South African Journal of Clinical Nutrition 2024; 37(4):184–192
https://doi.org/10.1080/16070658.2024.2427979

SAJCN
ISSN 1607-0658 EISSN 2221-1268

RESEARCH ARTICLE

Perceived barriers and enablers for consuming a diverse diet in women residing in resource-poor communities in Cape Town, South Africa: a qualitative study

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Background: Several studies have shown that South Africans consume a diet low in variety.
Objective: To explore the barriers and enablers for consuming a diverse diet in resource-poor communities around Cape Town.
Design: A qualitative study design was used. Data were collected from focus-group discussions (FGDs) conducted in Afrikaans, IsiXhosa, and English, using a semi-structured guide.
Setting: Twelve community sites in Cape Town, South Africa.
Subjects: Study participants were 24 Black and 21 Mixed-ancestry women ($n = 45$) with a mean age of 49.7 ± 7.8 years.
Results: Fourteen FGDs were conducted with an average of three participants per FGD. Six themes were identified from the FGDs, which included nutrition knowledge, perceptions of dietary diversity and its impact on health, individual factors, and social, physical environment, and societal influences on food choices. Perceived barriers to consuming a diverse diet included financial constraints, high food prices, and family taste preferences. Perceived enablers identified were individual taste preferences, access to food stores, community food aid, and food-store specials. Proposed facilitators to achieving a diverse diet included budgeting, income-generation activities, lowering food prices, and increasing community food aid.
Conclusions: The findings of this study suggest that financial constraints, high food prices, and social factors limit the ability of women from resource-poor communities to consume a diverse diet and make healthy food choices. Public health interventions aimed at promoting healthier food choices and reducing diet-related diseases should address financial barriers and the cost of food.

Keywords: adults, barriers, dietary diversity, enablers, food choices, qualitative research

Introduction

Globally, unhealthy diets are one of the leading risk factors for non-communicable diseases (NCDs) among adults, accounting for 22% of mortality and 15% of disability-adjusted life years.[1] South Africa, an upper-middle-income country, is undergoing a rapid nutrition transition and lifestyle change from active to more sedentary. In parallel with the change in diet and lifestyle, the prevalence of overweight and obesity is high. South Africa has the highest obesity prevalence in sub-Saharan Africa,[2] with more than 68% of women and 39% of men being either overweight or obese.[3] South Africa also has a high prevalence of NCDs, accounting for 51% of mortality.[4]

The intake of a variety of nutrient-dense foods is recommended globally through food-based dietary guidelines (FBDGs) for nutrient adequacy and disease prevention.[5] Dietary diversity (DD) is a component of diet quality. Poor dietary quality is associated with malnutrition and NCDs.[6] Monotonous diets, composed of mostly starchy staple foods, have been associated with food insecurity and micronutrient deficiencies.[7] The South African FBDGs, which were first published in 2003 and revised in 2012,[8] encourage South Africans to 'Enjoy a variety of foods'.[9] Yet, two national studies have shown that South Africans lack variety in their diet.[10,11]

Several structural, environmental, social, and individual factors influence food choices and dietary habits.[12] Determinants of food choice include various factors, such as physiological, taste, cultural, social, psychological, emotional factors (stress, attitude towards health, anxiety, depression), hereditary and epigenetic factors.[13] Socioeconomic factors, such as education level, occupation, income, and residential area, influence food choice behaviours.[14]

A healthy, diverse diet containing plenty of vegetables and fruits, legumes, and unrefined grains may be difficult to achieve for a large proportion of the South African population, as the current unemployment rate is 32.9%,[15] and 55.5% of people live below the upper-bound poverty line.[16] South Africans have found it increasingly difficult to afford healthier diets due to the deteriorating food environment and a declining purchasing power, with 66.7% of the population not being able to afford a healthy diet in 2021.[17] The consequence of a less varied and high energy dense diet is increased calorie intake, which leads to obesity. In the United States of America (USA) low socioeconomic status (SES) has been associated with unhealthy diets, low purchasing and consumption of fruits, and high purchasing of unhealthy foods.[18] Low SES may also be associated with a lack of nutrition knowledge and not following dietary guidelines.[19]

South African adults, in general, consume a diet low in variety.[10,11] However, there is limited research on the factors influencing food choices and consumption of diverse diets, particularly among adults in low-income groups. For the development and effective implementation of interventions aimed at promoting diverse diets and better food choices, especially in resource-poor settings, understanding the factors that influence the consumption of these diets is essential. Therefore, we aimed to explore barriers and enablers for consuming a diverse diet in women residing in resource-poor communities in Cape Town, South Africa.

