Social-economic factors influencing complementary feeding practices among caregivers of children 6-24 months attending nutrition clinic at Masaka regional referral hospital: A descriptive cross-sectional study.

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Abstract

Introduction: Inappropriate complementary feeding practices are responsible for stunting growth, increased risk of infection and cognitive impairment among children in Uganda.so this study accessed the social economic factors influencing complementary feeding practices among caregivers of children 6-24 months attending nutrition clinic at Masaka regional referral hospital

Background: This study aimed to investigate the factors influencing CF practices among caregivers of children 6-24 months attending nutrition clinic at Masaka regional referral hospital.

Methods: A descriptive cross sectional design was employed, using quantitative methods to collect data from 40 caregivers who were selected using purposive sampling and random sampling, data was collected using a questionnaire and analyzed using Microsoft excel into frequency and percentages.

Results: Socioeconomic factors such as unemployment status, 65% were unemployed and 45% had low household income level. Environmental factors, such as rural residence 70%and limited access to fresh foods 42.5%, all caregivers received community support in form of counselling 87.5% and 92.5% had access to clean water, although gaps in hand washing were noted.

Conclusion: The study concludes that factors influencing CF practices were generally socioeconomically for example low household income and financial constraints and environmental constraints for example rural residence, limited access to clean water and poor hand hygiene, all hindered the implementation of CF.

Recommendation: The nutrition clinic should continue to health educate caregivers on the importance of timely introduction of CF, complementary foods and the hygiene practiced while preparing foods.

Keywords: Complementary Feeding Practices, Caregivers, Children 6-24 Months, Nutrition Clinic, Masaka Regional Referral Hospital.

Background of the study

Complementary feeding (CF) is the process starting when breast milk alone is no longer sufficient to meet the nutritional requirement of infants and therefore other foods and liquids are needed along with breast milk (WHO, 2023). During first six months of life breast milk should be fed alone and must remain the first food for infants. From then onwards it should be complemented with other sources of nutrition until at least 2 years of age (Mohsin, Abdul, Rehana, Nighat, & Arit, 2014).Poor breastfeeding and inadequate complementary feeding practices, coupled with high rates of infectious diseases, are the principal proximate causes of malnutrition during the first two years of life. Infants are susceptible to malnutrition if the complementary foods given are of low nutrient density, have a low bioavailability of micronutrients and are introduced too early or too late in small amounts or not frequently enough. (World Health Organisation, 2016)

Globally, inappropriate CF of children remains one of the major causes of malnutrition, morbidity and death in children (WHO, 2017).The most recent global estimates of CF practices-based on indictors established by WHO highlights. In low and middle income countries, half of all children are not receiving the minimum meal frequency, more than two thirds of children are not receiving the minimum dietary diversity, and five out of six children are not receiving a minimum acceptable diet. (United Nation Children's Fund (UNICEF), 2020)

In sub Saharan Africa, poor complementary feeding practices have been shown to contribute to negative growth trends in developing countries. In some of these African countries, complementary feeding practices among mothers of children 6-23 months was 13.02%,4.2%10% in Nigeria, 7.7% in Malawi,15.7%-29.8%, in Ghana and 9.76% in Ethiopia (Getaneh, Alebachew , & Belayneh, 2024). Although in Africa, the problem of inadequate

complementary feeding practices continues to be the leading cause of poor growth among children (Areja, Dereje, & Mulugeta, 2017).

In East Africa for example Kenya according to the recent Kenya Demographic and Health Survey 2022 indicates that 87% of children age 6-23 months were fed solid, semi-solid, or soft foods ,37% of children received minimum dietary diversity and 71%of children received minimum meal frequency, overall 31%received the minimum acceptable diet. (Kenya Demographic and Health Survey, 2022). In Rwanda, a study which showed that factors influencing CF practices were the socioeconomic status of caregivers, mother's beliefs, knowledge of CF guidelines, the influence of postnatal care and the social network and lack of decision-making power in the household. Those factors are classified at individual, group and society. (Umugwaneza, Lize, Hester, & Edelweiss, 2021)

In Uganda, a research done in Kabale district to address the practices of CF indicates that, the prevalence CF of children below 24 months in Kitumba county was generally lower, majority of the age at which complementary foods were given to infants depended on varying factors like socio-demographic factors, parental attitudes and beliefs. (Birungi, 2021). In Kisoro district, 95% of the infants were introduced to semi-solid foods promptly, their diet was nutritionally inadequate as evidenced by the low minimum dietary diversity of 4.43%. (Birunji & David, 2022). Therefore, Inadequate CF practices remain a significant public health challenges, particularly in low-resource setting like Masaka District and surrounding areas, where malnutrition and associated health risks among children are prevalent. So this study accessed the social economic factors influencing complementary feeding practices among caregivers of children 6-24 months attending nutrition clinic at Masaka regional referral hospital

Methodology

Research design.

