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South African food-based dietary guidelines: testing of the preliminary guidelines among women in KwaZulu-Natal and the Western Cape

Abstract

Aim. To assess the appropriateness of the preliminary South African food-based dietary guidelines (FBDGs) as a nutrition education tool for women in KwaZulu-Natal (KZN) and the Western Cape (WC) in terms of comprehension, interpretation and implementation. **Methods.** This was a qualitative study using focus group discussions. Focus groups were held in five magisterial districts within KZN, and the Cape Town metropolitan area of the WC, to evaluate the comprehensibility and applicability of the FBDGs. Groups were randomly selected according to settlement type (non-urban, urban informal, urban formal) and ethnicity (black, coloured (of mixed origin), Indian, white) to reflect the KZN and WC population. Focus groups were conducted in the home language of the participants, namely, English, Zulu, Xhosa and Afrikaans. Participants included 137 women aged 19-63 years, with no formal nutrition training and who were responsible for food purchasing and food preparation decisions in the household. **Results.** In general, women understood many of the FBDGs and the suggested food categories, and could construct a day's meals using the FBDGs. Areas of confusion were identified regarding certain terminology and concepts, such as the terms 'legumes', 'foods from animals', and 'healthier snacks'. Primary constraints to implementation of the FBDGs included cost and availability of food, household taste preferences, routine food purchasing habits, habitual or traditional food preparation and cooking methods, time constraints, accessibility (primarily transport difficulties) and underlying attitudes towards health and nutrition. **Conclusion.** The findings from this study have been used to revise the preliminary FBDGs, in order to provide an appropriate tool for effective nutrition education, for the purpose of improving nutrition knowledge, attitudes and dietary behaviours of South Africans.

Keywords

western, cape, food, south, dietary, african, guidelines, testing, preliminary, among, women, kwazulu, natal

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SOUTH AFRICAN FOOD-BASED DIETARY GUIDELINES

Testing of the preliminary guidelines among women in KwaZulu-Natal and the Western Cape

P Love, E Maunder, M Green, F Ross, J Smale-Lovely, K Charlton

Aim. To assess the appropriateness of the preliminary South African food-based dietary guidelines (FBDGs) as a nutrition education tool for women in KwaZulu-Natal (KZN) and the Western Cape (WC) in terms of comprehension, interpretation and implementation.

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Results. In general, women understood many of the FBDGs and the suggested food categories, and could construct a day's meals using the FBDGs. Areas of confusion were identified regarding certain terminology and concepts, such as the terms 'legumes', 'foods from animals', and 'healthier snacks'. Primary constraints to implementation of the FBDGs included cost and availability of food, household taste preferences, routine food purchasing habits, habitual or traditional food preparation and cooking methods, time constraints, accessibility (primarily transport difficulties) and underlying attitudes towards health and nutrition.

Conclusion. The findings from this study have been used to revise the preliminary FBDGs, in order to provide an appropriate tool for effective nutrition education, for the purpose of improving nutrition knowledge, attitudes and dietary behaviours of South Africans.

South Africa is a society in transition, and this is reflected in its health profile. The coexistence of under- and over-nutrition is evident, not only between populations but also within populations and even within the same households.^{1,2} An estimated 2.3 - 2.5 million South Africans are undernourished; the majority of these are black children aged 0 - 12 years.³ National and regional studies show that undernutrition manifests as low birth weight, wasting, underweight, stunting, and specific micronutrient (vitamin A, iron, iodine) deficiencies.^{1,4-10} On the other hand, mortality attributed to chronic diseases of lifestyle (in particular, hypertension, heart disease and non-insulin-dependent diabetes mellitus) is currently estimated at 28.5%.^{11,12}

Nutrition-related problems in South Africa clearly reflect the double burden of disease associated with the nutrition transition that accompanies increasing urbanisation trends. Apart from rapid urbanisation, poverty, universally accepted as a fundamental cause of undernutrition, is a serious problem in the country, with the overall poverty rate estimated at 85.9%. Of this group, black and coloured South Africans represent 66.6% and 23.1%, the majority of whom live in non-urban areas.³

As a means to address nutrition-related problems, the World Declaration and Plan of Action for Nutrition was adopted at the International Conference on Nutrition (ICN) held in Rome in 1992, where South Africa was one of 159 participating countries. This Declaration places nutrition education and the promotion of appropriate diets and lifestyles as a priority issue to address nutrition-related problems.¹³

In response to this, the World Health Organisation (WHO) and the Food and Agriculture Organisation of the United Nations (FAO) convened an international consultation in Cyprus in 1995 to discuss the need for more effective nutrition education interventions. The meeting concluded that disseminating information through food-based dietary guidelines (FBDGs) can be a valid strategy for public health nutrition because:¹⁴

- consumers think in terms of foods rather than nutrients, and
- FBDGs can take account of considerable epidemiological data linking specific food consumption patterns with low incidence of certain diseases, while not requiring a complete understanding of the underlying biological mechanisms.

