Journal of Science, Innovation and Creativity
Vol. 4 No. 2 (2025): ISSN (Online): 2958-454X
DOI: https://doi.org/10.58721/jsic.v4i2.1148
Factors Affecting Monitoring and Evaluation of Malnutrition Reduction Programs among Children Under Five Years in Wanging'ombe District, Njombe, Tanzania

Factors Affecting Monitoring and Evaluation of Malnutrition Reduction Programs among Children under Five Years in Wanging'ombe District, Njombe, Tanzania

Luhuvilo Lupondo, Hebron Nyamboga, George Kihamba & Fadhir Ngalawa
Institute of Rural Development Planning, Tanzania

Article History
Received: 2025-02-04
Revised: 2025-06-08
Accepted: 2025-06-12
Published: 2025-06-13

Keywords
Accessibility
Children
Community involvement
Malnutrition

How to cite:
Lupondo, L., Nyamboga, H., Kihamba, G., & Ngalawa, F. (2025). Factors Affecting Monitoring and Evaluation of Malnutrition Reduction Programs among Children Under Five Years in Wanging'ombe District, Njombe, Tanzania. *Journal Science, Innovation and Creativity, 4*(2), 34-47.

Abstract
The study on factors affecting the monitoring and evaluation (M&E) of malnutrition reduction among children under five years was conducted in Wanging'ombe District. A total of 98 nurses were randomly selected purposively across 15 health facilities. Purposive sampling was used to select the heads of health facilities. Data collection methods included interviews, documentary reviews, and focus group discussions. The study focused on two specific objectives. The first objective was to investigate M&E practices related to malnutrition reduction among children under five. Descriptive statistical analysis was employed. The results revealed that common M&E practices included the preparation and use of standard M&E tools (66%), participatory monitoring and evaluation (65%), frequent meetings (67%), and supportive supervision (65%). To examine the determinants of M&E practices in reducing malnutrition among children under five, multiple linear regression analysis was used for analysis. The results showed that the involvement of NGOs and CSOs P-value 0.023, the financial capacity of organizations p- value 0.016,, the availability of M&E experts p -value 0.003, and the functionality of the M&E system p value 0.024 had significant effects on M&E practices, as their p-values were below 0.05. The government should involve NGOs in the fight against malnutrition, as they contribute significantly to its reduction. Additionally, the government should emphasize the use of robust M&E systems and prioritize the recruitment of M&E experts to ensure effective monitoring and evaluation for reducing malnutrition among children under five.

Introduction
Malnutrition among children under five years remains one of the most significant challenges facing communities in Tanzania (Bundara, 2018). The prevalence of malnutrition is notably high, with rates of 44% in Mainland Tanzania and 31% in Zanzibar (NBS, 2016). Approximately 500,000 children are underweight, and more than 200,000 suffer from vitamin and mineral deficiencies (Bonatti et al., 2021).

Monitoring and evaluation (M&E) is an essential component in ensuring the efficient and effective implementation of malnutrition programs. Without proper monitoring and evaluation (M&E), tracking progress is difficult. However, many developing countries, including Tanzania, lack effective monitoring and evaluation (M&E) tools in the health sector to collect reliable nutritional data.

In Tanzania, the problem of malnutrition is particularly severe in the southern highland regions. For example, the malnutrition rate in Njombe Region was approximately 53.6% (NBS, 2016), while in Wanging'ombe. District reported a rate of 42.3% (DHS, 2021).

Various stakeholders and organisations have implemented programs aimed at reducing malnutrition among children under five in Wanging'ombe, including USAID Kizazi Kipya, USAID Tulonge Afya, Tubadili Tabia, and USAID Boresha Afya.

Despite these efforts and numerous studies conducted (Adeyemi, 2022; Leach & Kilama, 2009; Kalu, 2018; Bundara, 2013; Kimiywe, 2015; Emmanuel, 2016; Panda et al., 2020; Town, 2019), malnutrition persists in Tanzania, particularly in the Njombe Region. For instance, in 2021, 32% of children under five were stunted, and 58% suffered from anaemia (DHS, 2021).

Previous research has primarily focused on food availability and the causes of malnutrition. Limited information exists on how monitoring and evaluation (M&E) practices influence the effectiveness of such programs. The study was supported by empirical literature, as outlined below.

Several researchers have examined the effectiveness of management and evaluation (M&E) systems, such as the Health Management Information System (HMIS), for data collection. Most findings suggest that HMIS is frequently used to comply with government or donor requirements rather than as a tool to track and improve nutritional outcomes. For example, Maina et al. (2017) recommended using HMIS to assess children's nutritional status, particularly during measles vaccination. However, local government health staff face challenges in adopting M&E systems due to a lack of commitment among health workers. Furthermore, disinterest among managers impedes the practical application of M&E in district councils (Naisiae et al., 2024).

