

Reflection on the Implementation Hurdles of Local School Feeding Programmes in Tanzanian Public Primary Schools: A Phenomenological Inquiry

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Abstract

This study explored the implementation hurdles of locally initiated School Feeding Programs (LSFPs) in public primary schools in Tanzania, with a particular focus on the Karatu District. The study employed a qualitative phenomenological approach to gain an in-depth understanding of the challenges faced in implementing LSFPs. The study's population comprised key stakeholders involved in LSFPs, including head teachers, local government officials, chairpersons of the school's meal committee, chairpersons of the school's committee, and parents. Purposive and convenient sampling techniques were utilised to select participants based on their roles and involvement in LSFPs. Data was collected through semi-structured interviews and focus group discussions, allowing for a comprehensive exploration of the participants' perspectives, experiences and perceptions. The selected schools that provide LSFPs were identified through a snowball sampling technique with assistance from local authority officials. Additionally, the document review method was employed to gather supplementary information by examining guidelines for food provision, minutes of parent meetings, records of meal rates received from parents and minutes of the school committee and school meals committee. Collected data were analysed inductively to generate themes. The findings indicate that there are variety of challenges threatening the sustainability of the school feeding programme. The challenges are grouped into three categories, which are climatic conditions such as shortage of rainfall, problems of governance like poor involvement of the communities, and integrity issues like mismanagement of LSFP by unethical individuals. The study recommends that increased funding, streamlined logistical assistance, increased actors' involvement and strong monitoring and evaluation systems are pivotal.

Keywords: *School feeding programmes, implementation hurdles, qualitative research, phenomenological study.*

Introduction

School feeding programs have gained recognition as effective interventions to address child malnutrition and enhance educational outcomes worldwide (World Bank, 2020; UNICEF, 2020). In Tanzania, local school feeding programs have been implemented to provide nutritious meals to students in public primary schools, aiming to improve their well-being and academic performance (Roothaert et al., 2021). However, various constraints often hinder the successful implementation of these programs (Shafii, 2021). Food represents a fundamental necessity for every human being, crucial for sustaining the proper functioning of the human body (Nemes, 2018). Ensuring access to food is of utmost importance due to its vital role in supporting human well-being. According to the World Food Programme reports published in 2017 and 2020, numerous countries worldwide have recognized the significance of providing school meals to students across different educational levels, including preschool, primary and secondary education.

School Feeding Programmes (SFPs) exhibit considerable variations in terms of their origins, institutional procedures, distribution methods, costs and management structures (World Food Programme, 2017). Furthermore, the goals of these Programmes differ depending on the country and region in which they are implemented. While some programs aim to address social needs and serve as a safety net for students, others strive to enhance child development by improving their education, health and nutrition (World Food Programme, 2020a). Research findings indicate that the provision of food and nutritional services to students within the school setting can yield a range of positive outcomes. These include improved academic engagement, reduced absenteeism, enhanced access to quality education for all, increased learning capacity, the mitigation of hunger-related challenges and a decline in child mortality rates (Santos et al., 2022). Typically, students spend a considerable portion of their day, approximately nine hours, at school, making it essential to provide food during break times to alleviate hunger. Adequate nutrition plays a crucial role in promoting good health and preventing malnutrition-related issues, particularly those resulting from poor dietary habits. Thus, providing food within schools becomes pivotal in addressing the nutritional needs of these students (Santos et al., 2022).

Nevertheless, it is important to note that School Feeding Programs (SFPs) cannot single-handedly generate all of these desired effects. As stated by the World Food Programme (WFP, 2020b), the impact of SFPs on the health and overall development of children and young individuals is significantly influenced by a multitude of factors. These factors include the quality of teaching, the learning environment, as well as other nutrition and social strategies implemented for both the mother and child. The effectiveness of SFPs in achieving positive outcomes relies heavily on the chosen philosophy and strategy for school feeding, the nutritional quality of the provided meals and the implementation of complementary measures within the broader context of school feeding initiatives (Shrestha et al., 2020). According to Bundy (2017), the purpose of school feeding programs in any given country is influenced by its specific requirements, available resources and policies. The primary objective is to address and alleviate hunger among school children aged six to seventeen years, ensuring that it does not hinder their overall development (Iro, 2020). Consequently, further research has been conducted to explore sustainable approaches for implementing school feeding programs in developing countries to reach all hungry school children in need (Mwendwa & Gori, 2019; Sitali, 2021).

