

School feeding programme implementation and its challenges in basic education schools in Rwanda

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ABSTRACT

The condition of food insecurity and malnutrition for school-aged children and adolescents remains one of the most influential determinants of learning outcomes. Healthy and well-nourished students learn better, have a prodigious opportunity to thrive and fulfil their potential as adults, and increase their earning potential. The purpose of this study was twofold: a) to examine the implementation level of the school feeding programme and b) to identify the existing challenges that limit the school feeding programme from realizing its full potential in basic education schools. The study was directed by a descriptive research design, and 227 were selected using stratified and simple random sampling approaches, with 73.7% males and 26.3% females. The bulk of participants (39.2%) were between the ages of 30 and 40. Questionnaires and interview guides were used to obtain quantitative and qualitative data. The numeric data were descriptively examined using SPSS, and the qualitative data was studied using theme analysis. The study established a moderate level of school feeding implementation in terms of programmes coverage, school meal and cost, school meal preparation, and service. The study revealed different challenges hindering the effectiveness of the school feeding programme in basic education schools, including insufficient food served to the students in quantity and quality, inadequate materials and infrastructure, and unaffordable prices of required groceries from the market. To improve the efficiency and effectiveness of school feeding programmes, the Rwandan government and its partners in these programmes should raise the school feeding fund allotted to basic education institutions throughout the country. To the same extent, the Rwandan government is advised to a) transfer the school feeding fund to the schools for timely use, b) provide the schools with the necessary equipment and materials for cooking and serving meals to students, as well as the provision of required dining rooms, c) find an adequate way to fix the country's progressive price increase, and d) promote the school gardening concept (such as growing vegetables and other relevant crops).

Keywords: School feeding programmes, basic education schools, implementation, challenges, physiological and psychological needs, Sustainable Development Goals (SDGs).

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INTRODUCTION

Food insecurity and malnutrition affect the educational attainment, family life, and overall health of children and adolescents attending school. There is considerable evidence indicating that malnutrition and food insecurity

remain a major global public health concern in developing countries, particularly in the sub-Saharan African region (Mwaniki, 2013; Grebmer et al., 2021). To the detriment of 828 million people suffering chronic hunger (FAO et al.,

2022), it is important to note that around 45% of deaths under five years of age are closely associated with under nutrition (WHO, 2021). One of the viable solutions to this problem was the introduction of school feeding programmes to serve as social safety nets and promote education and nutrition outcomes (WFP, 2013) to combat malnutrition among children and vulnerable students (Tomlinson, 2007). It therefore provides the students with a meal in the form of an on-site meal, take-home rations, or a combination (Alison et al. 2011).

The evidence from the study conducted by Hinrichs (2010) reported that a school feeding programme was present in the USA around the late 19th century, and was formally established in 1946 as the National School Lunch Act (Kevin, 2011) and was launched in the UK in the early 1900s (WFP, 2020). The school feeding programme has gradually been adopted by different countries. Bundy et al. (2009) have substantiated that the demand for school feeding programmes in various countries has mounted since 2009 following the food, fuel, and financial crisis of 2008. Accordingly, the recent report of WFP (2020) and Global Child Nutrition Foundation-GCNF (2022) pointed out that school feeding has been introduced in nearly every country, whereby school meals are provided every day to 338 million school-aged children and adolescents from all income countries at a cost of US \$75 billion annually. However, low coverage has been identified in low-income countries where school feeding programme demand is the greatest due to hunger and poverty prevalence (Verguet et al. 2020; Bundy et al., 2009). Of major concern is that only 10% of children and adolescents benefited from school feeding programmes in low-income countries in the school year 2020 (GCNF, 2022).

Previous research conducted on school feeding programmes has revealed different advantages for the students, family life, and the local community as well. As a matter of fact, school feeding programmes have been associated with enhanced educational gains including, but not limited to, academic performance, improved enrolment, attendance, completion rates, literacy, and decrease of dropout rate and absenteeism (Agu et al., 2023; Senesie et al., 2022; Aurino et al., 2019; WFP, 2019; Alison et al., 2011; WFP, 2020; Wang and Fawzi, 2020; Zenebe et al. 2018; Shekar et al., 2017), overall health related gains including reduction in malnutrition and food insecurity, and stunted growth (Singh et al., 2012; Bundy et al. 2018; Afridi, 2010, Alison et al., 2011; Adelman et al. 2019, Aliyar et al., 2015), social related gains like reduction of forced/early marriage, early childbearing for girls, inappropriate child labour and exploitation, and gender parity (WFP, 2019; UNICEF and WFP, 2020), economic related gains including human capital returns, an enhanced market for local farmers, returns on investment in education (Verguet et al., 2020; Chakrabarti et al. 2021; Dunaev and Corona, 2019, Bundy et al. 2018; Psacharopoulos and Patrinos, 2018;

Shekar et al., 2017), and contribution of school feeding on realisation of SDGs 2, ending hunger and promotion of sustainable agriculture, SDG 4, equitable access to quality education, and SDG 5, gender equality (WFP, 2019; UN, 2015).