Tungotyo (2017), in a study on malnutrition among infants with cleft palate and/or lip in Uganda, identified education level and lack of awareness about nutrients and supplements as key contributing factors. Similarly, Ashagidigbi et al. (2022) and Clark (2016) emphasised the importance of developing and implementing sustainable monitoring and evaluation (M&E) protocols for malnutrition rehabilitation programs in resource-limited settings. Their studies suggest that such protocols could be adapted in other under-resourced communities where interventions are urgently needed.

Studies in Nigeria have shown that the use of improved techniques, instruments, and standardisation has increased the sensitivity and specificity of the Mid-Upper Arm Circumference (MUAC) in assessing nutritional status (Ashagidigbi et al., 2022). For instance, they reported a specificity of 95.3% for identifying wasting using a 13.5 cm MUAC cutoff compared to weight-for-age measures. However, in Tanzania, the utilisation of the M&E system remains low. Consequently, there is limited information on the factors contributing to the successful implementation of M&E for reducing malnutrition among children under five in Wanging'ombe District.

Methods

Research design

A cross-sectional study, also known as a survey or prevalence study, collects data from a population or representative sample at a single point in time. In the context of under-five child malnutrition, this approach allows researchers to examine the prevalence of malnutrition, its associated factors all at once (Cummings, 2018).

Research Area

The study was conducted in Wanging'ombe District, one of the six districts in the Njombe Region of Tanzania, East Africa. The district has a population of 191,506 people, according to the 2022 Tanzania National Census. The administrative seat is in Igwachanya. The District lies between latitudes 8°8'

and 9°8′ south of the Equator and between longitudes 33°5′ and 35°8′ east of Greenwich. The District shares borders with Makambako Town and Njombe District to the East, the Iringa region to the North, and Makete District to the West. Its administrative headquarters are located in Igwachanya, approximately 50 kilometres from Njombe town, along the Makambako-Mbeya Road. According to the 2022 Tanzania National Census, the District population was 191,506. The study area has been selected due to a high rate of malnutrition among children under five years old, at approximately 42.6% (DHS, 2021).

Sample size

The study involved a sample size of 98. Registered and enrolled Nurses were selected by purposive sampling from nurses who are working in 15 health facilities. Purposive sampling was employed to select key informants, who were heads of sections and units, and a cross-sectional design was utilised to collect the required data.

Sampling procedures

To conduct purposive sampling of nurses across 15 health facilities for a study on malnutrition reduction in children under five years, specific criteria were identified (only staff dealing with matters related to malnutrition issues were selected). The task was done with the assistance of the heads of facilities. This ensured that data was obtained from individuals who can offer valuable insights.

Data collection

Both qualitative and quantitative data were collected from primary and secondary sources. Data were collected through interviews, focus group discussions, and documentary reviews, which were administered using questionnaires and checklists. Several data points were collected, including patient records such as weight, height, and other anthropometric measurements.

Data analysis

Descriptive statistical analysis was used to examine the demographic characteristics of respondents and to assess monitoring and evaluation practices related to reducing malnutrition among children under five. Multiple linear regression analysis was conducted to identify the factors contributing to the successful implementation of monitoring and evaluation in addressing malnutrition. A description of these factors and their measurement is provided in Table 2.

Description of variables in the regression model

$Y=f\ (x_1, x_2, x_3, x_4 \ldots\ldots\ldots\ldots X_n\ \varepsilon)$ .....Equation (i)

$Y = \beta_0 + \beta_1X_1 + \beta_2X_2 + \beta_3X_3 + \beta_4X_4 + \beta_5X_5 + \beta_6X_6 + \varepsilon_i$ equation (ii)

Table 1: Variables for regression analysis

Variables	Variables Description	Expected effects
Depended variables (Y)	Malnutrition reduction	+/-
Independent variables (Xs)		
NGOs &CSO(x_1)	**NGOs & CSO involvement** Dummy 1 involvement of NGOs & CSOs 0 otherwise	+/-
FINCAPCT(x_2)	**Financial Capacity of facility** Dummy 1 sufficient 0 otherwise	+/-
EXPERT(x_3)	**M&E expert:** Dummy 1 sufficient 0 otherwise	+/-
GUIDELINE(x_4)	**M&E.guideline:** Dummy 1 the use of Guideline 0 otherwise	+/-
SYSTEM(x_5)	**The use of M&E system:** Dummy 1 the use of M&E system 0 otherwise	+/-
COMMUNITY(x_6)	**Community involvement:** Dummy: 1 community are involved 0 otherwise	
ACCESSIBILITY(x_1)	**Accessibility of health facilities** Accessibility to Health facilities/ Location (Distance in Kms)	+/-

Ethical consideration

The nature and purpose of the study were explained to all participants, and written consent was obtained before their participation. Since most of the respondents were health staff, it was easy for them to understand. Key elements include informed consent, respecting participant autonomy, minimising harm, and maintaining confidentiality.

