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RESEARCH

Field-testing of the revised, draft South African Paediatric Food-Based Dietary Guidelines among Siswati-speaking mothers/caregivers of children aged 0–36 months in Kabokweni, Mpumalanga province, South Africa

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Objectives: To determine the appropriateness and understanding of the revised, draft South African Paediatric Food-Based Dietary Guidelines (SA-PFBDG) among siSwati speaking mothers/caregivers of children aged 0–36 months. Previous exposure to guidelines with similar messages, barriers and enablers to following the guidelines were also assessed.
Design: A descriptive, cross-sectional qualitative research approach was followed. Purposive and snowball sampling were used to recruit a total of 75 participants. Data were collected by means of focus-group discussions from 12 groups.
Setting: Kabokweni, Mpumalanga, South Africa.
Subjects: The study population included mothers/caregivers older than 18 years who provided informed consent.
Results: The participants were generally aware of messages similar to those contained in the revised, draft SA-PFBDG. They reported exposure to these messages at clinics/hospitals, radio/television, and the Road-to-Health booklet. Participants showed good understanding of guidelines on breastfeeding, complementary feeding, inclusion of protein-rich and starchy foods as well as fruit and vegetables in the diets of young children as well as hygiene practices. The guidelines on avoiding tea, coffee and sugar drinks and high-sugar, high-fat salty snacks, being active and providing five small meals were less well understood. Enablers to following the guidelines were its perceived importance and positive impact on children's health. Barriers included misinterpretation of the guidelines and lack of money and resources.
Conclusion: The revised, draft SA-PFBDGs are appropriate for the age group 0–36 months. A degree of rewording is suggested to aid understanding. The guidelines can be used as an educational tool to improve the nutritional status of children in South Africa.

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

Introduction

Undernutrition and a growing problem of overnutrition are persistent nutritional conditions in infants and young children in both low- and middle-income countries.[1,2] Effective nutrition interventions are therefore critical to achieving and maintaining optimal nutritional status of these vulnerable groups.[3] Nutrition education to parents and caregivers has been shown to improve complementary feeding practices.[4]

Food-Based Dietary Guidelines (FBDGs) is a tool for nutrition education that is scientifically developed to educate the public on healthy eating. Likewise, Paediatric FBDGs (PFBDGs) can be used to educate parents and caregivers on optimum feeding and caring of infants and young children. The revised, draft South African PFBDGs (SA-PFBDGs) are evidence-based and were specifically developed with the country's unique circumstances and needs in mind. The revised, draft SA-PFBDGs contain short, simple messages that are specifically targeted at nutrition for children between the ages of 0 and 5 years.[5] However, the revised, draft SA-PFBDGs have not been tested to determine whether these guidelines are appropriate and understood by the target population. Therefore, they needed to be field-tested in the different South African languages.

This study formed part of a larger study that aimed to field-test the revised, draft SA-PFBDG amongst mothers/caregivers of children aged 0–5 years in the Western Cape and Mpumalanga provinces of South Africa.[6] The aim of this study was to assess the appropriateness and understanding of the revised, draft SA-PFBDGs amongst among siSwati-speaking mothers/caregivers of children aged 0–36 months living in Kabokweni, Mpumalanga, South Africa. Previous exposure to guidelines with similar messages, barriers and enablers to following the guidelines were also assessed.

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.[6]

Study design, setting and population

A descriptive, cross-sectional qualitative research approach was followed. The study was conducted in Kabokweni, a small town situated in the Ehlanzeni District of Mpumalanga, South Africa. Participants were included if they were siSwati-speaking, were residing in the area for the duration of the data-collection period, were mothers/caregivers with one or more children between 0 and 36 months of age, were mothers/caregivers older than 18 years, and gave informed consent to participate in the research study.

A snowball sampling technique was followed for recruitment of participants by approaching them in the streets, outside public health facilities and crèches and then asking participants for referrals to other community members who met the same criteria.

Data collection

The sample population was grouped into (1) mothers/caregivers of infants aged 0–12 months and (2) mothers/caregivers of children aged 12–36 months, to correspond with the delineation of the SA-PFBDGs.

Participants completed a socio-demographic questionnaire, which was developed in English and translated into siSwati.