Methods

Study design and participants

This qualitative study is affiliated with the South African Diabetes Prevention Programme (SA-DPP). The SA-DPP aims to develop and evaluate a model for diabetes prevention for the South African population. Baseline data for SA-DPP were collected for 700 Black and Mixed-ancestry adults (age 25–65 years) at risk of type 2 diabetes (T2DM), recruited from 16 resource-poor communities around Cape Town. Participants had a mean age of 50.9 ± 9.1 years, with 81.1% female, 59.3% Black, and 40.7% Mixed-ancestry.[20] Participants had low education levels (84.2% did not complete high school), 43.7% were unemployed, and 71.6% had a monthly household income below R3200 (±$172,74). Most participants (70.4%) consumed a diet with low variety. Results also showed that 42.6% of individuals did not consume fruit, and 28.6% did not consume vegetables daily because of financial constraints.[20]

Data for the qualitative study were collected between November 2020 and February 2021. Purposive sampling was used to select participants previously included in the SA-DPP baseline study for participation in focus-group discussions (FGDs). Participants were selected based on their age, study site, and available contact details. Because most baseline study participants were females (81.1%), males were excluded. Eligibility criteria included females aged between 25 and 60 years and fluent in English, Afrikaans, or IsiXhosa. They were recruited via telephone and invited to join. Participants came from 12 resource-poor communities around Cape Town, South Africa: Athlone, Bongweni, Bonteheuwel, Crossroads, Gugulethu, Harare, Heideveld, Lavender Hill, Lotus River, Mfuleni, Retreat, and Samora.

The aim was to recruit 7 purposively selected participants per site, resulting in an expected sample size of 84. However, of the selected participants, 27 could not be reached on their cell phones, 4 declined to participate, and 8 were unavailable on the day of the FGD, resulting in a final sample size of 45.

Instrument development: focus-group discussion guide

The FGD guide questions were developed using the constructs of two conceptual frameworks: the socioecological model[21] and the health belief model.[22] The semi-structured FGD guide was developed in English in consultation with qualitative research experts. Three main domains were explored using semi-structured questions: (1) perception of healthy and unhealthy food; (2) understanding of DD and perceptions of DD on health (not reported); and (3) barriers, enablers, and facilitators for consuming a diverse diet and food choices. In the context of this study, enablers are factors that assist individuals in obtaining healthier foods, and facilitators are potential strategies and solutions to overcome barriers to consuming diverse diets.

The FGD guide was translated into Afrikaans and IsiXhosa by native Afrikaans and IsiXhosa speakers. The FGD guide (Supplementary File 1) was piloted in two focus groups with two Mixed-ancestry and six Black participants respectively, to determine appropriateness concerning the study objective and whether they understood the questions. After the piloting, the FGD guide was revised to include an exercise to gain clarity on the participants' understanding of DD, a question on possible facilitating factors for consuming a diverse diet, and questions on experiences and impact of the coronavirus disease (COVID-19) pandemic on food choices.

Data collection

The FGDs were conducted by two Afrikaans-speaking facilitators (JH and a registered dietitian) and one IsiXhosa-speaking facilitator (a registered dietitian) trained in qualitative data-collection methods. The sessions lasted between 45 and 90 minutes and were audio recorded. At each FGD session, a note taker took notes on the discussion. Despite challenges with recruiting participants, as the study was conducted during the second wave of the COVID-19 pandemic, data saturation was achieved after 14 FGDs. Participants received a supermarket voucher as reimbursement for participating in the FGDs.