The researcher used a descriptive cross-section study design employing quantitative methods of data collection. The cross-section study design was used to obtain data from a population at a specific point in time. The study design was used because it enables the researcher to describe the two variables and the relationship between them. Quantitative methods of data collection, i.e. use of questionnaire and data was analyzed using statistical methods.

Study area

The study was carried out at the nutrition clinic of Masaka Regional Referral Hospital which located in Masaka district, central Uganda.

Study population

The targeted population were caregivers with children aged 6-24 months attending nutrition clinic at Masaka regional referral hospital. They were primary target because they spent more time with children and involved in breastfeeding and complementary feeding.

Sample size determination

The sample size was determined using Fishers (1990), given by the expression

$$N = \frac{z^2 pq}{d^2}$$

Where; N=desired sample size, Z=standard normal deviation set at 1.96 for maximum sample size at 96% confidence level.

P=the population proportion (assumed to be 50% since it would provide maximum size).

q =difference between 1 and p (1-p).

d=degree of accuracy desired 0.155 probability level at 95%confidence level.

On substitution it gave 40 as my sample population.

By substituting, $N = \frac{96^2 \times 0.5 \times 0.5}{0.155^2}$,

N=40

Sampling technique

Purposive sampling and random sampling were used to collect data.

Sampling procedure

The study employed purposive sampling to select specifically mothers with children 6-24 months and then when the list was generated mothers were randomly selected from the list until 40 respondents were obtained.

Data collection methods

Survey method was used (face to face survey) because it made respondents feel at ease and give appropriate response.

Data collection tool.

Questionnaire was designed with both open and closed questions which was used to collect data from respondents. It was written in English with three sub section including maternal factors, socioeconomic factors and environmental factors. The respondent was just responding according to the question asked by the researcher from the questionnaire.

Data collection procedure.

Permission was sought from the school administration with an introductory letter from International Paramedical Institute research committee. The researcher then went to the administration of MRRH who granted permission to carry out the study. The researcher explained the purpose and procedure of data collection to the respondents who signed consent form. Every caregiver filled the questionnaire and those who did not understand are helped to fill.

Study Variables

Independent variable

These variables were factors influencing including maternal factors, socioeconomic factors and environmental factors.

Dependent variable

The dependent variable was the complementary feeding practices.

Quality control

The questionnaire was pretested among a few mothers at Nsangi Health Center III, which helped the researcher to assess the validity and reliability of the tool before being applied in the study.

Inclusion criteria

All caregivers with children aged between 6-24 months at nutrition clinic at Masaka regional referral hospital.

Data analysis and presentation

Data collected was checked for completeness, then questionnaires were coded. The coded questionnaires were then entered using developed themes. The Microsoft Excel was used to analyze data into frequencies and percentages and later presented in the form of tables and figures.

Ethical considerations.

The study was approved by School of clinical medicine ethic committee. An introductory letter was obtained from IPI Maya research coordinator which was used to introduce researcher to the hospital director of MRRH.

Informed consent was obtained from the mothers who were requested to voluntarily participate after the explanation on the purpose of the study and they had a right to withdraw from the study if one felt uncomfortable during the course. Confidentiality was maximally assured and had no hidden intention behind the study, only research purpose.

Results

Social-Demographic data

Table 1: showing demographic data. n=40

Variable	**Category**	**Frequency (f)**	**Percentages (%)**
Age	Below 20 years 21-29 years 30-39 years 40 years and shows	3 27 9 1	7.5 72.5% 22.5% 2.5%
Level of education	No formal education Primary education Secondary education Tertiary education	1 15 17 7	2.5% 37.5% 42.5% 17.5%
Marital status	Married Single Divorced	23 13 4	57.5% 32.5% 10%
Number of children	One child Two children Three Children Four and shows	9 11 11 9	22.5% 27.5% 27.5% 22.5%

Source; Primary data (2024)

From the table shows, Concerning the age, majority 67.5% of the participants were in age group of 21-29 years, followed by 22.5% participants in age group of 30-39 years, then 7.5% participants in age group of less than 20 years, unlikely 2.5% of the participants were in age group of shows 40 years.

The highest percentage of participants stopped in secondary level with 42.5%, followed by primary level with 37.5%, tertiary level with 17.5% and lastly no formal education with 2.5%. Mostly of the caretakers were married 57.5%, while singles were 32.5% and divorced 10%.

