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Assessment of Maternal Knowledge, Attitudes, and Practices on Stunting Prevention among Children Aged 0–24 Months in Burera District, Rwanda

[1]Ahishakiye Samuel, [2]Dr. Amos HABIMANA

[1]Author, [2]Co-author

[1](School of Public Health, Mount Kenya University)

[2](School of Public Health, Mount Kigali University)

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Abstract: **This study assessed maternal knowledge, attitudes, and practices (KAP) on stunting prevention among mothers of children aged 0–24 months in Burera District, Rwanda, where stunting remains a serious public health concern. The research aimed to understand how mothers' awareness, beliefs, and caregiving behaviors influence child growth and nutrition. A cross-sectional design was employed, using structured questionnaires administered to mothers attending health centers for antenatal care and vaccination. Stratified random sampling ensured both urban and rural populations were proportionally represented, enhancing the accuracy and generalizability of the results. The study explored mothers' understanding of the causes and prevention of stunting, their attitudes toward proper nutrition and healthcare, and their actual feeding and childcare practices. Descriptive and inferential analyses, including chi-square tests and multivariate logistic regression, were conducted to examine associations between maternal characteristics and good nutrition practices. Findings revealed that 46.5% of respondents had moderate knowledge about stunting prevention, while 28.3% demonstrated good feeding practices. Positive attitudes toward child nutrition were found in 20.3% of participants. Significant relationships were observed between maternal occupation ($\chi^2 = 13.499$, $p = 0.009$), number of children under five ($\chi^2 = 38.195$, $p < 0.001$), and knowledge levels ($\chi^2 = 24.371$, $p < 0.001$) with good child feeding practices. Regression analysis further showed that mothers with higher knowledge were 81% more likely to adopt proper feeding behaviors (AOR = 0.19; 95% CI: 0.07–0.53, p = 0.002), and households with more young children were nearly twice as likely to exhibit good practices (AOR = 1.906; 95% CI: 1.43–2.54, p < 0.001). However, age, education level, and income were not significantly linked to feeding practices. The study concludes that maternal knowledge and household composition are key determinants of child nutrition behavior. It recommends enhancing maternal education, strengthening community-based nutrition counseling, and providing targeted support to families with multiple young children to reduce stunting and promote healthy growth in Rwanda.**

Keywords: **Maternal, KAP, Stunting Prevention, Children Aged 0–24, Burera District, Rwanda.**

I. INTRODUCTION

Stunting, a key indicator of chronic malnutrition, reflects impaired growth in children caused by prolonged nutritional deficiencies, recurrent infections, and inadequate care. It has long-term consequences, including reduced cognitive and physical development, increased disease susceptibility, and diminished productivity in adulthood. Globally, about 148 million children under five (22%) are stunted (UNICEF, 2023), perpetuating a cycle of poor education, low income, and intergenerational poverty (Black et al., 2013).

Although global progress in reducing stunting is evident, Sub-Saharan Africa (SSA) continues to bear a disproportionately high burden—approximately 37% of children under five remain stunted (UNICEF, 2023). Contributing factors include persistent poverty, food insecurity, limited healthcare access, and inadequate maternal and child nutrition practices. Climate change further exacerbates food scarcity and malnutrition in the region (Gillespie et al., 2020).

In Rwanda, national efforts have led to notable progress, with stunting rates declining from 44% in 2010 to 33% in 2020 (NISR, 2020). However, disparities persist across regions, particularly in the northern and western provinces**,** where rates remain high. Among these, Burera District records a stunting prevalence of 43%**,** highlighting the need for context-specific interventions (NISR, 2020).

Maternal knowledge, attitudes, and practices (KAP) are central to child nutrition and growth outcomes. The KAP framework examines what individuals know, believe, and do regarding a given issue (Kirkpatrick et al., 2017). In Rwanda, despite awareness of proper feeding practices, many mothers struggle to apply this knowledge due to economic hardship, cultural norms, and limited health service access (UNICEF, 2023). For instance, while rural mothers often understand infant and young child feeding (IYCF) guidelines, only about **51%** adhere to optimal feeding behaviors such as exclusive breastfeeding and timely introduction of complementary foods (Mukamana et al., 2023).

Socioeconomic conditions, cultural traditions, and limited education compound these challenges. Mothers with higher education levels tend to demonstrate better feeding, hygiene, and healthcare-seeking behaviors (Kabayiza et al., 2021). Conversely, rural areas like Burera, characterized by low literacy and income levels, face persistent barriers. Poor water, sanitation, and hygiene (WASH) conditions further contribute to malnutrition by increasing infection risks (Prüss-Ustün et al., 2019), while food insecurity forces reliance on nutrient-poor staples (Tumushime et al., 2021). Additionally, cultural taboos may discourage the consumption of protein-rich foods among children (Munyaneza et al., 2022).

To effectively combat stunting, interventions must go beyond food availability to address the broader social, economic, and environmental determinants of malnutrition. Strengthening maternal KAP through community-based nutrition education, coupled with improved access to healthcare, female education, and economic empowerment, offers a sustainable pathway to reducing child stunting.

Despite national progress, Burera District continues to experience disproportionately high stunting levels. This study therefore applies a KAP-based approach to analyze the factors influencing maternal feeding practices and to identify effective strategies for improving child nutrition and reducing stunting in Rwanda.