Focus-group discussions (FGDs) were used as the main method of data collection and were undertaken in siSwati. A dietitian fluent in siSwati and familiar with the community was recruited as field worker and acted as the facilitator of the FGDs.

An FGD guide was compiled in English and was translated into SiSwati. The group discussions were audio recorded, and notes were taken during each FGD. Recordings were transcribed and translated into English by a professional transcription service.

Data analysis

The socio-demographic information was recorded and analysed in Microsoft Excel 2013 (Microsoft Corp, Redmond, WA, USA).

The FGD data were entered into Microsoft Excel 2013 and analysed manually. In the initial data-analysis process, the author thoroughly familiarised herself with the transcribed discussions from the FGDs. Notes taken during the FGDs were recorded in the transcribed document for each group. Codes were developed, using the main themes of exposure, barriers and enablers to understanding and following of the guidelines. The text was coded according to the objectives. Thematic frameworks were subsequently developed for each focus group according to the data for the 0–12 months and 12–36 months groups.

Ethical considerations

Informed consent to partake in the study as well as informed consent for the audio recording of FGDs was obtained from each participant. Confidentiality of participants was ensured by not including any form of identification in documents or audio recordings. The study received ethical approval from the Health Research Ethics Committee (HREC), Stellenbosch University (Ethics Reference number: S16/02/028).

Results

Results from the FGDs of the 0–12 months and 12–36 months guidelines were combined where the guidelines were similar, as the results overlapped.

Socio-demographic information

Six focus groups were conducted with the mothers/caregivers of 0–12-month-old children and six focus groups were also conducted with mothers/caregivers of 12–36-month-old children. Each group consisted of 6 to 7 participants, resulting in a total of 75 participants. The socio-demographic information on the participants is presented in Table 1.

Table 1: Participants' socio-demographic information

Indicator		0–12 months, n (%)	12–36 months, n (%)
Age	19–29 years	14 (38)	5 (13)
	30–39 years	7 (19)	13 (34)
	> 40 years	16 (43)	19 (51)
	Missing data	0	1 (2)
Education	None	1 (3)	1 (3)
	Grade 1–7	3 (8)	2 (5)
	Grade 8–11	14 (38)	11 (29)
	Grade 12	12 (32)	19 (50)
	Post-matric	7 (19)	5 (13)
Employment status	Employed	18 (49)	23 (61)
	Unemployed	19 (51)	15 (39)

Appropriateness and understanding of the revised, draft SA-PFBDGs

Guideline: Give only breast milk, and no other foods or liquids, to your baby for the first six months of life.

Guideline: At six months, start giving your baby small amounts of complementary foods, while continuing to breastfeed to two years and beyond.

Guideline: Continue to breastfeed to two years and beyond.

Most participants displayed a good understanding of the benefits of breastfeeding, stating that breastmilk provides all the necessary nutrients, it protects the baby against disease, no financial costs are involved, it is readily available, and it ensures the proper growth of infants. The following quote supports this:

> I say that mother's milk is so important. It equips the child with energy to grow appropriately. It stays warm at all times, unlike having to warm it up from scratch. It is always clean. (FGD 11108; Participant 5; SiSwati, Group 0–12)

However, not all participants agreed that this guideline was easy to follow. A misconception was that breastmilk alone is not sufficient for a child younger than six months. A barrier mentioned was that it is not easy to breastfeed exclusively when mothers are employed:

> I see that it will be a problem because I am working, and I leave her at home. She must get the formula milk that she can drink while I am away. Or maybe, I can use a bottle and extract milk from my breast and put it in the fridge. But I do not know if the person who minds the child during the day will give the milk. (FGD 11707, Participant 2, SiSwati, Group 0–12)

Perceived opinions on breastfeeding for two years and longer included: children wean themselves before then; if children breastfeed for that long, they have a poor appetite for food; children tend to bite the mother's nipples; breastfeeding for that long is old-fashioned; and mothers tend to lose weight if they breastfeed for an extended period. Also, according to the participants, continuation of breastfeeding for two years was not possible for HIV-positive mothers, supported by the following quote:

> In these times, there are problems of certain diseases that prevent you from breastfeeding the child until she is two years old or/and above … like HIV. (FGD 51707, Participant 1, SiSwati, Group 12–36)

Guideline: Gradually increase the amount of food, number of feeds and variety as your baby gets older.