This study was guided by a theory of human motivation advanced by an American psychologist, Abraham Harold Maslow (1943). The theory postulates that both physiological and psychological needs influence our occupation. As such, when students' basic needs are fulfilled, they show full ability and motivation for learning. In this specific instance, the availability of food through a school feeding programme for instance, encourages attendance, good health, high motivation, attention, enhanced academic achievement, and reduces hunger (Aurino et al., 2019, Bundy et al., 2018). This theory of human motivation was adopted in this study due to its relevance in envisaging academic and overall improved health outcomes, out of students' physiological needs satisfaction including meals, hygiene and sanitation. In the context of this study, the theory therefore holds that when students lack some basic needs, their attention is centered on those needs, and if all those needs remain unsatisfied, their full attention turns to the missing needs and students become unable to learn effectively.

In the literature, the term school feeding tends to be used to refer to the interventions that regularly provide school-going children and adolescents with nutritious food at school (FAO, 2019). A further definition is given by Cupertino et al., (2022) who describe school feeding programmes as an essential initiative addressing food insecurity, improving nutritional education, and ultimately enhancing health outcomes. In this sense, the World Bank (2015) has provided a simple definition of school feeding programmes, as any programme that provides school children with food. Throughout this study, the term 'school feeding programmes' was used in its broadest sense to refer to all interventions that provide the school-aged children and adolescents with meals at school (breakfast, lunch or dinner), take-home portions, or a combination of school meals and take-home supplies.

So far as basic education is concerned, it is necessary here to clarify what is meant by basic education. Basic education schools are generally understood to mean a combination of compulsory primary and secondary education and 2-3 years of nursery education (UNESCO, 2023). In broad educational terms, basic education has been defined by World Declaration for All as formal, non-formal, and informal public and private learning activities intended to meet the basic learning needs of all people regardless of their age UNESCO (1990). Of a little difference, the term basic education has come to be used to refer to a range of fee-free and compulsory pre-primary, primary, and secondary education plus non-formal and adult education (Ministry of Education [MINEDUC], 2019a). Alongside this present study, the term basic education schools has also been used to refer to a

continuum of compulsory public or government aided pre-primary schools, primary schools, and secondary (both lower and upper) schools in Rwanda.

The overall global aim of school feeding programmes, according to WFP (2020), is to ensure that all school-aged children have access to school meals and are healthy and ready to learn. A fact indicating world concern for school-age children's health and quality education. At the time an important aim corroborates the current Sustainable Development Goals (SDGs) particularly SDGs 2, 4, and 5 (UN, 2015). In a similar vein, the overall goal of school feeding programmes in Rwanda is to deliver a well-organized, decentralized intervention providing school-going children with nutritionally adequate, locally produced food thereby reducing poverty through improved household incomes and effective local economic development (MINEDUC, 2019b).

From this perspective, Rwanda is running three school feeding programmes: a) National Early Childhood Development Programme (NECDP) that serves one cup of milk per child to pre-primary aged children twice a week in 19/30 districts, b) school lunch programme funded by Government and parents that provides the secondary day school students enrolled in public and government-aided schools with one meal/day (lunch), while secondary boarding schools serve three meals/day, c) World Food Program (WFP) that serves meals to school going students in 4/30 districts that face poverty, food insecurity and malnutrition at large (MINEDUC, 2019c).

However, the capacity of these school feeding programmes to serve adequate meals for all students in need to experience cognitive, physical, health, and psychosocial benefits remains quite perplexing. A case in point, various educationalists, school leaders' communities, and parliament members declared that the quality and quantity of food served to the students under school feeding programmes are quite scanty, given the current cost of a meal (150 Rwf ≈\$0.14) per child per day in public and government aided schools (Emmanuel, 2022; Williams, 2022; Liesse, 2021). Given this contention, food insecurity and malnutrition in Rwanda remain relatively sobering.

In this sense, the indicators of food and nutrition security showed that 48.7% and 22.1% of the rural and urban populations face food and nutrition insecurity (FAO, 2018). Of major concern, the prevalence of child stunting in Rwanda has been reported among the highest level globally (Whetherspoon et al., 2019). In this specific instance, the National Institute of Statistics of Rwanda (NISR) et al. (2015) reported that 38% of children under the age of 5 were classified as stunted, particularly males from rural areas, the prevalence that represents a decrease (44.3%) from 2010-2011.

Besides, retention, performance, and dropout in basic education schools remain an unsolved matter. The study conducted by Jean Claude and Cyprien (2022) on

causes that influence dropout in Nine Years of Basic Education revealed child labour, childbearing, low academic achievement, and poverty from family, among others, as major factors that influence the dropout rate from Rwandan basic education schools particularly for boys.