II. METHODOLOGY

Study Design

This study was utilized a cross-sectional descriptive design, which is well-suited for gathering data on maternal knowledge, attitudes, and practices (KAP) related to stunting prevention at a specific point in time.

Study Setting

The study was conducted in Burera District, located in the Northern Province of Rwanda.

Study Population

The study was targeted mothers or primary caregivers of children aged 0–24 months residing in Burera District.

Sampling Design

Sample Size Calculation

The sample size was calculated using a 95% confidence level and a 5% margin of error. The sample size formula is as follows:

$$N = \frac{Z^2\, pq}{e^2} = \frac{(1.96)^2 \text{ x } 0.5 \text{ x}(1-0.5)}{(0.05)^2} = 384.6 => 385$$

Where:

- **Z** = 1.96 (standard normal deviation corresponding to 95% confidence level)
- **p** = estimated proportion of immunization coverage (assumed to be 0.5 or 50%) (with the study done by Mukama,2023 check whether we can use the reported estimated proportion)
- **e** = margin of error (0.05 or 5%)

This calculation yields a sample size of approximately 384 participants. Accounting for a 10% non-response rate, the final sample size was adjusted to 422 (Daniel, 2012).

Sampling Technique

Stratified random sampling was used to ensure that both urban and rural populations in Burera District are adequately represented.

Data Collection Instruments

Data was gathered through structured interviews using a pre-tested questionnaire designed to assess maternal knowledge, attitudes, and practices (KAP) related to stunting prevention.

Data Analysis

The data was processed using SPSS (Statistical Package for the Social Sciences) version 25 for analysis.

III. RESULTS

1. Socio-Demographic Characteristics of Mothers/Caregivers (N = 385)

The socio-demographic profile of the 385 surveyed mothers and caregivers provides important insights into their background. In terms of age distribution, the majority fell within the age group of 26–35 years, representing 45.7% (n=176) of the respondents. This was followed by those aged 18–25 years who accounted for 30.1% (n=116), while 23.4% (n=90) were between 36–45 years. Only a very small proportion, 0.8% (n=3), were aged 46 years and above. This indicates that most caregivers were young to middle-aged women, an age range typically associated with active childbearing and caregiving responsibilities. With regard to educational attainment, slightly over two-fifths, 42.3% (n=163), had completed primary education. A substantial share, 34.3% (n=132), reported having no formal education at all, highlighting a considerable literacy gap within the population. On the other hand, 20.5% (n=79) had attained secondary education, while only 2.9% (n=11) had pursued education at the tertiary level. These figures suggest that while a portion of the respondents had access to basic education, higher levels of schooling remain limited.

Examining occupational status, the data show that the overwhelming majority, 69.1% (n=266), were engaged in farming activities, reflecting the rural and agrarian context of Burera District. Housewives constituted 15.1% (n=58) of the sample, while 9.4% (n=36) were small-scale business owners. A smaller group, 5.7% (n=22), reported formal employment in either government or private institutions, and a marginal 0.8% (n=3) indicated other unspecified occupations. This points to a predominance of subsistence farming as the main source of livelihood for most households. In terms of household economic status, the majority lived on very limited incomes. Nearly three-quarters, 74.8% (n=288), reported earning less than 50,000 Rwandan Francs per month. Another 17.9% (n=69) earned between 50,000 and 100,000 RWF monthly, while 5.5% (n=21) earned between 101,000 and 200,000 RWF. Only 1.8% (n=7) reported household incomes exceeding 200,000 RWF per month. These findings illustrate widespread financial vulnerability, which could directly affect access to quality food and healthcare services necessary for preventing stunting.

Finally, analysis of the number of children under five years of age per household shows that most families, 59.7% (n=230), had only one child in this age group. Around 23.6% (n=91) had two children under five, while 8.1% (n=31) and 8.6% (n=33) reported three and four or more children, respectively. This distribution highlights that although single-child households were common, a notable proportion of families were managing multiple young children simultaneously, which may place additional strain on household resources and caregiving capacity. Overall, these findings reveal that the study participants were largely young to middle-aged women with modest educational levels, predominantly working in agriculture, living on very low incomes, and caring for one or more children under five. Such socio-demographic characteristics provide essential context for understanding the challenges and opportunities in promoting stunting prevention strategies in Burera District.

Table 1: Socio-Demographic Characteristics of Mothers/Caregivers (N = 385)

Variable	Category	Frequency (n)	Percent (%)
Age category	18–25 years	116	30.1
	26–35 years	176	45.7
	36–45 years	90	23.4

	46 and above	3	0.8
Education level	No formal education	132	34.3
	Primary education	163	42.3
	Secondary education	79	20.5
	Tertiary education	11	2.9
Occupation	Housewife	58	15.1
	Farmer	266	69.1
	Business owner	36	9.4
	Employed (government/private)	22	5.7
	Other	3	0.8
Monthly household income	Less than 50,000 RWF	288	74.8
	50,000 – 100,000 RWF	69	17.9
	101,000 – 200,000 RWF	21	5.5
	Above 200,000 RWF	7	1.8
Number of children under 5 years	One	230	59.7
	Two	91	23.6
	Three	31	8.1
	Four and more	33	8.6

Source: Primary Data (2025)

2. Presentation of Findings

This part of the chapter outlines the study outcomes derived from mothers and caregivers of children aged 0–24 months in Burera District. The results are systematically presented in accordance with the study objectives to ensure logical flow and clarity. The analysis begins with an overview of the respondents' socio-demographic characteristics, after which their levels of knowledge, prevailing attitudes, and actual practices related to stunting prevention are explored. To clearly demonstrate the results, descriptive statistics such as frequencies and percentages are applied, and tables or figures are incorporated where they help illustrate the patterns observed. The structured presentation of the findings creates a foundation for interpreting the determinants of maternal knowledge, attitudes, and practices regarding stunting prevention within the study area.