Trustworthiness was ensured by (i) conducting focus groups in the participants' language (Afrikaans/IsiXhosa), (ii) using a quality digital recorder, (iii) having a debriefing session with the research team after each FGD, (iv) taking discussion notes, and (v) keeping an audit trail of the coding process.

Data analysis

Audio recordings of the FGDs were transcribed verbatim in English by independent translators fluent in English and Afrikaans or IsiXhosa. Transcripts were reviewed for accuracy against the notes taken by the note taker by the first author (SSM) and imported into ATLAS.ti 9 software (https://atlasti.com/) for data coding and analysis. Data were analysed using directed content analysis.[23] The initial codebook was piloted by two researchers (SSM and JH) before being finalised. A hybrid approach, by combining the deductive and inductive approaches to coding, was taken. Upon completion of coding, the researcher (SSM) merged and deleted codes as necessary. Additionally, the researcher categorised quotes based on predetermined themes. Themes were described using codes and their relevant quotations. Data analysis codes, categories, and themes were re-examined and refined by SSM, JH, and MF to improve credibility.

Results

In total, 45 women (53.3% Black, 46.7% Mixed-ancestry) with an average age of 49.7 ± 7.8 years (range 31–62) participated in the FGDs. Fourteen FGDs were conducted with 45 participants from 12 communities. The average number of participants per FGD was three (ranging from two to six). The sub-themes identified for the predefined six themes and relevant quotes are summarised in Table 1 (nutrition knowledge and perceptions on dietary diversity), Table 2 (barriers and enablers for consuming a diverse diet), and Table 3 (facilitators for consuming a diverse diet).

Table 1: Nutrition knowledge and perceptions of dietary diversity: themes and quotes from the focus-group discussions

Theme	Sub-themes	Supporting quotes
Nutrition knowledge	Perceived healthy and unhealthy food	'Vegetables – like you eat pumpkins and eat different colours – one day this and on another day something else. They make us to feel healthy and body parts become strong when we eat these things. Eggs and fish have protein, and the proteins help the body to remain strong – then you won't be troubled by sicknesses so much' (Area F, participant 2) 'Fizzy drinks are not good for your body; even junk food like sweets and chocolates they can cause bile problems. Red meat makes you sick and chocolates are not good for children and adults' (Area H, participant 1)
	Source of nutrition information	'Sometimes we are told at the clinic, but we understand that we do not have money. You just agree but it is hard to buy these things' (Area P, participant 2) ' … yes, the TV and even if we go to the hospital then they have people there who speak and explain things about health' (Area Q, participant 4)
Perceptions of dietary diversity	Definition of dietary diversity	'It's not eating the same food every day' (Area J, participant 1) 'What comes to mind is that I'm eating right, because I shouldn't be eating just one thing. I should be eating different types of food – the food that builds the body so that when I get sick the doctor doesn't tell me that there is something lacking in my body' (Area L, participant 5) 'It is eating everything that is available to you, healthy and unhealthy' (Area R, participant 5)
	Defining dietary diversity using pictures*	' … for me it is C as it is a variety of everything. Vegetables and everything else. Milk is there, fruit is there, chicken is there. There is a variety of everything' (Area Q, participant 4) 'D because it's got of everything; sweet and healthy and unhealthy, everything' (Area K, participant 3)
	Defining dietary diversity using plates of food¶	'I will say A, because it has a variety and we have to choose 3 or more groups' (Area Q, participant 1) 'B is not healthy even though we eat it because of circumstances' (Area F, participant 2)
	Possibility of consuming a diverse diet daily	'The plate look like that only on a Sunday' (Area K, participant 1) 'During the month my plate is B, I would have liked it to be A, but I can't afford to eat like that because of the situation at home it is always B, but I wish I was eating A' (Area L, participant 9) 'Maybe at the beginning of the month we can try but by the second week you just cook what is available' (Area P, participant 1)

*C: picture represented diverse healthy foods, D: picture represented a combination of healthy and unhealthy foods.
¶ Plate A: represented a plate of food with variety (more food groups), Plate B: represented a plate of food without variety (two food groups).

