

Challenges to implementing the food-based dietary guidelines in the South African primary school curriculum: a qualitative study exploring the perceptions of principals and curriculum advisors

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Objectives: The South African food-based dietary guidelines (FBDG) were developed and implemented to promote healthy lifestyles in the population along with preventing non-communicable diseases and other forms of diet-related illness. The FBDG were recommended for implementation within the national school curriculum. The objective of this study was to explore perceived challenges to successful implementation of these guidelines in the primary school curriculum.

Design: This qualitative study gathered data via semi-structured individual interviews. Data were transcribed and analysed with ATLAS.ti software, using a thematic approach.

Setting: Public primary schools located in three education districts in the Western Cape, South Africa.

Subjects: Principals at twelve schools from communities with different socioeconomic statuses, and five curriculum advisors of relevant subjects from provincial and district levels.

Outcomes measures: Perceived barriers to implementing FBDG in the primary school curriculum.

Results: A lack of knowledge and/or expertise related to the FBDG by educators, time constraints within the teaching programme and lifestyle related factors of educators, parents and learners emerged as the three main challenge themes from the interviews. A lack of resources was identified as an additional theme.

Conclusions: The principals and curriculum advisors anticipated many barriers to the success of implementing nutrition education using the FBDG in the primary school curriculum. Adequately addressing such barriers through improved awareness and knowledge of the FBDG by school staff could improve the potential of using the FBDG as a nutrition education tool in primary schools in South Africa.

Keywords: challenges, food-based dietary guidelines, implementation, school curriculum, South Africa

Introduction

Healthy diets and regular physical activity are key factors in attaining and maintaining good health throughout the life cycle. In contrast, unhealthy diets and physical inactivity along with high blood pressure, raised blood glucose, abnormal blood lipids, and overweight or obesity are major risk factors for non-communicable diseases (NCD) such as type 2 diabetes mellitus, cardiovascular disease, renal failure, and certain cancers.¹

South Africa, like many other developing nations, is undergoing a nutrition transition and faces the double burden of overnutrition and undernutrition. Overweight and obesity in both adults and children are among the main NCD risk factors emerging in many South African settings.² Regarding under-nutrition, 16% of children aged 0–9 years were identified with stunting, while 5.4% were found to be underweight in the first South African National Health and Nutrition Examination Survey (SANHANES-1).³ The dual existence of undernutrition and overnutrition in the same population and household is mainly attributed to food insecurity, poor diets and physical inactivity.³ Therefore, improving lifestyle behaviours is of importance.

In response to the burden of disease, the South African government has implemented several strategies, including the National School Nutrition Program (NSNP)⁴ and the Food-Based

Dietary Guidelines (FBDG)⁵ The guidelines were envisaged for use as an education tool to inform, educate and empower South Africans to adopt healthy diets and change their dietary behaviour.⁶ The Department of Health (DoH) and academic institutions anticipated the FBDG to form the basis of nutrition education in schools in South Africa.^{6,7} Furthermore, nutrition education is one of the key pillars of the NSNP (now one of the flagship programmes of the National Department of Basic Education [DBE]) and, as such, must be reinforced in the curriculum in accordance to the DBE.⁴ It is, however, not clear to what extent schools implement this important component of the NSNP.

The utilisation of educators and the school curriculum are recommended globally as a key strategy in communicating the FBDG^{8,9} with schools being seen as an ideal setting for implementing nutrition programmes and services.¹⁰ In South Africa, since the development of the FBDG, several school-based initiatives have used these guidelines to develop nutrition education materials to complement the national curriculum on nutrition.¹¹ However, these programmes were only experimental and very few educators indicated that they use these materials to teach nutrition at schools.¹¹

At the time of the study, the national school curriculum in South Africa included nutrition and healthy lifestyles in the subject, Life