The World Bank and World Food Programme have recently shifted their focus towards long-term and sustainable solutions, emphasising local resources, capacity building and community participation (WFP, 2020c). The concept of Home-grown school feeding, which links school feeding programs to local agricultural production as a means of promoting sustainability, has emerged as a strategy to transfer ownership of the programs to the national level (Bundy, 2017; Iro, 2020; Karisa & Orodho, 2014; Sitali, 2021). In Tanzania, localised and effective home-feeding programs have been successfully implemented in various regions of Tanzania since 2003 (Roothaert et al., 2021). This was made possible through the introduction of the Home-Grown School Feeding Program (HGSFP) by the New Partnership for African Development (NEPAD) in collaboration with the World Food Program and other international organisations (WFP, 2017). The primary objective of the HGSFP is to establish a cost-effective school feeding program that utilises locally sourced food from small-scale farmers.

While in general, School Feeding Programs (SFPs) have demonstrated positive academic and health outcomes for students (Nemes, 2018), there are concerns about the long-term sustainability of locally initiated programs in Tanzanian primary public schools, particularly in terms of

ensuring an adequate supply of food and effective organisation (Shafi, 2021). Additionally, limited information is available regarding the hurdles to sustainability and implementation of such programs. This backdrop calls for a research study to investigate the hurdles encountered in implementing the HGFP in an attempt to show the real problem as well as suggesting the way forward towards addressing it. This study, therefore, intended to fill this research gap.

The Home-Grown School Feeding Program (HGSFP) Theory

The Home-Grown School Feeding Program (HGSFP) theory developed by Bundy et al. (2009) provides a relevant theoretical framework for understanding the implementation challenges of local school feeding programs in Tanzanian public primary schools. Tanzania, like many other countries, has recognised the potential of sourcing food locally to support school feeding initiatives (Shafi, 2021; Roothaert et al., 2021). The HGSFP theory emphasises the utilisation of locally produced food resources as a sustainable approach to school feeding to promote local economic development, enhance food security and nutrition, and foster community engagement. This theory consists of two programs, namely agricultural development and school feeding. This means that HGSFP theory focuses on the two-fold objectives of agriculture development and education in order to ensure sustainability in SFP. Despite its shortcomings related to entire dependence on small-scale farmers who are struggling in technology and markets, among others, HGSFP theory is still a useful framework for understanding the context of the LHGSFP.

The HGSFP theory holds particular significance in the Tanzanian context due to its alignment with national policies and initiatives. The Tanzanian government has prioritised the promotion of home-grown school feeding programs as part of its efforts to address child malnutrition and stimulate agricultural development (Felix, 2017; Nemes, 2018). By sourcing food locally, the program aims to support local farmers and suppliers, improve food availability and accessibility, and strengthen community participation in ensuring schoolchildren's well-being and educational outcomes.

Examining the implementation hurdles of local school feeding programs through the lens of the HGSFP theory allows for a comprehensive understanding of the specific challenges and opportunities associated with adopting this approach in Tanzanian public primary schools. The theory directs attention to various factors that may affect the successful

implementation of home-grown school feeding programs, including the availability and quality of local food resources, the capacity of local farmers and suppliers to meet the demand, the establishment of effective supply chains and logistics, and community engagement and ownership (Roothaert et al., 2021).

Furthermore, contextualising the study within the HGSFP theory enables an exploration of the potential benefits and limitations of the local sourcing approach. It allows for an examination of how effectively local school feeding programs in Tanzanian public primary schools have integrated the principles of the HGSFP theory and how these programs have navigated the specific challenges associated with sourcing food locally. The findings of the study can contribute to a deeper understanding of the implementation dynamics, identify areas of improvement, and provide evidence-based recommendations to enhance the effectiveness and sustainability of home-grown school feeding programs in Tanzania.

Empirical Literature Review

Several studies have highlighted the challenges faced when implementing school feeding programs in diverse contexts. For instance, Tanika and Jayaraman (2016) emphasised the importance of addressing logistical obstacles such as supply chain management and food distribution to ensure efficient program operations in India. Additionally, Mwendwa and Gori (2019) found that limited funding and resources hindered the sustained provision of nutritious meals, impacting the effectiveness and reach of the school feeding programs in Kenya.

Sibanyoni, Tshabalala, and Tabit (2016) revealed that a significant proportion (91.4%) of NSNP food preparation facilities lacked a hazard analysis and critical control points (HACCP) Program. Additionally, a large majority (93.2%) of food handlers were unaware of HACCP practices. Moreover, a notable percentage (60%) of food handlers demonstrated a lack of awareness regarding the proper procedure for cleaning cutting boards after use. Furthermore, a significant portion (95.5%) of food handlers reported never sanitising utensils and cutting surfaces after handling raw meat. Moreover, a study conducted by Roothaert et al. (2021) revealed that Tanzania lacked a clear school feeding policy, no established standards for the quality of school meals, and participation in school feeding programs is voluntary, leading to many students being left out and experiencing hunger. Additionally,

students in private schools generally receive better quality and more consistent school meals than public school students.