Theme 1: Nutrition knowledge (Table 1)

Foods perceived as healthy and unhealthy

When given a pack of food cards and asked to choose two healthy and two unhealthy foods and give reasons why, participants were generally able to distinguish between healthy and unhealthy foods.

Sources of nutrition information

Most participants mentioned receiving nutrition information from nurses or doctors at health facilities, such as clinics or hospitals, though they do not always have the means to follow the nutrition advice given. The media, such as television, radio, and social media, was also mentioned as a significant source of information. Some said that they learned about nutrition from their parents, and one participant reported receiving nutrition information from a dietitian.

Theme 2: Perceptions of dietary diversity (Table 1)

Defining dietary diversity

Although most participants had a good understanding of what it meant to eat a variety of foods, some interpreted variety as consuming healthy and unhealthy foods. When shown a picture with four rows of different food items (Supplementary File 2; row A: only starchy foods, row B: unhealthy foods, row C: variety of healthy foods, row D: combination of healthy and unhealthy foods), most participants recognised that row C represented a variety of foods, while a few thought that row D represented variety. When shown two plates of food (Supplementary File 3), most participants could distinguish between a plate with variety versus one without variety.

Possibility of consuming a diverse diet daily

Most participants stated that they did not consume a variety of foods every day, but mostly did so on Sundays. Across all FGDs, most participants did not think it would be possible to have a variety of foods every day because of financial constraints. Eating a variety daily would be possible only at the beginning of the month after a household member received a salary, wages, or a social grant.

Theme 3: Individual factors influencing food choices (Table 2)

There were several individual factors that influenced food choices among FGD participants: household income, taste preferences, satiety, food availability and shelf life, convenience, season and weather, time, as well as health conditions.

In terms of decision-making, all participants were responsible for decisions on what foods were purchased, cooked, and consumed in their households. Participants also mentioned having enough time to prepare food. Food budgeting and writing shopping lists were mentioned by a majority of participants, and all compared store prices and usually purchase cheaper foods or those at a reduced price.

Financial constraints were the most critical individual barrier to consuming a diverse diet and most participants had a limited budget to spend on food. Lack of nutrition knowledge and taste preferences were also barriers to diverse diets. The individual enabler for consuming a diverse diet was taste preferences for healthy foods such as fruits and vegetables.

Table 2: Participants' perceptions of the barriers and enablers for consuming a diverse diet and healthy food choice

Domain	Themes	Sub-themes	Supporting quotes
Barriers to consuming a diverse diet and food choice	Individual factors	Financial status	'Not everyone is privileged to pick and choose what we want to eat. We must go according to what we earn. When you go into the shop you must see what you can afford. It's difficult to manage a balanced diet especially now because everything is expensive. You can't buy the things that's important for you and your family' (Area G, participant 1)
		Taste preferences	'It's not about the money, it's about the choice. That's a choice that I make. The choice of buying the banana of R2.50 and getting 2 packets of Niknaks, I would rather go with the 2 packets of Niknaks than the banana' (Area D, participant 1) 'I just eat what tastes nice to me' (Area O, participant 1)
		Nutrition knowledge	'We don't have enough information not 100%, I know that starch is not good for your body, but why is it not good for your body?' (Area H, participant 1)
	Social influences	Family structure	'Yes, you can tell the children, but they don't listen. They eat what they want to eat. If you have children, you don't have a choice but with adults in the house you can reason with them and suggest different foods' (Area J, participant 3) 'I live in the high life. Because I'm alone I can make anything I want. What I sometimes make is sweet potato with a bit of custard, that will be my supper. I know it's unhealthy. I will make cooked food 2 times a week' (Area G, participant 1)
		Family taste preferences	'Most days I make veggie food, the children get cross with me, saying to me "this again"' (Area Q, participant 3) 'The husbands will eat anything, but not the children' (Area N, participant 2)
	Physical environment influences	Proximity to food outlets	'But in the community the large supermarkets are further away' (Area G, participant 2) 'I need to take a taxi and go to the supermarket, so it's better to settle for what I get in the neighbourhood because of time and spending less' (Area L, participant 3)
		Perceived consumer food environment	'For me it's like stuff became more expensive especially vegetables. It used to be easy to buy, but now it becomes quite pricy, and the value of the money has become … what you get in … ' (Area D, participant 1) 'We are not always sure of the quality at these "house shops". Not sure if they sell fresh meat or where it came from. You have to watch the date when it's fresh meat. As a parent you will be sceptic to buy there. Tins will be safe but not fresh produce' (Area G, participant 3) 'I leave the township and go to town because the prices are double the prices at the mall. They are there but they are expensive, but I'll take transport and go to Spar because there is a difference' (Area O, participant 3)
		Community food assistance	'If I had a garden, I would plant some veggies because I have a little bit of land to make a little garden but I don't have a fenced yard. Dogs would get inside and mess it all up' (Area O, participant 1) 'Yes, there are projects, but they eat the money' (Area O, participant 3) 'There are no soup kitchens where I live' (Area P, participant 1) 'Even if I could think of growing my own crops – we live in the squatter camp in a very crowded place, it's impossible to make a garden' (Area P, participant 2)
	Societal influences on food choices	COVID-19 lockdowns	'Since the beginning of Corona most people have lost their jobs, so that little cent that you have you go and buy at the Somalian's shop because you cannot afford' (Area L, participant 8) 'Even with those food parcels I had an issue with what was available inside them. That food that was given to people was about to expire and a lot of companies saw it as an opportunity of getting rid of the stock' (Area L, participant 9)
		Media influences	'The only thing that they advertise on the TV is junk food. They don't advertise healthy food. So there's a lack of information. They must advertise more on TV and stop this junk food and then our people won't be obese' (Area N, participant 2) 'Adverts do influence us, they make you not to stick to your budget. You end up buying things that you did not plan to buy' (Area R, participant 2)