Orientation (LO).¹² The outcome-based curriculum allowed educators to select their own teaching materials to reach the outcome assessment standards.¹² This curriculum has subsequently been revised and the name 'LO' has been changed to 'Life Skills' with the aim 'to be more specific on what is to be taught and learnt'.¹³ Although, the new curriculum includes FBDG in grade five as part of 'Health and Environmental Responsibility', the time-frame allocated for nutrition is three hours per annum.¹³ Although this time allocation is far less than the minimum 50 hours recommended by school nutrition researchers,¹⁴ nutrition information is also provided in other subjects such as Natural Sciences (seven hours in grade six),¹⁵ providing the opportunity for concepts contained in the FBDG to be reinforced across subjects. Additional concerns include LO (now Life Skills) that is often taught by educators who are not specialised in the subject¹² and who also have poor knowledge on nutrition.¹⁶

Despite nutrition education being part of the school curriculum in South Africa, research in school settings revealed that learners or pupils preferred unhealthy food choices.^{17,18} There were also gaps in their knowledge about nutrition and healthy lifestyles.¹⁹ Although researchers have attempted to understand the extent to which educators succeeded in achieving the LO curriculum outcomes, no specific attention was paid to nutrition and healthy lifestyle topics.^{12,20}

The 2012 Integrated School Health Policy (ISHP) incorporated the FBDG as the nutrition education component of a school-health programme.²¹ Health education and nutrition, particularly FBDG, could be provided to learners (pupils) through Life Skills in the national curriculum or as additional co-curricular/school-based activities or programmes. The ISHP targets all school-going children and youth from grade R (at age six) to grade 12 (at age 18). The ISHP comprises health screening, on-site service and health education, and is designed to meet different stages of developmental and health needs in various schools and communities.

Subject curriculum advisors at provincial and district levels, along with principals, are supportive channels in the curriculum implementation process, while educators directly influence curriculum outcomes.²² The opinions of these role-payers could provide invaluable insights into the success of a new or amended curriculum in public schools. Understanding their concerns could furthermore contribute towards knowing what support is required for implementing FBDG in schools. Accordingly, we conducted a study to explore perceptions among educators, principals and curriculum advisors on the feasibility of optimising the implementation of the FBDG in the primary school curriculum. This paper illustrates their perceptions on potential barriers that could hinder teaching the FBDG in primary schools.

Materials and methods

Study design

This qualitative study was part of a cross-sectional and descriptive study using quantitative and qualitative methods. The quantitative component of the study reporting on data collected from educators at 12 public primary schools from different socioeconomic strata has been published elsewhere.²³ This paper focuses on the qualitative arm of the study comprising of interviews with principals at these schools and selected curriculum advisors.

Sampling methods

Data for the qualitative arm were collected from 12 (out of 418) randomly selected public primary schools located in three of eight education districts in the Western Cape representing urban, peri-

urban, and rural areas, as well as all three languages used as a medium of instruction in the province (English, Afrikaans and Xhosa).

Subject curriculum advisors were selected based on findings from the quantitative arm of the study. The 'general education and training band' (grades R to nine) in the national curriculum include eight subjects: Languages, Mathematics, Natural Sciences (NS), Technology, Social Sciences, Arts and Culture, LO, and Economic and Management Sciences (EMS). The educator survey identified LO, NS, Mathematics, Languages and EMS as possible subjects for integrating and teaching FBDG. Advisors for Mathematics and Languages were excluded from the investigation, as they were not available at data collection. Twelve principals (five each from high and low-income and two from middle-income schools) and five curriculum advisors comprising three at provincial level with one for each subject (LO, NS and EMS) and two for LO at district level, participated in the interview sessions.

The Research Ethics Committee of the University of Cape Town approved this study (HREC.REF: 498/2010) and the Western Cape Education Department gave permission for this study to be conducted at schools. Participants were informed about the objectives, procedures and confidentiality aspects of the study and provided written consent.

