term 'five small meals' be replaced with 'at least three small meals and two healthy snacks' to improve comprehension.

Discussions around starchy foods revealed a general understanding of the importance thereof for the provision of energy. Despite this, participants explained that it may promote a 'starch-heavy' diet for children if starchy foods were to form 'part of most meals'. Starchy foods are typically staple foods for many South Africans, thus promoting foods rich in starch may result in misinterpretation and the public increasing their intake of starchy foods to above the recommended amount. Using a combination of starchy foods with a variety of other food sources is thus essential.[12] The guideline should therefore not be interpreted in isolation, but rather together with the other revised, draft SA-PFBDGs to ensure a balanced diet.

Despite the appropriateness of the guidelines and a general understanding of them, following the PFBDGs may prove to be a difficult task for many South Africans. In South Africa, food insecurity, poverty and hunger are endemic. To further compound the problem, healthy foods are often more expensive and in some cases unaffordable.[13] The cost of following the FBDGs is also higher than what South Africans with a low socio-economic status can afford.[14] Based primarily on financial constraints, following the PFBDGs may be challenging for some families, while near impossible for others. In this study, many participants described an inability to purchase all of the foods recommended. Affordability was thus labelled a cardinal barrier to following the revised, draft SA-PFBDGs.

In the light of these findings, effective dissemination of the SA-PFBDGs for the age group 12–36 months is essential in moving forward. This study indicated good exposure to infant feeding guidelines, through healthcare facilities and staff, as well as the media. The use of multiple communication platforms and media channels for dissemination is therefore supported. Furthermore, the need for illustrations and colourful images to accompany the revised, draft SA-PFBDGs for the age group 12–36 months was expressed. Pictures and illustrations have been proven to increase comprehension and the chances of an educational tool being read, especially when simple drawings were used.[15] To make the educational tool appealing, pictures should be used to illustrate the types of foods recommended, similar to those of the food guide developed for the adult FBDGs.

Limitations were noted in this study. One FGD was made up of only four participants. Despite this, data saturation was reached. Discussions around all 10 PFBDGs resulted in lengthy FGDs. Participants, who were often working mothers or teachers from local crèches, had limited time, which may have resulted in a few guidelines being discussed hastily.

Conclusion

The nutritional status of children in South Africa remains a concern, emphasising the need for appropriate IYCF guidelines for the country. The results from this study indicate that the draft, revised SA-PFBDGs for the age group 12–36 months are appropriate and the core messages are generally understood. Minor rewording is, however, required to enhance understanding. Furthermore, effective dissemination of the guidelines through multiple communication platforms is recommended.

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