Demographic Characteristics of Respondents

The respondents' ages were categorised into five groups, as shown in Table 2. The findings indicate that the majority, approximately 58 respondents, were within the 31–40-year age group. This suggests that many of the respondents likely possess relevant experience and knowledge regarding child nutrition, particularly for children under the age of five. Women in this age range, especially nurses, are more likely to have both personal and professional experience with child nutrition, as they often have children of their own and are actively engaged in nutrition-related responsibilities both at home and within healthcare facilities.

This observation is supported by Kalu and Etim (2018), who found that in developing countries, younger mothers tend to have a higher incidence of malnourished children compared to older mothers, mainly due to limited experience and knowledge in childcare. Similarly, Mawa and Lawoko (2018) reported that most women aged between 30 and 50 years typically have more than one child and are therefore more knowledgeable and experienced in addressing nutritional needs and managing malnutrition in children.

Regarding educational attainment, the findings reveal that a minority of respondents, 31 individuals, held a bachelor's degree, while the majority, about 67 respondents, possessed a diploma. This outcome aligns with the findings of Humba (2015), who observed that in the health sector, particularly within hospital settings, many nurses hold diploma-level qualifications. This trend is attributable to the fact that most specialised courses related to maternal and child health are offered at the certificate and diploma levels, with only a few, such as medicine, available at the bachelor's degree level or higher. Consequently, this suggests that the majority of personnel addressing malnutrition issues in health facilities possess diploma-level education or lower.

Table 2: Demographic characteristics of respondents (n=98)

Variable	Frequency	Percent
Age		
Below 21 years	11	11.2
21-30 years	15	15.3
31-40 years	58	53.1
41-50 years	14	14.3
Above 50 years	6	6.1
Education level		
Bachelor's degree Holder	31	32
Diploma Holder	67	68
Occupation		
Enrolled nurse	67	68
Registered nurses	31	32

Monitoring and evaluation practices on malnutrition reduction among children under five

Preparation and use of standard M&E tools

Results from Table 3 indicate that most respondents, approximately 65%, prepare and utilise monitoring and evaluation (M&E) tools, such as the log frame, M&E templates, and M&E plans. The responsibility for preparing and using these standardised tools primarily lies with M&E experts at the district level, which excludes the community from direct involvement. Instead, the primary role of community representatives is to raise awareness about the availability of nutritious foods in their environment. Consequently, community members are generally unfamiliar with the preparation and use of monitoring and evaluation (M&E) tools. A community supporter from Igwachanya Dispensary explained that,

"When staff from the Council (meaning CHMT members) visit our dispensary here, they come with many documents, including the matrix to track indicators they tick and write down some notes" (report from Community health supporter (CDHF), July 2022)

These findings are consistent with those of Juma and Obinna (2016), who found that local communities were not involved in the preparation and use of monitoring and evaluation (M&E) tools due to insufficient knowledge and skills required for effective management. Nevertheless, community representatives, such as village leaders, serve an essential role in raising awareness about malnutrition by providing frequent reminders to community members.

Health facilities visit

The primary monitoring and evaluation (M&E) practice for malnutrition reduction programs involves visits to health facilities, including hospitals, dispensaries, and health centres. Approximately 67% of

respondents reported that the M&E unit conducts quarterly visits to these facilities, as indicated in Table 3. This finding aligns with the study by Kengera (2023), which emphasises the importance of site visits as an effective and straightforward method of project monitoring. Supporting this, a medical doctor from Wanging'ombe District Hospital stated that...

"When M&E experts visit facility (CHMT members), they monitor all inputs and activities which related to malnutrition which are being recorded by selected nurse from facility, since they are the accountable in all matters related to malnutrition" (key informants report August 2022)" This content implies that regular visits of facilities contribute to the improvement of M&E (WHO, 2014.

Staff meetings

The results from Table 3 indicate that most respondents, approximately 66%, reported that monthly progress meetings were conducted frequently to monitor the reduction of malnutrition interventions. This result aligns with information from the documentary review, which found evidence in monthly project reports. This was supported by a Medical Doctor from Ilembula hospital who said ……

When we receive invitation letters or calls from the government focal person on nutrition matters to attend staff meetings and discuss issues related to malnutrition, we go and join the discussion session. We provide our advice and opinions (Interviewee, recorded June 2022)

This finding aligns with that of Gakwaya (2019), who examined the factors influencing the implementation of a malnutrition prevention program for children under five in Bugesera District, Rwanda, and found that staff meetings are essential for providing feedback as a key component of monitoring. This suggests that effective monitoring practices require mechanisms for feedback, with meetings serving as one of the primary means of delivering such feedback.

Participatory monitoring

The results from Table 3 indicate that approximately 66% of respondents agreed that they were involved in the community, particularly the Community Development Health Focal Persons (CDHFs); however, their involvement was not comprehensive. This finding is consistent with the report by Lwoga (2006) on the impact of monitoring and evaluation on the performance of malnutrition projects in Zanzibar, which emphasised the need for M&E experts to collaborate with village representatives or CDHFs during site visits. Additionally, Henrietta (2015) supported these findings by noting that participatory M&E at the community level was primarily used to provide information related to local malnutrition issues. These results suggest that nurses do not fully implement a participatory approach in practice. One enrolled nurse stated...