On the other hand, Phiri and Chisala (2017) asserted that social and cultural factors also influence the success of school feeding programs. They identified dietary preferences and food taboos as key factors affecting program acceptance and utilisation. This observation is supported by Roberts (2019), who emphasized the significance of considering local cultural practices and perceptions of program benefits to enhance community engagement and participation. Effective coordination and collaboration among various stakeholders are also identified by scholars to play a vital role in overcoming implementation hurdles. Nemes (2018) emphasised the importance of strong partnerships between government agencies, NGOs, schools, and communities to ensure successful program implementation. Similarly, Shafi (2021) highlighted the need for clear communication channels and collaborative decision-making processes among stakeholders to address challenges and promote program sustainability.

Despite the existing literature on school feeding programs (Roothaert, et al., 2021; Shafi, 2021; Felix, 2017; Nemes, 2018), there is a limited body of research specifically addressing the implementation hurdles faced by local school feeding programs in Tanzanian public primary schools. While previous studies have identified challenges related to funding (Felix, 2017), logistics (Nemes, 2018) and social factors (Shafi, 2021), there is still a dire need for more comprehensive studies to examine the specific and unique contexts in the country in order to find out if there are similarities and differences in implementing the HGSFP. This study focused on the specific context of Karatu district in Arusha Region, a mixed farming location. Furthermore, few studies have explored the implications of these challenges on the sustainability and effectiveness of local school feeding programs in addressing child malnutrition and improving educational outcomes. Therefore, to address these concerns, this study aimed to identify and analyse the specific challenges and barriers encountered in the implementation of locally initiated SFPs in public primary schools in the Arusha region of Tanzania, guided by the following research question: What are the key challenges and barriers faced in the implementation of locally initiated School Feeding Programs (SFPs) in public primary schools in the Arusha region of Tanzania?

Methodology

This study employed a qualitative approach to examine the challenges faced during the implementation of local school feeding programs in Tanzanian public primary schools. This research approach was apt for capturing the intricate contextual details and perspectives (Dawadi & Giri, 2021) of stakeholders involved in program execution. It offered a profound understanding of the encountered obstacles. The study's design was phenomenological, aiming to delve into participants' subjective sentiments, views, experiences, and convictions. This aided in grasping the essence of the investigated phenomenon (Creswell, 2014).

Conducted in the Karatu District of the Arusha Region in Tanzania, this research spotlighted a region previously targeted by a World Food Programme pilot initiative in 2000. This initiative focused on School Feeding Program (SFP) zones across fifteen districts prone to famine due to recurrent dry periods (Chaula, 2015). The Arusha region, encompassing the Karatu district, was selected for the pilot, making it the focal point of this study due to limited information about the sustainability of SFP initiatives in this area.

Sampling involved key stakeholders related to SFP implementation in Karatu district's selected schools. These included five head teachers, five school meal coordinators, five local government officials, five school meal committee chairpersons, and five school committee chairpersons, and 25 parents. These participants were purposively chosen based on their roles in SFPs.

Data were collected through semi-structured interviews, focus group discussions, and document analysis (Hancock & Algozzine, 2006). Semi-structured interviews were conducted with individual participants like head teachers, school meal coordinators, committee chairpersons, and government officials. Focus group discussions, comprising five parents each, facilitated insights into parental perspectives on SFP challenges. These discussions, lasted around one hour, enriched the understanding of hurdles faced in implementing SFPs. Alongside interviews and discussions, a document review was employed to supplement insights (Creswell, 2014). Guidelines for food provision, records of parent meetings, documentation of monthly/yearly meal contributions, school committee, and meal committee minutes were scrutinised. This document analysis furnished a holistic comprehension of SFP operations, challenges, and decision-making processes.

The data were analysed thematically as outlined by Longhurst (2010). Initially, transcripts and pertinent documents were meticulously coded, ensuring each piece of information was appropriately categorised. These codes were then systematically organised into coherent themes and sub-themes, a process which involved scrutinising the data for patterns, recurring issues, and underlying interconnections.

The derivation of themes primarily followed an inductive approach, allowing themes to emerge naturally from the data rather than being imposed by preconceived notions or theoretical frameworks. This iterative process involved constant refinement and restructuring of themes to ensure they accurately captured the nuances and complexities inherent in the data.

Several methods were employed to enhance the trustworthiness of the study, including member checking. The accuracy and interpretations of the collected data were verified by seeking feedback and validation from the participants themselves. Data triangulation was employed to strengthen the credibility and reliability of the findings (Creswell & Poth, 2018). Multiple data sources, including interviews, focus group discussions, and documentary reviews, were utilised. This approach enabled the corroboration of information from various perspectives and sources, thus reinforcing the overall trustworthiness of the study. To establish dependability, the research process was thoroughly documented. Detailed descriptions of the research procedures, data collection methods, and analysis techniques were recorded (Lewis-Beck et al., 2004). This documentation ensures transparency and enables other researchers to replicate the study, thereby verifying its consistency and dependability. Lastly, an external review through peer debriefing was conducted to further enhance the study's trustworthiness (Stake, 1998). Colleagues and experts in the field were invited to review the research design, data collection, and analysis processes. Their input and feedback strengthened the study's overall validity and trustworthiness.