The previous studies tended to explore the academic (Wall et al., 2022), health (Wang and Fawzi, 2020), economic (Verguet et al., 2020), and psychosocial related gains (Dago and Yogo, 2022; Drake et al., 2017; Alhassan, 2013; Gelli, 2015) associated with school feeding programmes rather than determining the implementation level of school feeding programmes and the existing challenges that hinder its effective execution in basic education schools in Rwanda to serve its purpose. To the best of our knowledge, there has been no study conducted to examine the overall implementation of school feeding programmes in basic education schools.

The findings of this study will therefore inform the Ministry of Education, policymakers, planners, and other related partners about the genuine current school feeding implementation and the major challenges that need to be addressed and some suggested recommendation in line with ending hunger and promoting local agriculture towards equitable quality education and sustainable development. The present study therefore examined the implementation level of school feeding programmes and identified the existing challenges that limit the school feeding programme from realizing its full potential in basic education schools of Rwanda.

MATERIALS AND METHODS

The study was guided by a descriptive research design that involved a cross-sectional research design (Cvetkovic-Vega et al., 2021). Stratified random sampling technique and purposive sampling technique were employed to select a total of 23 basic education schools (compulsory pre-primary, primary, and secondary education schools plus non-formal and adult education, [MINEDUC, 2019a]) consisting of 10 located in Kicukiro district (Kigali city) and 13 in Karongi district (western province) (MINEDUC, 2018), for data collection.

Stratified random, purposive, and simple random sampling techniques were used to select 253 respondents i.e., 23 head teachers and 230 School General Assembly (SGA, [all parents whose children enroll in that school, all teachers affiliated with that school, student representatives, and the owner and his/her assistants in government and government-aided schools]) members. This study's SGA members included 92 parents, 46 instructors, 46 students, and 46 school owners. Because of participants who were exempted from the study, a total of 227 respondents (73.7% of males and 26.3% of females) successfully participated in

this study, with a substantial proportion (39.2%) of participants aged 31-40 years old.

SGA members were selected to participate in this study since it involves parents, teachers, and student representatives who all have necessary accurate information regarding all the activities and programmes undertaken in such schools considering their responsibilities (Rwanda Basic Education Board [REB, 2019 pp. 3-4]). The head teachers, on the other hand, were selected due to their position in leading the implementation of all educational and other related policies and programmes at the school level (MINEDUC, 2008 pp. 11). Hence, they were in a good position to provide accurate information concerning school feeding programmes in the schools which they are representing.

Both quantitative and qualitative data were collected from June 2022 to October 2022 through questionnaires and interviews. Researchers themselves distributed questionnaires to the sampled population. The respondents were asked to rate 10 statements about the overall implementation of school feeding, including the role of parents in the programme, the issuance of school feeding funds, the provision of food to the students, and the difficulties that limit the effective implementation of the programme, on a five-point Likert scale ranging from strongly disagree to strongly agree. E.g., *school feeding is effectively implemented in my school*. Furthermore, all participants were given questionnaires containing an option requesting them to leave their contact information if they would like to participate in an interview guide for further information concerning school feeding programmes in basic education schools. 12 participants therefore participated in the interview. The quantitative data collected was descriptively (frequencies, percentages, means) analyzed through SPSS-21 and thematic analysis for qualitative data.

The validity of the questionnaire employed for quantitative data collection in this study was examined using the expert-judgement technique (Wynd et al., 2003). Two experts in the field of education were given the questionnaire to evaluate the relevance of each item on the questionnaire and rate each item on a 4-point Likert scale of very relevant (4), quite relevant (3), somewhat relevant (2), and not relevant (1). The Content Valid Index (C.V.I) was used to determine validity thereby, $C.V.I. = \frac{\text{the number of items on the questionnaire that received a score of 3 or 4 from both judges, divided by the total number of items}}{2}$ (Zamanzadeh et al., 2015). As a result, the validity of the questionnaire was guaranteed because the C.V.I was 0.83, provided that it was greater than 0.79 (Zamanzadeh et al., 2015).

To establish the reliability of the research instrument, 30 participants who were specifically chosen from the district that was not included in the study sample underwent two administrations of the research questionnaire using the test-retest technique (Weir, 2015). The study tool was first presented to these participants,

and their replies were noted. After 5 weeks, the same respondents were given the research instrument once more, and their responses were again recorded. After gathering this data, the Spearman rank order correlation coefficient was calculated to assess the degree of correlation between the findings from the two distinct periods. The formula for the Spearman rank order correlation coefficient is $R = 1 - \frac{6 \sum d^2}{n(n^2 - 1)}$, where R is the correlation coefficient, n is the sample size, and $\sum d^2$ is the total sum of rank differences. As a result, the study instrument was proven to be reliable based on the reliability of the questionnaire which was 0.78, provided that the Spearman rank order correlational coefficient was not less than 0.75 (Orodho, 2009).

Given ethical considerations, since this study involved human participants, it was reviewed and approved by the administration of Karongi (Ref No: 1424/03/0301) and Kicukiro district/Kigali City (Ref No: 21320/07.01.16/22) and the participants provided their written informed consent to participate in this study.