The WHO and FAO^{14,15} and leading nutrition education researchers^{16,17} suggest that the following factors should be

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considered in the development of effective nutrition education tools, including FBDGs:

- household food security (the availability, accessibility and affordability of food)
- the consumer's socio-economic circumstances
- the consumer's specific nutrition/health concerns
- the consumer's lifestyle and cultural eating habits
- the consumer's understanding of and ability to implement the information.

Since the publication of the WHO/FAO consultation report, several countries have begun the process of adapting their existing dietary goals/guidelines towards a food-based approach.¹⁸ Unfortunately, few countries have conducted consumer research testing on the comprehension, interpretation and implementation of these guidelines. Where consumer testing is done, it relates to that of the food group model used by the country in conjunction with their guidelines.^{19,21}

In South Africa, nutrition education attempts have been *ad hoc* and their impact on knowledge and behaviour change has not been extensively evaluated. Quantitative data regarding the health/disease status of South Africans and their food consumption patterns suggest that nutrition education has not made much impact on achieving optimal nutritional status.¹

It is likely that the dietary/health messages currently being used to promote healthy diets and lifestyles are inappropriate because they do not reflect the country's specific health issues; the availability, accessibility and price of food; or the different lifestyles, cultures and socio-economic circumstances of the people. Poor coverage, inadequate education materials, and inconsistent messages may also be contributing factors.²²

Following the publication of the WHO/FAO consultation report, the Nutrition Society of South Africa (NSSA) initiated the formation, in May 1997, of a South African Food-Based Dietary Guidelines Work Group. The Work Group consists of an intersectorial group, with representation from the Department of Health, the United Nations Children's Fund (UNICEF), academia, agricultural boards and producer organisations, the food industry, professional associations (Association for Dietetics in South Africa, Nutrition Society of South Africa), the Medical Research Council, and non-governmental organisations.^{23,24}

It was agreed that the overall aim of the South African FBDGs should be to address the nutrition transition experienced by many South Africans. The mandate of the South African FBDG Work Group was therefore:²³

- To develop a core set of guidelines for the promotion of health to South Africans older than 5 years of age.
- To ensure that the guidelines developed are affordable, practical, attuned to food availability, culturally sensitive (i.e. encourage the use of traditional foods and eating patterns),

positive, non-prescriptive, sustainable, and environmentally friendly.

- To adapt the finalised guidelines for children under the age of 5 years, and persons with special dietary requirements (such as pregnant and lactating women, the chronically ill, the elderly).

Following a situational analysis of the nutritional status of South Africans, and broad consultation with health professionals at the 1998 biennial Nutrition Congress of Southern Africa, a preliminary set of eleven preliminary FBDGs was drafted (Table I).²²

The initiative to implement one set of dietary guidelines for all South Africans is a challenging one. Consumer testing to ensure that such dietary guidelines can be understood and applied by South Africans, given their cultural and socio-economic diversity, is consequently a crucial part of the FBDG development process. This paper reports on the findings of qualitative consumer testing of the preliminary FBDGs among women from different cultural and socio-economic backgrounds from two provinces of South Africa, namely KwaZulu-Natal and the Western Cape.

METHODOLOGY

Qualitative data, using focus group discussions, were collected from 101 women from five magisterial districts in KwaZulu-Natal (KZN) and from 36 women in the Cape Town metropolitan (CTM) area of the Western Cape (WC). Magisterial districts, as supplied by Statistics South Africa, were stratified according to settlement type (non-urban, urban informal, urban formal) and ethnicity (black, coloured, Indian, white) to represent the diverse populations of KZN and the WC (Table II). A random table of numbers was used to select magisterial districts from within each settlement stratum, and enumerator areas from within each selected magisterial district.

Only women who made the food purchasing and preparation decisions in the household and who had received no formal nutrition training were included in the sample. Ages ranged from 19 to 63 years and mean ages were similar for all groups (mid-30s to mid-40s). The majority of black non-urban and urban informal participants had received 6 years of formal education. Higher levels of education were evident among all urban formal groups. Within all groups, most of the participants were housewives. Within the entire sample, the majority of participants were urban (informal and formal) dwellers.

The number of focus group discussions conducted within each enumerator area was governed by the responses elicited, that is, discussions were conducted until the information obtained was no longer new. This resulted in 3 - 4 focus group discussions, with an average of 6 - 8 women per discussion, being conducted within each enumerator area in KZN and the