2.1 Barriers to Stunting Prevention Among Mothers of Children Aged 0–24 Months in Burera District

The findings presented in the table highlight the major barriers mothers face in preventing stunting among children aged 0–24 months in Burera District. Out of the total 281 respondents, the most frequently reported barrier was financial constraints, accounting for 90 mothers (32.0%). This suggests that limited household income significantly hinders the ability of mothers to access adequate and diverse food necessary for optimal child growth and development. The second most common barrier was limited access to nutritious food, reported by 71 mothers (25.3%). This reflects the reality that, even when mothers are aware of appropriate feeding practices, the unavailability or high cost of nutritious foods such as animal protein, fruits, and vegetables may restrict their application. Closely following this, lack of knowledge on proper nutrition was mentioned by 68 mothers (24.2%), indicating that gaps in maternal nutritional knowledge continue to play a critical role in poor infant feeding practices.

A smaller proportion of respondents highlighted barriers related to health service utilization. Lack of access to healthcare services was reported by 23 mothers (8.2%), while distance to health facilities was cited by 4 mothers (1.4%). These findings imply that although health service–related barriers are less common compared to financial and knowledge-based challenges, they still contribute to stunting by limiting opportunities for nutrition counseling, growth monitoring, and timely interventions. Cultural influences were also observed, with 22 mothers (7.8%) reporting cultural beliefs and practices as a barrier. This indicates that traditional norms, food taboos, or misconceptions about child feeding may discourage the adoption of optimal nutrition practices. Lastly, a small fraction, 3 mothers (1.1%), mentioned other barriers, which could include individual or household-specific challenges not captured in the main categories. Overall, the results demonstrate that the prevention of stunting in Burera District is constrained primarily by economic limitations, food insecurity, and gaps in maternal nutrition knowledge, with health system and cultural factors contributing to a lesser extent.

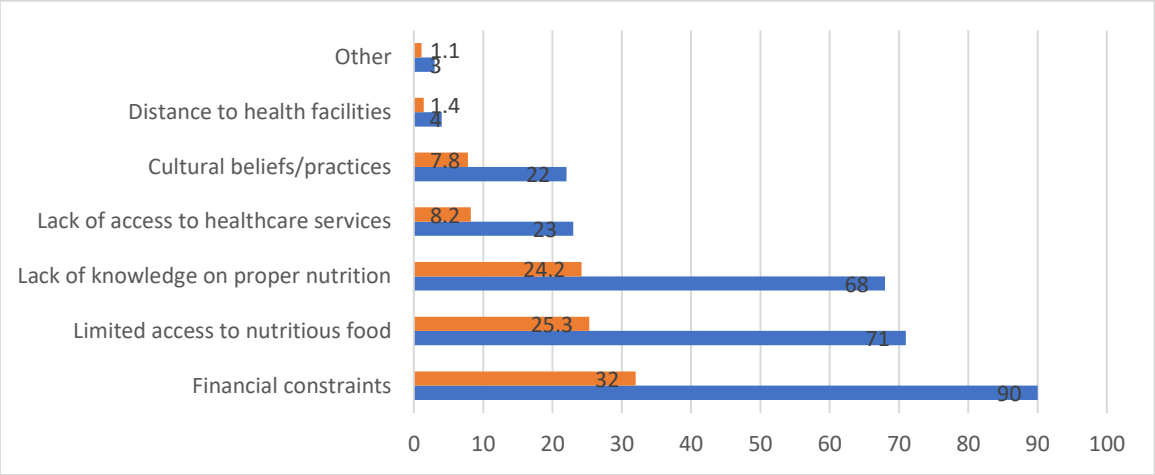

Figure 1: Barriers to Stunting Prevention Among Mothers of Children Aged 0–24 Months in Burera District

Source: Primary Data (2025)

2.2 Maternal Knowledge on Stunting Among Children Aged 0–24 Months

The study explored mothers' understanding of stunting among children aged 0–24 months in Burera District. Concerning the definition of stunting, a majority, 57.7% (n=222), correctly described it as a child being too short for their age due to malnutrition. Meanwhile, 24.4% (n=94) thought it referred to low body weight relative to height, and 11.2% (n=43) incorrectly associated it with being overweight. A small proportion, 6.8% (n=26), were unsure of its meaning. These findings suggest that while most mothers grasp the concept of stunting, some misconceptions persist. Regarding the causes of stunting, more than half of the respondents, 53.5% (n=206), recognized poor nutrition as the primary factor. Additionally, 22.9% (n=88) identified inadequate breastfeeding as a cause, while 7.8% (n=30) cited poor sanitation and hygiene, and 8.6% (n=33) mentioned genetic factors. Approximately 7.3% (n=28) of mothers did not know the causes. This indicates that although nutritional deficiency is well-understood, awareness of other contributing factors remains limited. When asked about foods that can prevent stunting, just over half of the mothers, 51.7% (n=199), highlighted breast milk. A further 25.5% (n=98) recognized fruits and vegetables, and 14.3% (n=55) identified animal proteins. However, 6.8% (n=26) incorrectly selected sugary foods, and 1.8% (n=7) were unsure. This demonstrates a partial understanding of optimal dietary practices for stunting prevention.