RESULTS

This study sought to examine the implementation level of school feeding programmes in basic education schools and to identify the existing challenges that hinder the effective implementation of school feeding programmes in basic education schools of Rwanda. To get the related information for the questions of the study, both quantitative and qualitative data were collected. The results are therefore presented in the form of figures and tables indicating the demographic characteristics of respondents and their experience on the implementation level of school feeding programmes and the challenges against effective implementation in basic education schools of Rwanda.

Demographic characteristics of respondents

Demographic characteristics in this study were classified into 4 categories namely, gender, age, academic qualification, and working experience.

Gender of respondents

Initially, the data on the gender of respondents presented in Figure 1 showed that the majority (73.7%) of respondents who participated in this study were males.

The results of Figure 1 show that there was an inadequate number (i.e., less than 30%) of females who participated in this study. This finding clarifies that the proportion of females included in school SGA and school management (position of head teacher) in Rwanda remains low.

Gender of respondents

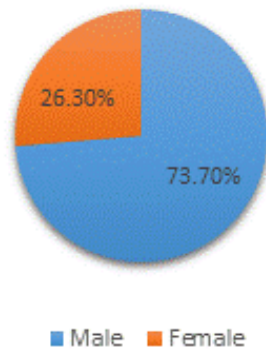


Figure 1. Gender of respondents.

Age of respondents

Concerning the age of respondents, the results of Figure 2 show that a big proportion (39.2%) of respondents who participated in this study were aged 31 to 40 years old. This finding means that head teachers and School General Assembly (SGA) who are responsible for basic education schools' management are young adults.

Academic qualifications

Considering the academic qualifications of participants, the results summarised in Figure 3 depict a big proportion (82%) of participants qualified in education with a Bachelor's degree (B. Ed). More exactly, further analysis was undertaken to examine the academic qualification of Head teachers and that of SGA. The results of Figure 4 therefore demonstrated that the majority (74%) of SGA members qualified with a bachelor's degree in education and 7.9% of Head teachers qualified with a bachelor's degree in education. It's worth noting that this proportion of head teachers 7.9% who identified with a qualification of bachelor's degree was not inadequate but it included nearly all head teachers due to their distributed number (23) against 204 of SGA within the entire sampled population, i.e. their observed count was 18/23. These findings indicate that either head teachers or SGA members who participated in this study possess adequate knowledge in education, a fact which could be an advantage in the effective management of programmes purporting to improve educational output like school feeding.

Working experience of respondents

So far as the working experience of participants is taken

into account, the results of this study summarised in Figure 5 clarified that the majority (81.1%) of respondents have a work experience classified above 5 years. This finding revealed a fact indicating that both head teachers and SGA members in basic education schools of Rwanda have working experience in education at this level. This is an advantage in effectively managing school feeding programmes for the benefit of all students.

Implementation of school feeding and its challenges in basic education schools

In view of answering the questions of this study reflecting the implementation level of school feeding programmes and the existing challenges in the basic education schools of Rwanda, data was collected from 227 head teachers and SGA members who provided their experience on the implementation of school feeding and its challenges in the schools they were representing.

Implementation of school feeding in basic education schools

In the first instance, the respondents who participated in this study were asked different questions to answer the first question of the study reflecting the implementation level of school feeding programmes in basic education schools. Their data provided through questionnaires are summarised in Figure 6 and Table 1.

For the sake of establishing the implementation level of school feeding programmes in basic education, schools located in Kicukiro and Karongi districts were selected for data collection, and the respondents were asked to rate such a level. The results are summarised in Figure 6. and show that the majority (67.8%) of respondents expressed that a school feeding programme in basic education schools is being implemented on a moderate level. This finding is congruent with the results summarised in Table 1, which established that 68.4% of respondents either agreed or strongly agreed that school feeding is being implemented in schools they represent, whereby parents are getting involved in its implementation either by giving their contribution or management through SGA availability and transfer of funds reserved for school feeding from the government. An additional concern supporting a moderate level of school feeding implementation as presented in Table 1 was a proportion of respondents 41.8% (Table 1) who disagreed or doubted that all students are getting lunch from school every day. Further analysis involving results from the interview guide clarified that there is a proportion of students who are not benefiting from the school feeding programme. Some of the reasons were mentioned when asked to describe the implementation level of school feeding from their schools, as one interviewee said:

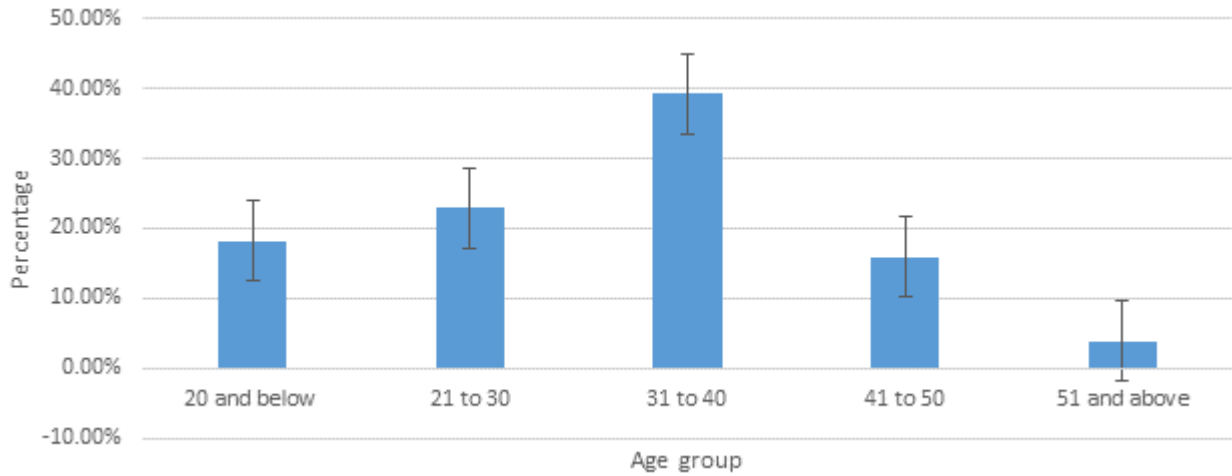


Figure 2. Age of respondents.

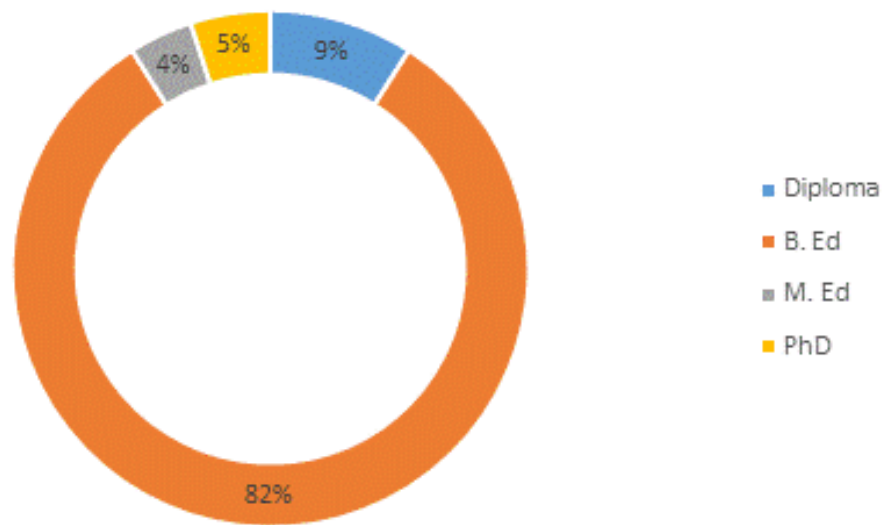


Figure 3. Academic qualification of respondents .

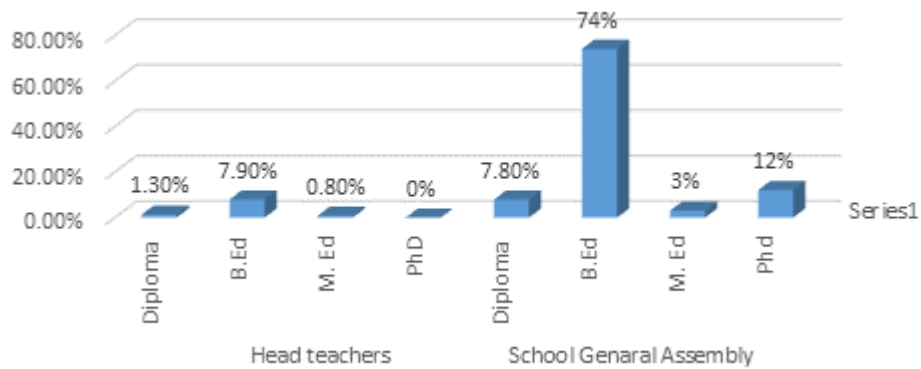


Figure 4. Academic qualification by groups.

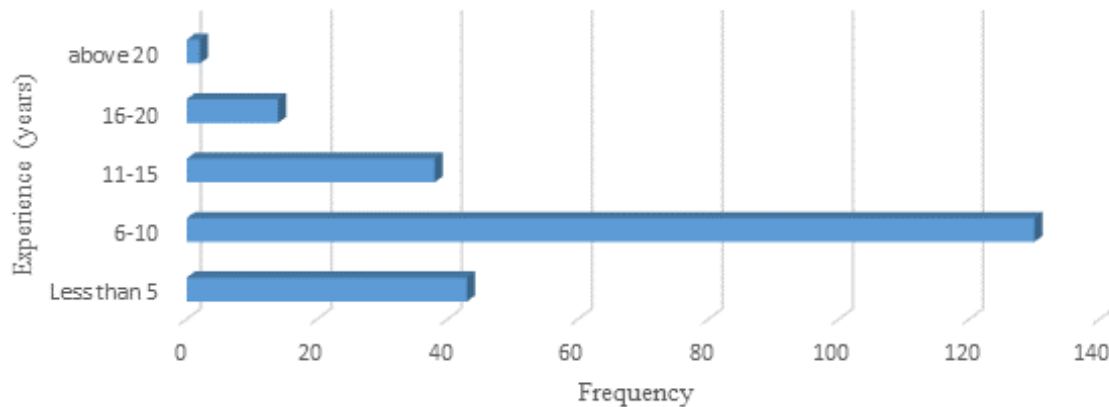


Figure 5. Working experience of respondents.