At the beginning of the malnutrition reduction campaign, which Wanging'ombe District Council established, we collaborated with registered Nurses, data clerks, and community leaders in making sure all communities are reached. But as time goes on, the community are less involved (Enrolled nurse June 2022).

Supportive supervision

According to the results presented in Table 3, approximately 66% of monitoring and evaluation (M&E) staff conducted supportive supervision to ensure malnutrition indicators were accurately captured, a finding confirmed by all 98 respondents interviewed. This result is consistent with the study by Wanzira (2019), which examined supportive supervision as a means of enhancing the quality of care for children with acute malnutrition in Arua District, Uganda. The study found that supportive supervision improves compliance with the collection and tracking of malnutrition indicators. This was insisted by one of the enrolled nurses who said……

Data clerk does all technical tasks regarding to malnutrition reduction such as filling indicators forms and registered nurses but other activities such as organizing data are done by enrolled nurses with the support of

experienced and competent nurses (Interview from enrolled nurse July, 2022)"we work together with the PO LARG and Ministry of Health and get guidance every time, they guide us in our daily task (Interview of M&E experts June, 2022).

Table 3: Monitoring and Evaluation Practices on Malnutrition Reduction in Children under Five Years

M&E Practices	Frequency	Percent cases
Preparation and use of standard M&E tools	18	64.5
Field visit	23	67
Staff meeting	22	66
Participatory M&E	21	65.5
Supportive supervision	22	66

Factors for the successful Implementation of Monitoring and Evaluation on Malnutrition Reduction in children under five years

In this part, Multiple Linear regression was used. The following model was used

$Y = \beta_0 + \beta_1X_1 + \beta_2X_2 + \beta_3X_3 + \beta_4X_4 + \beta_5X_5 + \beta_6X_6 + \varepsilon_i$

The result of the Multiple linear regression analysis is presented in Tables 4 and 5, respectively, and the formulated hypotheses were tested accordingly.

- The R-squared was checked for its value to understand the proportion of variance explained.
- The adjusted R-squared was checked for a more accurate measure when multiple predictors are used.
- Normality.

Check for normality

```
set.factors
n <- 100
x1 <- rnorm(n)
x2 <- rnorm(n)
y <- 3 + 2 * x1 - x2 + rnorm(n)
data <- data.frame(y, x1, x2)
```

Fitness for Regression

```
model <- lm(y ~ x1 + x2, data = data)
```

summary(model)

ntercept (3.07): close to your true intercept (3). Coefficients for x1 (1.95) and x2 (-1.02): close to true values (2 and -1), indicating model captured the relationships well.

Table 4: Results for testing the fitness of the Regression model

	Unstandardized Coefficients Standardized Coefficient (B)	**Standard error**	**Standardized Coefficients**	**t**	**P- value**
Constant	-2.673	1.007	5.138	2.160	.0031
M&E practices	.366	0.6621	0.205	2.27	.024
R Square = .8064 Adj. R Square = .8012					

The result in Table 4 shows that the coefficient of determination (R-squared) explains that,

The high R^2 shows that 0.804 of the variance is explained. Adjusted R^2 0.8012 is very close; predictors are likely genuinely helpful, not just inflating R^2. A model like this is statistically strong and practically reliable, as the variation in the dependent variable is due to changes in the independent variable. The R-squared value indicates a significant improvement in malnutrition reduction as M&E practices improved by 80%. 4% with a 95%confidence interval.

Additionally, the adjusted R-squared value indicates a positive relationship among the study variables. Residual standard error = 1.007: Average size of the residuals, roughly close to noise std dev (1 in rnorm(n) shows normal distribution. The result indicates a p-value of 0.0031, indicating that the model is statistically significant. The regression coefficient indicates that the effective implementation of M&E practices contributes 36.6% to the reduction of malnutrition, with a P-value of 0.24.

Table 5: Regression results on factors for the Successful Implementation of Monitoring and Evaluation on Malnutrition Reduction in children under five years

Model	Unstandardized coefficients	Standardized coefficients		t	P- value.
	β	Std. error	Beta		
Constant)	-2.673	5.138			.000
NGOs&CSOs	0.226	0.097	0.261	2.014	.023**
Fund (x2)	0.200	0.082	.272	2.178	.016**
M&E Expert(x3)	0.204	0.160	.104	3.03	.003***
Guideline(x4)	0.095	0.078	.0136	1.20	.228
M&E System(x5)	0.744	0.105	.257	2.241	.024**
Community(x6)	-0.143	0.208	-.053	1.21	.224
Accessibility(x7)	-0.175	0.109	.161	0.193	.085

(**) indicates significance at the 5%, and (***) indicates significance at the 1% level.

