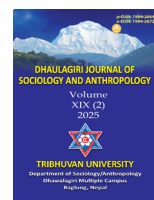


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# The Mid-Day Meal Program and Students' Learning, Health, and Social Behaviour in Community Schools: Multiple Stakeholders' Perspectives

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## Abstract

There is evidence of the impact of the Mid-Day Meal (MDM) program on students' learning, nutrition, and health. Still, there is no exploration of the perceptions and experiences of community school stakeholders on this issue. This gap led to the research question: how do stakeholders perceive the impact of the MDM program on students' education and health in community schools? This study employed an exploratory qualitative design and worked with the purposively selected 21 participants in two community schools in Musikot Municipality, Rukum West district, Nepal. It used in-depth interviews for gathering qualitative data, which were transcribed, translated into English and analyzed thematically. The results showed that most participants expressed positive responses. Some participants noted that managing MDM in their respective schools is not easy. The program helped increase student enrollment, attendance, and retention, and enhanced their hygiene and general wellness. It strengthened positive social skills, motivated the students in class, and improved educational quality. Participants reported that inadequate human resource is common barrier to the operation of this program. The findings imply that the collaboration between local, provincial, and federal governments, as well as stakeholders, is needed for the program's success to continue further.

**Keywords:** mid-day meal, perception, schoolchildren, stakeholders

## Introduction

The school meal program has gained worldwide popularity due to the school feeding program, known as the Mid-Day Meal, which has been at the centre of the intersection of education, health, and social justice (UNICEF, 2016; UNESCO, 2016). They are designed to address nutritional conditions in classrooms and improve learning outcomes among children from low-income and

underserved populations, and have become a mainstay of inclusive education policy in developing nations (Gelli & Daryanani, 2013; Hoque, 2023). The existing evidence shows that nutritious meals at school enhance student attention, cognitive abilities, attendance, and social inclusion, while strengthening community involvement and gender equality (Gelli et al., 2019; World Food Program [WFP], 2024).

South Asia has become a centre of massive regional



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MDM interventions. The nationally integrated MDM scheme in India has shown improvements in enrolment, attendance, and retention among children from disadvantaged backgrounds (Banerjee, 2019). Similar programs in Bangladesh and Sri Lanka demonstrated beneficial child nutrition and health as well as classroom attendance (Rai et al., 2024). Such regional experiences demonstrate how midday meal programs can function as a nutritional response and, subsequently, as social promoters, i.e., increase inter-caste, inter-class, and inter-gender interactions in schools.

The MDM program in Nepal is one of the sectors that has been of paramount policy response to insurmountable issues of hunger, malnutrition and educational disparity. There is moderate hunger in the country, and the number of children in need of acute malnutrition services is estimated to be 60,000 (USAID, 2021). Such factors have increased poverty, food insecurity, and household and occasional parental neglect, worsening the situation (MoHP & MoE, 2014). Research shows that hunger is a crucial factor diminishing school attendance and learning effects, especially in community schools that have a concentration of children in disadvantaged groups (QRi Consulting, 2014).

To address those problems, the Government of Nepal, with the technical assistance of development partners, initiated the MDM Program as a measure focused on improving the learning and health outcomes of primary students at school. It has been indicated that the program has given rise to better attendance, lower dropout rates and enhanced learning outcomes, particularly among children of marginalized backgrounds (Pokharel et al., 2025; Shiksha et al., 2025) and improves student retention in Nepali community schools (Ghimire, 2024). UNICEF (2019) indicated that the majority of the community schools offered school meals daily, and this is in a bid to enhance the quality of education as well as the nutrition of the children. Since the average duration of school per year by Nepali students is about 200 days, with activities from six to seven hours per day, MDM interventions are instrumental in addressing the nutritional requirements of the students (Singh & Mishra, 2010).

Despite these achievements, several challenges remain that render the program ineffective. Some rural and mountainous regions like Rukum West have limited infrastructure, unreliable energy and poor investments in kitchen and sanitation facilities (Centre Education and Human Resource Development [CEHRD], 2020). The problem of insufficient monitoring, discontinuous funding and issues with the hygiene and the quality of food have cast certain doubts on the sustainability of the program in the long-term (Banerjee, 2019). Besides, the available numbers on attendance and nutrition are getting more common; however, the social and experiential aspects of MDM, its influence on the social behaviour of students, relationships and academic desire to study, are poorly

explored.