And the number of children each caretaker had were almost similar, those who had 2 or 3 children were 27.5% and 1 or 4and shows were 22.5%.

Maternal factors influencing complementary feeding.

Table 2: Showing the knowledge about complementary feeding.

Variable	**Category**	Frequency(f) n=40	**Percentage (%)**
Knew about CF	Yes No	39 1	97.5% 2.5%
Age at which CF should be introduced	2-5 months 6 months Shows 6 months	6 25 9	15% 62.5% 22.5%
Frequency of feeding a child per day	Once Twice More than 3 times	9 26 5	22.5% 65% 12.5%

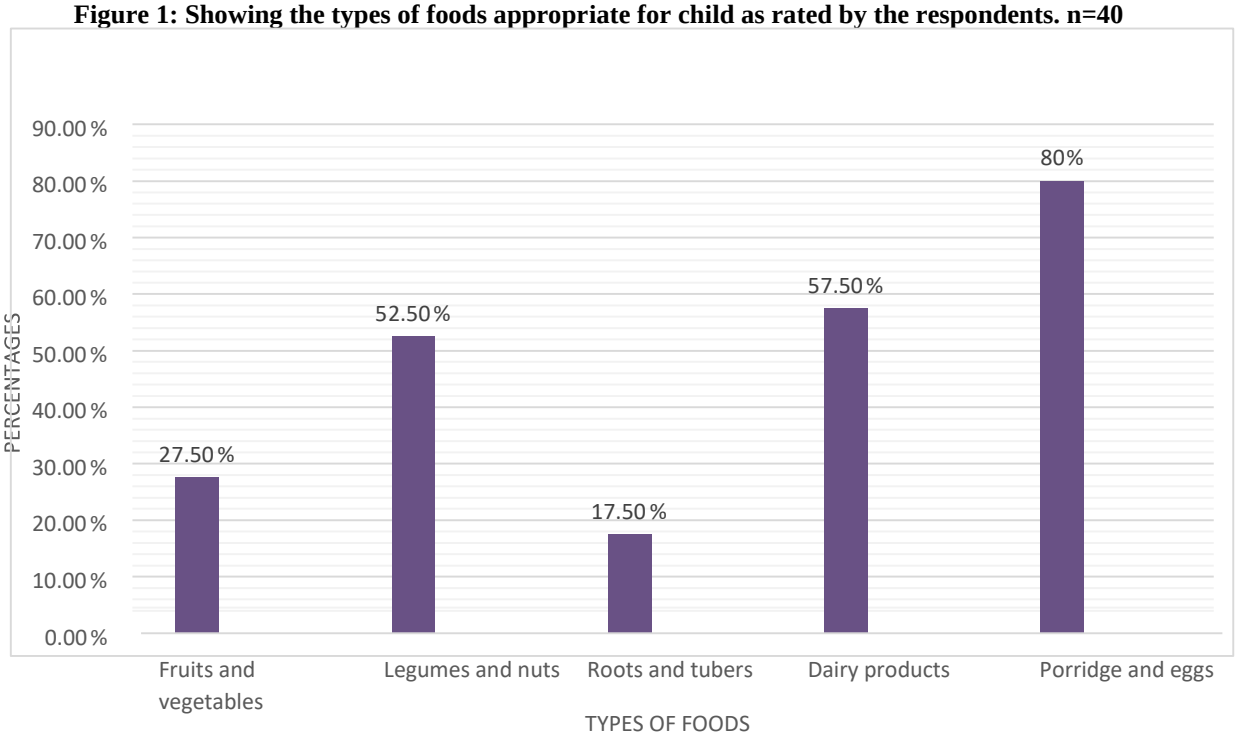
Source: primary data 2024

From the table, most of caretakers knew about CF 97.5% of the participants and 2.5% of the participants did not know about CF.

Majority of the respondents started complementary foods at the age of 6 months 62.5%, while 15% at age between 2-5 months and 22. 5% at shows 6 months

About the number of times to feed a child per day, 65% responded two times, while 22.5% responded once and 12.5% responded three and shows.