Table I. Translated versions of the preliminary food-based dietary guidelines tested using focus group discussions			
English	Zulu	Xhosa	Afrikaans
Enjoy a variety of foods	Thokozela ukudla okwahlukene noma okunhlobonhlobo	Yitya iintlobo ezahlukeneyo zokutya	Geniet 'n verskeidenheid kosse
Be active	Khuthalela ukwelula umzimba	Sebenza, ushukumise umzimba	Wess aktief
Make starchy foods the basis of most meals	Isitashi akube yisona sisekelo sokudla noma esiningi ngezikhathi zonke	Yitya ukutya okumhlophe (isitatshi) amaxesha onke, umzekelo: iitapile, umngqusho	Styselkosse moet basis van alle maaltye wees
Eat plenty of fruit and vegetables every day	Yidla izithelo kanye nemifino eminingi ngazo zonke izinsuku	Yitya iziqhamo nemifuno ntsuku zonke	Eat baie vrugte en groente elke dag
Eat legumes regularly	Yidla izinhlobonhlobo zikabhontshisi njalo	Yitya iintlobontlobo zemboty	Eet peulgroente gereeld
Foods from animals can be eaten every day	Ukudla okutholakala kwizilwane ezahlukenengakudla zonke izinsuku	Yitya ukutya okufumaneka ezilwanyaneni okunjengobisi, amaqanda, iinyama njalonjalo yonke imibla	Kos vanaf diere kan elke dag geëet
Use fat sparingly	Sebenzisa amafutha kancane	Sebenzisa amafutha amancinici	Gebruik vet spaarsamig
Use salt sparingly	Sebenzisa usawoti kancane	Sebenzisa ityiwa kancinane	Gebruik sout spaarsamig
Drink lots of clean, safe water	Phuza ngokwenele amanzi ahlanzekile nangenangozi	Sela amanzi acocekileyo amaninzi	Drink baie water wat skoon en veilig is
If you drink alcohol, drink sensibly	Uma uphuza utshwala, kwenze ngokuhlakanipha	Ukuba usela utywala, sela ngokuzilinganisela	As jy alkohol drink, drink matig
Eat healthier snacks	Yidla ukudla okuncane noma okuphakathi kwezikhathi zokudla okunomsoco	Ukutya okutya phakathi kwezidlo makube kokunempilo	Eet gesonde peuselkosse

CTM. Four trained female focus group moderators conducted the discussions and four trained female focus group observers took written notes of the proceedings using the spoken language of the participants (English, Zulu, Xhosa, Afrikaans) and the relevant translation of the FBDGs (Table I). The Medical Research Council provided training of moderators and observers.

During focus group sessions, participants were guided by the moderator to discuss previous exposure to each FBDG and sources of information, interpretations of each FBDG in terms of concepts, specific terminology, food categories suggested, constraints to implementation, and ability to plan a day's meals using the FBDGs.

A pretested topic guide and a selection of colour food photographs, consisting of items commonly consumed by South Africans (identified through regional and *ad hoc* food and nutrient studies) were used in the discussions. All food items were depicted in a non-branded, non-stylistic, uncooked/unprepared manner to enhance identification and to reduce bias regarding food brands and food preparation methods. Food photographs were used to gather information on food categorisation per FBDG.

All focus group discussions were recorded, and transcripts interpreted by the moderator and observer of each session. Final transcripts were coded and analysed, together with written notes, to identify common themes in responses. The

Table II. Characteristics of focus group participants

Province	KwaZulu-Natal					Western Cape	
Magisterial district	Estcourt	Durban	Nqutu	Kwa-Dukuza	Durban	Cape Town	Tygerberg
Enumerator area	Thembalihle	Cato Crest	Empumelelweni	Stanger Township	Hillcrest	Mitchells Plain	Samora Machel
Settlement type	Non-urban (rural)	Urban informal	Urban formal	Urban formal	Urban formal	Urban formal	Urban informal
Ethnicity	Black	Black	Black	Indian	White	Coloured	Black
Home language	Zulu	Zulu	Zulu	English	English	Afrikaans	Xhosa
Number of women	24	19	25	16	19	22	16
Ages (yrs) (mean)	19 - 25 (35.5)	20 - 61 (36.6)	21 - 59 (32.9)	27 - 59 (44.1)	22 - 57 (35.8)	23 - 63 (43.3)	23 - 57 (36.7)
Education							
None	2 (8.3%)	3 (15.8%)	1 (4.0%)	2 (12.5%)			
Grades 1 - 6	12 (50.0%)	10 (52.6%)	6 (24.0%)	2 (12.5%)		11 (50.0%)	2 (12.5%)
Grades 7 - 11 (plus incomplete Grade 12)	10 (41.7%)	6 (31.6%)	9 (36.0%)	8 (50.0%)	1 (5.3%)	11 (50.0%)	9 (56.3%)
Grade 12 (matric)			9 (36.0%)	4 (25.0%)	3 (15.8%)		4 (25.0%)
Post-matric					15 (78.9%)		1 (6.3%)
Employment							
Housewife	24 (100.0%)	14 (73.7%)	22 (88.0%)	14 (87.5%)	11 (57.9%)	17 (77.3%)	14 (87.5%)
Part-time/seasonal/occasional		1 (5.3%)	1 (4.0%)	2 (12.5%)	4 (21.1%)	1 (4.5%)	
Full-time		4 (21.1%)	2 (8.0%)		4 (21.1%)	4 (18.2%)	2 (12.5%)
Water source	Communal (outdoor) tap/river	Communal containers — delivered by municipality	Communal (outdoor) tap	Indoor taps	Indoor taps	Indoor taps	Communal (outdoor) tap
Cooking fuel source	Firewood	Paraffin	Electricity and paraffin	Electricity	Electricity	Electricity	Electricity and paraffin

study was approved by the ethics committees of the universities of Natal and Cape Town.