The lack of qualitative insights highlights a fundamental research gap: the need to understand the perspectives of multiple stakeholders (Ghimire, 2024) who perceive and experience the MDM program within their socio-cultural and institutional settings. They are directly engaged in the program's everyday activities, but their voices are rarely heard in policy discussions alongside stakeholders such as students, parents, teachers, and school management committees (Joshi & Bohra, 2025). There is, therefore, a strong necessity to investigate their views to evaluate not only the level of effect of nutrition and education but also the social dimension of the program, such as equity, participation and community ownership.

Most studies have measured the impact of MDM, but few have examined its interplay with students' learning contexts, social relationships, and health awareness in rural Nepal. This study is conducted to explore a multi-dimensional and underpinning insight into how the midday meal program affects the learning, health and social behaviour of students. Placing the analysis in the global, regional, and national contexts, the research also serves to contribute to academic discussion and practical policy. It also supports Nepal's commitments to the Sustainable Development Goals (SDGs 2, 3, 4), which are zero hunger, good health and well-being, and quality education, with the provision of locally based evidence to strengthen the implementation of various programs and achieve equity in education (National Planning Commission [NPC], 2020). The following question guided the study:

How stakeholders perceive the impact of the MDM program on the education and health of students in community schools.

## Methods and Procedures

This study adopted an explorative qualitative study design to explore the participants' diverse perceptions and understandings of the effectiveness of the MDM program on students' health and learning (Creswell & Creswell, 2018). This approach allowed us to explore participants' perspectives, beliefs, and experiences within their contexts (Creswell, 2013).

This study was conducted at Musikot Municipality, Rukum West, situated in the Karnali Province of Nepal. There are fifty-five community schools in the municipality, and all schools are implementing the MDM program for their students (Souvenir, 2021). Two schools were purposively selected from the Musikot Municipality, Rukum West.

School A was selected because it enrolled differently-abled/special needs children. This school represents a unique and challenging context characterized by remote and geographically disadvantaged students, such as migrants, Indigenous, Dalit, and those with low economic status. School A is located 3.5 kilometers from the Musikot

Municipal Office. According to the School records (2021), there are a total of 13 teachers and staff. That school runs from ECD to grade ten. The total number of students was 299; among them, 159 were boys, and 140 were girls, but only 135 children received the mid-day meal.

School B was selected based on the MDM program initiated just two years before the Nepal Government's MDM program. According to the School B records (2021), there are a total of twenty-six human resources. That school runs from ECD to grade twelve. The total number of students was 761; among them, 354 were boys, and 407 were girls, but only 217 children had the mid-day meal.

The study purposively involved 21 participants from the two selected schools, including head teachers, teachers, cooks, school Management Committee (SMC) chairs,

language. The transcriptions were coded (27), categorized/sub-themes (eight), and generated themes manually (Three themes). The data were thematically analyzed.

### Results

The collected information was analyzed in three themes (Table 2), adhering to its various sub-themes and coding.

#### Revealing the Academic Progress

Under this theme, we discussed MDM's effect on students' enrollment, attendance, involvement and retention as perceived by the participants. The results showed that the stakeholders commonly perceived the MDM program's support for increasing student enrollment. A Head Teacher (HT1) pointed out that the MDM helps increase the admission rate of the students:

**Table 1**

*Study Participants of the study*

School Municipal-ity	Head Teacher	Teacher	Cook	SMC Chair	PTA Chair	Ward Chair	Students	Parents	ESU Chief	Total
School A	1	1	1	1	1	1	2	2	1	11
School B	1	1	1	1	1	1	2	2	-	10
Total	2	2	2	2	2	2	4	4	1	21

chairs of Parents Teachers Association (PTA), municipal ward Chairs, Students (one girl and one boy from each school), parents, and the Education and Sports Unit Chief (Table 1).

The study employed in-depth interviews with all research participants to collect the data. Initially, the first author developed the interview guideline, which was reviewed by experts and finalized. The first author collected the information using guidelines from face-to-face meetings with participants in their respective offices and at home.

After receiving consent from the respective participants, data were collected. Informed consent included four elements: competence, voluntarism, complete information, and comprehension (Cohen et al., 2018). We also ensured participants' volunteer participation in the interview process. We assured the participants that the collected data did not refer to their personal and professional identity, ensuring anonymity (Cohen et al., 2018). We used pseudonyms HT1/HT2 (for Head Teachers), T1/T2 (for teachers), P1/P2/P3/P4 (for Parents), C1/C2 (for cooks), S1/S2/S3/S4 (for Student), SMC1/SMC2 (for Chair of School Management Committee), PTA1/PTA2 (for Chair of Parent Teacher Associations), CW1/CW2 (for Chair of Wards), CESU (for Chief of Education, and Sports Unit) to represent them.