Data collection

Data were collected using a semi-structured interview schedule. The schedule included ten open-ended questions, with the aim to elicit perceptions of the principals and curriculum advisors on the feasibility of implementing FBDG in the school curriculum. The questions addressed participants' concerns about learners' health, explored what is taught about nutrition and healthy dietary habits in the primary school curriculum, feasibility of and barriers to implementing FBDG, and recommendations towards implementing FBDG into the primary school curriculum.

Experts in the development of FBDG and primary school-based interventions were involved in the development of the interview schedule questionnaire, which was piloted among two principals not participating in the study. Except for the inclusion of a 'recommendations' section, very little modification was needed after the pilot. Although the interviews were guided by predetermined questions, the interviewer still allowed the conversations to flow naturally.

The interviews were conducted individually at the participants' respective offices. The same interviewer conducted all interviews, which lasted approximately an hour each. All communications were done in English as preferred by the participants, and audiotaped. A full set of the FBDG of the DoH⁵ were disseminated to the principals and curriculum advisors via e-mail before the scheduled interviews.

Data analysis

All the records were transcribed verbatim by the interviewer and transcripts were checked for accuracy by another experienced researcher. This researcher also guided and confirmed the analysis process, as well as the results. The ATLAS.ti v5.2 software package was used for coding and managing the data, resulting in specific themes representing each objective of the study. In this study, data were analysed as a whole (principals and curriculum advisors together), and only the most significant data that emerged from the analysis relating to the barriers to implementation of the FBDG in the national curriculum or as curriculum activity are presented in this article.

Results

Except for one, all principals were male. Their mean age was 55 years (SD 4.4). Their experience included a mean of 12 years (SD 6.2) as principal and 32 years (SD 5.4) as educators, and two of them had taught LO. The sizes of the schools ranged from 484 to 1752 learners per school, with between 35 and 46 learners per class. Three of the curriculum advisors were responsible for LO and one each for NS and EMS. Two of them were female and three were male, and their mean age was 51 years (SD 5.4). Their experience as curriculum advisors was a mean of 11 years (SD 7), and as educators was 19 years (SD 5.6).

The findings of the study showed that participants, i.e. principals and curriculum advisors, identified two sets of challenges: barriers specific to implementing the FBDG as additional curricular or non-curricular activities for nutrition education at schools, and more general challenges that could be encountered if it were included as envisaged in the education programme at schools. These challenges, however, overlapped and were often interlinked. Table 1 presents the main and sub-themes that emerged as barriers to implementing the FBDG at the selected schools as an add-on to the curriculum, as well as the more general concerns raised by participants.

From Table 1, it is clear that potential challenges identified by participants centred on three main themes: (1) lack of expertise/knowledge; (2) time constraints; and, (3) lifestyle and related issues. Various sub-themes were identified in each main theme and, as can be seen from the table, challenges mostly concerned the educators. A lack of resources in the implementation of the FBDG in schools was identified as a challenge to a lesser extent.

Lack of expertise/knowledge: As can be seen in Table 1, some participants pointed out that a lack of awareness about the FBDG could mean that no perceived need for proper inclusion of the FBDG in the curriculum or otherwise existed among educators. However, even if educators were aware of the FBDG, participants perceived educators as lacking content knowledge about the FBDG. A curriculum advisor suggested that if it were left to educators to include additional resources in the primary school curriculum, they would have difficulty in deciding what to include for which grades, and how to link these with subjects other than LO. Several participants pointed to the challenge of frequent turnover of staff teaching the LO curriculum leading to a potential challenge for conveying the messages of the FBDG in a continuous manner. Parents' poor knowledge of what healthy dietary behaviour entails was also mentioned as a possible barrier to teaching the FBDG to learners.

Time constraints: Concerning time constraints, various participants pointed out that educators tend to have heavy administrative workloads and that the basic requirements of the curriculum take up all their available time. Participants thought that educators would probably be reluctant if they were requested to teach the FBDG as a supplement or an add on to the curriculum. The time to train educators is also limited since training workshops could only take place after school hours and, if not compulsory (as would be for an extra-curricular offering), educators often refused to attend. Limited time is furthermore available in the structured curriculum for nutrition education.