RESULTS

Findings from both the KZN and WC studies will be reported together under the following identified themes: (i) previous exposure to each FBDG and sources of information; (ii) interpretations of each FBDG in terms of concepts, specific terminology, food categories suggested, and constraints to implementation; and (iii) ability to plan a day's meals using the FBDGs.

Previous exposure to the FBDGs and sources of information

Subjects' responses regarding whether they had previously heard or seen each of the FBDGs, or something similar, are

shown in Table III.

Only two FBDGs were familiar to all groups, the 'fruits/vegetables' and 'fats' guidelines. All urban groups were also familiar with the 'salt' and 'alcohol' guidelines. Black urban formal groups were familiar with the 'water' guideline, while black urban informal groups gave a mixed response and black non-urban groups were unfamiliar with this guideline. All groups gave a mixed response to the 'variety' and 'be active' guidelines. Four of the FBDGs were unfamiliar to all groups, namely, 'starchy foods', 'legumes', 'foods from animals', and 'snacks'. Black non-urban groups were also unfamiliar with the 'salt', 'water' and 'alcohol' guidelines.

Participants who had been exposed to the FBDGs, or something similar, cited numerous sources of information (Table IV). The mass media (in particular the radio) was a primary source of information for all groups, followed by clinics and schools.

Table III. Previous exposure to the FBDGs by focus group participants

Guideline	Yes	Unsure	No
Variety		All groups	
Be active		All groups	
Starchy foods			All groups
Fruits/vegetables	All groups		
Legumes			All groups
Foods from animals			All groups
Fats	All groups		
Salt	All urban groups		All non-urban groups
Water	All urban formal groups	All urban informal groups	All non-urban groups
Alcohol	All urban groups		All non-urban groups
Snacks			All groups

Table IV. Sources of information cited by focus group participants who indicated previous exposure to the FBDGs

FBDG	Mass media				Clinic	School	Doctor	Hospital	Book
	Television	Radio	Magazine	Other					
Variety	✓	✓	✓		✓	✓			
Be active	✓	✓	✓		✓	✓			
Fruits/ vegetables	✓	✓	✓		✓	✓	✓	✓	
Fats		✓			✓	✓	✓	✓	✓
Salt		✓			✓		✓	✓	
Water		✓							
Alcohol	✓			✓*					

* Billboards on main roads and the 'Arrive Alive' campaign.

Interpretations of the FBDGs and barriers to implementation

Results are discussed according to each of the eleven preliminary FBDGs that were tested (Table I).

1. 'Enjoy a variety of foods'

All groups endorsed the importance of this guideline in terms of taste preferences and the enjoyment of eating: 'You have to cook a variety to keep everyone in the family happy' (Indian urban formal), as well as the nutritive value of incorporating a variety of foods in the diet: 'The body needs different food types to provide different nutrients' (black urban formal).

All groups understood the meaning of 'variety' in terms of dietary diversity. Participants referred to different food types, food groups and nutrient groups. Dietary diversity was perceived as being achieved by varying the composition of meals throughout the day: 'Different foods on my plate at an actual meal . . .' (white urban formal) and by varying the composition of meals from day to day: ' . . . today I may cook pumpkin, then tomorrow potatoes . . .' (black non-urban).

Where the inaccessibility of certain foods limited dietary

diversity, food preparation methods were altered for variety: ' . . . sometimes we eat the same food item prepared in different ways' (black urban informal).

'Satisfaction', 'liking the food' and 'being happy' were frequently used to describe the word 'enjoy'. Black non-urban participants expressed a sense of gratitude just to have food: 'We enjoy what we have prepared because we feel lucky to even have food' (black non-urban).

All groups identified **affordability** (Table V) as a major constraint to implementation of this message. For all black groups, **availability** (Table V) was also reported to affect dietary diversity, particularly with respect to consumption of fruits, vegetables, and foods from animals. Food staples (starchy foods), which are relatively cheap and readily available, are the only consistent source of food for participants when household food security is threatened: 'Sometimes it [starch] becomes the only food that one has' (black urban informal).

All groups stated that **household taste preferences** (Table V) could lead to the exclusion of certain foods: 'It is important to accept other people's likes and dislikes' (black urban informal).

Table V. Constraints to implementation of the FBDGs as cited by focus group participants

Constraints	Guidelines										
	Variety	Be active	Starchy foods	Fruits/vegetables	Legumes	Foods from animals	Fats	Salt	Water	Alcohol	Snacks
Affordability	All groups			All black groups	All non-urban and urban informal groups	All non-urban and urban informal groups					All black groups
Availability	All groups			All groups					All black groups		
Household taste preferences	All groups			All groups	All white urban formal groups		All groups	All groups	All urban formal groups		
Routine food purchasing habits	All groups										
Food preparation time	All groups				All black groups		All white urban formal groups				
Food preparation methods							All groups	All groups			
Use of private transport (cars)		All urban formal groups									
Lack of (leisure) time		All urban formal groups									
Concerns with weight gain			All urban formal groups								
Persistent attitudes							All groups			All groups	
Lack of awareness											All groups

* Affordability of legumes relates to lengthy cooking period where fuel resources are expensive (paraffin) and limited (wood).

