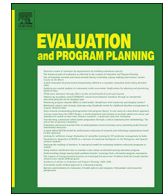




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Comparative analysis of the factors contributing to sustainability of a food and nutrition intervention programme: Two case studies from South Africa

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ABSTRACT

Sustainability of health interventions is a consistent and ongoing issue in Africa. Understanding key aspects of sustainable interventions provides the necessary methods for success. This research evaluates a nutrition intervention implemented in two peri-urban communities in the Free State and Gauteng province in South Africa (SA) respectively. A case study approach was employed using cross-case study analyses, including triangular data collection (empirical research through surveys of respondents; qualitative data collection through researcher journals, diaries, communications and photographs; and research team reflections). The information from these case studies is organized according to a framework from the United States (US) Office of Organizational Health (OAH) to evaluate the sustainability of intervention programmes. All eight of the OAH criteria were met in the Free State community and supported the importance of these key factors for sustainability compared to only three in the Gauteng community. The OAH framework provided a compelling rationale for the relative success of the intervention and clearly showed the Free State project was sustainable. The Gauteng project was not sustainable. Planned interventions should devote significant effort and time towards ensuring sustainability. The OAH guidelines provide key steps that the research shows is relevant to the South African context.

1. Background

A major ongoing challenge is that many interventions in developing countries end after the funding of the project ends and are quickly forgotten. Strategies to improve nutrition and health of populations in developing countries have evolved throughout the last decades to broader approaches integrating nutritional interventions in the context of sustainable community development. Most of these programmes involve multisectoral interventions (Suárez-Herrera, 2006) with large amounts of money being spent for the prevention of malnutrition (Kim, 2012). Despite the evidence of the potential impact of community nutrition programmes on improved nutritional status and the development of self-sufficiency of communities, their success and sustainability is lacking, mainly as a result of poor planning, implementation, monitoring and evaluation as well as a lack of resources and political will (Cardona-Morrell, Rychetnik, Morrell, Espinel, & Bauman, 2010; Prüss-Üstün, Bos, Gore, & Bartram, 2008; Suárez-Herrera, 2006). It is

nonetheless important that food and nutrition intervention programmes succeed by achieving their objectives including sustainability (United States Department of Health and Human Services (HHS) (2014); Ismail, Immink, Mazar, & Nantel, 2003). Assessments of intervention programmes should thus be undertaken to improve their outcomes, cost effectiveness, efficiency and sustainability (Ismail et al., 2003).

Sustainability is a complex issue (Eder, Khatiwada, & Schooley, 2018; Ismail et al., 2003; Meppem & Gill, 1998) and nutritional health is a key element of sustainable development as it is important for individuals, families and communities as well as for social and economic development (Gruen et al., 2008; Lang & Heasman, 2015; Suárez-Herrera, 2006). It was found that forty percent of development projects are not sustained after their closure (Eder et al., 2018). Furthermore, numerous organisations, including governmental, non-governmental, research and multilateral organizations, have acknowledged the importance of sustainability, specifically for informing food and nutrition policy (Jones et al., 2016). Continuous planning for sustainability is

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thus essential to ensure the success of nutrition intervention programmes and sustainability over time and also of strategic importance and practical application for not only program implementers and beneficiaries, but also for funding agencies (Eder et al., 2018). A framework for building sustainable programmes was developed by the United States Department of Health and Human Services Office of Adolescent Health (United States Department of Health and Human Services (HHS) (2014)) and include eight factors to evaluate the sustainability of intervention programmes. These include: creating an action strategy, assessing the environment, being adaptable, securing community support, integrating programme services into community infrastructures, building leadership team in the community, creating strategic partnerships and securing diverse financial opportunities.

2. Methods

2.1. Aim, design and setting of the study

This research was undertaken in two communities of South Africa, namely a community in a peri-urban area of the Eastern Free State and Vaal Region of Gauteng. Both these communities were selected as they were homogeneous in nature, namely food insecure low-income black, majority Sotho-speaking communities with an established prevalence of both over- (obesity and overweight) and under- (micronutrient deficiencies) nutrition. The respondents from both the Eastern Free State and Vaal Region communities were mainly unemployed and/or retired (Oldewage-Theron, Salami, Zotor, & Venter, 2008; Oldewage-Theron, Duvenage, & Egal, 2012; Oldewage-Theron, Egal, & Grobler, 2014; Oldewage-Theron, Kruger, & Egal, 2014). The people in these communities had not previously been involved in any form of horticultural or agricultural activities beside household chicken production. Previous research had been undertaken in both these communities by the researchers and because of the food and nutrition insecurity and malnutrition observed, as well as the fact that the researchers were familiar with both communities, both were included in the study. The initiated 'Improving household food security in Free State and Gauteng' projects constituted a community-centred integrated food and nutrition approach to support the alleviation of malnutrition through improved household food security in these communities.