Findings

This section presents the study's findings from Karatu District, Arusha, Tanzania. Drawing from qualitative data collected via interviews, focus groups, and observations, overarching themes were identified through an inductive thematic analysis. The key arguments and significant statements were quoted verbatim after translation from Kiswahili to English.

Limited Public Awareness of the Importance of Contributing to School Food Programs

One of the prominent findings that emerged from the data analysis is the limited public awareness of the importance of contributing to School Food Programs (SFPs). Despite the significant impact of these programs on students' academic engagement and nutritional well-being, many parents and community members exhibited a lack of understanding regarding the significance of their contributions. During the focus group discussions with parents, it was evident that a considerable number of participants were unaware of the direct benefits of their contributions to the SFPs. For instance, one parent remarked,

...I didn't know that my small contribution could make such a difference in the school feeding program. It would be helpful to have more information on how our contributions are being used... (FGD, Parent, June 2023)

Similarly, another parent expressed,

...I thought the school feeding program was fully funded by the government, so I didn't see the need to contribute. Now I understand that our support is crucial to sustaining the program... (FGD, Parent, June 2023)

This lack of awareness resulted in reduced participation and passion among parents, leading to potential challenges in sustaining the programs. As one focus group participant noted,

...If more parents were aware of the positive impact of their contributions, I believe more of them would be willing to support the school feeding program... (FGD, Parent, June 2023)

Moreover, the documentary review of minutes from parent meetings revealed that discussions on the importance of their contributions to the SFPs were rarely addressed. The focus of these meetings often revolved around other school-related matters, with limited attention given to the significance of their involvement in ensuring the success and continuity of the feeding programs. To address this issue, it is crucial to implement targeted educational initiatives and awareness campaigns to emphasise the positive impact of parents' contributions to SFPs. As one local government official highlighted,

...We need to actively engage parents and the community in awareness programs that highlight the importance of their involvement. This can foster a sense of ownership and encourage more active support for the school feeding programs... (FGD, Parent, June 2023)

Raising awareness among parents and the broader community about the importance of their involvement can create a sense of responsibility and commitment to sustaining the programs. Providing clear information on how their contributions are utilised and showcasing the tangible benefits of the programs can significantly enhance public awareness and support.

Lack of Clean and Reliable Water Supply in the Schools

Another significant finding that emerged from the data analysis is the lack of clean and reliable water supply in the schools providing School Food Programs (SFPs). Access to clean water is essential for food preparation, hygiene, and overall program sustainability. However, school staff and participants reported several challenges related to water availability and quality. During the interviews with head teachers, concerns were raised about the irregular water supply to the school premises. One head teacher stated,

...We often face water shortages, especially during the dry season. This affects our ability to cook meals for the students regularly... (Interviews, Head Teacher/Parents, June 2023)

Additionally, focus group discussions with parents highlighted their worries about the water quality used in meal preparation. A parent expressed,

...We worry about the cleanliness of the water used to prepare meals for our children. Sometimes, the water looks muddy, and we are not sure if it's safe... (FGD, Parents, June 2023)

The lack of a clean and reliable water supply poses challenges to the effective implementation of the SFPs. Without a consistent water source and assurance of water quality, the school's ability to provide nutritious and safe meals to the students is compromised.

Furthermore, documentary reviews of school committee minutes revealed discussions about seeking assistance from the local government to address water supply issues. These records indicated the efforts made by school committees to improve water availability in the schools and its direct impact on the sustainability of the SFPs. To address this challenge, relevant authorities need to prioritise water infrastructure development in schools implementing SFPs. As one local government official emphasised,

...We need to work together to ensure that schools have access to clean and reliable water sources. It is crucial for the success of school feeding programs and the health of the students... (Interview, DEO, June 2023)

Moreover, the involvement of the community in addressing water supply issues can be instrumental in finding sustainable solutions. Engaging parents and community members in water infrastructure projects and raising awareness about water conservation can contribute to improved water availability in schools.

Limited Rainfalls in Karatu Promoting Food Shortages

Another crucial theme that emerged during the study was the impact of limited rains in the Karatu district, leading to food shortages and challenges in implementing School Food Programs (SFPs). The region's reliance on rain-fed agriculture makes it particularly susceptible to food scarcity during periods of inadequate rainfall. Interviews with local government officials revealed their concerns about the region's vulnerability to food shortages. One official remarked,

...Karatu district relies heavily on agriculture for food production. When rains are insufficient, it affects crop yields, and this, in turn, leads to food scarcity among the community and schools... (Interview, WEO, June 2023)

The impact of limited rains on the availability and quality of food was also evident in focus group discussions with parents. Parents expressed worry about the reduced availability of locally sourced food items for school meals. A parent shared,

...During dry seasons, it becomes challenging to get fresh produce for the school feeding program. Sometimes, we have to rely on food supplies from other areas, which may not be as nutritious or affordable... (FGD, Parent, June 2023)

The limited availability of locally sourced food items directly affects the nutritional quality of meals provided through the SFPs. The dependency on external food supplies during food shortages can increase costs and potential challenges in sustaining the program.