(*Continued*)

Table 2: Continued.

Domain	Themes	Sub-themes	Supporting quotes
Enablers for consuming a diverse diet and food choice	Individual factors	Taste preferences	'I love fruit and vegetables a lot, my broccoli, my butternut, my squash and chicken and pork. I eat red meat now and then' (Area G, participant 3) 'I never buy junk food. So, if you like it, but it's not me' (Area K, participant 1) 'I prefer veggie food as I was brought up like that, I love my vegetables' (Area Q, participant 3) 'I don't just eat everything. I like eating nutritious stuff' (Area P, participant 1)
	Social influences	Family structure	'I like to make everyday something different, because the children will say "hey mommy, every time the same food?" It's just to please them' (Area N, participant 3)
		Family taste preferences	'My husband is not a meat person; he loves his vegetables and will leave the meat. They eat everything I make them. I don't have picky children' (Area G, participant 1)
	Physical environment influences	Food outlet location	'The shop is not that far – maybe 10 minutes' (Area F, participant 2) 'Yes, Shoprite is just opposite me and Pick n Pay is just down the road' (Area J, participant 2)
		Retail food environment stalls	'For me to tell the truth, there are someone who are selling fruit and vegetables in our community. I go there to buy stuff till month end' (Area D, participant 1) 'Yes, with the fruit and with the veg. They are cheaper than Shoprite. Shoprite is a bit pricy on that' (Area D, participant 2) 'Yes, our communities have an influence because there are vegetables at the stands and at the Somalian shops you can get fresh vegetables – like you can mix your veggies – they are helpful but not so much' (Area F, participant 1) 'Yes, much cheaper' (Area K, participant 3)
		Food store specials	'Fruit you can't always buy but if they have a sale like 2 packets for R50, then I buy it' (Area G, participant 2)
		Community food aid	'Yes, there is community kitchens not all the schools have vegetable gardens. In the community we started a small one now, it's only at its beginning. We asked for donations for seed' (Area G, participant 1)
	Societal influences on food choices	COVID-19 food aid	'So, on a Sunday before lunch there will be 4–5 vans driving. The one van will just have greens, the other one will have chicken akni or meat and they will come to your door and they will hand out according to the number of people … last year there was people coming around with hampers and it contained basically what you would buy from the shops like tastic rice, baked beans, fish, jungle oats, powdered milk, tea bags and coffee. It was 2 carrier bags' (Area J, participant 2)
		Media – food store specials	'They make us eat correctly because we are able to go for specials' (Area R, participant 4)

Individual facilitators (Table 3) identified in the FGDs include drawing up a grocery budget, finding employment, or starting a business to generate income.