The mothers/caregivers understood this guideline very well. A few participants suggested that the guideline should elaborate

on the meaning of 'variety' by giving examples of different food groups. Not everyone felt it was always possible to provide a wide variety of food for the child, mainly because of financial constraints, demonstrated by the quote below:

> It depends on the availability of money. (FGD 22907, Participant 6, SiSwati, Group 12–36)

Guideline: Feed slowly and patiently and encourage your baby to eat, but do not force him or her.

Participants had a good understanding of the guideline. Some of the participants were of the opinion that if you do not force-feed a child, he/she will not eat well. It was also mentioned that some people do not have time to sit and feed a child slowly. However, participants were also of the opinion that if mothers/caregivers are educated, they would be able to follow the guideline, supported by the quote below:

> Some will understand it when you explain it to them. Others are in a hurry. (FGD 12907, Participant 3, SiSwati, Group 0–12)

Guideline: From six months of age, give your baby meat, chicken, fish or egg every day, or as often as possible.

The participants understood the importance of including animal source foods in a child's diet. However, mothers/caregivers misinterpreted this guideline to mean that meat, chicken, fish and eggs should be provided every day. Participants expressed that they would be able to give one of these foods per day but not all in one day, as is evident from the following quote:

> It is not well written. A child cannot eat meat now, and then she eats fish. She should eat fish in one day, eat meat the following day, and eat egg. (FGD 11708, Participant 5, SiSwati, Group 0–12)

Participants mentioned that lack of finances poses difficulties in following this guideline.

Guideline: Give your baby dark-green leafy vegetables and orange-coloured vegetables and fruit every day.

Some participants understood that these vegetables and fruits are beneficial to children because of the nutrients they contain. Others felt it is not always possible to follow this guideline because of factors such as 'children do not want to eat vegetables', 'it causes diarrhoea', 'children are too small to eat green vegetables' and 'mothers/caregivers are not always able to afford them'. Suggestions from the participants to overcome these barriers included planting a vegetable garden, blending the vegetables to make them easier for smaller children to eat and teaching children to eat fruit and vegetables from a young age.

Guideline: Start spoon-feeding your baby with thick foods, and gradually increase to the consistency of family food.

Participants understood why it is important to progress with the consistency of the food. Most groups explained that children cannot begin with eating hard, solid food because they are not yet developed enough to tolerate and chew such foods. Participants further explained that one should increase the consistency as the child develops and grows.

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

The groups had a good understanding of the term, 'clean water', and had good knowledge of how to clean dirty water, naming methods such as boiling and adding 'Jik' (bleach). Participants demonstrated good understanding of the guideline, as seen in the quote below, but mentioned that it is sometimes difficult to follow this guideline because they struggle with water availability. Crèches have devised a smart invention to overcome this challenge: a hole is made in the bottle cap of a two-litre bottle and water is then squirted from the bottle onto the children's hands when necessary. Another barrier mentioned for not implementing the guideline was the availability of soap:

> We wash our hands so that bacteria from our hands should not be passed on to the food and affect the child whilst preparing the food. (FGD 12907, Participant 4, SiSwati, Group 0–12)

Guideline: Avoid giving tea, coffee and sugary drinks and high-sugar, high-fat salty snacks to your baby.

This guideline was poorly understood, poorly followed and not familiar to all. Some mothers/caregivers felt that this guideline is not practical because children specifically ask and cry for these drinks and snacks and they are easy to carry when travelling. Mothers/caregivers who followed the guideline mentioned that, if children are taught from early on not to eat and drink these items and if parents followed this guideline too, it can be done. Some misconceptions were raised, as mentioned in the quote below:

> Chips, they are not right. They cause ringworms … [and] When children consume too sugary things, the Danones, it gives them bile. You find them having a diarrhoea. (FGD 41708, Participant 1, SiSwati, Group 12–36)

There was also much confusion regarding rooibos tea because rooibos tea is marketed for children, thus implying that one can give it to children. A few participants also stated the same with regard to biscuits marketed for children:

> Tea is important …. I am pleased because at the shops there are things specifically made for kids. (FGD 20208, Participant 2, SiSwati, Group 0–12)

Guideline: Encourage your child to be active.