In terms of exclusive breastfeeding duration, a substantial majority, 75.6% (n=291), correctly indicated six months as the recommended period. Only 6.2% (n=24) suggested three months, 2.6% (n=10) believed nine months was sufficient, and 15.6% (n=60) thought it should continue for twelve months. This shows good awareness of breastfeeding guidelines, though some mothers still hold incorrect beliefs. Concerning complementary feeding, 78.4% (n=302) of respondents correctly understood that it provides essential nutrients starting from six months of age. A smaller group, 5.7% (n=22), thought complementary feeding should begin after one year, while 9.9% (n=38) believed it has no effect on stunting, and 6.0% (n=23) were unsure. These results indicate that most mothers are aware of the importance of complementary feeding, but some gaps in knowledge remain. In summary, maternal knowledge on stunting in Burera District is relatively strong in areas such as definitions, breastfeeding, and complementary feeding. Nevertheless, misconceptions about its causes and the specific foods that prevent stunting highlight the need for targeted nutrition education programs.

Table 2: Maternal Knowledge on Stunting Among Children Aged 0–24 Months

Question	Response	Frequency (n)	Percent (%)
What is stunting?	A child being too short for their age due to malnutrition	222	57.7
	A child having low body weight for their height	94	24.4
	A child being overweight	43	11.2
	Don't know	26	6.8
What causes stunting in children?	Poor nutrition	206	53.5

	Lack of breastfeeding	88	22.9
	Poor sanitation and hygiene	30	7.8
	Genetic factors	33	8.6
	Don't know	28	7.3
Which of the following foods can help prevent stunting in children?	Breast milk	199	51.7
	Fruits and vegetables	98	25.5
	Animal proteins	55	14.3
	Sugary foods	26	6.8
	Don't know	7	1.8
How long should a child be exclusively breastfed to prevent stunting?	3 months	24	6.2
	6 months	291	75.6
	9 months	10	2.6
	12 months	60	15.6
What is the role of complementary feeding in stunting prevention?	It helps provide additional nutrients after 6 months of age	302	78.4
	It should only be started after the child turns 1 year old	22	5.7
	It has no effect on stunting	38	9.9
	Don't know	23	6.0

Source: Primary Data (2025)

2.3 Levels of Maternal Knowledge on Stunting Prevention Among Children Aged 0–24 Months

Maternal understanding of stunting prevention was evaluated using a composite knowledge score ranging from 5 to 20 points. For analysis, the scores were categorized into three levels: poor knowledge (5–8), moderate knowledge (9–13), and good knowledge (14–20). The results showed that 46.5% (n=179) of the mothers had poor knowledge, suggesting that nearly half of the participants had limited awareness regarding the causes, consequences, and preventive strategies for stunting. This low level of understanding could negatively impact the implementation of recommended child-feeding practices. An almost equal proportion, 46.2% (n=178), demonstrated moderate knowledge, indicating that while these mothers possessed some insight into stunting and nutritional practices, there were still significant gaps that may hinder effective prevention. This group may require additional educational interventions to fully translate knowledge into practical actions. Only 7.3% (n=28) of respondents exhibited good knowledge, reflecting a comprehensive understanding of stunting and appropriate preventive measures. Mothers in this category are more likely to adopt optimal feeding practices and preventive behaviors that support healthy child growth. Overall, these findings highlight that the majority of mothers in Burera District have either limited or partial knowledge of stunting prevention, emphasizing the need for targeted nutrition education programs and awareness campaigns to improve child health outcomes (Olowokere & Oyewole, 2021).

Table 3: Levels of Maternal Knowledge on Stunting Prevention Among Children Aged 0–24 Months

Knowledge Level	Score Range	Frequency	Percent
Poor	5–8	179	46.5
Moderate	9–13	178	46.2
Good	14–20	28	7.3
Total	5–20	385	100.0

Source: Primary Data (2025)

2.4 Maternal Attitudes Toward Stunting Prevention Among Children Aged 0–24 Months in Burera District

The study assessed maternal attitudes toward preventing stunting among children aged 0–24 months in Burera District, using ten statements to gauge beliefs, perceptions, and confidence regarding nutrition and childcare practices. Concerning the importance of maternal knowledge in stunting prevention, a significant proportion, 71.4% (n=275), either agreed or strongly agreed, reflecting recognition that informed caregivers are crucial for promoting healthy child growth. A smaller portion, 19.2% (n=74), disagreed or strongly disagreed, while 9.4% (n=36) remained neutral, suggesting that a few mothers

may not fully appreciate the role of knowledge. On whether stunting poses a serious threat to children's health and development, 67.0% (n=258) of participants agreed or strongly agreed, demonstrating awareness of its long-term consequences. Conversely, 22.9% (n=88) disagreed or strongly disagreed, with 10.1% (n=39) neutral, highlighting some uncertainty among a minority. Regarding the critical nature of nutrition in the first two years of life, 72.4% (n=279) acknowledged its importance, indicating strong awareness that early nutrition significantly influences growth. Disagreement was noted among 19.0% (n=73), while 8.3% (n=32) remained neutral.