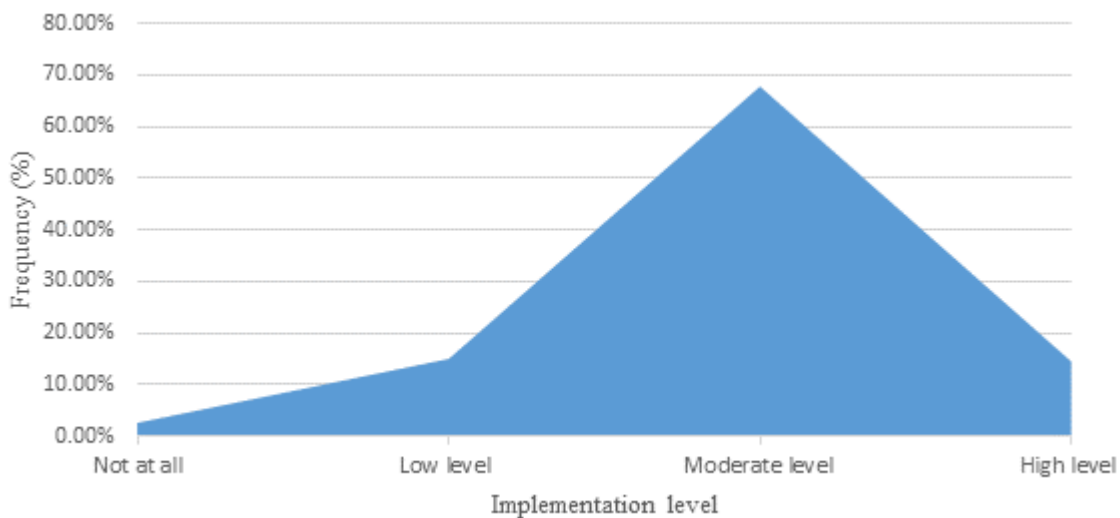


Figure 6. Implementation level of school feeding programmes.

School feeding has been implemented at a high level as a majority of students are benefiting from the programme. In our school, nearly all students of nursery and primary age are benefiting from a school feeding programme compared to 75% of secondary students, because of reasons including the double shift system whereby some students come late to school while others have already finished eating. Another reason lies in the fact that students who come from places not far from the school prefer to go back home for lunch instead of taking lunch at school.

The extract above showed that one of the reasons some students get exempted from having lunch at school under the school feeding programme is the fact that they live in places near the school. But there is a need to find out whether their request to go back home lies on the critical

quality of food served at school or lies on the parents' inability to pay their contribution, a reason therefore making them request an exemption from school feeding so as not to be asked for payment (parents' contribution on school feeding fund).

Challenges hindering the effective implementation of school feeding programmes in basic education schools

In the second instance, this study sought to identify the existing challenges that hinder the effective implementation of school feeding programmes in basic education schools in Rwanda. To find relevant information for this objective, respondents through questionnaires provided their experience about such challenges, and the results found are summarised in Table 2.

Table 1. Implementation of school feeding programmes in basic education schools.

Statements	Strongly disagree		Disagree		Neutral		Agree		Strongly agree	
	Freq	%	Freq	%	Freq	%	Freq	%	Freq	%
School feeding is effectively implemented in my school	14	6.2	10	4.4	12	5.3	85	37.4	106	46.7
Parents are effectively involved in school feeding in my school	14	6.2	14	6.2	53	23.3	112	49.3	34	15
My school has an active school feeding committee	22	9.6	28	12.4	18	7.9	44	19.4	115	50.9
School feeding fund is available on time	20	8.8	24	10.6	30	13.2	44	19.4	109	48.0
School feeding fund is effectively and efficiently managed	30	13.2	12	5.3	34	15	101	44.5	50	22
All students in my school get lunch from Monday to Friday	32	14.1	22	9.7	41	18.1	32	14.1	100	44.1
Average	22	9.7	18.3	8.1	31.3	13.8	69.7	30.7	85.7	37.7

Table 2: Challenges against effective implementation of school feeding programme.