The collected data were transcribed into the English

I assume that the admission process is satisfactory, because of the effect of the mid-day meal; the students increase at the time of serving the MDM rather than at the time of not serving it (HT1).

The MDM has also prominently supported the parents. For example, parents with low incomes need to work after sending their children to school. Then children get both food and education. So, parents send their children to school. A head teacher shared, "the mid-day meal has increased the admission rate of the students, and some of the students think that it would be better if there were no holidays in school" (HT2).

Teachers further revealed that the MDM plays a significant role in academic improvement, has helped increase the number of students in the school, and has led to particularly good student attendance. In the same line, a teacher opined:

I have found that there is a vast difference between serving and not serving the MDM. The meal was not provided earlier, and the students complained that they were suffering from hunger, and they had to go home. Some used to bring 5-10 rupees from home and used to buy noodles (Chauchau). Some used to go home for their meal and did not return. The admission rate was also exceptionally low. The MDM is especially important for the support of poor and underprivileged students, to provide nutrition, organic food, and to

**Table 2***Thematic Matrix of Participants' Perceptions of the Mid-Day Meal Program*

Main Themes	Subthemes	Coding	Data Sources
Revealing the academic progress	increased enrollment	The admission rate increased in community schools instead of private, students do not go home during tiffin.	Teachers, Head Teachers, Chief of ESU
	attendance and retention	The absentee rate is low, students stay for the whole class, dropout reduced	Teachers, Head Teachers, Chief of ESU
	academic improvement and engagement	students satisfied and attentive, students do not leave class, enjoy school because of meal	Teachers, Parents
Unfolding the health issues, healthy habits and nutrition	valuing nutrient foods	ban on the junk food in school premises, reducing the junk food, medium nutritious, better if the amount increases, more nutritious food needed	Students, Teachers, cook
	hunger reduction	children eat less at home, home far away so it reduces hunger, helps students concentrate	Students, Parents, Chief of ESU
	health improvement	children no longer hungry, do not eat chocolates in school, look healthy and active, practicing of the healthy hand washing habit	Teachers, Head Teachers
Enhancement of students social behavior	support for poor families/parents	low-income parents go to work after sending children to school, children get both food and education, helpful for poor families, parents trust schools, parents trust schools, government's good initiative	Parents, Head Teachers, PTA and SMC chair
	equity and gender inclusion	feeling together with different caste, developing the social harmony, equal opportunity through meals positive school environment, happy to share meal	Teachers, Parents, SMC chair

increase the students' regularity in the classroom.

Regarding the admission process and academic improvement, the research participant shared that the MDM's effectiveness increased the admission and retention rates. Similarly, the students do not need to go home at tiffin hour. So, the entire day, the students were at school because of the MDM program.

The MDM contributed a positive impact on the students' academic performance and other school participation. Furthermore, it showed students' motivation to attend classes regularly.

### Unfolding the Health Issues, Healthy Habits and Nutrition

Stakeholders supported that Mid-day meals not only supported a cheerful outlook on learning, but they also promoted health in ways such as healthy habits and nutritious food. Different opinions of the participants expressed support for MDM in terms of healthy food:

Before the mid-day meal program, our students

used to eat junk food in school. However, after the implementation of the mid-day meal program me, students are discouraged from eating junk food, they are not allowed to bring any kind of junk food to the school premises (SMC 2).

Similarly, head teacher also shared,

We have banned on junk food in our school like chocolates and biscuits, cheese ball, noodle etc. Students do not eat such things here, but now, the students think that there is a meal provided by the government and the school looks healthy and fresh. So, they did not express any type of complaint. They were happily eating whatever is given (HT1).

Further, the MDM program is fruitful for nutrition point of view of the family backgrounds. A quote from a head teacher reads:

Students get a fresh, nutritious diet from mid-day meals, which helps to increase the parent's savings. This nutritious diet helps in improving the physical part of the students and if they are physically healthy,

they will have good concentration in their studies, they will understand properly what is being taught. The main thing is the parents do not need to worry about the mid-day meal of their wards, so this is important (HT2).