For the statement that stunting can be prevented through appropriate feeding and care, 70.9% (n=273) agreed or strongly agreed, suggesting confidence in the effectiveness of recommended practices, though 20.2% (n=78) disagreed or strongly disagreed, and 8.6% (n=33) were neutral. On the role of mothers in preventing stunting, 72.5% (n=279) agreed or strongly agreed, indicating recognition of their direct influence on child nutrition and health. 18.4% (n=71) disagreed or strongly disagreed, with 9.1% (n=35) neutral. Regarding the impact of stunting on cognitive and physical development, 67.5% (n=260) of mothers agreed or strongly agreed that stunting negatively affects children, while 22.6% (n=87) disagreed or strongly disagreed, and 9.9% (n=38) were neutral, reflecting some gaps in understanding. For the importance of following health workers' guidance, 64.2% (n=247) agreed or strongly agreed, showing trust in professional advice, whereas 24.9% (n=96) disagreed or strongly disagreed, and 10.9% (n=42) were neutral. Regarding nutritional interventions like breastfeeding and complementary feeding, 65.2% (n=251) of mothers agreed or strongly agreed on their relevance, with 24.4% (n=94) in disagreement and 10.4% (n=40) neutral, indicating overall good awareness of preventive practices. When asked about challenges in providing balanced nutrition due to limited resources, 65.2% (n=251) acknowledged these difficulties, while 24.7% (n=95) disagreed, and 10.1% (n=39) were neutral, underscoring economic constraints as a barrier.

Finally, regarding confidence in preventing stunting through proper nutrition and care, 65.2% (n=251) agreed or strongly agreed, suggesting that most mothers feel capable of implementing preventive measures. 24.4% (n=94) disagreed or strongly disagreed, and 10.4% (n=40) were neutral. Overall, the results indicate that most mothers in Burera District have a positive attitude toward stunting prevention, acknowledge the importance of their role, and understand that proper nutrition and childcare practices are essential. However, the presence of neutral or disagreeing responses points to areas where further education and support could enhance maternal attitudes and practices.

Table 4: Maternal Attitudes Toward Stunting Prevention Among Children Aged 0–24 Months in Burera District

Statement	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
1. Maternal knowledge is essential for preventing stunting in children	33 (8.6%)	41 (10.6%)	36 (9.4%)	138 (35.8%)	137 (35.6%)
2. Stunting is a serious issue that affects children's health and future development	40 (10.4%)	48 (12.5%)	39 (10.1%)	135 (35.1%)	123 (31.9%)
3. A child's nutrition during the first two years of life is critical in preventing stunting	31 (8.1%)	42 (10.9%)	32 (8.3%)	146 (37.9%)	133 (34.5%)
4. I believe that stunting can be prevented through proper feeding and care practices	34 (8.8%)	44 (11.4%)	33 (8.6%)	142 (36.9%)	131 (34.0%)
5. I think that mothers play a significant role in preventing stunting through proper child care	29 (7.5%)	42 (10.9%)	35 (9.1%)	149 (38.7%)	130 (33.8%)
6. I believe that stunted children have difficulties in their cognitive and physical development	42 (10.9%)	45 (11.7%)	38 (9.9%)	149 (38.7%)	111 (28.8%)
7. It is important to follow the advice of health workers to prevent stunting	44 (11.4%)	52 (13.5%)	42 (10.9%)	137 (35.6%)	110 (28.6%)
8. Nutritional interventions such as breastfeeding and complementary feeding are important in preventing stunting	43 (11.2%)	51 (13.2%)	40 (10.4%)	140 (36.4%)	111 (28.8%)
9. It is difficult to provide balanced nutrition due to limited resources in my household	43 (11.2%)	52 (13.5%)	39 (10.1%)	141 (36.6%)	110 (28.6%)
10. I am confident that I can prevent stunting through proper child nutrition and care practices	43 (11.2%)	51 (13.2%)	40 (10.4%)	144 (37.4%)	107 (27.8%)

Source: Primary Data (2025)

2.5 Levels of Maternal Attitudes Toward Stunting Prevention Among Children Aged 0–24 Months in Burera District

The analysis of maternal attitudes toward stunting prevention was grouped into three levels: negative, neutral, and positive. Mothers with negative attitudes (28.8%, n=111) displayed limited engagement or unfavorable perceptions regarding preventive measures for stunting, suggesting gaps in awareness or confidence in recommended practices. The largest segment, 62.9% (n=242), exhibited a neutral stance, reflecting uncertainty or mixed feelings about their role and the effectiveness of interventions to prevent stunting. Only a small proportion, 8.3% (n=32), were classified as having a positive attitude, indicating a strong commitment to and understanding of strategies such as proper feeding, nutrition, and adherence to health advice. These findings reveal that while a minority of mothers are confident and proactive in stunting prevention, most are uncertain, highlighting the need for structured educational programs and supportive interventions to foster positive maternal attitudes and improve child nutrition outcomes.

