

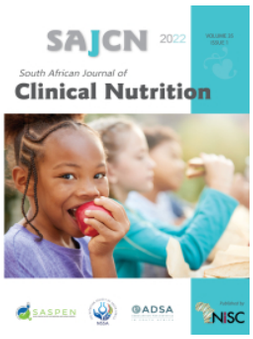
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South African Journal of Clinical Nutrition

ISSN: (Print) (Online) Journal homepage: www.tandfonline.com/journals/ojcn20

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To cite this article: Lethabo Mogashoa, Shane A Norris, Khuthala Mabetha, Larske Soepnel & Catherine E Draper (2024) Integration of nutrition support using the FIGO nutrition checklist in the *Bukhali* trial: a dietitian's perspective, South African Journal of Clinical Nutrition, 37:1, 49-52, DOI: 10.1080/16070658.2023.2202507

To link to this article: https://doi.org/10.1080/16070658.2023.2202507

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Published online: 19 May 2023.

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South African Journal of Clinical Nutrition 2024; 37(1):49–52
https://doi.org/10.1080/16070658.2023.2202507

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SAJCN
ISSN 1607-0658 EISSN 2221-1268
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Integration of nutrition support using the FIGO nutrition checklist in the *Bukhali* trial: a dietitian's perspective

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The burden of malnutrition experienced globally, coupled with the increasing rate of micronutrient deficiencies, compromises the health and well-being of women during their reproductive years. Obesity places young South African women at particular risk during pregnancy, and increases obesity risk for their offspring. To address these risks, the *Bukhali* trial is being implemented in Soweto, South Africa with 18–28-year-old women, as part of the Healthy Lifestyle Trajectory Initiative. A dietitian is part of the *Bukhali* intervention team (community health workers) to provide nutritional support for overweight/obese trial participants, making use of the International Federation of Gynaecology and Obstetrics (FIGO) Nutrition Checklist. This paper reflects on the experiences and lessons learned by the *Bukhali* dietitian, including the use of the FIGO Nutrition Checklist and Healthy Conversation Skills to facilitate conversations about making healthy dietary behaviour changes. Identified challenges that influence nutrition and behaviour are discussed, including lack of food affordability, cultural and social influences on healthy food choices, unsupportive environments and food insecurity. Strategies to optimise this nutritional support are also mentioned. The *Bukhali* trial is showing that introducing additional nutrition support by a dietitian for at-risk participants has the potential to encourage young women to prioritise nutrition and health, even in the midst of contextual challenges to both nutrition and health.

Keywords behaviour change, FIGO, Nutritional support, preconception, pregnancy, women of reproductive age

Introduction

The double burden, now the triple burden (undernutrition, hidden hunger, overweight), of malnutrition experienced globally compromises the health and well-being of women during their reproductive years.[1] The most recent data indicate that over two-thirds (68%) of South African women were classified as either overweight or obese in 2016.[2] In Soweto, there is an increased rate of obesity coupled with nutrition deficits driven by a lack of dietary diversity and pervasive food insecurity.[3] To address these risks, the *Bukhali* (meaning smart/powerful in isiZulu) trial is being implemented in Soweto (South Africa) with 18–28-year-old women, and is the first individually randomised controlled trial in Africa that aims to test the efficacy of a preconception intervention to improve nutrition and the physical and mental health of women and that of their offspring for those who become pregnant.[4] The trial comprises an 18-month preconception phase, and, if a participant becomes pregnant, follows through pregnancy until the offspring is 5 years old. *Bukhali* forms part of the Healthy Life Trajectories Initiative (HeLTI) and is aimed at improving the health outcomes of women and offsetting obesity risk in their children. HeLTI is an international consortium developed in partnership with the World Health Organization, and is being implemented in South Africa, Canada, India and China. Ethical approval for the *Bukhali* trial has been obtained from the Human Research Ethics Committee (Medical) at the University of the Witwatersrand (M1811111 and M190449). The trial is registered with the Pan African Clinical Trials Registry (PACTR201903750173871).

Baseline (cross-sectional) data from the *Bukhali* pilot trial (Table 1) highlighted this double burden of malnutrition coupled with hidden hunger amongst participants at the start of the trial, with 30.3% of participants experiencing anaemia, 24% with high blood pressure risk, and 4.2% with HbA1c > 6.5%, indicative of diabetes (SEMDSA 2017).