The sampling frame for the Eastern Free State community included a power calculation (Gibson, 2006) based on 80% power, 95% significance and an estimated change of 15% in food frequency score with standard deviation (SD) (2.38) (Jones, Shrinivas, & Bezner-Kerr, 2014). The local community leader purposively chose three tribes, meeting the inclusion criteria (peri-urban areas, monthly household income < ZAR2000, Sotho-speaking women, aged 19–75 years) from which a random sample was selected, using a location map for each of the tribal areas. Every fourth household was selected until the sample size was obtained. Ten extra respondents were recruited to make provision for possible drop-out during the intervention. All the women signed informed consent forms for voluntarily participation after the project objectives and procedures had been explained to them.

The sampling frame for the Vaal Region community included the same power calculation for the sample size and inclusion criteria. A convenience sample was drawn from the respondents who voluntarily and regularly attended a day care centre and gave consent to participate in the study. In both study communities, data were collected from all the respondents participating in the study.

The goal of this paper is to describe the processes followed in the soy gardening programmes of the two study areas from a sustainability viewpoint using the key factors identified by the OAH sustainability framework (United States Department of Health and Human Services (HHS) (2014)). This is one of the first studies evaluating the sustainability of community-based food and nutrition programmes. The definition of sustainability used for this paper include best practices to improve health and wellbeing (United States Department of Health and

Human Services (HHS) (2014)), thus looking at a soy and vegetable gardening as an intervention to improve household food insecurity and how the community took ownership to continue with the project activities once the formal intervention was terminated and no more funding was provided by the researchers.

A cross-case analysis design was used where the authors compared commonalities and differences in the project activities and processes that were used as the units of analyses. This research design is used as a mechanism for examining existing case studies, particularly a case study from the Free State and another from Gauteng, so that the knowledge generated from this process, sustainability in this study, can be applied in broader contexts such as planning of future food and nutrition interventions to support sustainability. Cross-case analysis provokes the researchers' imagination to seek an explanation as to why there are differences between case studies by prompting new questions towards producing alternative methods, measuring tools or outcomes, as well as construct ideals and generate models for future research (Bennett & Elman, 2006; Khan & VanWynsberghe, 2008). In this study, this design allowed the researchers to compare similar cases from two communities in order to learn from the different cases and gather critical evidence to identify sustainability best practices.

Ethics approval for both the Qwa-Qwa (M080931) and Sharpeville (M070126) studies was obtained from the University of the Witwatersrand's Medical Ethics Committee for Research on Human Beings. The study protocol followed the guidelines laid down by the South African Medical Research Council. Informed written consent from all respondents had been obtained before implementation of the projects. Participation in the projects was voluntary and respondents could withdraw at any time during the project without being penalised. For this part of the project (this manuscript) no respondents were used as this was a reflection of the implementation of the previous projects.

2.2. Processes, intervention and analyses

Two case studies are compared in order to generate conclusions and to improve the validity of the findings, various data collection sources were used (Yin, 2008) as indicated in Fig. 1. A cross-sectional descriptive survey approach was applied over time to measure the following by means of a questionnaire completed by respondents who had participated in the implemented interventions in the selected communities:

- Home gardening: size of harvest yield, purpose for which harvested seed were used, willingness to plant soy again
- Respective soy-containing dishes prepared by participating households, frequency of preparation.

Due to the lay-out of questions, data were mainly captured in

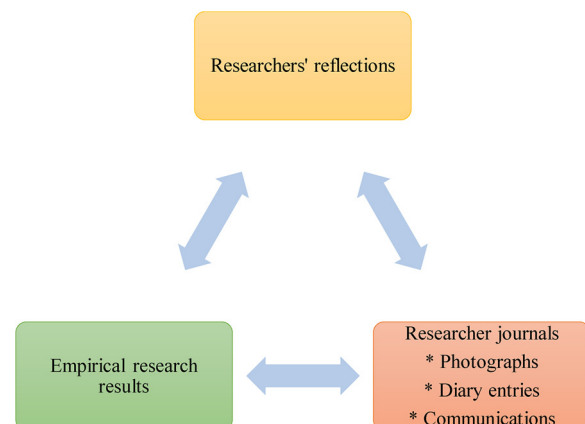


Fig. 1. Integrated process used to collect data in both locations.

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