Theme 4: Social factors influencing food choices (Table 2)

Family taste preferences were the main social barrier to consuming a diverse diet. Having children or grandchildren was perceived as a negative influence on food choices and food purchases. According to participants, children dislike healthy foods such as vegetables; therefore, parents cook food that children will consume. Husbands generally consumed whatever foods their wives prepared. Only two participants, who lived alone, stated that living alone made them have unhealthy food choices. Social factors that enabled healthier food choices were family taste preferences for healthy foods or not having picky eating by children. Having a family with children and a husband encouraged participants to cook a variety of foods for their families. No social facilitators for consuming a diverse diet were identified in the FGDs.

Theme 5: Physical environment factors influencing food choices (Table 2)

High food prices were the main physical environment barrier to consuming a diverse diet. Some participants mentioned a lack of community food aid facilities, such as soup kitchens and community gardens, as a barrier. Some participants mentioned having a home garden in the past or wanting to have one; however, lack of space, the presence of dogs, and people destroying gardens in the community were barriers to starting and maintaining home gardens. Regarding enablers, participants mostly had a positive perception of their neighbourhood food environment, which includes food stores such as supermarkets, convenience stores, and vendors near their homes. Neighbourhood presence of fruit and vegetable stalls (perceived to have lower prices than supermarkets), access to community soup kitchens and gardens, and in-store food product sales were, respectively, perceived as enablers for diverse diets within the food environment. Starting home gardens and community gardens/projects or supporting existing community kitchens/gardens were identified as potential facilitators (Table 3) for consuming diverse diets and improving access to

Table 3: Participants' perceptions of the possible facilitators for consuming a diverse diet and healthy food choice

Theme	Facilitator	Supporting quotations
Individual factors	Budgeting for groceries	'What I can suggest is to work out a budget before going to the shop. That the most important thing because people tend to not stick to their shopping list and the one thing I have noticed with myself now is that I don't put extra money in my bag. I put in what I need' (Area D, participant 1) 'Everything is so expensive, one need to budget and do your homework before going to the shops' (Area G, participant 3).
	Income generation	'If there is better income it will be possible to eat a greater variety and be more healthy. Everything cost money and there is a lot of expenses like rates, water, policies' (Area G, participant 1) 'We need to start our own businesses. Renting flats is also a business. Another business is to sell chicken feet and paraffin' (Area H, participant 1)
Physical environment influences	Community projects & home gardens	'If our communities could have places where we could grow crops, where people could have chickens and eggs – we could get some nutrients.' (Area P, participant 2) 'We don't have space to grow crops, but people have ideas like they use crates or old bath containers then they put fertilizer but I'm not that creative.' (Area R, participant 3)
	Lower food prices	'If the stuff could be cheaper. If the vegetables was less pricy, because everybody can't afford to pay R10 for 5 or 6 carrots. So, when stuff is in full season, like now you would get watermelon, mangoes, litchi's. It's that season. Now you get it cheaper at the fruit stall. So that goes for the veggies also' (Area D, participant 1) 'If the prices are lower. Perhaps we need to change what we buy to be buying more healthily' (Area G, participant 2) 'The shops need to make food affordable (food must be on sale) and the stock must be available' (Area H, participant 2)
Societal influences on food choices	Government support	'Grant must be increased, R400 is nothing if you buy milk and then there is no money for nappies. In this R450 you can only buy milk. And the old people's pension grant must increase because the kids are dumped with them' (Area O, participant 2)

food. Lowering the price of healthy foods was another possible facilitator within the physical environment.