Involvement of NGOs & CSOs

The findings from Table 5 revealed that NGOs and CSOs have a t-value of 2.014, which is positive, and a p-value of 0.023. Thus, the involvement of NGOs and CSOs has a statistically significant effect, indicating that as these organisations participate, the malnutrition rate is reduced by 20.1%. This

implies that involving NGOs and CSOs—such as USAID Kizazi Kipya, USAID Boresha Afya, USAID Tulonge Afya, and Tubadili Tabia—contributes to the effectiveness of monitoring and evaluation (M&E) practices toward reducing malnutrition in children under five years of age.

This result is supported by More et al. (2018), who found that NGOs perform well in monitoring and evaluating malnutrition reduction programs in Nairobi. Therefore, including stakeholders, particularly NGOs and CSOs, in monitoring malnutrition programs helps to empower health facilities and enhance the effectiveness of M&E practices, as these organisations are well equipped with the skills, knowledge, and experience necessary for monitoring and evaluating malnutrition-related programs.

Fund (Financial Capacity)

The results presented in Table 5 indicate that the variable fund has a t-value of 2.178 and a p-value of 0.016, demonstrating statistical significance at the 5% level. This finding suggests that as financial capacity in health facilities increases, there is a 22% greater likelihood of reducing malnutrition. This implies that sufficient funding enhances monitoring and evaluation (M&E) activities aimed at reducing malnutrition.

Furthermore, Figure 1 shows that 93% of respondents agree or strongly agree that inadequate funding reduces the effectiveness of monitoring and evaluation (M&E) practices aimed at reducing malnutrition. These findings are consistent with the study conducted by Nyabuti (2015) in Kenya, which revealed that monitoring and evaluation of malnutrition programs targeting children under five years old heavily depend on adequate funding due to the high operational costs involved.

Similarly, Tungotyo et al. (2017) reported comparable results in their study on factors associated with malnutrition among infants in Uganda, noting that monitoring and evaluation (M&E) of malnutrition-related programs is complex and sensitive, requiring frequent visits to health facilities to track malnutrition indicators. In light of inadequate financial resources for M&E practices, a medical doctor from Igwachanya Health Centre stated that...

We are questioning ourselves why the government is not allocating enough resources to invest in the M&E system, while most of the data used by them in making decisions depends on the M&E system. For example, in my facility, the amount of funding allocated for M&E activities is not enough. Funds for fuel, monitoring allowances, and stationery costs are deemed essential and may cause delays in M&E data collection and submission at the district level (Interview with respondent, 14th June 2022).

M&E Experts

The results from Table 5 indicate that experts have a t-value of 3.03 and a p-value of 0.003, demonstrating statistical significance at the 1% level. This suggests that the availability of monitoring and evaluation (M&E) experts contributes to a 30.3% reduction in malnutrition among children under the age of five. This finding implies that having competent M&E experts at the facility level increases the likelihood of effective monitoring and evaluation efforts aimed at reducing malnutrition in this vulnerable population.

Additionally, Figure 1 shows that approximately 91% of respondents agree or strongly agree that the presence of M&E staff plays a critical role in effective M&E practices related to malnutrition. These results are supported by studies conducted by Juma et al. (2016) and Tungotyo (2017), which found that a shortage of competent monitoring and evaluation (M&E) staff hindered effective monitoring and evaluation practices in malnutrition programs.

Furthermore, Picolo et al. (2019) reported in their study on integrated nutrition-health strategies addressing micronutrient deficiencies among children under five in Mozambique that low monitoring

and evaluation (M&E) capacity among staff contributed to the failure to operationalise outreach activities for hard-to-reach children. This suggests that insufficient monitoring and evaluation (M&E) skills in malnutrition-related programs impede efforts to reduce malnutrition.

In line with these findings, one medical doctor elaborated that...

Due to the challenges of data management, we face, it is important to have employed Monitoring and Evaluation (M&E) staff at all health facilities, including health centres, dispensaries, hospitals, and districts. However, we do not have employed M&E staff or data clerks (Interview with respondent, 14th June 2022).

The use of the M&E System

The results from Table 5 indicate that monitoring and evaluation (M&E) systems, such as HIMS and DHIS2, have a t-value of 2.241 and a p-value of 0.024, demonstrating statistical significance at the 5% level. This suggests that the use of these M&E systems is associated with a 22.4% reduction in malnutrition rates among children under the age of five. This implies that the implementation of M&E systems increases the likelihood of conducting effective M&E practices aimed at malnutrition reduction.

However, during interviews regarding the use of the M&E system, staff familiarity with these systems was identified as a primary concern, as shown in Table 6. The report indicated that approximately 72% of respondents were familiar with systems such as HIMS and DHIS2, which are used for reporting health information.