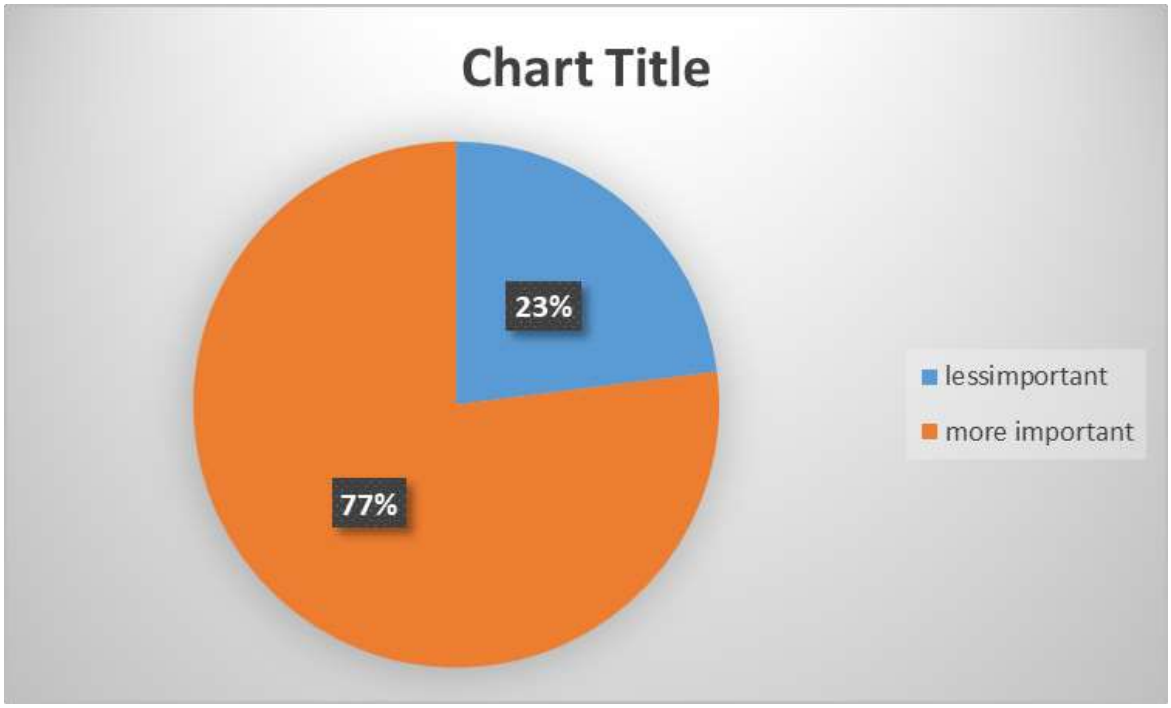
Figure 1: Showing the types of foods appropriate for child as rated by the respondents. n=40



Source: primary data 2024

Caregivers had multiple responses on the type of foods they use. From the figure shows, most the respondents rated porridge and eggs 80% as the major food they use with any other food, followed by daily products 57.5% participants, legumes and tuber 52.5%, fruits and vegetables
27.5% participants and the least used is roots and tubers 17.5%.

Figure 2: Showing how caregivers responded on the importance of introducing complementary feeding. n=40



Source: primary data 2024

From Figure 2, about importance of introducing CF, majority 77% responded more important and 23% caregiver's respondent less important while 0% said it wasn't important.

Table 3: Showing attendance of education programs on complementary feeding. n=40

Variable	Category	Frequency(f)	Percentages (%)
Ever attended any education programs about CF	Yes No	33 7	82.5% 17.5%
Where they attended education program	 Health center Community Family	**n=33** 25 6 2	 75.8% 18.2% 6.0%
Topic learnt	Hygiene Types of foods When to start CF All the three	5 4 10 14	15.2% 12.1% 30.3% 42.4%

Source: primary data 2024

From the table, 82.5% caregiver attended education programs on CF while 17.5% did not attend. Out of 33 participants who attended education program, 75.8% got it from health centers, while 6.0% from the family. Most of them 42.4% learnt hygiene, while preparing food and 12.1% types of foods.

Socioeconomic factors influencing complementary feeding.