Indian and white urban formal groups mentioned that **time constraints** (Table V) often led to repetitive consumption of certain foods: *'We haven't got the time to cook different foods'* (Indian urban formal).

White urban groups suggested that **routine food purchasing habits** (Table V) might limit the incorporation of new foods: *'... you tend to stick to what you know ... you are used to buying certain items'* (white urban formal).

14 2. 'Be active'

Most participants agreed that this guideline was important, with reasons ranging from weight reduction to improving general health through fitness, reducing blood pressure, restoring vitality to the body, increasing resistance to illness, and improving one's mental state.

Interpretations of this guideline by most groups reflected two classes of behaviour. The first perception was that activity

is a conscious attempt to exercise the body in an effort to improve health, such as going to the gym, walking or running. The second perception was that activity is incidental to the daily routine, with the goal being to complete some task, either in the domestic sphere (housework, collection of firewood/water, shopping) or in employment.

Black Xhosa-speaking participants interpreted this guideline as being *'alert', 'intelligent', 'fresh', 'waking up early', 'not being lazy'* and being *'willing to participate'* in activities of life.

For non-urban and urban informal groups, compliance with this guideline was considered to be a consequence of daily routine: *'... housework ... fetch fire wood ... cutting grass [by hand] ...'* (black non-urban), *'... walking to town ... working around the house ...'* (black urban informal).

Conversely, all urban formal groups felt that the amount of activity done by the entire household, including the children,

could be increased. Urban formal groups considered constraints to implementation of this guideline to include the use of **private transport** (cars) and the **lack of (leisure) time** (Table V).

3. 'Make starchy foods the basis of most meals'

All groups regarded starchy foods as a valuable contribution to the diet in terms of providing energy, satiation, and being relatively cheap in comparison with other foods.

Most groups understood '**basis of most meals**' as implying that starchy foods should provide the major contribution to energy intake: '*. . . that when you serve food, the bulk of it should be starch*' (black non-urban).

The majority of participants interpreted '**meals**' as meaning three meals a day, namely breakfast, lunch and dinner. One white subgroup felt that '**most meals**' referred to dinners only, and that the guideline should therefore be amended to read 'all' meals instead of 'most' meals.

Areas of confusion included uncertainty as to whether:

- a person with diabetes can eat starchy foods (Indian urban formal)
- it is healthy to eat starch and protein together ('food combining') (white urban formal)
- eating too much starch would result in weight gain (all urban groups).

All groups identified maize meal, bread, rice and potatoes as starchy foods. Indian and white participants identified a greater variety of the more expensive products (breakfast cereals, pasta, oats, sweetcorn) than other groups. Indian and white participants were uncertain about the classification of dry beans, sugar and coffee creamer, with many of them classifying these foods as 'starchy' foods.

All black groups reported that they were already implementing this guideline as a result of traditional/habitual food consumption patterns. For all urban formal groups, the greatest constraint to implementation of this guideline related to a **concern with weight gain** (Table V).

4. 'Eat plenty of fruit and vegetables every day'

The importance of this guideline was recognised by all groups in terms of general health ('*good for the body and skin*') and preventing diseases ('*resistance to illness*').

Interpretations of the word '**plenty**' emphasised the frequency of consumption as well as the quantity of consumption. Numeric values ascribed to the word '**plenty**' ranged from a minimum of 1 fruit and 1 vegetable a day to as many as 5 - 9 fruits and/or vegetables a day.

All groups identified common fruits such as bananas, apples and oranges as well as fruit juices. Canned fruit (peaches) and dried fruit (mango, dates, raisins and mixed) were also mentioned by Indian and white urban formal groups.

Common vegetables identified by all groups included spinach, pumpkin, butternut, tomato, cabbage and onions. Vegetables mentioned by specific groups included *imifino* and pumpkin leaves (non-urban blacks); gem squash, canned baked beans and frozen (mixed, carrots, corn, peas) vegetables (urban formal Indians and whites); and broccoli, celery, baby marrow, mushrooms and leeks (urban formal whites).

Potato, sweet potato, mealies, sweetcorn and *amadumbes*, previously identified as starchy foods, were also included in the vegetable group. Indian participants included legumes (canned baked beans) in their classification of vegetables. White participants queried the classification of avocados (a fruit, vegetable or fat?) and potatoes (a vegetable or starchy food?).

White participants identified the greatest variety of fruit and vegetables, reflecting greater disposable income and greater accessibility to these food items.

All black groups reported that fruit and vegetable consumption was restricted by **affordability** (lack of household income) (Table V): '*. . . these foods are good for our health, but we do not have the money to buy them*' (black urban informal).

For all groups, fruit consumption was also related to **availability** (Table V) and highly contingent on seasonal fluctuations: '*Families are practising this message but are limited by finance and the varieties available to them*' (black urban formal).