Lifestyle and related constraints: Three sub-themes emerged regarding lifestyle related factors: Some participants pointed out that *educators' unhealthy lifestyles and overweight status* could influence their confidence making them feel uncomfortable

during class lessons, and influence lesson content. Participants thought that learners should not only learn the FBDG at school, but also implement these at home. *Parents' poor dietary behaviours* could therefore also compromise effective teaching of the FBDG. The most important subtheme regarding lifestyle related factors raised by many participants were, however, the *poverty stricken backgrounds of many learners* attending the schools in lower socioeconomic areas. Participants mentioned that learners in these schools often come from large poor families where food is not always available, let alone the option for healthy food choices. Some participants perceived teaching the FBDG as problematic as they saw it as teaching the learners to eat what they could not afford.

Lack of resources: Participants also identified financial constraints as an important perceived challenge to implementing the FBDG. Concern was expressed whether the Department of Education (DoE) and individual schools had sufficient financial resources to fund such a programme. One curriculum advisor pointed out that to direct educators to a website was inappropriate, the relevant resources would have to be provided in hard copy, which would require sufficient funding.

Discussion

Overall, these results illustrate some of the key challenges to successfully implementing the FBDG as a programme in schools or as the national primary school curriculum, as perceived by selected principals and curriculum advisors in a large metropolitan area of the Western Cape province of South Africa. A lack of knowledge and/or expertise related to the FBDG by educators, time constraints within the teaching programme and lifestyle and related factors of educators, parents and learners emerged as the three main themes from the interviews. A lack of resources was identified as an additional theme.

Knowledge: The perception of principals and curriculum advisors that many educators are not aware of the FBDG is supported by the educators' survey reporting that only 28% of educators knew about the guidelines.²³ Similar findings were reported from studies conducted elsewhere in South Africa.²⁴ There is no clarity in the literature on the level of awareness regarding FBDG in the general population of countries that have implemented such guidelines. According to Hawkes,²⁵ evidence from a small number of countries suggests that consumers are aware of the FBDG where they exist, but this does not mean that they understand them. The author, furthermore, states that very few studies specifically measured actual use of the FBDG by consumers and uses South Africa as an example where FBDG are promoted to the public via written/electronic information through health and/or education sector channels. Our study, however, suggests that these promotion efforts have not been successful at least for the educators that participated in our survey. The lack of awareness of the FBDG together with a lack of nutrition knowledge could pose a challenge for the effective teaching of the FBDG. This challenge would be exacerbated by a lack of LO specialist educators and a high turnover in staff teaching LO. Similar factors were identified in a study that investigated the perceptions of LO educators in schools in the Western Cape.¹² Teaching a learning area in which they had not been trained was also reported as a serious stressor for Life Science educators at secondary schools in South Africa.²⁶ Likewise, international studies revealed educators often had a lack of confidence in implementing the topics in which they did not have sufficient knowledge.²⁷ This could result in negative attitudes and less time spent on the topics in the classroom.²⁸

Table 1: The main and sub-themes that emerged as barriers to implementing the FBDG