None of the groups were familiar with this guideline. However, participants stated that this guideline was important because it enables children to learn, and a parent can easily determine when a child is not active, or that he/she is not well:

> To be clever and to be active. You make her do things. She must not just sit and watch TV, looking so inactive all day long. (FGD 51708, Participant 5, SiSwati, Group 12–36)

Guideline: Feed your child five small meals during the day.

Some participants understood the appropriateness of this guideline. However, others felt that it will leave a child hungry; some children are not able to eat only small amounts and five times a day is too many. Certain groups even recommended

that this guideline be removed completely since they did not perceive it to be appropriate.

Guideline: Make starchy foods part of most meals.

This guideline was the most familiar and was practised by all groups. Participants were of the opinion that the message conveyed in the guideline is obvious since starches (mainly porridge) are their staple food as shown in the quote below:

> Yes, it is eaten by a family. It's staple … . (FGD 10208, Participant 4, SiSwati, Group 12–36)

Participants also explained that starches are important because they provide children with energy and they are necessary for optimal growth.

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

Participants understood the importance of this guideline, stating that it is essential for bone development and general growth. There was uncertainty in the sense that some understood that one should give milk, maas and yoghurt every day. Most participants only understood the importance of giving milk daily, not giving yoghurt and maas, because some considered sweet yoghurt to be a sweet snack and a few mentioned that they were told at the clinics not to give yoghurt to children.

Exposure to messages similar to the revised, draft SA-PFBDGs

Most of the mothers/caregivers reported familiarity with the nutritional messages portrayed in the SA-PFBDGs. Similar messages were heard at clinics, the hospital, on the radio or television, or read in the Road-to-Health booklet.

Discussion

In this study, the revised, draft SA-PFBDGs were field-tested in Kabokweni, Mpumalanga province to determine appropriateness and understanding of the guidelines by siSwati-speaking mothers/caregivers of children aged 0–36 months. The results of this study indicate overall understanding and exposure to infant and young child feeding (IYCF) messages similar to those contained in the revised, draft SA-PFBDGs.

The guidelines on exclusive and continued breastfeeding were well understood. However, a barrier raised to breastfeeding exclusively included that it is difficult for working mothers to combine breastfeeding and employment. In terms of the law in South Africa, the Basic Conditions Employment Act, 75 of 1997 allows for breastfeeding at the workplace. The Act states that, for the first six months of a child's life, breastfeeding mothers should get two 30-minute breaks during each workday for breastfeeding or expressing milk.[7] Even though this may be challenging, it is possible for employed mothers to provide breastmilk for their children. The enforcement of this Act should be addressed, and mothers should be informed and supported in the workplace. The Side-by-Side campaign[8] produced a booklet that addresses breastfeeding in the workplace and is aimed at employers, containing practical information on making the workplace more breastfeeding-friendly.[9]

Another barrier and significant issue pertaining to breastfeeding was confusion regarding the transmission of the human immunodeficiency virus (HIV) and breastfeeding. In 2016, the World Health Organization released an update on HIV and infant feeding, stating that all mothers should breastfeed for at least 12 months and can continue to breastfeed for two years and beyond, regardless of their HIV status.[10] This updated guideline has been formally adopted by the South African government,[11] but needs support and implementation to curb the inconsistent messages concerning HIV in communities.

Some participants also mentioned that breastfeeding was an old-fashioned practice. For breastfeeding to be successfully established and practised, it needs to be seen as the norm in society today.

The Lancet Series on Breastfeeding 2016[12] found that there are various components that help to enable a supportive environment for breastfeeding, which include social and cultural components, family, community, healthcare services, the workplace, the mother, the infant and their relationship. These determinants could be targeted by various sectors, including legal and political interventions, social and community support, employment and work environments, healthcare services and individual counselling and support. Multiple efforts are currently being made by the South African Department of Health to protect, promote and establish breastfeeding. This includes, but is not limited to, the Side-by-Side campaign[8] (including the Road to Health Booklet (RtHB); Supporting Breastfeeding in the Workplace booklet;[9] and the What You Should Know About Breastfeeding booklet[13]), the Regulations Relating to Foodstuffs for Infants and Young Children (R991)[14] and the updated guidelines regarding HIV and infant feeding.[11] To establish breastfeeding as the norm, however, collaboration and input from all sectors are needed.[12,15]