Table 4: Showing how participates responded on socioeconomic factors. n=40

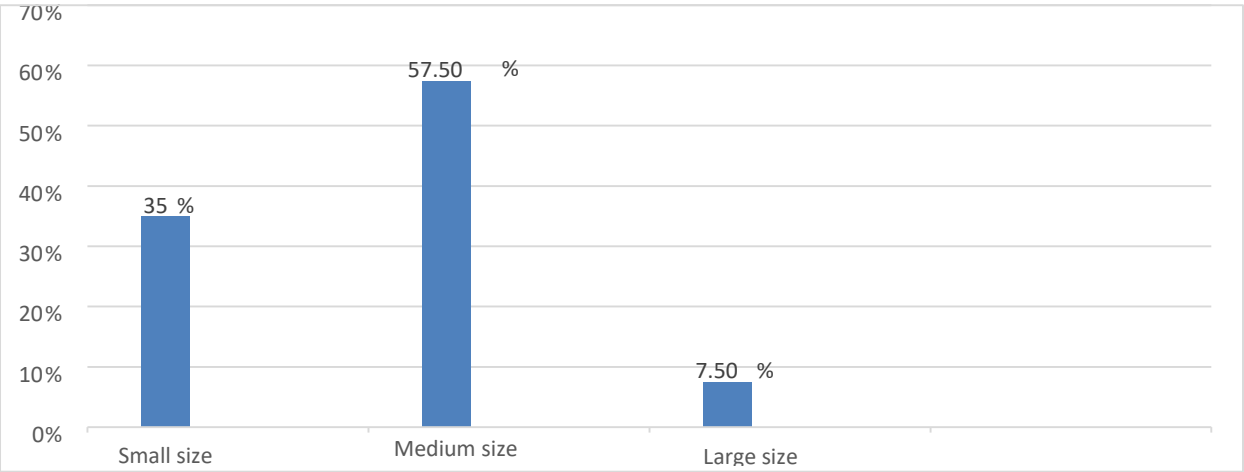
Variable	Category	Frequency (f)	Percentage (%)
Employment status of caregiver	Employed Unemployed	14 26	35% 65%
Household level income(monthly)	Low income Middle income High income	18 19 3	45% 47.5% 7.5%
How often caregivers face financial constraints that limit the ability to provide balance diet	More often Less often Not at all	29 11 0	72.5% 27.5% 0%
Effect of household level income to purchase appropriate complementary foods	Can't afford the food No effect at all	23 17	57.5% 42.5%
Fathers influence on complementary feeding practices	He buys food Encourages them No influence	21 9 10	52.5% 22.5% 25%

Source: primary data 2024

From the table, majority 65% of the respondents were unemployed and a few 35% were employed. Most of them had middle monthly income with a rate of 47.5% while a few with high monthly income with a rate 7.5%. 72.5% of the participants more often faced financial constraints that limit ability to provide balanced diet, while 27.5% less often faced financial constraints and none of them didn't face financial constrain. Also biggest percentage 57.5% of participants can't afford to buy the foods due to their household income while 42.5% their ability to purchase complementary foods was not affected by household income.

On the father's influence in CF, most of them 52.5% responded that he buys food while a few 22.5% said he encourages them.

Figure 3: Showing how the respondents rated their household size. n=40



Source: primary data 2024

From the figure, most 57.5% of the respondents mentioned that they had medium household size and while the least 7.5% mentioned that they had large household size.

Discussion

Demographic data of respondents

A study revealed that, most 72.5% of caregivers were aged 21-29. The age had an impact on initiation of CF and other practices of feeding. This was supported by the research done in Lublin, Poland (Kostecka, Izabella,

&Julianna, 2020) which indicated that younger mothers most liked introduced CF early compared to elder mothers. Most caregivers stopped in secondary level with 42.5% followed by primary level with 37.5%. Those who received high level of education had good practices of CF, this was in line with research done in Nepal (Hossain, et al, 2018). From the study findings most 57.5% of the caregivers were married. Those who were married received support from their husband and practiced CF as recommended. This was supported by the research done in South Africa (Black et al, 2018) which indicated that single mothers were more likely to introduce CF earlier than recommended.

Maternal factors that influenced the caregivers towards complementary feeding.

This section assesses how the knowledge, attitudes, age and educational levels of the caregivers influences complementary feeding of children of 6-24 months.

The study found that most caregivers were knowledgeable about complementary feeding, with 97.5% aware of CF and 62.5%introducing it at the recommended age of six months. This indicated improved complementary feeding practices and enhanced nutritional status of children. This finding is consistent with previous studies. For example, research in Kathmandu Medical Collage (Shrestha, Manoj and Smriti, 2020) with 64.4% of mothers knew about the proper age of initiating complementary feeding.

Result from the study, revealed that 65%of participants fed their children twice a day. This indicated that caregivers were not aware of the frequency to feed a child per day and also others never had enough foods. These results contradicted with Mohsin, Abdul, Rehana, Nighat and Arit (2014) which showed that 52.9% knew it should be at least thrice a day and only 37%consired twice a day. And also with Shrestha, Manoj and Smriti (2020) showed that 68.8%knew that complementary foods should be given thrice a day.

Furthermore, from the research, the most common complementary foods were porridge and eggs 80%, daily products 57.5% and legumes and nut 52.5%. Caregivers lucked knowledge on the complementary foods. This indicated limited inclusion of diverse food groups, highlights the need to for nutrition education and support. This results did not align with Bimpong, Cheyou, and Abud (2020) which indicated that 16.5% gave legumes and nuts, 68% grain, roots and tubers, 13.5% daily products and 5%fruits and vegetables.