In terms of **household taste preferences** (Table V), all groups stated that most resistance to fruit and vegetable consumption came from the children and, in some cases, the men in the household: '*The children love fruit, but not always their vegetables . . .*' (Indian urban formal).

5. 'Eat legumes regularly'

Legumes were regarded by all groups as a valuable contribution to the diet because of their relative cheapness (cited as the primary motivation for including legumes in the diet), their use as a meat substitute or meat 'extender', a perceived ability to satiate, and a perceived ability to promote health due to their high nutritional value (protein, vitamins).

All groups interpreted this guideline to mean that legume consumption was recommended and that legumes should be eaten often. Participants varied in their perception of the word '**regularly**' and explanations ranged from 'often' to 'once a day', 'at least once a week', and 'twice to three times a week'.

While all participants were familiar with the different types of foods classified as legumes, none of the participants were comfortable with the use of the word 'legumes'. All groups suggested alternative terminology, such as '*different types of beans*' and '*dry beans*'.

Legumes identified by participants included dry beans, canned baked beans, split peas (dhal), soya mince and peanuts. Indian participants identified the greatest variety of legumes, reflecting cultural eating habits for this group.

For all black groups, the affordability of legumes relative to other foods was identified as a major reason for their inclusion in the diet. However, the **lengthy cooking period** required (Table V) is seen as a constraint where cooking fuel (i.e. paraffin, wood) is an expensive and limited resource. In many cases, this leads to substitution of dry beans with processed soya products: *'... beans take a long time to cook, so they waste paraffin'* (black urban formal).

While Indian urban formal groups regarded **household taste preferences** (Table V) as a reason to include legumes in the diet, white urban formal groups regarded this as a constraint: *'... we eat legumes because we like them'* (Indian urban formal), *'... husbands don't like them'* (white urban formal).

6. 'Foods from animals can be eaten every day'

All groups acknowledged the importance of this guideline in terms of the physiological (health) benefits associated with consuming these foods, in terms of their nutritive value (protein, vitamins and minerals).

The majority of participants interpreted the advice **'can be eaten every day'** as flexible and non-prescriptive: *'different animal products may be used daily'* (black urban formal), *'These foods may be eaten every day, but it is not essential ...'* (white urban formal).

A few black Xhosa-speaking and white participants, however, interpreted this advice as meaning that these foods **must** be eaten every day. This conflicted with nutritional information to which they had previously been exposed.

None of the participants were comfortable with the use of the term **'foods from animals'**. Black Xhosa-speaking participants identified red meat and dairy products as foods from animals, but did not mention poultry or fish. Coloured participants identified red meat and meat products, but did not include dairy products. Indian and white participants also suggested the separation of **'dairy'** (milk, yoghurt, cheese, butter) and **'meats'** (red meat, chicken, fish, eggs).

Indian participants were the only group to not identify beef, as this food is not consumed by many owing to religious beliefs. Only black participants identified **'maas'** (soured cultured milk product) as being in this food category, indicative of their cultural eating habits. White participants identified the greatest variety of foods from animals, particularly of dairy foods, reflecting greater disposable income and cultural eating habits. White participants expressed uncertainty regarding the classification of condensed milk as a food from animals (dairy food). They also classified butter and cream as dairy foods.

All groups mentioned **affordability** (Table V) as the single biggest constraint to implementation of this guideline: *'A lot of people will say they cannot afford these foods'* (black urban informal).

For urban formal groups, where income levels are higher than non-urban and urban informal groups, affordability was

related more to the frequency with which these foods were consumed (*'eaten less often'*) rather than a reason for their exclusion from the diet.

7. 'Use fat sparingly'

Health risks associated with excessive fat consumption, in particular high blood pressure, heart disease and weight problems, were recognised by all groups.

All groups interpreted this guideline in terms of limiting the use of fat in food preparation: *'Don't add too much fat when cooking'* (black non-urban).

Indian and white urban formal groups and black urban informal groups interpreted this guideline as also meaning that the fat content of food should be considered: *'I would advise people to buy low-fat foods'* (black urban informal).

All groups interpreted the word **'sparingly'** as meaning *'use less'* or *'use a little'*. White participants felt that the guideline was too vague and wanted precise quantities for *'what is regarded as too much'*. White participants also expressed a view that perhaps not all fats are harmful, and that it is the type of fat, namely, animal fat and cholesterol, that causes health problems.

All groups identified oil, butter and margarine as sources of fats used in cooking. Indian and coloured participants mentioned foods with a high visible fat content (fatty meat, chicken skin). White participants were the only group to include foods with a high fat composition (avocado, nuts, peanut butter, olives, biscuits, potato crisps, pies, pastries, chocolate), although there was some uncertainty as to the classification of avocados, nuts and peanut butter.

For all groups, **household taste preferences** (Table V), which influence food preparation methods, emerged as the primary constraint to implementation of this guideline: *'Fat gives a meaty taste to the food when there is no meat'* (black urban informal).

Time limitations (Table V) were a constraint for white participants, who regarded cooking with fat as a quick method of food preparation: *'... it's quicker to fry than to bake or grill'* (white urban formal).