Table 5: Levels of Maternal Attitude Toward Stunting Prevention Among Children Aged 0–24 Months (N = 385)

Attitude Category	Score Range	Frequency (n)	Percent (%)
Negative	24–33	111	28.8
Neutral	34–40	242	62.9
Positive	41–88	32	8.3
Total	24–88	385	100

Source: Primary Data (2025)

2.6 Maternal Practices on Child Feeding and Care for Stunting Prevention Among Children Aged 0–24 Months in Burera District, Rwanda

The study assessed maternal practices related to child feeding and care for children aged 0–24 months in Burera District. Findings indicated that exclusive breastfeeding up to six months is widely practiced, with 61.3% (n=236) of mothers reporting consistent adherence, 29.1% (n=112) doing so frequently, and only 9.6% (n=37) doing so occasionally. This reflects a generally strong commitment to recommended breastfeeding guidelines among most respondents. Concerning complementary feeding after six months, the majority of mothers (68.3%, n=263) provide such foods regularly, while 25.2% (n=97) offer them sporadically. A minor proportion either does not provide complementary foods (2.9%, n=11) or is uncertain (3.6%, n=14), demonstrating that most mothers understand the necessity of introducing age-appropriate foods at the proper time. Regarding animal protein intake, nearly half of the mothers (48.8%, n=188) feed their children once weekly, 23.4% (n=90) provide it two to three times a week, and only 10.4% (n=40) give it daily. However, 17.4% (n=67) never include animal protein in their child's diet, revealing a potential gap in meeting essential nutritional needs critical for stunting prevention.

When it comes to ensuring a balanced diet, 42.9% (n=165) of mothers rely on available household foods, whereas 35.1% (n=135) actively plan meals according to nutritional recommendations. A smaller proportion, 14.8% (n=57), follow guidance from health professionals, and 7.3% (n=28) do not ensure dietary balance at all. These results indicate that while some mothers intentionally provide nutritionally balanced meals, many depend on what is readily accessible at home, which may limit dietary diversity. For child health check-ups and vaccinations, the vast majority of mothers (77.9%, n=300) attend regularly, 12.2% (n=47) attend occasionally, 9.1% (n=35) rarely, and 0.8% (n=3) never take their children for scheduled services. This shows that preventive health service utilization is generally high among respondents. Lastly, in terms of following health workers' advice on nutrition and growth, 63.9% (n=246) of mothers reported always adhering to recommendations, 25.2% (n=97) sometimes follow guidance, 7.0% (n=27) do not follow advice, and 3.9% (n=15) do not consult health workers. This reflects a substantial reliance on professional guidance, which is vital for supporting optimal child nutrition and stunting prevention. Overall, the findings suggest that while adherence to exclusive breastfeeding, complementary feeding, and regular health check-ups is high, gaps remain in animal protein provision and ensuring fully balanced diets, highlighting the need for targeted nutrition education and support programs.

Table 6: Maternal Practices on Child Feeding and Care for Stunting Prevention Among Children Aged 0–24 Months in Burera District, Rwanda

Practice Question	Response Category	Frequency (n)	Percent (%)	Cumulative Percent (%)
Exclusive breastfeeding until 6 months	Always	236	61.3	61.3
	Often	112	29.1	90.4
	Occasionally	37	9.6	100.0
Providing complementary foods after 6 months	Yes, regularly	263	68.3	68.3
	Yes, occasionally	97	25.2	93.5
	No	11	2.9	96.4
	Not sure	14	3.6	100.0
Providing animal protein	Daily	40	10.4	10.4
	2–3 times a week	90	23.4	33.8
	Once a week	188	48.8	82.6
	Never	67	17.4	100.0
Ensuring a balanced diet	Plan meals based on nutritional guidelines	135	35.1	35.1
	Feed based on available home foods	165	42.9	77.9
	Rely on advice of health workers	57	14.8	92.7
	Do not ensure balanced meals	28	7.3	100.0
Health check-ups and vaccinations	Regularly as scheduled	300	77.9	77.9
	Occasionally	47	12.2	90.1
	Rarely	35	9.1	99.2
	Never	3	0.8	100.0
Following health workers' advice on nutrition	Yes, always	246	63.9	63.9
	Yes, sometimes	97	25.2	89.1
	No	27	7.0	96.1
	I don't visit health workers	15	3.9	100.0

Source: Primary Data (2025)

2.7 Distribution of Maternal Child-Feeding and Care Practice Levels Among Children Aged 0–24 Months in Burera District

The evaluation of maternal child-feeding and care practices in Burera District showed that a majority of mothers exhibited inadequate practices. Specifically, 71.7% (n=276) of respondents scored between 6 and 11, placing them in the "Poor Practices" category. This finding indicates that most mothers are not consistently applying recommended strategies for child nutrition and care, which could increase the risk of stunting among children aged 0–24 months. Conversely, 28.3% (n=109) of mothers scored between 12 and 18 points, categorizing them as having "Good Practices." These mothers consistently implemented key stunting prevention measures, such as exclusive breastfeeding, timely introduction of complementary foods, providing a balanced diet, and following health worker advice. Overall, the results highlight a substantial gap in optimal child-feeding and care practices among mothers. While a smaller group adheres to proper practices, the majority require additional support and education to improve behaviors that are critical for preventing stunting.