A documentary review of records from the school's meal committee minutes further highlighted the impact of limited rains on food availability and the committee's efforts to find alternative solutions. Discussions in these minutes emphasised the need to explore strategies to address food shortages during dry seasons and ensure the continuous provision of meals to students.

To mitigate the impact of limited rains and food shortages, stakeholders must adopt strategies that enhance the resilience of the SFPs. One possible approach is to promote climate-smart agriculture practices and support the cultivation of drought-resistant crops. Engaging local farmers in the SFPs and encouraging them to grow food items suitable for dry conditions can help improve food availability even during periods of limited rains. Moreover, exploring partnerships with food banks and other food assistance programs can provide a safety net during food shortages. These collaborations can ensure a steady supply of nutritious food items to schools, promoting the sustainability of the SFPs throughout the year.

The Presence of Unethical School Meals Supervisors

The presence of unethical school meal supervisors emerged as a significant theme in the study, raising concerns about the implementation and sustainability of School Food Programs (SFPs). School meal supervisors play a crucial role in overseeing the preparation and distribution of meals to students. However, the presence of unethical practices among some supervisors poses challenges to the successful operation of the programs. Interviews with head teachers and school committee members shed light on the unethical behaviours displayed by a few school meal supervisors. Reports of mismanagement of food supplies, diversion of resources, and favouritism in meal distribution were evident in these accounts. One head teacher shared,

...Some supervisors show favouritism in meal distribution, giving more food to certain students while neglecting others. This creates discontent among students and parents... (Interview, Head Teacher, June 2023)

The presence of unethical practices not only undermines the trust and confidence of stakeholders but also impacts the overall effectiveness of the SFPs. It may lead to food wastage, unequal distribution of meals, and compromised nutritional support to students, ultimately affecting their well-being and academic performance.

Focus group discussions with parents further corroborated the concerns about unethical practices among school meal supervisors. Parents expressed dissatisfaction with the lack of transparency in meal distribution and called for stricter oversight and accountability of supervisors. A parent voiced their concern, saying,

...We need supervisors who are fair and transparent in their roles. They should prioritise the well-being of all students and ensure that meals are distributed equally... (FGD, Parent, June 2023)

To address this issue, it is imperative to establish clear guidelines and standards for school meal supervisors, emphasising ethical conduct and fair distribution practices. Regular training and capacity-building programs can help reinforce ethical values and promote professionalism among supervisors. In addition, promoting community involvement in monitoring and oversight mechanisms can safeguard against unethical behaviours. Parents and school committees can play an active role in monitoring meal distribution and reporting any incidents of misconduct to relevant authorities. By addressing the challenges associated with unethical school meal supervisors, stakeholders can ensure the integrity and efficiency of School Food Programs. Fostering an environment of transparency, accountability, and ethical conduct among supervisors is essential to uphold the community's trust and maintain the SFPs' positive impact on students' well-being and academic progress.

Contradiction of Fee-Free Education and Parental Involvement in School Feeding Programs

A significant theme that surfaced during the study is the contradiction between the implementation of fee-free education in Tanzania and parental involvement in School Feeding Programs (SFPs). The introduction of fee-free education policies aimed to increase access to quality education for all students, but it unintentionally led to a perception among parents that they have no role to play in supporting the SFPs. Implementing fee-free education was intended to alleviate financial burdens on parents, enabling more children to attend school. However, interviews with parents revealed that the policy created a misconception that the responsibility for providing meals at school entirely rested with the government. As a result, some parents felt they were absolved of their role in supporting the school feeding programs.

One parent expressed this sentiment during a focus group discussion, stating,

...With fee-free education, we assumed that the government takes care of everything, including meals. We didn't know that our involvement was still crucial... (FGD, Parent, June 2023)

Another parent added,

...When the government introduced fee-free education, we thought they would take care of the meals too. We didn't realise that parents still needed to contribute to support the feeding programs... (FGD, Parent, June 2023)

This perception directly impacted the level of parental involvement in the SFPs. Many parents assumed that the provision of meals was entirely the

government's responsibility, leading to reduced engagement and support for the programmes.