All black groups cited **persistent attitudes** (Table V) as a reason for non-compliance: *'... people have been told many times [to use less fat] but they still do it'* (black urban informal).

8. 'Use salt sparingly'

All groups agreed that this guideline was important in terms of the potential physiological harmful effects of excessive salt consumption, such as high blood pressure, heart disease, kidney disease and water retention.

Some Indian and white participants were uncertain about this guideline and perceived salt consumption as having some benefits: *'... isn't salt good for preventing cramps?'* (white urban formal), as well as that it was relevant only to people with

specific health problems: *'My husband uses a lot, but then he doesn't have any blood pressure problems'* (Indian urban formal).

All groups interpreted this guideline as advice against the excessive use of salt as well as seasonings with a high salt content (stock cubes; soup powders; seasonings; meat and yeast extract spreads; tomato sauce; soya mince) when preparing and cooking food.

White participants were the only group to interpret this guideline as advice to reduce excessive consumption of all foods with a high salt content, such as 'biltong' (dried and salted meat), salted nuts, potato crisps, salted popcorn, salted meats, 'snoek' (dried and salted fish), and bacon.

For all groups salt was the most frequently used seasoning, as a means to enhance the taste of food both in food preparation/cooking and table use. Other seasonings reportedly used by all groups included stock cubes, soup powders and Aromat. No group reported the use of seasonings containing no salt.

Household taste preferences, reinforced by **traditional/habitual food preparation methods** (Table V), emerged as the primary constraint to implementation of this guideline.

9. 'Drink lots of clean, safe water'

All groups recognised the importance of this guideline in terms of general health, and interpreted this guideline as advice to drink sufficient water that is free from contamination. Numeric values ascribed to the word 'lots' ranged from 6 to 12 glasses/day (1 - 2 litres/day). For all groups, actual water consumption was lower than levels of intake participants considered optimal.

All black groups accessed their water from communal sources (containers, outdoor taps), and they identified this (non-)availability of drinking water as a primary constraint to implementation of this guideline (Table V). The further away the water supply is from the household, the greater the likelihood of a reduced allocation of water for all household needs, including for drinking purposes. This is verified by the reported actual consumption of water among black participants. Black non-urban participants, who have the longest distances to walk to access water, reported consumption of 1 - 1½ glasses/day, black urban informal participants stated that they 'sometimes' drink water, and black urban formal participants specified a range of 2 - 4 glasses/day.

For all urban groups, **taste preferences** (Table V) were cited as a reason for low water consumption: *'I don't like water'* (black urban informal).

10. 'If you drink alcohol, drink sensibly'

All groups regarded this guideline as important in terms of the social consequences of excessive alcohol consumption. Excessive alcohol consumption was perceived as having disruptive behaviour-altering consequences that resulted in

problems in the domestic and work spheres. White urban formal and black urban informal groups highlighted the physiological effects of excessive alcohol consumption, such as liver cirrhosis.

All urban groups were concerned with the general acceptance of excessive alcohol consumption within their communities, and the socio-economic effects: *'It uses up money, then there is no food for the children'* (Indian urban formal).

Participants understood the word 'alcohol' to mean 'liquor', 'a drug', 'to be drunk in small amounts . . . in moderation', and 'drinks of no use for the body'.

Interpretations of appropriate alcohol consumption ('**drinking sensibly**') were qualitative (non-numeric, descriptive): *' . . . there's a time and place for drinking alcohol . . . socially at a party . . .'* (Indian urban formal) and quantitative (numeric): *' . . . one glass every night with meals'* (white urban formal).

All groups felt that the major limitation to the general understanding of this guideline was the use of the phrase '**drink sensibly**', which was open to interpretation: *' . . . rather say "don't drink" . . .'* (Indian urban formal), *' . . . use the words "limit", "reduce", "use sparingly" . . . put a quantity to it . . .'* (white urban formal).

All groups identified whisky, beer and wine as alcoholic beverages. All black Zulu-speaking groups (from KZN) also included *isiZulu* (traditional home-brew).

All groups indicated that **persistent attitudes** (Table V) were the primary constraint to implementation of this guideline, especially among men and the young. Indian participants were the only group to cite religion as a reason for abstinence from alcohol consumption.

11. 'Eat healthier snacks'

All groups expressed uncertainty about the importance of this message. For all groups, the concept of '**healthier**' snacks was difficult to comprehend as '**snacks**' were considered to be 'luxury' items (cakes, biscuits, potato crisps, chocolates, ice-cream, pizza, pies) that had little nutritional value and were '*eaten between meals*' or '*whenever you feel like something nice*'.

For black non-urban and urban informal groups, where disposable household incomes were limited (and sometimes even the regularity of main meals uncertain), the purchasing of 'luxury' food items was accorded very low priority. Snacks were regarded as 'treats' for special occasions (parties, weddings, funerals) or when there was '*a little bit of money to spare*'. Similarly, all urban formal groups regarded snacks as 'treats' (chocolates, sweets, cakes) and/or 'desserts' (ice cream, custard, jelly) that were also only '*eaten on occasion*'.