Table 7: Distribution of Maternal Child-Feeding and Care Practice Levels Among Children Aged 0–24 Months in Burera District

Practice Level	Score Range	Frequency (n)	Percent (%)
Poor Practices	6–11	276	71.7
Good Practices	12–18	109	28.3
Total	6–18	385	100.0

Source: Primary Data (2025)

2.8 Association Between Socio-Demographic, Knowledge, and Attitude Factors and Maternal/Caregiver Child Nutrition Practices in Burera District

In the 18–25 years' group, 82 caregivers were observed to have poor practices, while 34 demonstrated good practices. Among those aged 26–35, 131 exhibited poor practices compared to 45 with good practices. For the 36–45 age range, 63 had poor practices and 27 had good practices. In the 46 years and above category, all three respondents displayed good practices, with none classified as poor. Age was significantly associated with nutrition practices ($\chi^2 = 8.432$, $p = 0.038$), indicating that younger and middle-aged caregivers were more likely to show poor feeding practices. Respondents without formal education recorded 84 poor and 48 good practices. Those with primary education had 121 poor and 42 good practices, while secondary education respondents exhibited 63 poor and 16 good practices. Among tertiary-educated caregivers, eight had poor practices and three demonstrated good practices. The association between education level and practice was not statistically significant at the 5% level ($\chi^2 = 7.270$, $p = 0.064$), although higher education appeared to correlate with better nutritional practices.

Housewives reported 34 poor and 24 good practices. Farmers recorded 203 poor versus 63 good practices. Business owners had 20 poor and 16 good practices, and employed caregivers (government/private) showed 16 poor and six good practices. Respondents in other occupations had three poor practices and none classified as good. Occupation was significantly associated with nutrition practices ($\chi^2 = 13.499$, $p = 0.009$), suggesting that caregivers engaged in farming or household duties were more likely to have inadequate feeding practices. Caregivers from households earning less than 50,000 RWF showed 214 poor and 74 good practices. Those earning 50,000–100,000 RWF recorded 43 poor and 26 good practices, while 101,000–200,000 RWF households had 15 poor and six good practices. Households earning above 200,000 RWF showed four poor and three good practices. No significant association was found between income and practice levels ($\chi^2 = 4.687$, $p = 0.196$), indicating that household earnings alone did not strongly influence child feeding practices in this study.

Caregivers with one child had 184 poor and 46 good practices. Those with two children had 65 poor and 26 good practices. Households with three children recorded 10 poor and 21 good practices, and those with four or more children had 17 poor and 16 good practices. A significant relationship existed between the number of children and practice levels ($\chi^2 = 38.195$, $p = 0.000$), suggesting that caregivers with fewer children were more likely to demonstrate poor practices, while those with more children sometimes exhibited better practices, potentially due to accumulated caregiving experience. Among caregivers with poor knowledge (scores 5–8), 143 exhibited poor practices and 36 had good practices. Those with moderate knowledge (9–13) recorded 123 poor and 55 good practices, and caregivers with good knowledge (14–20) had 10 poor and 18 good practices.

Knowledge levels were strongly associated with nutritional practices ($\chi^2 = 24.371$, $p = 0.000$), emphasizing the influence of nutrition awareness on proper feeding behaviors. Caregivers with negative attitudes (scores 24–33) had 64 poor and 23 good practices. Respondents with neutral attitudes (34–40) recorded 162 poor and 58 good practices, while those with positive attitudes (41–88) showed 50 poor and 28 good practices. Attitude did not show a statistically significant association with practice levels ($\chi^2 = 2.773$, $p = 0.250$), suggesting that while attitude may play a role, it was not a key determinant in this sample. The analysis indicates that maternal or caregiver age, occupation, number of children under five, and knowledge levels significantly influence child nutrition practices, whereas education, household income, and attitude have weaker or non-significant effects. These findings highlight the need to focus interventions on younger, less experienced, or less knowledgeable caregivers to enhance child feeding practices and prevent malnutrition.

Table 8: Association Between Socio-Demographic, Knowledge, and Attitude Factors and Maternal/Caregiver Child Nutrition Practices in Burera District

Variable	Category	Poor Practices (6–11)	Good Practices (12–18)	Chi-Square (Pearson)	p-value
Age category	18–25	82	34	8.432	0.038*
	26–35	131	45		
	36–45	63	27		
	46+	0	3		
Education level	No formal education	84	48	7.270	0.064
	Primary	121	42		
	Secondary	63	16		
	Tertiary	8	3		