Implications

Non-communicable disease (NCD) risk not only has implications for young women's health, but also for their pregnancy and offspring. Obesity has been found to have a negative impact on women's health during pregnancy, is associated with obstetric complications (e.g. gestational diabetes, pre-eclampsia, preterm birth),[5] and results in children of these women having a 264% increased odds of being obese.[6] Within the context of the recent COVID-19 pandemic, risk factors for overnutrition and the food insecurity have increased.[7,8] Therefore, improving the health and nutrition of South African women is imperative to improve healthy trajectories throughout the life-course, from preconception through to pregnancy and postpartum.

In South Africa, within the public sector, preconception health is not specifically targeted. During pregnancy and the postpartum period, nutrition is addressed during contacts with health services, e.g. the emphasis on breastfeeding, although these contacts are not fully optimised from a nutrition point of view, especially in terms of reducing NCD and obesity risk. This is partly due to the shortage of dietitians at primary care level; patients are primarily referred for dietetic services after diagnosis with any condition requiring nutrition intervention such as diabetes, and rarely will patients be referred to the dietitian solely for weight management.[9]

Table 1: Characteristics of non-pregnant participants of the HeLTI pilot trial with available data on age and BMI, collected between June 2018 and July 2019

Pre-conception participants at baseline, *N* = 1 647	% (*n*)	*N*
Current age:		1 647
18–19 years	27.7 (456)	
20–22 years	42.9 (707)	
23–25 years	29.4 (484)	
BMI categories:		1 647
Underweight (BMI < 18.5 kg/m^2)	8.3 (136)	
Normal weight (BMI 18.5–24.9 kg/m^2)	47.4 (781)	
Overweight (BMI 25.0–29.9 kg/m^2)	23.3 (384)	
Obese (BMI ≥ 30.0 kg/m^2)	21.0 (346)	
Waist circumference risk:		1 645
Waist to height ratio ≥ 0.5	39.9 (656)	
Blood pressure:[1]		1 645
High blood pressure risk (≥ 130/80 mmHg)	24.0 (394)	
Diabetes risk by HbA1C:		
Normal (HbA1c < 6) Diabetes (HbA1c ≥ 6.5)	95.8 (1208) 4.2 (53)	1 261
Anaemia categories:[2]		
Anaemia (any severity) (Hb < 12.5)	30.3 (493)	1 626
Severe anaemia (Hb < 8.5)	2.3 (38)	
Education:		
Completed high school	59.1 (964)	1 632
Total years of education (median, IQR)	12.0 (12, 13)	1 635
Employment status		
Ever been employed	37.2 (608)	1 636
If yes, currently employed	23.8 (144)	608
Food security		
Household runs out of money to buy food	45.4 (742)	1 634
Has cut size of meals/skipped meals because there is not enough money for food	36.5 (596)	
Has gone to bed hungry because there is not enough money to buy food	20.1 (329)	
No food insecurity (no to all 3 above questions)	46.2 (755)	

[1]Using left arm, resting blood pressure measurements in triplicate, and the 2017 American Heart Association/American College of Cardiology Guideline for the prevention, detection, evaluation and management of high blood pressure in adults.
[2]Using WHO altitude-adjusted cut-offs for non-pregnant women: WHO. Haemoglobin concentrations for the diagnosis of anaemia and assessment of severity. Geneva: World Health Organization; 2011.

Potential solution

The International Federation of Gynaecology and Obstetrics (FIGO) Nutrition Checklist was designed in 2015 to be an easy to use, quick, and cross-culturally applicable tool, which aims to identify nutritional issues that may require further intervention (https://www.figo.org/news/figo-nutrition-checklist).[10] This facilitates the provision of appropriate recommendations around nutrition within a healthcare setting. The use of the FIGO Nutrition Checklist has been found to be acceptable, feasible and valid in a clinical setting for pregnant women in Ireland.[10,11] Studies evaluating the tool have found high rates of pregnant women reporting suboptimal dietary practices (80–95%).[10,12] This emphasises the need for a simple nutrition tool that can be used as an educational guide in community-based settings to counsel young women regarding the various nutrition groups and their role in providing optimal nutrition.[13]