Theme	Subtheme	Supporting quotes
Lack of expertise/knowledge	Educators: not aware of the FBDG	'These things are basically in the curriculum and unfortunately I cannot say there is a demand. Because most educators will not have been aware of the FBDG. I wasn't aware that this has been around since 2004, 2005 – I wasn't aware of that... What you don't know you won't ask for. They don't give them that voice to say we think we need more content here or we need the FBDG – which they weren't aware of.' (A2, LO)
	Educators: lack of content knowledge	'Bear in mind that in our GET [General Education Training] band many of our schools we do not have specialists in the subjects. We have got educators who are generalists in those grades. So they will teach what they know or they will focus on what they know compared to what they do not know. Yes, so that is some of our dilemmas with the curriculum.' (A3, NS)
	Educators: turnover in staff teaching the LO learning area	'We have a massive turnover of educators in Life Orientation that teach those things. This year I'm teaching it, next year I'm not teaching it again. The principal will give that Life Orientation to somebody else and it is just sometimes that kind of turnover of educators within the staff that will make it difficult to impart the very important information to learners on a continuous basis. That learners can understand and benefit from the curriculum – they don't. They don't. At the moment I'm not happy with that.' (A1, LO)
	Parents: Lack of nutrition knowledge	'Sometimes when you teach the children they have the perception that these things that we are telling them about – lentils and what not. Some of their parents, they don't know about these things.' (P7, low-income school)
Time constraints	Educators: Work load	'They stress, because of all the administration and the burden from Head Office and the pressure I put on them and the pressure I get, the whole system is tasks.' (P8, high-income school)
	Educators: Requirements of the curriculum	'... [You] can't do anything because this thing – this policy document they want us to follow that slavishly at most, for the minimum work. You can do more, but it must all be related to the documents. So when you do more you'll have to need more time, and that is normally the problem that very seldom do they consult the educators or us.' (A2, LO)
	Educators: Reluctance to add to the curriculum	'I think most of educators, knowing schools, knowing educators; unfortunately, I am in education for 34 years. I know! That is, if it's not being set, it's not going to be done. If it's not stated formally by the Department, it's not going to be done. Because educators tend to focus only on the basic things need to be done within the curriculum of that learning area.' (P9, middle-income school)
	Educators: Limited time available for training	'Another barrier could obviously be if the Department gives us a chance to have workshops with the educators just to enlighten them. They will say we can arrange on our own, but then it's you know – we can't start earlier than three o'clock... Educators are tired. So you don't have a long time to fit in basically a grade one to grade seven workshop. So that could be a barrier for implementation... The workshop is there to make it easier for me to get to them, but as I said now many don't turn up, because I cannot make the workshop compulsory.' (A2, LO)
Lifestyle and related constraints	Educators: Weight status and eating behaviours	'Obesity it's a huge problem in many of our settings. How do you teach learners to be aware of the problem of obesity and you yourself find it difficult? You can't explain it to young people. So those are the immense dilemmas that our educators in Life Orientation find themselves in.' (A1, LO)
	Parents: Eating behaviours	'... you need your role models; you need your healthy foods at home as well. And we're not sure whether that happens all the time. I mean just think of when people refer to food nowadays, they refer to pizza, to fried chicken, to a lot of prepared food or processed food already. So the chances that what they are taught in school and what happens at home, there can be a vast difference.' (A5, LO).
	Learners: Disadvantaged background	'It is one thing to teach all this, but it's another thing for pupils, say in our specific circumstances to get back and, with their parents, implement it, you know. Because we living, in a certain area that is rural and with lots of parents, say about 80% that are quite poor and haven't the means or the finance to buy on a regular basis, say what is needed for them to be actually very healthy and so on. So that's the one concern and the one problem. So we can teach in the school but it's another thing to get the parents to feed them on that way also.' (P10, low-income school)
Lack of resources	Financial constraints and lack of resources	'If the resource [FBDG] goes into the school, if the document goes to the school as a separate resource for educators that also is a challenge. Because who is going to fund it right? WCED's got a policy now that everything goes into a textbook. So whatever a teacher needs as a primary source would be in a text book. Especially in the rural areas. But if this comes as an additional resource – who's going to fund it is very important.' (A1, LO)

This perceived lack of knowledge is especially disconcerting when considering that one of the most important programmes of the DBE, the NSNP, has nutrition education and support of nutrition content in the total curriculum, and not only Life Skills, as one of its main objectives.