Some of the revised draft SA-PFBDGs for the age group 0–36 months were not well understood, mainly due to the wording of the guidelines. For the guideline 'From six months of age, give your baby meat, chicken, fish or egg every day, or as often as possible' most of the participants understood the messages to mean that one should give all of the options mentioned in one day, not one per day. It is therefore recommended that the guideline on protein-rich foods be rephrased to emphasise the options separated by the word 'or'. For the same guideline some participants were of the opinion that beans should be included as an option. Legumes are plant-based protein sources high in a range of micronutrients, high in fibre and have anti-oxidant properties.[16] They are also cost-effective, increasing the benefits of their inclusion in the diets of children within many communities. It is recommended that the guideline be changed to: 'From six months of age, give your baby either meat or chicken or fish or egg or beans or peanut butter every day, or as often as possible.'

In terms of the guideline, 'Give your child milk, maas or yoghurt every day', mothers/caregivers felt it was not appropriate to give yoghurt to their children. The most common comment was that yoghurt was not healthy for children, a perception that was acquired from clinics and communities. This indicates that communities and PHC facilities require more nutrition education on the health benefits of plain, unsweetened yoghurt. Possible rewording of the guideline to specify plain, unsweetened yoghurt should be considered.

The one nutritional message that participants were not previously exposed to was '*Avoid giving tea, coffee and sugary drinks and high-sugar, high-fat salty snacks to your baby*'. Participants believed it is a good idea to give rooibos tea to children,

especially since this tea is marketed for children in South Africa. Some rooibos tea brands have included the words 'for kids' or 'junior' on the label. Tea, including rooibos tea, is not indicated for use in infants (0–12 months) because it replaces breastmilk and other nutritious food in the diet and is of poor nutrient content.[3] Black/Ceylon tea contains polyphenols that inhibit iron absorption and could thus lead to iron-deficiency.[17] Section 4 of R991 focuses on labelling for complementary foods and other drinks and states that products indicated for use by children should indicate recommended age groups.[14] These regulations are important to prevent misleading marketing, and monitoring of the implementation of these regulations is essential to ensure compliance.

Similar messages to the revised, draft SA-PFBDGs were mostly heard at clinics, which indicates the importance of educating clinic staff on standardised, evidence-based IYCF guidelines, tested for the public's understanding. It is therefore also important that IYCF guidelines are consistent and aligned with information distributed by primary health care (PHC) facilities. Participants were also exposed to messages similar to the revised, draft SA-PFBDGs through radio and television. Various nutrition and non-nutrition professionals voice their opinions on IYCF in the media, including social media. It is therefore important to promote uniform and evidence-based messages to healthcare professionals in order to avoid confusion and avoid the presentation of incorrect IYCF practices, which could have negative effects on the nutritional status and growth of young children.[18–20]

Financial constraint was a significant barrier that could prevent the optimal following of the revised, draft SA-PFBDGs. The 2020 Global Nutrition Report confirms that there is a clear link between infant and young child feeding practices and household wealth. Specifically, the appropriate introduction of complementary foods and minimum diet diversity are significantly lower for children in the poorest households, in rural areas or with a less educated mother. The South Africa General Household Survey (GHS) of 2018 indicated that 20.2% of all households had limited access to food.[21] The National Food Consumption Survey-Fortification Baseline (NFCS-FB-I) in 2005 also found mothers of households at risk or experiencing hunger had the lowest levels of education.[22] The latter corresponds with results from the 2016 South African Demographic and Health Survey, which showed that the mother's education and income was inversely related to stunting levels of the children in the household.[23] Rigorous and tireless efforts should therefore be put in place to address the social determinants that affect the nutritional health of women and their young children.[1]

Conclusion

The revised, draft SA-PFBDGs are short, concise nutrition messages that were developed to improve and maintain the nutritional status of South African children. The results from this study showed that the participants were generally aware of the nutrition messages for children aged 0–36 months and understood most messages. Some messages were less well understood and participants reported that they had not been exposed to a few of the messages before. Enablers to the following of the guidelines were mainly the perceived importance of the messages and the positive impacts that the messages could have on children's health. Barriers included misinterpretation of the guidelines, and lack of money and resources. A degree of rewording of some messages is therefore proposed.

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