The study also revealed that one of the main challenges affecting the effectiveness of M&E systems is that nutrition data are often collected using paper-based methods and are not entered directly into the digital system. Data entry responsibilities fall to the District Social Welfare Officers (DSWOs), who are few and unable to enter all the data collected by community volunteers. These findings are consistent with those of Maseta et al. (2017) and the World Health Organisation (2017), both of which reported that paper-based data collection leads to significant problems in monitoring and evaluation (M&E), including the loss of important information.

Table 6: Familiarity with HIMS and DHIS2

Category	Frequency	Percent
Familiar	71	72.0
Not familiar	27	28.0
Total	98	100.0

Furthermore, due to discrepancies between paper-based data and data extracted from M&E systems such as DHIS2, it becomes difficult for the Council Health Management Team (CHMT) to make informed decisions regarding nutrition by relying solely on DHIS2 data. This finding aligns with Henrietta's (2011) recommendation to utilise M&E systems to avoid information shortages.

Most studies indicate that although M&E activities are conducted, they are often not performed professionally due to a lack of M&E skills among project personnel. This is supported by Mamiro et al. (2005), whose study revealed that malnutrition reduction projects are typically implemented by health workers with nursing and medical training, but without adequate monitoring and evaluation (M&E) expertise, resulting in insufficient M&E practices. Additionally, Henrietta (2011) reported poor investment in monitoring and evaluation (M&E), noting that a substantial portion of project funds is allocated to implementation activities rather than to M&E.

Community involvement

The results from Table 5 indicate that the community does not significantly influence successful

monitoring and evaluation (M&E) efforts aimed at reducing malnutrition among children under five. The study revealed that M&E activities related to malnutrition in this age group are primarily conducted by selected nurses and the Council Health Management Team (CHMT) staff. The Community Development Focal Person (CHDF) is the only community member partially involved. In contrast, other community members participate mainly in sensitisation efforts focused on promoting the consumption of nutritious foods available in their environment.

These findings align with the study by Acosta and Haddad (2014) on the politics of success in combating malnutrition in Peru, which reported that community involvement is mainly linked to initiatives that integrate agriculture, nutrition, and education to reduce malnutrition among children under five. One village leader reported that.....

One of the village leaders reported that, in each meeting, we provide directives to our community to make sure pregnant mothers consume a balanced diet to make sure the new baby born will be healthy (without malnutrition). In addition, we sensitise the community to plant vegetables, and to keep livestock such as chicken, which will be a source of vitamins and protein (Interview with respondent, 14th June 2022).

Accessibility of health facilities

The results from Table 5 indicate that the accessibility of health facilities does not significantly affect monitoring and evaluation (M&E) practices aimed at reducing malnutrition among children under five. This finding reflects the situation in Tanzania, where nearly all health facilities in Wanging'ombe are accessible to the Council Health Management Team (CHMT) members and other relevant staff.

This result is consistent with the study by Deconinck et al. (2016), which examined factors influencing the monitoring and evaluation of acute malnutrition interventions in Niger. They found that geographical location, distance, and transportation infrastructure did not significantly impact the monitoring and evaluation (M&E) of interventions aimed at reducing malnutrition. Instead, the significant challenges identified were insufficient funding, a shortage of M&E experts specialising in malnutrition, and failure to use health management systems effectively.

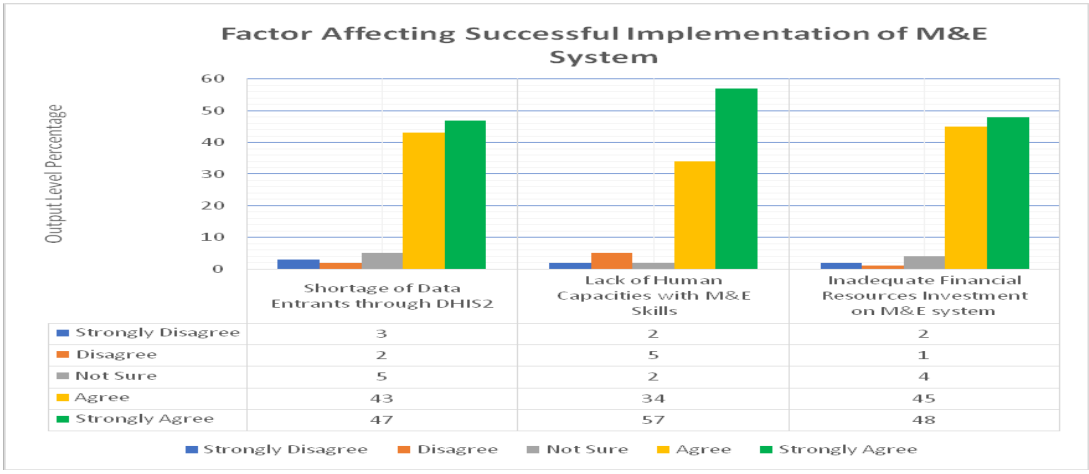

Figure 1: Factors affecting Successful implementation of M&E system

Results from Figure 1 indicate that most respondents, approximately 90 out of 98 (agree + strongly agree), reported that a shortage of data entry personnel hinders the effective use of the monitoring and evaluation (M&E) system. Additionally, about 91 out of 98 respondents (agreeing and strongly agreeing) identified a lack of monitoring and evaluation (M&E) skills among staff as a barrier to effective system use. Furthermore, inadequate funding was also reported to constrain the effectiveness