Statements	Strongly disagree		Disagree		Neutral		Agree		Strongly agree	
	Freq	%	Freq	%	Freq	%	Freq	%	Freq	%
School feeding fund is not delivered on time	8	3.5	18	7.9	24	10.6	131	57.7	46	20.3
In my school, parents have negative attitudes on school feeding programmes	8	3.5	43	18.9	38	16.7	42	18.5	96	42.3
Poor cooking facilities affect school feeding programmes	6	2.6	7	3.1	36	15.9	44	19.4	134	59.0
Instability of prices from the market affects the implementation of school feeding in my school	2	0.9	0	0.0	4	1.8	91	40.1	130	57.3
Average	6	2.6	17	7.5	25.5	11.3	77	33.9	101.5	44.7

The results of Table 2 indicate that 78.6% of respondents confirmed that delays in school feeding fund, parents' negative attitude towards school feeding, insufficient facilities for cooking, and frequent changes in groceries prices from the market, together made a great challenge against effective implementation of school feeding in basic education schools. One of the more significant findings to emerge from this study is that 97.4% of respondents substantiated that they are facing a continuous increase in prices of required groceries from the market. This finding indicates that the required food supply remains problematic. This result therefore needs to be interpreted with caution. Along the same lines, the analysis of data collected from the interview guide emphasized that there are great challenges in taking their

funding from both the school feeding fund and the government fund, as there are delays in reaching the schools and the inability of some parents to pay their contribution. At the time, insufficient equipment, materials, and infrastructure was also a matter of concern. In this specific instance, when asked to describe the existing challenges hindering the effective implementation of the school feeding programme, one interviewee said:

The greatest challenge regards the parents' mindset towards the programme. Some parents, for example, express that they don't live far from the school. Hence there is no reason to take lunch from the school. In addition, most of the families are still unable to find the required

parental contribution toward the school feeding programme. Another challenge to mention is insufficient materials and infrastructure such as dishes and kitchens with small capacity compared to the number of students.

This finding demonstrates the parents' mindset towards the programme and provides additional evidence of their negative attitude mentioned at 60.8% towards school feeding programmes. Another important finding noted from the interview was a scarce food supply, particularly from local farming and insufficient infrastructures and materials, as the other interviewee said:

It sometimes becomes hard to get food for cooking because of the limited capacity of local markets to provide enough quantity of food for all the schools. This problem causes a lack of some type of food from the market. For example, it will not be possible for students to eat rice this term because the production company announced that they don't have any rice to supply to the school. Another challenge is the lack of a dining room because the school is using the classroom and it takes much time to arrange before eating and after eating.

DISCUSSION

Initially, the demographic characteristics of participants (gender, age, academic qualification, and working experience) were analyzed. Concerning the gender of participants, the results showed that males occupied a big proportion (73.7%) of participation in this study. Given that participants of this study were head teachers and SGA members, this finding showed that these leadership opportunities from basic education schools are mostly occupied by men. It is therefore important to note that this finding is against the principle of gender balance prescribed in the Rwandan constitution of 2003 revised in 2015 (Constitutes project, 2022) which declares that 30% of the entire positions are to be reserved for women from all decision-making organizations.

Regarding the age group of participants, the finding of this study showed that the majority (39.2%) of participants were young adults aged 31 to 40 years old. This finding held the implication of young adults participating in educational management and leadership through heading the entire institution and representing parents in a school SGA. Considering the previous literature, the current finding is consonant with the report of Statista (2020) which revealed that the majority of the Rwandan population consists of young adults classified in the age group of 15-65 years old.

The findings of this study on the academic qualification of participants revealed that the majority, 82%, of

participants were qualified in education with a bachelor's degree including 18/23 i.e. 7.9% of head teachers, and 168/204 i.e. 74% of SGA. This indicates that head teachers and SGA members in basic education schools of Rwanda have adequate knowledge of education, an advantage leading to the implementation of educational programmes, including school feeding. This finding is consistent with the regulation of the teachers' service commission in Rwanda (Simpson and Muvunyi, 2013) which requires head teachers to have at least a bachelor's degree in education (A0). For SGA members, there was no regulation specifying the required qualification because they are all members of the SGA by default as long as they belong to that school (REB, 2019).

So far as working experience is taken into consideration, the finding of this current study showed that the majority (80.7%) of participants have 5 years of work experience and above. This finding justified that the respondents who participated in this study had essential experience in education to provide accurate data required in this study. This finding supports the previous study conducted by Le Saux et al. (2021) which established that head teachers have an average of 5 years of teaching experience in Rwanda.

On examining the implementation level of school feeding programmes in basic education schools, the findings of this study revealed a moderate level of school feeding implementation in these schools. This degree of implementation was supported by a third of participants who either disagreed or doubted the statements describing school feeding implementation in their schools including the provision of lunch to all students, management of school feeding fund, timely provision of school feeding fund to the schools, and role of parents in this programme.

This finding clarified that a school feeding programme has been initiated in these basic education schools to serve its purpose but still has some areas of improvement for its effectiveness. Provision of lunch to all students, for example, was one factor noted as decelerating the school feeding programme, which goes hand in hand with the expected contribution of parents towards school feeding and which remains an unsolved issue for parents. This finding corroborates the parents' opinion that it is difficult to find such contributions particularly those who have more than one child (Liesse, 2021). This also accords with the previous study conducted by Jean de Dieu et al., (2022) which revealed that the school feeding programme is not sufficiently supported to serve the entire proportion of students in need from nursery to secondary schools.