Occupation	Housewife	34	24	13.499	0.009*
	Farmer	203	63		
	Business owner	20	16		
	Employed	16	6		
	Other	3	0		
Monthly household income	<50,000 RWF	214	74	4.687	0.196
	50,000–100,000 RWF	43	26		
	101,000–200,000 RWF	15	6		
	>200,000 RWF	4	3		
Number of children <5	One	184	46	38.195	0.000*
	Two	65	26		
	Three	10	21		
	Four+	17	16		
Knowledge levels	Poor (5–8)	143	36	24.371	0.000*
	Moderate (9–13)	123	55		
	Good (14–20)	10	18		
Attitude levels	Negative (24–33)	64	23	2.773	0.250
	Neutral (34–40)	162	58		
	Positive (41–88)	50	28		

Source: Primary Data (2025)

IV. DISCUSSION

The prevention of stunting among children aged 0–24 months requires a multifaceted approach that addresses maternal knowledge, attitudes, and practices within their socio-economic and cultural contexts. In Rwanda, and particularly in rural districts such as Burera, maternal capacity to prevent stunting is influenced by various interrelated factors, including age, education, occupation, and access to health information. Research across East Africa has highlighted that maternal behaviors related to infant feeding, hygiene, and healthcare-seeking practices are key determinants of child growth and development (Tesema et al., 2021).

Maternal age has consistently been recognized as an important factor in shaping childcare practices. Studies conducted in Ethiopia and Tanzania demonstrate that younger mothers often face challenges in adopting recommended child-feeding and healthcare practices due to limited experience and exposure to maternal education programs (Amaha et al., 2021; Tesema et al., 2021). This underscores the importance of developing age-sensitive health promotion strategies that provide younger mothers with the guidance and support needed to build confidence and competence in child care.

The occupational status of mothers also plays a significant role in influencing child nutrition practices. Research in Kenya and other East African settings indicates that employed mothers may have limited time to devote to child feeding and care routines, which can affect child nutritional outcomes (Ahmed et al., 2022). Therefore, community-based interventions should be designed to accommodate mothers' work schedules and household responsibilities, ensuring that all mothers—regardless of occupation—have the opportunity to access information and resources on stunting prevention.

Maternal experience, often reflected in parity, is another factor that shapes maternal competence in child-rearing. Evidence from Ethiopia suggests that mothers with multiple children tend to have greater practical knowledge and confidence in child nutrition and health care (Amaha et al., 2021). However, this also points to the need for targeted capacity-building programs for first-time mothers to equip them with essential child-care knowledge and skills early on.

Knowledge remains the cornerstone of effective maternal and child health practices. As noted by Habimana and Mutesi (2021) and Tsedeke et al. (2023), comprehensive maternal education on nutrition, breastfeeding, complementary feeding, and hygiene significantly enhances the adoption of appropriate child-care behaviors. Consequently, policy interventions should strengthen health education initiatives through community health workers, antenatal clinics, and mother-to-mother support groups to promote behavior change and sustain positive practices.

While formal education contributes to general awareness, its direct impact on stunting prevention is often mediated by access to relevant health information and socio-economic conditions. Studies have shown that even educated mothers may fail to implement recommended feeding and hygiene practices if constrained by poverty, cultural beliefs, or inadequate health infrastructure (Amaha et al., 2021). This implies that education-based interventions must be complemented by structural support measures—such as income-generating programs and improved access to healthcare and nutritious food—to translate knowledge into practice.

Furthermore, maternal attitudes, although important in shaping intentions, may not necessarily lead to behavioral change without adequate resources and environmental support. As observed in other East African studies, positive attitudes toward child nutrition and health can be hindered by factors such as food insecurity, low income, and poor access to healthcare services (Amaha et al., 2021). Therefore, efforts to improve maternal practices must go beyond attitude change campaigns and instead integrate socioeconomic empowerment and service accessibility into stunting prevention strategies.

Overall, the discussion highlights that maternal knowledge, socio-demographic characteristics, and contextual barriers collectively influence the effectiveness of stunting prevention efforts. Sustainable progress requires a holistic approach that combines health education, social support, and policy interventions. Strengthening community-based nutrition programs, particularly for young and less experienced mothers, can foster lasting behavioral change and contribute to national and regional goals of reducing child stunting in Rwanda and other low-resource settings (Habimana & Mutesi, 2021; Tsedeke et al., 2023).

V. CONCLUSION

The study concludes that maternal knowledge plays a pivotal role in promoting good child nutrition practices; however, knowledge alone is insufficient to ensure consistent adoption of such behaviors. Structural and socio-demographic factors—including maternal age, education level, occupation, household size, and the number of children under five—significantly influence the extent to which recommended practices are followed. Younger mothers and those caring for multiple young children are particularly at risk of adopting suboptimal childcare and feeding practices.

Education emerges as a key enabler of positive nutrition behaviors, with better-educated mothers demonstrating a higher likelihood of adhering to appropriate feeding and care standards. Although household income contributes to improved outcomes, it cannot fully counterbalance the challenges associated with large family sizes or limited maternal knowledge. Furthermore, while positive maternal attitudes toward stunting prevention contribute meaningfully to improved practices, their influence remains secondary to knowledge and structural determinants.

Overall, the findings underscore that interventions focusing solely on attitude change are likely to yield limited results unless they are accompanied by efforts to enhance maternal knowledge and address practical barriers. Therefore, a comprehensive and integrated approach—combining nutrition education, economic empowerment, and robust health system support—is essential for optimizing child nutrition practices and effectively preventing stunting within the East African Community (EAC) context.

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