of M&E system utilisation. These findings align with those of Deconinck et al. (2016), who revealed that insufficient funding and a shortage of M&E experts specialising in malnutrition contribute to the failure to use health management systems effectively. Similar results were reported by Jubayer (2022), whose research in Bangladesh found that financial capacity significantly affects the effective implementation of monitoring and evaluation (M&E) activities aimed at reducing malnutrition.

Conclusion

This study examined the factors influencing the monitoring and evaluation (M&E) of malnutrition reduction programs among children under five years old in Wanging'ombe District. The demographic characteristics of the respondents indicated that female health workers were predominantly involved in monitoring and evaluation (M&E) practices related to malnutrition. Additionally, middle-aged staff members were more engaged in M&E activities aimed at reducing malnutrition. The study also found that most health workers responsible for reporting held lower-level professional positions, such as nurses; similarly, enrolled nurses were primarily responsible for entering data into the monitoring and evaluation (M&E) system.

The study identified that key M&E practices used by Council Health Management Team (CHMT) members in addressing malnutrition reduction included the preparation and use of standard M&E tools, participatory monitoring and evaluation, staff meetings, and supportive supervision.

Regarding determinants of successful M&E implementation for malnutrition reduction programs targeting children under five, the results showed that the involvement of non-governmental organisations (NGOs) and civil society organisations (CSOs), financial capacity, the availability of competent M&E experts, and the use of M&E systems were significant factors. Conversely, community involvement and accessibility to health facilities did not significantly impact the success of M&E practices in reducing malnutrition.

References

Adeyemi, O., Phorbee, O., Samuel, F., Sanusi, R., Afolabi, W., Covic, N., ... & Ajieroh, V. (2022). Training to build nutrition capacity in the Nigerian agricultural sector: Initial assessment and future directions. *Food and Nutrition Bulletin, 43*(4).

Ashagidigbi, W. M., Ishola, T. M., & Omotayo, A. O. (2022). Gender and occupation of household head as major determinants of malnutrition among children in Nigeria. *Scientific African, 16*, e01159. https://doi.org/10.1016/j.sciaf.2022.e01159

Bonatti, M., Borba, J., Bundala, N., Löhr, K., Ito, L. H., Rybak, C., & Sieber, S. (2021). Food insecurity and malnutrition in rural Tanzania: Mapping perceptions for social learning. *Ecology of Food and Nutrition, 60*(6), 765–784. https://doi.org/10.1080/03670244.2021.1962807

Bundara, N. (2018). Addressing Childhood Undernutrition in Tanzania: Challenges and Opportunities. *[Journal name missing], 13*(1), 7288–7306.

Clark, S. A. (2013). *Development and implementation of a sustainable monitoring and evaluation protocol for a malnutrition rehabilitation program in a resource-limited setting* (Doctoral dissertation). University of Zimbabwe). http://ir.uz.ac.zw/handle/10646/1234

Clark, S. A. (2016). *Development and implementation of a sustainable monitoring and evaluation protocol for a malnutrition rehabilitation program in a resource-limited setting* (Doctoral dissertation, University of Zimbabwe]

Costa, A. M., & Haddad, L. (2014). The Politics of Success in the Fight Against Malnutrition in Peru. *Food Policy, 44*, 26–35. https://doi.org/10.1016/j.foodpol.2013.10.002

Cummings, C. L. (2018). Cross-sectional design. In M. Allen (Ed.), *The SAGE encyclopedia of communication research methods*. SAGE Publications.

Deconinck, H., Hallarou, M. E., Pesonen, A., Gerard, J. C., Criel, B., Donnen, P., & Macq, J. (2016**).** Understanding factors that influence the integration of acute malnutrition interventions into the national health system in Niger. *Health Policy and Planning*, **31**(10), 1364–1373. https://doi.org/10.1093/heapol/czw073

Emmanuel, A., Nwachukwu, J. O., Adetunji, O. E., Hosea, G. K., & Kumzhi, P. R. (2016). Malnutrition and associated factors among under-five in a Nigerian local government area.

Henrietta, C. N. (2015). *Determinants of acute malnutrition in children under five years in Harare City, Zimbabwe* [Unpublished master's thesis]. University of Zimbabwe.

Jubayer, A., Islam, M. H., & Nayan, M. M. (2022). Malnutrition among under-five children in St. Martin's Island, Bangladesh: A cross-sectional study on prevalence and associated factors. *SAGE Open Medicine*, *10*, 20503121221116246.