From the study findings, most caregivers 77.5% responded that it's more important to introduce CF. Their attitude towards introduction of CF based on their knowledge they had about CF. These aligned with those obtained in the research done in Indonesia
(Riesmiyatiningdyah, Kusuma, Faida and Meli, 2020) showed that mothers who had low knowledge related to CF had negative attitudes toward CF.

The study found that 82.5% of caregivers had attended educational programs related to complementary feeding, with 75.8%of these receiving their education at health centers. The programs primarily covered hygiene, the type of foods appropriate for children, and the recommended age for introducing CF. Of the participants, 42.4% learnt about all the three aspects-hygiene, food type and timing. This indicates that educational interventions have been relatively effective in teaching caregivers and providing them with essential knowledge. These results were well supported with the literature, for instance study in Nigeria by Arikpo, Ededet, Moriam, Friday and Deborah (2018) showed that caregivers who received education on CF introduced semi-solid foods at the appropriate age and improved hygiene practices, including better handwashing habits.

Socioeconomic factors of caregivers influencing complementary feeding.

In the study, 65% of caregivers were unemployed and employment status had a direct impact on complementary feeding practices. Unemployed caregivers faced challenges in accessing a diverse range of foods for their children, while employed caregivers had slightly better access to resources that allow them to provide more balanced diets. This finding aligns with research from southern Ethiopia by Chane, Shimelash, Tesfa, and Wubalem, (2017), where more than half (65%) of caregivers were housewives and their dependence on a single household income limited their ability to provide adequate nutrition.

Furthermore, study findings revealed that, 45% of households had low income, and 47.5% of respondents had middle household income. Low household income was a significant barrier to purchasing appropriate complementary foods, which impacted dietary diversity and meal frequency. The association between low household income and poor CF practices is widely documented in the literature, a study in Kenya by Darmon and Adam, (2015), found that lowincome families were unable to purchase nutrition for children. Also Ameyaw et al, (2023) showed that children from lower income households were more likely to suffer from chronic undernutrition due to their inability to access sufficient and diverse food sources.

Also study findings showed that, 72.5% of caregivers reported facing frequent financial constraints that limited their ability to provide a balanced diet for their children. This directly impacted the frequency, variety and quality of complementary foods. Caregivers with financial difficulties often provided fewer meals per day and relied on less nutritious, lower-cost foods which reduced dietary diversity. This align with Chane, Shimelash, Tesfa and Wubalem, (2017) research which indicated 65% of caregivers from low-income household reported being unable to provide a varied diet due to financial limitations

The results showed that, 57.5% of caregiver's households were classified as medium sized. Medium household less often struggled to provide adequate food for all members, which less affected the quality and frequency of complementary foods for children. The effect of household size on CF practices is also supported by the literature, a study in Southern Benin Mitchodigni et al, (2017), found that larger household sizes sometimes strained resources making it difficult to provide sufficient complementary foods for young children. In Kenya, a research Nyakundi, Peter and Irene, (2019) showed that larger households were more likely to experience financial and food shortages which impacted the ability of caregivers to meet the nutritional need of their children.

About the father's influence on CF, the research showed that 35% buys the food, 37.5% encourages the mothers and 27.5% had no influence. Father's involvement is vital in the introduction of CF as he will provide complementary feeds and other necessities. Mother alone cannot facilitate CF and this results into inappropriate CF practices. These results were in with (FAO, 2015) in Uganda were fathers able to purchase food items and encouraged women to use those food ingredients.

Conclusion

The study at nutrition clinic in MRRH reveals that CF practices among caregivers of children aged 6-24 months were influenced by a combination of maternal, socioeconomic While majority of caregivers were knowledgeable about CF, a gap in timely initiation and meal frequency still exist.

Socioeconomic factors, such as unemployment and low household income, significantly impact the ability of caregivers to provide balanced, nutritious meals. Financial constraints remain a major barrier to accessing diverse foods leading to suboptimal feeding practices.

Recommendations

To the government through the ministry of Health

The ministry of health should implement nationwide, continuous nutrition education programs targeting both urban and rural areas, with special focus on complementary feeding. These programs should emphasize the importance of dietary diversity, proper meal frequency and age –appropriate feeding practices.

To address financial constrains faced by caregivers, the ministry should develop and implement food assistance programs, especially targeting vulnerable, low income household. These programs could include subsidies for nutrient dense foods or distribution of essential foodstuffs.

The ministry of health should launch hand hygiene and sanitation campaigns, focusing on rural areas where knowledge of proper hand washing with soap may be lower. This is done through outreach and local organization.