They further reported that students' awareness of a nutritious diet is raised due to the program that supports their lives. The value of the MDM program is also added, as it is a mission to enhance the health of the children. A head teacher points out that the value of MDM in providing nutritious food instead of junk food is:

There is a ban on junk food in our school, like chocolates and biscuits. Students do not eat such things here, but now, the students think that there is a meal provided by the government and school, and they should not complain but eat whatever is given (HT2).

The cook and food server also supported the necessity of MDM at the school level, as it supports school administration, students, and parents. They further mentioned that the students do not have to eat junk food, and they get fresh things to eat. It prevents students from leaving the school compound during break time, which is crucial in school. The practice of healthy habits is also one of the major components of MDM. In this perspective, HT2 shared:

We have MDM program run effectively. Before the starting of MDM program our students are not aware about the healthy habit like hand washing before starting the eating. This thing is taught to all the students; their home and this hygiene should also be maintained at school before having meal. The MDM program, our children felt like the healthy habit was also good for health, then they started cleaning their hands before getting the meal.

Washing our hands before we eat is taught to students and children at home. This shows that hygiene is related to washing hands before eating. If not cleaned properly, students might get an infection. MDM promotes healthier practices and reduces harmful hygiene habits. Teachers regularly monitor students' meals and educate both students and parents on the importance of healthy eating.

### **Enhancement of Students' Social Behaviour and Inclusion**

The stakeholders perceived that the MDM program plays a strong role in the improvement of the students' social behaviour, such as eating together, sitting, sharing their support to distribute the meal to other friends, uniformity in food consumption, and reducing discrimination, such as caste. One of the participants expressed his views on students' social behaviour as follows.

Students sit together while taking the meal, which helps them to develop social feelings among themselves. The first author believes that there is no discrimination among those students who used to bring good meals, simple meals, and those who never brought their meals (HT 2).

The study additionally revealed that the MDM program played a significant role in increasing students' sense of social harmony. Maintaining a cheerful outlook in the classroom is essential to creating a supportive, conducive learning environment. A supportive outlook inspires students to believe in their abilities and strive for success. All of the participants explained that the MDM is the meal served to the basic level school students in the public schools, as per the government policy to feed the hunger of the students during school hours, which has motivated students to study. Giving more emphasis on it, a quote related to it is, "I believe that MDM is a kind of nutritious food which is provided by our local government to this school for feeding hungry children" (HT1).

This view accepted the experience that having an empty stomach prevents learners from concentrating on teaching-learning activities, and the participants agreed that this is a beautiful aspect of the program. They also argued that the program's support for the teaching and learning environment is not merely about fulfilling hunger. A quote from a participant is:

The MDM has helped to improve the academic quality of the students because they do not run away from school and sit in every class, and they have done the homework properly. Therefore, from my perspective, there has been a lot of improvement in the study of students before serving the meal and after it (HT2).

In the same way, the student participants also shared positive feelings about the MDM in their study, emphasizing their mental and physical well-being. A quote from a student reads, "the MDM provides the necessary nutrients for the body, which helps in the increment of our memory capacity, and it helps to keep our body healthy. It brings improvement in education and gives positive effects" (S1).

Similarly, students also connected the influence of MDM with the positive impact of the examinations, mentioning that, "MDM brings positive changes in education as it helps in lessening the hunger that helps us to concentrate on our study and because of this, we can score good marks in the examination" (S4).

This shows that the MDM supports education. The parents and cooks agreed that the MDM had a good impact on regularity in school attendance and studying passionately until the end of school hours. The MDM is not only for students' physical or mental health but also for regularity in school attendance, improved concentration in studies, and better performance in examinations. They also perceived that MDM's indirect effect increased students' attention, leading to enhanced memory capacity. It also enacted the student's active participation in classroom activities and the regularity of assignments. The MDM has been an effective measure for addressing such students' active participation due to its timely service. It does not let them feel hungry, so they remain focused on school activities.

The MDM program also promotes social harmony. Several studies also state that MDM has played a pivotal role in establishing social harmony. Free MDM reduced the inequality and encouraged the development of social harmony. In this T1 said:

The scheme has played a pivotal role in improving school attendance, especially among children from marginalized communities. The introduction of MDM led to significant improvements in both school enrollment and attendance, particularly in different caste like marginalized and underprivileged group also can sit together to eat the meals.

The Ward Chair, chair of the Parent Teacher Association (PTA) and Chairperson of the School Management Committee (SMC), highlighted a considerable role of the program in the education of the school's students. The ward chair, PTA chair, and SMC openly underscore the importance of the mid-day meal program in providing nutrition to students from low-income families and the positive effect it has had on their academic performance.