Juma, O. A., Enumah, Z. O., Wheatley, H., Rafiq, M. Y., Shekalaghe, S., Ali, A., ... & Abdulla, S. (2016). Prevalence and assessment of malnutrition among children attending the Reproductive and Child Health clinic at Bagamoyo District Hospital, Tanzania. *BMC Public Health*, *16*, 1-6.

Kalu, R. E., & Etim, K. D. (2018). Factors associated with malnutrition among under-five children in developing countries: A review. *Global Journal of Pure and Applied Sciences*, *24*(1), 69-74.

Kankera, G., P. (2019). *Factors Influencing the Implementation of a Malnutrition Prevention Program for Children Under Five in Bugesera District, Rwanda* (Doctoral dissertation, University of Rwanda).

Kengera, Z. (2023). Rhetoric and Reality of Result-based Monitoring and Evaluation in Tanzania: An Experience from the Public Sector. *Journal of the Geographical Association of Tanzania*, *43*(1), 41-54.

Lwoga, P. R. (2021). *Impacts of Monitoring and Evaluation on the Performance of Malnutrition Projects in North "A" District, Zanzibar* (Doctoral dissertation, The Open University of Tanzania).

Maina, L., Mwirigi, L., Imelda, V., Bilukha, O., Leidman, E., Kinyua, L., & Chirchir, K. (2017). *Improving nutrition information systems: lessons from Kenya. Field Exchange 55, 80.*

Mawa, R., & Lawoko, S. (2018). Malnutrition among children under five years in Uganda. *American Journal of Health Research*, *6*(2), 56-66.

More, N. S., Waingankar, A., Ramani, S., Chanani, S., D'Souza, V., Pantvaidya, S., ... & Jayaraman, A. (2018). Community-based management of acute malnutrition to reduce wasting in urban informal settlements of Mumbai, India: a mixed-methods evaluation. *Global Health: Science and Practice*, *6*(1), 103-127.

Naisiae, G. S., & Mungai, A. M. W. (2024). Monitoring and Evaluation Systems and Performance of Integrated Management of Acute Malnutrition Projects in Narok County, Kenya. *International Journal of Social Sciences Management and Entrepreneurship (IJSSME)*, *8*(3).

National Bureau of Statistics (NBS) (2016). *Tanzania Demographic and Health Survey and Malaria Indicator Survey* (TDHS-MIS) 2015-16

Nyabuti J. (2010) *Factors associated with the continuation of growth monitoring among children 10 to 59 months old in Nyamira county, Kenya*. Kenyatta University.

Nyabuti, J. I. (2015). Factors associated with the continuation of growth monitoring among children 10 to 59 months old in Nyamira County, Kenya. *Unpublished Masters dissertation, Kenyatta University, Nairobi, Kenya*, *1*.

Nyamongo D. (2017) *Factors influencing implementation of Monitoring and Evaluation of Non-governmental water projects in Kenya*. University of Nairobi.

Panda, B. K., Mohanty, S. K., Nayak, I., Shastri, V. D., & Subramanian, S. V. (2020). Malnutrition and poverty in India: Does the use of public distribution system matter? BMC Public Health, 20(1), Article 1799. https://doi.org/10.1186/s12889-020-09875-z

Picolo, M., Barros, I., Joyeux, M., Gottwalt, A., Possolo, E., Sigauque, B., & Kavle, J. A. (2019). Rethinking integrated nutrition-health strategies to address micronutrient deficiencies in children under five in Mozambique. *Maternal & Child Nutrition*, *15*, e12721.

Saiguran, H. S. (2014). *Quality of the Health Management Information System Data: A Case Study of Nutritional Status Surveillance in Arusha* (Doctoral dissertation, Muhimbili University of Health and Allied Sciences).

Sunguya, B. F., Zhu, S., Mpembeni, R., & Huang, J. (2019). Trends in prevalence and determinants of stunting in Tanzania: an analysis of Tanzania demographic health surveys (1991–2016). *Nutrition journal*, *18*(1), 1-13.

Tungotyo, M., Atwine, D., Nanjebe, D., Hodges, A., & Situma, M. (2017). The prevalence and factors associated with malnutrition among infants with cleft palate and/or lip at a hospital in Uganda: a cross-sectional study. *BMC Paediatrics*, *17*(1), 1-7.

Wanzira, H. (2019). Supportive Supervision as an approach to improve the quality of care for children with acute malnutrition in Arua district, Uganda: Baseline systematic assessment, Cluster Randomised Controlled Trial and Cost-Effectiveness Analysis.

World Health Organisation. (2014). *Trends in maternal mortality: 1990 to 2013: estimates by WHO, UNICEF, UNFPA, The World Bank and the United Nations Population Division: executive summary* (No. WHO/RHR/14.13). World Health Organisation.

World Health Organisation. (2017). *Strengthening Health Systems to Improve Health Outcomes: WHO's Framework for Action. 2007.* Geneva: World Health Organisation.