To the staff of MRRF

The hospital administration should expand the outreach efforts to ensure that more families in remote areas are reached with nutrition education services. These outreaches should focus on educating caregivers about the importance of CF, nutritional needs of children and food safety practices.

Health center should collaborate with local government and non-government organizations to secure additional funding for nutrition programs. This ensures consistent supply of RUTF and supplementary foods to meet the demand for malnutrition treatment.

To the caregivers

Caregivers should adhere to the WHO recommendations for complementary feeding, including introducing solid foods at six months, providing variety of nutrient rich foods and maintaining proper meal frequency.

Caregivers should practice proper hand washing, washing hands with soap before preparing food, after using toilet and before feeding their children. Ensuring cleanliness during food preparation and storage is essential in preventing food contamination and related diseases.

Caregiver should actively participate in community health programs and seek nutritional counseling from local health centers. Engaging in these will provide them with up to date information on the best practices of CF.

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List of Abbreviations

BF: Breast feeding

CF: Complementary Feeding

FBCFRs: Food Based Complementary Feeding Recommendations

IYCF: Infant and Young Child Feeding

LMICs: Low and Middle Income Countries

MOH: Ministry of Health

MRRH: Masaka Regional Referral Hospital

UBOS: Uganda Bureau of Statistics

UNICEF: United Nation Children Education Funds

WHO: World Health Organization

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Conflict of Interest

The author declares that there was no conflict of interest in the conduct and reporting of this study.

Author Contributions

Nakawooya Shanawi conceptualized the study, designed the methodology, collected and analyzed the data, interpreted the findings, and prepared the final manuscript under the supervision of Ms. Nabuuma Flavia.

Data Availability

The datasets generated and analyzed during the current study are available from the corresponding author upon reasonable request.

Ethical Approval

Ethical approval for the study was obtained from the School of Clinical Medicine Ethics Committee of the International Paramedical Institute (IPI)-Maya and permission was granted by the administration of Masaka Regional Referral Hospital.

Informed Consent

Written informed consent was obtained from all participating caregivers prior to data collection, and participation was voluntary with the right to withdraw at any time.

Author Biography

Nakawooya Shanawi is a Diploma student in Clinical Medicine and Public Health at the International Paramedical Institute (IPI)-Maya with research interests in maternal and child health, nutrition, and community health interventions.

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References

Areja, A., Dereje, Y., & Mulugeta, Y. (2017). Determinants of appropriate complementary feeding practices among mothers having children 6-23months of age in rural Damot sore district,Southern Ethiopia;a community based cross sectional study. *BMC Nutrition*, 3,:82.

Arikpo, D., Ededet, S. E., Moriam, T. C., Friday, O., & Deborah, M. C. (2018). Educational intervantions for improving primary caregiver complementary feeding practices for children aged 24 months under. *Cochrane Database Syst Rev*, (5):CD011768 PMCID:PMC6494551/PMID 29775501.

Aronsson, A., Virtanen, S., C, U., Vehik, K., Yang, J., Silvis, K., . . . Norris, J. M. (2015). Age at first introduction to complementary foods is associated with socio demographic factors in chidren with increased genetic risk of developing diabetes. *Maternal and Child Nutrition*, 11(4):803-814.

Birungi, V. (2021). Complementary feeding practices and associated factors in children below the age of 24 months in Kitumba Sub county-Kabale district.

Birunji, T. L., & David, L. E. (2022). Optimal complementary feeding practices among caregivers and their children aged 6-23 months in Kisoro district ,Uganda. *BMC Nutrition*, http://doi.org/10.1186/s40795-022-00581-0.

Bisoi, S. K., Mamata, M., Dillip, D., & Satabdi, G. (2019). Complementary feeding practices and its economic and social impact:A cross sectional Hospital based study. *Journal of Nepal paediatric society* , 39(1):22-28.

Black, M., M, M., Walker, S, P., Fernald, & L, C. (2018). Family structure and the introduction of complementary foods in south African infants. *Maternal and child Nutriion*, 14(4),e12594.

Dad, F., & Ijaz, H. (2017). Mothers knowledge ,attitude and practices(KAP) Regarding complementary feeding for children age 6-24 months in kurrum agency of FATA pakistan. *Public health and preventive medicine*, 33-42.

Darmon, N., & Adam, D. (2015). Contribution of food prices and diet cost to socioeconomic disparities in diet quality and health:a systematic review and analysis. *Nutrition reviews*, 73(10),643-660.