For all groups, **confusion regarding the concept** (lack of awareness) of this guideline was the primary constraint to implementation (Table V).

Planning a day's meals using the FBDGs

Many groups felt that they already implemented many of the FBDGs, and all groups were able to construct a day's meals using the FBDGs. Meals suggested by the different groups reflected cultural food choices and availability of resources (incomes, time, fuel, water).

Groups where disposable incomes are limited (non-urban, urban informal) felt that it was difficult to incorporate the guidelines for 'fruits/vegetables' and 'foods from animals'. Urban formal groups stated that they were '*already doing most of them*', although white participants expressed difficulty about incorporating the 'legumes' guideline because of taste preferences and traditional/habitual eating habits.

DISCUSSION

For all groups, the radio, followed by clinics and schools, were cited as primary sources of information regarding those dietary guidelines with which they were familiar. These channels of communication could therefore be useful in disseminating the finalised FBDGs and supportive materials.

Participants from all groups endorsed the importance of implementing the FBDGs, predominantly for health reasons, and were open to the idea of adopting dietary guidelines as a means of improving or maintaining good health. They did not regard FBDGs as unnecessary.

It is evident that the terminology used for two FBDGs requires revision and re-testing, namely:

1. '**Legumes**'. All groups were unfamiliar with the use of the term 'legumes'; the use of the phrase 'dry beans, lentils and split peas' may be more suitable.

2. '**Foods from animals**'. Coloured, Indian and white participants suggested the separation of dairy products from meat products, and the use of the terms 'dairy' and 'meats' instead of the all-inclusive term 'foods from animals'.

Areas of confusion regarding certain concepts and food categorisation were evident and will need to be addressed by using explanatory information that accompanies the finalised FBDGs. Clarification is also needed regarding the concerns that an increased consumption of starchy foods may lead to weight gain, and that red meat should be eaten less often because of its high fat content.

Owing to the difficulty in understanding the concept of 'healthier snacks', it is suggested that this guideline be excluded from the final set of FBDGs, and that advice about appropriate snack food choices be included in the explanatory information accompanying the finalised FBDGs.

Interpretations of the terms 'plenty' (fruits and vegetables), 'regularly' (legumes), 'lots' (water) and 'sensibly' (alcohol) were both qualitative (descriptive) and quantitative (numeric),

with numerous groups requesting numeric guidelines. If optimal consumption of these items is to be expressed numerically, a range of values may be more realistic and beneficial to the consumer than a single recommended optimal quantity. Both qualitative and quantitative guidance will need to be explained more fully in the explanatory information that accompanies the finalised FBDGs.

All groups also mentioned several constraints to the implementation of the guidelines. To enhance implementation, the explanatory information accompanying the finalised FBDGs will need to provide practical advice to overcome these constraints. Primary constraints included affordability and availability of food, household taste preferences and limited time.

Practical advice to overcome such constraints should therefore include an assessment of what is affordable and available within the client's specific situation. Nutrition educators should also emphasise positive strategies already in practice, and promote others that are realistically possible, such as seasonal purchasing of fruits and vegetables (affordability, availability); quick and appetising cooking methods to increase legume consumption (limited time, taste preferences); alternative cooking methods and food choices to decrease fat and salt consumption (taste preferences); and alternative forms of physical activity (limited time).

CONCLUSION

Findings from this study indicate that it may be possible to use one set of dietary guidelines for all ethnic groups living in KZN and the WC provided that these guidelines are accompanied by explanatory information citing commonly eaten foods and practical examples of how to implement the guidelines. It is anticipated that while there will be one core set of FBDGs (translated into the official South African languages), the accompanying information (also available in the official languages) will be written to reflect the cultural and socio-economic diversity that exists within the country. It may also be appropriate to conduct additional focus group testing of all the FBDGs in other South African provinces to accommodate other ethnic groups, in particular, non-urban dwellers where the need for nutrition education is greatest and resources most limited.

The finalised core set of FBDGs will need to be adapted for children under 5 years, and for persons with special dietary requirements, such as those with HIV/AIDS, pregnant women and the elderly. Long-term monitoring of the impact of the FBDGs on knowledge and behaviour change is also required to enable regular evaluation of the FBDGs (a 5-year period is recommended) and subsequent adjustment of the guidelines to address the changing health needs of South Africans.

It should be remembered that food security is an issue for at

least 50% of South African households. While FBDGs may be an effective nutrition education tool to address the nutrition-related problems experienced by many South Africans, they will need to be applied sensitively where food security is apparent. FBDGs may not improve household food security by increasing the availability of and access to food, but they can assist in promoting the best use of available resources, including food. For this to occur effectively, however, the starting point when using FBDGs should always be the client's needs, namely, their predominant nutrition-related problems, constraints and circumstances.

For the long-term resolution of nutrition-related problems in South Africa, nutrition education needs to be accompanied by several strategies to improve access to basic resources (such as water and fuel). Nutrition education, and the use of FBDGs, therefore needs to be part of a larger programme, not only focusing on combating hunger and micronutrient deficiencies, but also encouraging self-sufficiency and economic sustainability.

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