The mid-day meal program has allowed the school to provide students with a wider range of nutritious meals than would otherwise be possible, ensuring that they get the most benefit from their education. Participants agreed that the mid-day meal program has had a positive impact on the education of the school's students and that it should continue to be supported and encouraged. Regarding the perspectives of MDM T1 said, "we have run the MDM program for a few years, but still, we need to do improving areas like cleaning the kitchen more, and monitoring the food quality. And managing soap and water at the wash basin".

The results commonly show that the MDM has played a key role in improving the student's academic environment and has also supported the student's family by reducing their worry about their ward's meals. Similarly, student participant 1 also focused on the need for MDM.

### Discussion

This study aimed to explore the participants' perceptions of the MDM program in *Rukum West*. It showed that the diverse participants had positive perceptions of the mid-day meal program roles as discussed below under the three themes.

#### Revealing the Academic Progress

The study clearly shows that all participants perceive the MDM program as having positive effects on students' educational progression, including enrollment, attendance, and retention, thereby supporting educational quality. The evidence from different studies and beyond Nepal supports this finding. For instance, in a study conducted by Singh (2019) in India, many parents reported that the MDM scheme leads to a substantial increase in students' enrollment, retention, and attendance at the school, as

explored in this study. He also stated that this program improves enrollment, retention, and attendance, and concurrently improves health in kids. Paul and Mondal (2012) conducted a study in West Bengal and found that schools with the Mid-Day Meal scheme had higher student enrollment and retention rates than schools without it.

The program also supports increasing the attendance and enrollment of poor primary school students. The study further supported the finding that rural head teachers and headmen have a unanimous cheerful outlook towards this midday meal program, similar to the research study by Kantawala (2015), who also showed that the MDM has increased students' enrollment and attendance and the school performance of children in India. The preference is for cooked meals, as this is important for the children's daily participation. Nath and Nath (2015) found that the research focused on MDM and yielded meaningful results, including increased enrollment, attendance, and retention. The reason behind such comparable results may be due to the common study context, the similar goals of the MDM program operators, etc. Based on this conclusion and similar studies, it can be stated that the MDM program plays an incomparable role in students' educational progression. However, the study conducted in Dadhuldura, Nepal, presented contradicting findings. Even the management part of the midday meal is not seen as hopeful; nevertheless, it has a significant impact on students' regularity in school activities and learning outcomes (Pant, 2020). The reason for the difference between Pant's study and my study may be that the parents in his study were from the Dalit community and based on a more traditional livelihood, while the parents in my study were from the Brahmin and Chhetri communities, because the economic condition of the Brahmins and Chhetri communities is better than that of Dalits. Parents' socio-economic status can also influence their understanding of MDM. Studies rarely conclude that the MDM program does not affect the attendance of students.

The study clearly articulates the participants' positive perception of the MDM program in motivating students in class and improving educational quality. Because students do not run away from school due to hunger, they sit in every class, do their homework properly, and improve learning outcomes. These findings align with Maslow's motivation theory (1954), with the basic concept of the need to motivate a subsequent stage of needs. The participants also agreed on the need for food, as hunger is not only related to physical health but also directly affects attention and memory. The study by Panta (2020) highlighted the voices of school administrators and teachers who claimed that midday school meals serve not only to address short-term hunger in schools but are also important for children's socialization and effective teaching and learning. Paul and Mondal (2012) noted that the MDM program had a positive impact in some cases, such as enhancing enrollment and attendance and reducing student retention and dropout

rates, which are essential for achieving higher academic performance. This study indicated that student enrollment, attendance, retention, and dropout rates significantly influenced students' academic achievement. Maslow (1954) states that intelligence, memory, and habit are hunger-gratifying tools, and that addressing hunger motivates them and enables the individual to function accordingly. The participants stated that students' learning behaviour is related to their hunger, so MDM has had a positive impact on their learning, too. MDM supports children's health, growth, and academic performance by boosting brain development, cognition, and memory. Learners cannot concentrate on teaching and learning activities when they are hungry. Proper nutrition is crucial for children's health, growth, and academic performance, as it stimulates brain development, cognition, and memory. Therefore, based on the findings of the study and the similar findings of other supporting studies, it can be concluded that the MDM program plays an incomparable role in motivating the students in class and improving the educational quality.