Moreover, the documentary review of records from parent meetings highlighted a lack of discussions about parental contributions to the SFPs. These meetings primarily focused on academic matters, with limited attention given to the importance of parental involvement in sustaining the feeding programs. To address this issue, there is a need for increased awareness and communication about the shared responsibility between the government and parents in supporting the SFPs. Implementing awareness campaigns and educational initiatives that emphasise the partnership between parents and the government in ensuring the success of the programs can help dispel the misconception and encourage active involvement.

Furthermore, school authorities and local government officials can play a crucial role in fostering parental engagement by actively communicating with parents about their essential role in contributing to the school feeding programs. Collaborative efforts can help create a conducive environment that promotes parental participation and support for the well-being and academic performance of the students. By addressing the contradiction between fee-free education and limited parental involvement in School Food Programs, stakeholders can work towards creating a more holistic and sustainable approach to ensuring the nutritional needs of students are met, leading to improved learning outcomes and overall educational success.

Lack of Conducive Resources: Example Kitchen Buildings and Utensils

The theme of "Lack of Conducive Resources" emerged prominently during the study, highlighting the challenges schools face in providing School Food Programs (SFPs) due to inadequate infrastructure and essential resources. Insufficient kitchen buildings and utensils were identified as significant barriers impacting the efficient implementation and sustainability of the feeding programs. Interviews with head teachers and school committee members revealed concerns about the lack of proper kitchen facilities in some schools. One head teacher remarked,

...Our school lacks a suitable kitchen building to prepare meals for the students. During inclement weather, it becomes even more challenging to cook meals in an open area... (Interview, Head Teacher, June 2023)

The absence of proper kitchen buildings not only hampers meal preparation but also poses health and safety risks to food handlers and students. The cooking process may be hindered, resulting in meal delays and reduced meal quality. Furthermore, focus group discussions with parents highlighted the insufficiency of utensils for meal preparation in some schools. Parents expressed their worries about the limited availability of cooking utensils, affecting the school's capacity to prepare meals for a considerable number of students.

A parent expressed concern, saying,

...The school faces challenges in providing meals to all students due to a lack of enough cooking utensils. It slows the meal preparation process, and sometimes, not all students get a full meal... *(FGD, Parent, June 2023)*

The limited availability of cooking utensils can impede the efficiency of feeding programs and lead to unequal meal distribution, impacting the nutritional support provided to students. To address these resource constraints, relevant authorities and stakeholders must invest in improving infrastructure and providing necessary resources for schools implementing SFPs. Constructing proper kitchen buildings and equipping them with the required cooking facilities can enhance the meal preparation and ensure food safety and quality.

Additionally, providing adequate and functional cooking utensils can streamline meal preparation, allowing schools to cater to the nutritional needs of all students efficiently. Collaborative efforts between the government, local communities, and non-governmental organisations can help mobilise resources to support the school feeding programs and create an enabling environment for their success.

Discussion of the Findings

The first significant finding that emerged from the findings of this study is the limited public awareness of the importance of contributing to School Food Programs (SFPs). Despite the positive impact of SFPs on students' academic engagement, attendance, and nutritional well-being, the study revealed a lack of awareness among the public, particularly parents, about their role in supporting these programs. The results of this study align with previous research on school feeding programs, both nationally and internationally, which often highlight challenges related to community engagement and support (UNESCO, 2019; Awuor, 2016). Insufficient awareness about the significance of parental contributions to

the SFPs can hinder the sustainability and effectiveness of these programs, as active parental involvement is vital for the success of such initiatives. The limited awareness is particularly evident in parents' perceptions that the government's implementation of fee-free education meant the full responsibility for providing meals rested with the state. This misunderstanding has led to a decreased sense of ownership and contribution from parents, hindering the holistic approach required for the success of SFPs (Langinger, 2011). Consequently, this lack of active engagement may lead to a reduction in parental contributions, negatively impacting the students' overall quality and availability of meals.

One possible explanation for this limited awareness could be the lack of targeted information campaigns and educational initiatives to highlight the importance of parental involvement in SFPs. Government authorities and educational institutions should take proactive measures to promote community awareness through targeted campaigns, workshops, and community meetings. By fostering a shared understanding of the roles and responsibilities of all stakeholders in supporting SFPs, including parents, the programs can better achieve their intended goals (Buttenheim et al., 2019). Furthermore, partnerships with local NGOs, community-based organisations, and civil society groups can play a pivotal role in raising awareness and mobilising support for SFPs (Roothaert et al., 2021). Collaborative efforts can increase community participation and contributions, ensuring a steady and sustainable supply of nutritious meals for students.