Theme 6: Societal factors influencing food choices (Table 2)

The FGDs were conducted during the COVID-19 pandemic second wave. High and rising food prices during the COVID-19 pandemic were barriers to consuming a diverse diet and meant that participants could not purchase the food they usually consumed. Some participants said that the food aid during the pandemic was not distributed properly, the parcels did not reach those who needed them most, and some food in the parcels was close to expiry date. However, food aid supplied by non-governmental organisations (NGOs), religious organisations, and the government enabled participants to have access to healthy food during the COVID-19 pandemic. While television advertisements influenced participants to purchase unhealthy fast foods instead of using money to buy healthy foods, supermarket television advertisements and catalogues enabled participants to buy food at lower prices. Governmental support in the form of job opportunities and increasing money for social grants were identified as possible facilitators (Table 3) for consuming a diverse diet.

Discussion

This qualitative study identified socioecological barriers and enablers for consuming a diverse diet among low SES women. Overall, participants could differentiate between healthy and unhealthy foods and had a good understanding of eating a variety of food. Perceived barriers to consuming a diverse diet were financial constraints, food prices, and family taste preferences. Individual taste preferences, accessibility to and availability of food stores and vendors, community soup kitchens/gardens, and food store specials were identified as the main enablers for consuming a diverse diet and making healthy food choices.

The SA-DPP baseline study, from which the FGD participants were recruited, reported a low DD, high unemployment rate, low household income, and cost/money being the main reason for not eating fruits and vegetables daily.[20] It is therefore not surprising that financial constraints were identified as a critical barrier to consuming a diverse diet. The study was conducted during the COVID-19 pandemic, which resulted in critical job losses, drastically reduced household incomes, and a sharp increase in food prices,[24] which limited households' purchasing power. Low income was also reported to be a critical barrier to purchasing and consuming a healthy diet in a qualitative study in Soweto, South Africa that was done before the pandemic.[25] Price has been identified as the main driver behind food choices not only in South Africa,[11] but also in low-income countries and poorer households globally.[26] From the FGD it was clear that cost of food, rather than access to supermarkets, corner stores, and food stalls, was the barrier. Budgeting and buying cheaper brands or foods at sale prices/on promotion were among the strategies FGD participants used to cope with a limited budget. Similarly, a study conducted in Limpopo, South Africa, reported that to cope with rising food prices, women budget and write shopping lists with the necessities, buy in bulk, or buy cheaper brands, such as generic store brands.[27]

All FGD participants were responsible for cooking food within the household and made the decisions on what foods to purchase. Participants mentioned having plenty of time to cook for their families. However, a systematic review indicated that lack of time is a barrier to healthy eating.[28] One study supporting our findings stated that older women are less likely to perceive time as a barrier to healthy eating.[29] Family taste preferences were identified as a critical social barrier to consuming a diverse diet. While most participants prepared meals based on family preferences, they also recognised that these preferences were unhealthy.

Most FGD participants who lived with children or grandchildren cited difficulties with getting them to consume healthy foods such as vegetables. Studies with low-income women have reported that mothers often have knowledge of healthy diets

but are challenged to implement those behaviours among their children.[30,31] Some participants stated they cooked vegetables separately because they liked them but did not serve them to their children.

Although children play some role in the foods consumed in the household, most participants had a taste preference for healthy foods such as fruits and vegetables, but some mentioned that they could not afford to purchase healthy foods. A recent systematic review of qualitative studies reported that taste, price, and convenience were key factors considered when making food choices rather than health.[32] Notably, only a few participants mentioned eating healthy foods or avoiding specific unhealthy foods because of health conditions.

Access to various types of food stores and vendors was identified as an enabler within the physical environment for consuming a diverse diet. Access to food outlets within walking distance has been reported as a facilitator for healthy eating.[31,33] It has been estimated that more than 90% of the population in Cape Town purchases food from supermarkets.[34] A study in the UK found that factors such as health, convenience, and SES influence store and product choice.[35]

Access to food aid such as community soup kitchens and community and home gardens was identified as an enabler and possible facilitator within the physical environment for consuming a diverse diet. Between September and December 2020, 9.34 million people (16%) in South Africa experienced acute food insecurity.[24] Community facilities such as soup kitchens and food parcels from NGOs and the government enabled FGD participants to access food during the COVID-19 lockdown. A study conducted in the USA found that using soup kitchens, food pantries, and receiving food donations were associated with improved diet quality among people with food insecurity.[36]