Time constraints: Educators' workload, the requirements of the present curriculum, reluctance to add to these, and limited time available for professional development of educators emerged as time-related constraints to teaching the FBDG. These perceptions are consistent with findings from other research studies in South Africa where researchers reported that educators' workload constrained preparation, planning and presentation of LO class lessons.^{18,20}

Similar to what was reported by curriculum advisors in this study, Villegas-Reimers²⁹ in a review on the professional development of educators pointed out that the increased demands for school accountability and testing learners could limit time for professional development outside the core curriculum. These authors suggest that it is important to find ways to embed health education in professional development for core curriculum subjects such as reading and writing. This could assist in helping educators to overcome their resistance to add to what is expected in the curriculum. Locally the inclusion of nutrition education and especially the FBDG in the curriculum of educators' teaching programmes could lay a solid foundation for such professional development activities.

Lifestyle and related constraints: Another important factor which participants highlighted was the high level of household food insecurity experienced by learners and their parents. It has been suggested that a healthy school environment, with educators acting as role models for healthy diets and lifestyle, is needed to reinforce messages contributing to optimal nutrition education.³⁰ Participants in the present study were concerned that the weight status and unhealthy lifestyles of some of the educators, could influence their confidence in teaching healthy habits and impact on what is taught to learners. Very little research, however, has addressed the association between educators' own health behaviours and how it may influence their effectiveness as educators and healthy lifestyle role models for children.³⁰ While it has been suggested that the role of schools and educators as instruments for public health policy should be further investigated,³¹ educators' own health status and health risk behaviours should not deter them from teaching the FBDG through the formal curriculum.

Teaching theory of nutrition and healthy dietary habits, especially the FBDG, to learners from food-insecure families with little chance for informed choices could be problematic according to participants. Schönfeldt and colleagues³² pointed out that even when the most basic and low-cost food items are selected when applying the FBDG, the associated costs are well beyond the reach of disadvantaged households. With 58% of children in South Africa reportedly living below the poverty line in 2011,³³ the concerns of participants in this study should form part of the discourse around the implementation of the FBDG. The National Schools Nutrition Programme (NSNP)³³ and the Child Support Grant (CSG)³³ have, however, been put in place to address some of these concerns. The NSNP feeds nearly nine million children daily,³⁴ while the CSG is the single largest programme for alleviating child poverty in South Africa.³² These measures could possibly contribute to ensuring that the disadvantaged backgrounds of learners would not prevent them from being taught the FBDG.

Research shows that lack of resources has often been a problem in health interventions for developing countries.⁹ Most principals and curriculum advisors perceived that the Western Cape Education Department did not have the financial resources to fund a FBDG programme in their schools or implement this appropriately as part of the formal curriculum. Materials for educators and learners and budgets for workshops were some of the resources lacking in schools.

Limitations of this study are the relatively small sample in a single province, which makes it difficult to generalise the results to the broader population. Therefore, results of this study need to be viewed with caution. However, the participants are working with the national curriculum, and the South African FBDG are country-specific, these findings therefore may provide useful information on implementation on a wider scale.

Implications for research and practice

This study has set the agenda for further research needed to strengthen the implementation of the FBDG at schools. Although the revised ISHP has firmly advocated FBDG education in the school environment and curriculum, the curriculum implementers anticipated many challenges to proper implementation. Many of these perceived barriers could be mitigated by creating awareness and increase knowledge of the FBDG and its place in the curriculum by educators across all subjects. Such a large-scale nutrition education effort will have

to be spearheaded by the Department of Health in close collaboration with the DBE and National Treasury as adequate financial resources will have to be made available. Exposing all educators to the FBDG could assist in ensuring that nutrition education is implemented in schools as envisaged by the ISHP and the NSNP. It will furthermore optimise the role of the FBDG as the benchmark against which nutrition related content in the curriculum is selected and evaluated. Convincing policy makers of the public health value of such a large-scale effort will ask for determined and informed advocacy from public health nutritionists.

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