### **Perceived Impact on Health, Healthy Habits, and Nutrition**

This study demonstrates that the (MDM) program has significantly improved students' health, healthy habits, and nutrition demands by discouraging students from consuming junk food, encouraging them to clean their hands before and after meals, and providing a fresh, nutrient-dense diet, all contributing to better health outcomes. The findings corroborate with Panta (2020) that the program promotes students' personal hygiene and habits. Research in middle- to high-income school settings in India aimed to map the prevalence of malnutrition, including obesity, overweight, underweight, and anaemia, among school adolescents (Matela et al., 2022). This study further revealed a lack of canteen rules, hygienic practices, and a balanced diet routine in the school lunch program. The incidence of obesity and overweight remains high among school-age children. For the effective implementation of the MDM program, a balanced diet routine is essential in Indian schools where MDM is provided (Matela et al., 2022). Additionally, other evidence suggests that MDM programs play a crucial role in fostering healthy eating habits, promoting a healthier lifestyle, and reducing the long-term burden of non-communicable diseases among children (Annamrita, 2023). Similarly, the study suggested the same conclusion as the study findings. It stated that the nutritional status of non-tribal schoolchildren is better than that of tribal children, although both groups do not consume sufficient nutrients as per their requirements (Pothal & Panda, 2018). A study in Punjab, India, consistently indicated that the midday meal program was viewed as a substitute rather than a supplement to the home meal (Mehta et al., 2013). One of the research papers also showed that the Mid-Day Meal Scheme addresses

issues related to access to education, inadequate nutrition, and food security (Shanker & Arora, 2022). In addition to this, Sahoo (2013) concluded that in Odisha, the MDM program provides physiological benefits for school-going children. Aligning the findings of our study with the above, it concludes that the MDM program has a significant impact on students' nutrition and health habits, as well as on health promotion.

### **Enhancement of Students' Social Behaviour**

The findings emphasized the participants' common perception that the program supports students' social behavior and inclusion, such as sitting together during meals, helping each other, developing social bonds among students, no discrimination during meals, and a sense of social security among students. Consistent with the findings of Singh (2019), this study reported that MDM can play a vital role in the erosion of caste prejudices and class inequality by inculcating good practices among children, like sitting together and sharing meals. Pant (2020) similarly noted that the MDM program enhances children's learning abilities, reduces poverty, and promotes social behaviour among schoolchildren. It fosters a sense of discipline, highlighting the children's socialization. Perceptions from all participants indicated that the MDM program develops primary school students' social behaviour.

### **Limitations**

Despite this study's strengths, there are some limitations. First, since this study is limited to two schools in a small municipality, its results cannot be generalized to all community schools in Nepal. Second: Since this study was conducted on a small sample, it indicates a limited representativeness of the respondents, which limits the transferability of the findings. Third: Since this is a qualitative study, the findings emphasize participants' subjective rather than objective experiences.

### **Conclusion**

Based on the findings and discussion above, we can draw several key insights from the diverse stakeholders' perceptions of the value of the MDM program in community schools. Stakeholders commonly perceive that the MDM program plays a role in three principal areas, including academic progression by reducing hunger and absenteeism, improving concentration, and motivating classroom participation. The program enhances health, healthy habits, and nutrition by providing a healthy and balanced diet that promotes hygiene and wellness. It also promotes social behaviour and inclusion among students by fostering sharing, equality, and support. These positive perceptions may support effective implementation and

sustainability of the program. The study suggests that an effective MDM program requires understanding and collaboration among internal stakeholders, such as the SMC, school administration, and cooking staff, and external stakeholders, such as the local government and other partners. The study also calls for further comparative and longitudinal research across a larger area and population.

### Declarations

#### Ethics Approval and Consent to Participate

This study was conducted in accordance with established ethical principles of research, such as informed consent from participants, respect for participants, voluntary participation and confidentiality, responses to protect confidentiality, and the assurance that all school records used in the study would be kept anonymous, with the possibility of withdrawal without consequence.

#### Consent for Publication

Not applicable

#### Competing Interests

The authors declare they have no competing interests.

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#### Authors' Contributions

The first Author: Contributed research design, data collection, analysis and interpretation, and drafting of the manuscript. Second Author: Conceptualized the study, interpreted the data, and critically reviewed the manuscript. Third Author: Contributed on data analysis and interpretation, performed manuscript revision and editing. Last Author: Contributed to the analysis and discussion of the findings, and was responsible for manuscript revision and final editing. All authors read and approved the final version of the manuscript.

#### Use of AI

Research and language improvement.

#### Declaration of Conflict of Interest

The authors declare they have no competing interests.

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