The second prominent finding that emerged from the findings of this study is the lack of clean and reliable water supply in schools, which poses significant challenges to the implementation of School Food Programs (SFPs). The availability of clean water is essential for proper meal preparation, food safety, and overall hygiene in school kitchens. The findings of this study align with previous research on school feeding programs, which have also highlighted the importance of access to clean water in ensuring the success and sustainability of the programmes. (Jomaa et al., 2011; Sekiyama et al., 2018). Insufficient access to clean water not only affects the quality and safety of the meals prepared but also hampers the overall efficiency of the feeding programs. Participants in the study, including food handlers and school committee members, consistently pointed out the challenges they faced in obtaining a reliable water supply. In some schools, inadequate water infrastructure resulted in limited access to clean water for cooking and cleaning purposes. It is

argued here that the lack of proper water facilities not only delays meal preparation but also poses health risks, as it compromises food safety and hygiene standards (Shafi, 2021). The limited availability of clean water is exacerbated during periods of water scarcity, such as prolonged dry seasons, which are common in the study area. The inadequate supply of water during these periods not only affects meal preparation but also impacts overall school sanitation and hygiene practices.

To address this challenge, the relevant authorities must invest in improving water infrastructure in schools. The construction of proper water facilities, such as boreholes, water tanks, and rainwater harvesting systems, can ensure a consistent and reliable water supply throughout the year (Sitali, 2021). Moreover, training food handlers and school staff in proper water management and hygiene practices can further enhance food safety and kitchen sanitation. Collaboration between the education sector and water resource management agencies is essential in developing sustainable solutions to the water supply challenge. By pooling resources and expertise, these stakeholders can work together to address water scarcity and ensure that schools have access to clean water for educational and food preparation purposes. Additionally, educational institutions can leverage partnerships with local communities and NGOs to support school water provision projects. Engaging the community in water supply initiatives can foster a sense of ownership and commitment, leading to the long-term sustainability of the water facilities.

The third significant finding that emerged from the findings of this study is the impact of limited rains in the Karatu region, which promotes food shortages and adversely affects the implementation of School Food Programmes (SFPs). The study revealed that the region's agricultural productivity heavily relies on rainfall, and variations in precipitation patterns can lead to food insecurity and challenges in sustaining the feeding programs. The findings of this study are consistent with previous research on the impact of climate variability on food security in sub-Saharan African regions (Agbozo et al., 2017; Cupertino et al., 2022). Prolonged dry spells, erratic rainfall, and other climate-related factors threaten agricultural production, affecting food availability and affordability for communities in the study area. During focus group discussions with parents, concerns were raised about the reduced agricultural output during periods of inadequate rainfall. A parent shared their experience: "When the rains are not enough, we face challenges in growing crops for our families. It becomes difficult to contribute to the school feeding programs during such times." Food shortages resulting

from limited rains can directly impact the provision of meals in schools. With reduced agricultural yields, parents may struggle to provide the necessary food contributions to support the feeding programs (WFP, 2016). This challenge is further compounded by increased food prices during times of scarcity, making it difficult for families to afford the necessary food items for their children and contribute to the school feeding initiatives.

To address the challenge of food shortages caused by limited rains, there is a need for diversified and climate-resilient agricultural practices. Implementing sustainable agricultural techniques, such as rainwater harvesting, drought-resistant crop varieties, and conservation agriculture, can enhance food production and improve resilience to climate variability (Wineman et al., 2022). Moreover, educational institutions can play a role in promoting climate-smart agriculture practices among parents and local communities. Providing training and extension services on climate-resilient farming techniques can empower communities to mitigate the impact of climate change on food production and contribute to the sustainability of SFPs (Awuor, 2016). Additionally, collaboration between local governments and NGOs can facilitate the establishment of food banks and emergency food reserves to support communities during food scarcity. These initiatives can act as a safety net to ensure continuous access to food for vulnerable families and support the provision of meals in schools even during challenging times.

The fourth significant finding that emerged from the findings of this study is the presence of unethical school meal supervisors, which poses challenges to the implementation and sustainability of School Food Programs (SFPs). School meal supervisors play a crucial role in overseeing the meal preparation process and ensuring adherence to food safety and quality standards. However, the study revealed instances of unethical behaviour among some supervisors, which has detrimental effects on the feeding programs. The findings of the current study shed light on an often overlooked aspect of SFPs, where the conduct of supervisors can directly influence the program's success (Atta & Jacob, 2015). Unethical behaviour among school meal supervisors includes mismanagement of food resources, embezzlement of meal funds, and favouritism in meal distribution, among other issues. During interviews with school committee members and parents, concerns were raised about the improper conduct of some school meal supervisors. One school committee member expressed their frustration, stating, "Some supervisors prioritise their interests over the well-being of the students. They divert

food meant for school meals and show favouritism towards certain students. "Such unethical practices can lead to unequal distribution of meals among students, affecting the nutritional support provided to those in need. It can also erode trust and confidence in the feeding programs among parents and the wider community, potentially leading to decreased contributions and support for the initiatives.