Steyn and Ochse (2013) suggested that food policies and food aid may help reduce barriers to consuming diverse diets in the South African population.[9] Despite the lack of space and presence of dogs being mentioned as barriers to creating home gardens, participants perceived community and home gardens as facilitators for diverse diets. According to a recent systematic review, community gardening was associated with high fruit and vegetable intake.[37]

Most participants stated that healthier foods were expensive, and compared food prices between different stores using advertisements to select stores offering lower prices. Therefore, lower food prices and food store specials were identified as enablers and facilitators within the physical environment for consuming a diverse diet. Lowering food prices was reported to be associated with increased fruit and vegetable consumption[38] and may support healthy eating behaviours.[31] Subsidies on healthy foods and taxation of unhealthy foods have been reported to be an effective strategy to improve dietary behaviour.[39]

This study provides insight into the barriers and enablers to consuming a diverse diet in women residing in resource-poor communities. However, there are limitations. First, data collected were self-reported and therefore susceptible to social desirability bias, particularly regarding consuming a diverse diet and factors affecting food choices. Second, as qualitative content analysis relies on the researcher reading and interpreting texts, the study may be subjected to researcher bias. Third, the researchers did not use member checking, which involves allowing participants to review and provide feedback on the findings to enhance credibility. However, notes taken by a note taker during the FGDs were examined during the analysis to improve credibility. Fourth, the average FGD had only three participants because data were collected during the second wave of COVID-19 in South Africa, leading to a low response rate, although data saturation was still reached.

Conclusion

Our study findings suggest that women from resource-poor communities face many challenges, including financial constraints, high food costs, and social factors, such as family members, especially children, who inhibit their ability to consume a diverse diet and make healthy food choices. Public health interventions should not only focus on nutrition education but also address financial barriers and the cost of food so that they can support the consumption of diverse diets, healthy food choices, and adherence to FBDGs among people in resource-poor settings.

Acknowledgements – The authors thank the SA-DPP investigators, staff, and trial participants. The authors would like to thank Dr Anniza de Villiers for assisting with the development of the focus-group discussion guide, Erica April for assisting with research administration, Samuel Sipango for transporting participants and translating the information sheet, consent form, questionnaire, and guide into IsiXhosa, Tatum Lopes for note-taking, Zintle Nelani for facilitating the IsiXhosa focus groups, Sonja Mostert for facilitating Afrikaans focus groups, transcribing, and translating, Phumeza Soci for transcribing and translating IsiXhosa focus-group discussion recordings, and Ms Jean Fourie for language editing.

Disclosure statement – No potential conflict of interest was reported by the authors.

Funding – The work reported herein was made possible through funding by the South African Medical Research Council (SAMRC) through its Division of Research Capacity Development under the Internship Scholarship Programme from funding received from the South African National Treasury. The content hereof is the sole responsibility of the authors and does not necessarily represent the official views of the SAMRC or the funders. This research was carried out with the financial support of the SAMRC through the South African Diabetes Prevention Programme study's baseline allocation to the Non-Communicable Diseases Research Unit. The APC was funded by the SAMRC through baseline allocation to the Non-Communicable Diseases Research Unit.

Ethical statement – This study forms part of a PhD thesis by publication that SSM submitted at the University of the Western Cape for degree purposes. This study was conducted according to the guidelines laid down in the Declaration of Helsinki 2013, and all procedures involving research study participants were approved by the University of the Western Cape Biomedical Research Ethics Committee (approval no. BM20/1/1). Written informed consent was obtained from all participants. The baseline survey of the SA-DPP was approved by the ethics committee of the South African Medical Research Council (approval no. EC018-7/2015).

Author contributions – Conceptualisation: SSM, JH, EK, and MF; methodology: SSM, and JH; formal analysis: SSM and JH; investigation: SSM and JH; writing original draft preparation: SSM; writing review and editing: JH, EK, and MF; project administration: SSM and JH. All authors have read and agreed to the published version of the manuscript.

Supplementary data – Supplementary data for this article can be accessed online at https://doi.org/10.1080/16070658.2024.2427979.

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Received: 11-06-2024 Accepted: 04-11-2024