This study produced results that corroborate the previous findings of the Rwandan Parliament report on their outreach programmes (Daniel, 2020), which pointed out that implementation of school feeding programmes in basic education schools across the country has a long way to go to be effective. This contention was articulated

based on their analysis of meal costs which were found to be far less than what is needed to serve a meal that was sufficient to curb food insecurity and malnutrition for the students. The fact was that the government of Rwanda recently (fiscal year 2020-2021) extended a school feeding programme in all basic education schools and increased its fund by 89% contribution against 11% from parents to serve a nutritious meal worth 150 Rwf≈\$0.14 per day for each student, but this fund has been proven scanty (Emanuel, 2022; Liesse, 2021).

The present study is consonant with the State of School Feeding Worldwide report (WFP, 2013) which noted that school feeding programmes are present in almost every country across the globe, but are not always efficient. A recommendation is therefore suggested that the Government of Rwanda and its partners in this programme should increase the school feeding fund allocated to basic education schools across the country for the programme to serve its purpose efficiently and effectively.

In the second instance, this study sought to determine the existing challenges that obstruct the effective implementation of school feeding in basic education schools of Rwanda. The findings of this study revealed that such schools are facing challenges implementing this programme including a delay in the school feeding fund from the government, insufficient cooking facilities such as kitchen, stove, gas or firewood, and refectory. Some of the issues emerging from this finding relate specifically to the instability of grocery prices from the market that continues to mount. This combination of findings may help to understand how the management in charge of school feeding faces difficulties in the buying and payment of groceries supplied due to delays of funds and loss of time normally dedicated to lessons; this is because classrooms are also used as eating halls, which requires additional time to get the classroom ready for teaching and learning again. This finding also designates a reduction of the schools' purchasing power to afford the prices that increases against a constant fund, a fact which leads to a reduction of meal quantity and quality to be served to the students.

This finding further supports the increasing evidence raised by some head teachers, who have reported that they will not be able to feed the students for the whole term due to deficient funds (Liesse, 2021). Thus, this represents a barrier to the overall purpose of school feeding programmes. These findings are congruent with the previous research studies (Agu et al., 2023; Desalegn et al., 2022; Mafugu, 2021; Roseline and Felix, 2021; Global survey report, 2019; John and Anthony, 2018; Iddrisu, 2018; Tagoe, 2018; Aliu and Fawzia, 2014; Kedze, 2013) which identified that school feeding programmes are facing challenges of inadequate finance and material resources, inadequate monitoring and evaluation mechanisms, insufficient infrastructure, low level of community participation, etc.

Along the same lines, it was declared in Rwanda that \$0.14 for one student per day is meager given the current cost of living (Emmanuel, 2022). In detriment of all interventions associated with school feeding in Rwanda, this concern of a lack of meals could have a close relationship with long-lasting stunting, as reported by Whetherspoon et al. (2019). The government of Rwanda is therefore recommended to a) transfer the school feeding fund to the schools for use on time, b) provide the schools with the necessary equipment and materials needed in cooking and serving meals to the students and the provision of required dining rooms, c) find an adequate way of fixing the progressive increase of prices across the country, d) promote the school gardening concept (like growing vegetables and other relevant crops), particularly in schools located in provinces where some remaining plot of land should be available.

Limitation of the study and areas for further studies

The important limitations need to be taken into consideration, including financial limitations that did not allow the current researchers to conduct a cross-national study covering all regions of the country, a reason which led to the selection of one rural district (Karongi) and one urban district (Kicukiro). Another important limitation was the COVID-19 pandemic outbreak which did not allow researchers to collect data within a single time scale due to inconsistent school closures.

Several questions therefore remain unanswered at present: a) the authentic implementation of school feeding programmes in basic education schools across all regions of a country, including rural and urban areas, b) the overall school feeding programmes coverage, given the number of students in need of nutrition support across the country, c) the composition of food nutrients available in meals served under school feeding programmes, given the overall goal of providing school going children and adolescents with nutritionally adequate food and its corresponding fund available from the Government and community participation, d) contribution of school feeding programmes on students' attendance, completion and academic achievement in basic education schools. Further research studies on this topic with more focus on these variables are therefore suggested.

CONCLUSION

This study set out to determine the implementation level of school feeding programmes and the existing challenges that limit their effective execution in basic education schools in Rwanda. Considering this objective, a moderate level of school feeding programmes in basic education schools from two selected Kicukiro and

Karongi districts were established. Concurrently, these basic education schools are facing hindrances identified as a delay of school feeding funds from the government, inadequate facilities in cooking and serving meals to the students, insufficient infrastructure, and the crux of the matter is a progressive increase of grocery prices from the market against a constant fund. From this standpoint, there is a long way ahead for the realization of the predetermined goal of “delivering a well-organized, decentralized intervention providing school going children with nutritionally adequate, locally produced food thereby reducing poverty through improved household incomes and effective local economic development”.

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