Demmelash, A. A., Melese, B. D., Admasu, F. T., Bayih, E. T., & Yitbarek, G. Y. (2020).

ygienic practice during complementary feeding and associated factors among mothers of children aged 6-24 months in Bahir Dar Zuria District,Northwest Ethiopia. *Journal of environmental and public health*, (1),2075351.

Getaneh, E., Alebachew , Z. F., & Belayneh, W. S. (2024). Complementary feeding practices and associated factors among mothers of children aged 6-23 months in Sub=saharan African countries:amultilevel analysis of the recent demographic and health survey. *BMC Public Health*, 8;24(1):114.

Hoddinott, J., & Park, S. (2019). Complementary feeding practices in Bangladesh:Family structure and maternal education. *World Development*, 115,72-85.

Hossain, M, Sarwar, T, Roy, & S, K. (2018). Maternal education and complementary feeding practices in Nepal:A cross sectional study. *Journal of Child Nutrition*, 14(2),180-188.

Kenya Demographic and Health Survey. (2022). Kenya: National Bureau of Statistics.

Kostecka, M., Izabella , J., & Julianna, K. (2020). Complementary Feeding of infants.A pilot study conducted after the itroduction of new infant feeding guidelines in poland. *Nutrition and public health* , Nutrients 2021,/13(1),61.

Mitchodigni, I. M., Hounkpatin, W. A., Bouzitou, G. N., Avohou, H., Termote, C., Kennedy, G., & Hounhouigan, D. J. (2017). Complementary feeding practices:determinates of dietary diversity and meal frequency among children aged 6-23 monthsin southern benin. *Food Sec*, 9:1117-1130.

Mohsin, S. S., Abdul, S. S., Rehana, S., Nighat, H., & Arit, P. (2014). Knowledge,attitude and practices of mothers regarding complementary feeding. *J Dow Uni Health Sci*, 8(1):21-
25.

Navuga, & Rehema. (2015). *Complementary feeding practices and nutritional status of children 6 to 23 months in Wakiso district.* Wakiso district: Makerere University school of health sciences DSpase 5.8.

Nyakundi, L. N., Peter, C., & Irene, O. (2019). Maternal socio-Economic status,Complementary Feeding Practices and Nutrition status of children age 6-23 months in Kuria West ,Migori county ,kenya. *International journal of Health Sciences and Research*, vol 9;12.

Riesmiyatiningdyah, Kusuma, W. R., Faida, A., & Meli, D. (2020). The level of knoeledge and attitudes of mothers in complementary feeding to infants aged 0-12 months inSidoarjo district ,East java provice ,Indonesia . *Nurse and Health :jurnal Keperawatan*, 9(2):233-239.

Saaka, M., Ferguson, N. S., & Dogoli, R. N. (2021). Independent and joint contribution of inappropriate complementary feeding and poor water,sanitation and hygiene (WASH)practices to stunted child growth. *journal of nutritional science*, 10,e109.

Shrestha, S., Manoj, P., & Smriti, M. (2020). Knowledge ,attitude and practices among mothers of children 6-24 months of age regarding complementary feeding. *JNMA J Nepal Med Assoc*, 58(230):758-763.

Turner, C., Kadiyala, S., Aggarwal, A., Coates, J., Drewnowski, A., Hawkers, C., . . . Walls, H. (2017). concepts and methods for food environment research in low and midle income countries. *Agriculture,Nutrition and Health Academy Food Environment Working Group,London UK*, 6(1),1-13.

Uganda Bureau of Statistics; ICF. (2018). *Uganda Demographic and Health survey 2016.* Kampala Uganda: Rockville,Maryland,USA:UBOS and ICF.

Umugwaneza, M., Lize, H., Hester , H. V., & Edelweiss, W. V. (2021). Factors influencing complementary feeding practices in rural and semi-urban Rwanda:aqualitative study. *J Nutr Sci*, 9:10:e45.

United Nation Children's Fund (UNICEF). (2020). *Improving young children's diets during the complementary feeding period.* New york:UNICEF: UNICEF Programming guidance.

Valerie, F., Makebeb, N., Alawiyatu, U. I., Sheila, L., Eric, J. D., & Margaret, E. B. (2014). Integration group counselling,cell phone messaging,and participant -generated songs and drama into a microcredit program increases nigerian women's adherence to international breastfeeding recommendation. *The journal of Nutrition*, 1120-1124.

WHO. (2017). School of public Health ,University of Maryland: Complementary feeding.

WHO. (2023). Apprppriate complementary feeding.

World Health Organisation. (2016). *World health statistics 2016:Monitoring health for the sustainable development.* Geneva,Switzerland: WHO library cataloguing in publication data.