Addressing the issue of unethical school meal supervisors requires a strong emphasis on transparency and accountability. Proper monitoring mechanisms and regular audits can help detect and prevent unethical practices. Schools can involve parent representatives and community members in oversight committees to enhance transparency and community engagement in program management. Additionally, training and capacity building for school meal supervisors are essential to ensure their understanding of their responsibilities and the importance of adhering to ethical standards. Emphasising the significance of their role in providing nutritious meals to students can foster a sense of commitment to the well-being of the students and the success of the feeding programs. Furthermore, promoting a culture of integrity and accountability within the school environment can positively impact the behaviour of supervisors. Schools can encourage a climate of openness and whistleblowing, where concerns about unethical behaviour can be reported without fear of reprisals.

The current study also found there is a lack of conducive resources, particularly the absence of adequate kitchen buildings and utensils, which poses significant challenges to the implementation of School Food Programs (SFPs). The study revealed that a lack of essential infrastructure and equipment hampers the efficiency and effectiveness of the feeding programs in the Karatu region. The findings of this study are consistent with existing research on the importance of infrastructure and resources in the successful implementation of SFPs (Afoakwa, 2005; Roothaert et al., 2021). Adequate kitchen facilities and utensils are crucial for safe and hygienic food preparation, as well as for meeting the nutritional needs of the students.

During interviews with food handlers and school committee members, the lack of proper kitchen buildings and utensils emerged as a prominent concern. Many regional schools operate without dedicated kitchen facilities, forcing food handlers to prepare meals in makeshift settings, such as open-air spaces or poorly equipped rooms. This compromises

food safety and hygiene standards, increasing the risk of food contamination and related health issues. A food handler shared their experience: "We lack proper kitchen buildings with proper ventilation and storage facilities. It becomes challenging to ensure food safety in such conditions. "Inadequate kitchen utensils and equipment further exacerbate the challenges food handlers face. The lack of essential tools hinders efficient food preparation and leads to time-consuming processes. As a result, food handlers may struggle to meet the required meal preparation schedule, affecting the timely provision of meals to students.

To address the issue of inadequate infrastructure and resources, there is a need for substantial investment in school kitchen facilities. Constructing dedicated kitchen buildings equipped with proper ventilation, storage facilities, and sanitation amenities is essential to ensure safe and hygienic food preparation. Additionally, providing schools with the necessary kitchen utensils and equipment can enhance the efficiency of food preparation and improve the overall quality of meals. This includes supplying cooking stoves, cooking pots, cutting boards, and other essential items required for meal preparation. Furthermore, capacity building and training for food handlers are essential to ensure proper utilisation of available resources and adherence to food safety standards. Educating food handlers on proper hygiene practices, meal planning, and nutrition can enhance their skills and knowledge, contributing to the overall success of the feeding programs.

Conclusion and Implications

The analysis, results, and discussion presented in this study have illuminated crucial dimensions of the challenges faced in implementing local school feeding programmes (SFPs) in Tanzanian public primary schools, specifically in the Karatu district. Through rigorous qualitative exploration, several themes have emerged, underscoring the multifaceted nature of the hurdles that impact the sustainability and effectiveness of these programs. The findings reveal that fostering parental engagement through awareness campaigns is pivotal for securing the financial sustainability of SFPs. The significance of transparent communication between schools and parents, highlighting the role of contributions, echoes the necessity of a harmonious partnership to ensure the continuity of these programs.

Moreover, the hurdles posed by limited access to clean water have come to the forefront. The intricate relationship between water availability and the hygienic preparation of school meals unveils a critical requirement for infrastructure investment and reliable water supply within educational institutions. The implications of climate variability on food shortages, compounded by limited rainfall in the Karatu district, signal the necessity for adaptive measures. This underscores the urgency of integrating climate-resilient strategies into SFPs, guaranteeing food security despite environmental challenges.

Ethical considerations surrounding the behaviour of school meal supervisors unveil the importance of maintaining integrity within the feeding programs. Transparency, oversight, and accountability mechanisms are crucial to ensuring equitable distribution and upholding the ethical standards of program implementation. Furthermore, the absence of conducive resources, including well-equipped kitchen buildings and utensils, underscores the fundamental infrastructure requirements for efficient food preparation and safe consumption.

In sum, the synergy of these themes portrays a comprehensive picture of the intricacies surrounding the successful execution of SFPs. The implications for policy and practice are manifold. Advocating for parental involvement, investing in water infrastructure, embracing climate resilience, fostering ethical conduct, and ensuring appropriate resources can collectively enhance the efficacy and longevity of SFPs.

It is essential to recognize the limitations of this study, including its regional focus and specific context. As such, this research serves as a stepping stone for further exploration, encouraging broader investigations into the implementation challenges of SFPs across diverse contexts.

Ultimately, this study contributes to the ongoing discourse on enhancing educational and nutritional outcomes through SFPs. The findings offer valuable insights for policymakers, educators, and stakeholders invested in fortifying the foundation of accessible and sustainable school feeding initiatives.

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