Reflection as a dietitian

The FIGO tool is being used in the *Bukhali* trial to assist with providing additional nutritional support for intervention participants who are overweight/obese.[14] This tool is administered by an onsite trial dietitian (LM), who works with the community health workers delivering the intervention. In the *Bukhali* trial, these community health workers are referred to as 'Health Helpers'. The dietitian provides participants with evidence-based information and individual approaches to address and manage their weight and improve their nutrition habits. There is regular follow-up and support (from Health Helper and dietitian) provided to participants to help improve their nutrition and implement healthy behaviour changes. Being a dietitian in the trial setting allowed the provision of nutritional support for participants at community level, instead of purely managing nutrition-related conditions. This role has provided the opportunity to understand various individual needs and improve skills in addressing these, understanding that the needs impact not only the participants but their families and surrounding communities as well.

The FIGO checklist aids as a nutrition counselling tool and screening tool simultaneously. It is a useful tool to understand the eating habits of participants and provides an opportunity to identify areas where knowledge gaps may be present and need to be addressed. The use of Healthy Conversation Skills[15] (part of the intervention approach) helped to foster an approach to nutrition counselling that facilitated conversations with the participants, allowing them to be open and willing to consider and make healthy behaviour changes. The use of Healthy Conversation Skills as part of the trial[16] has also aided

with supporting health and nutrition goal setting and participant-centred behaviour change. However, some of the requests from participants for a more directive and didactic approach did not fully align with the Healthy Conversations Skills approach.[15]

Through the provision of this additional nutrition support for *Bukhali* participants, a number of challenges have emerged that influence nutrition status and behaviour. These include a lack of food affordability, cultural and social influences on healthy food choices, and unsupportive environments. Some participants were reluctant to speak to a dietitian due to fear of judgement, several failed attempts at losing weight and after following 'fad' diets, and some perceive healthy food to be expensive, resulting in them being discouraged and unmotivated to engage with the dietitian. Participants also spoke about their fear of being alienated or judged by their friends and family for not eating unhealthier food and going against social norms. Various social pressures and socioeconomic circumstances were found to be common factors that influenced the participant's ability to make healthy lifestyle choices and remain motivated. These have been previously identified as part of HeLTI.[16–21] Another common challenge encountered was food insecurity reported by overweight or obese participants (referred to the dietitian), which needed a different nutritional support approach. When encouraged to start vegetable gardens in order to increase food security and dietary diversity, participants tended to mention barriers such as not having enough resources or land available, making them unwilling to partake in such activities.

Regarding strategies that helped to optimise these interactions, trusted relationships between the participants and their Health Helper formed a helpful foundation. Furthermore, the dietitian being relatable to participants helped them to open up to new learning experiences and remain consistent in their behaviour change. A focus on health rather than weight made it easier to facilitate discussions regarding nutrition, and tended to reduce the incidence of participants concealing their true eating habits from the dietitian. Other strategies included the provision of simple healthy meal ideas, onsite exercises done with the Health Helpers, and getting an accountability 'buddy' encouraged participants to feel motivated and supported in making healthy behaviour changes. In addition, reinforcing basic information, such as food groups and portion sizes, was helpful for participants to understand concepts and how food contributes not only to weight management but also to improving their health and well-being. Small behavioural changes, such as eating less fatty food and more fruits and vegetables, were observed and were encouraging.

Conclusion

The *Bukhali* trial is showing that introducing additional nutrition support for at-risk participants has the potential to encourage young women to prioritise nutrition and health, even in the midst of contextual challenges to both nutrition and health. Specifically, the integration of dietary support by a dietitian in the *Bukhali* intervention, delivered by community health workers, is a valuable learning experience for implementing nutrition support at a community level. This community health worker approach, with additional nutritional support provided by a community dietitian, can complement primary health care services. Further research needs to be done assessing the use and efficacy of the FIGO checklist in community and primary care settings. The use of Healthy Conversation Skills for providing community-based nutritional support, together with the FIGO checklist, is also an area for further research.

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

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Received: 15-09-2022 Accepted: 10-04-2023