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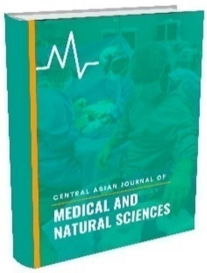

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Assessing the Nutritional Skills of the Parents on the Development of Children Under Five Years of Age through Anthropometric Measurements in Rwanda a Case Study of Muyumbu Health Center in Rwamagana District, Rwanda

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In the history of human being, nutrition has been played an important role in the development starting from pregnancy up to the senior citizen. It has been stated that under-nutrition as well as food shortage have been main threats to the growth of children. However, where food is available parental feeding practices have brought the responses against these threats (Birch, et al., 2007). The control and keeping eating habits respecting balanced diet can be the way of ensuring good health as well as active mind because balanced meals which is consumed by pregnant mothers improve children cognitive development (Scaglioni et al., 2018)

- There are some nutrition influences found in the families that can affect children nutrition and these include culture, socio-economic and skills of the parents (Mahmood et al., 2021).
- In Rwanda, Demographic and Health Survey (DHS) done in 2019-2020 on children nutritional status disclosed that when compare height and weight measurements nationally referring to the international standards, one in three children is stunted and it applied to children under five years of age (NISR, MOH and ICF, 2021). On the other hand, infant and young children feeding practices vary and applied based on individual choice depending on mother or caregiver knowledge and skills and attitude on children feeding, hence this practice leads to children malnutrition or not (Ahishakiye, 2021).

Objectives of the study

This research has the following aims and objectives:

- To assess the parents food literacy in Muyumbu health Center.
- To determine the children nutrition through use the anthropometric measurements
- To find out the contribution of balanced diet knowledge to the children feeding

Significance of the study

The study shows the current parents nutritional skills. Also, it will give the children nutritional statuses and these will help the decision-makers to act and fight against malnutrition in Rwanda

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Study limits

This study confined its assessment to children under five years of old. In addition, the research covers only Muyumbu health center area.

Literature review

- Weight-for-age is measurement that shows the nutritional status of a child. So, low weight-for-age index recognizes the condition of a child being underweight just in a specific age. The method has advantage of past chronic and/or present acute under-nutrition where poor skeleton growth is clarifying manifested. However, it is not able to point out if it is past or present (Savanur and Ghugre, 2015).
- Another measurements normally used to determine children malnutrition is Mid-Upper Arm Circumference (MUAC). It is relatively easy to measure and to predict the current and future status of a child in terms of malnutrition based on received data
- This is a rapid tool used for screening of acute malnutrition of children whose ages range from 6-59 months. (Marshall, et al., 2019). MUAC is simply and easily used in the field. As per recommendation of World Health Organization, MUAC shows children malnutrition in terms of wasting. Therefore, MUAC <115 mm for severe wasting, MUAC <125 mm for wasting) (Baro et al., 2021).
- Equally important, children malnutrition related to stunting as well as wasting is measured by low height-for-age are described by Z-score where the range is between -3 and -2 standard deviation. That is means that Z-score values below -3 shows severe wasting and stunting. For simple determination, a table of children Z-scores was already computed and presented (Martinez-Millana et al., 2018).

Methodology

- **Research design**: The design of this study was descriptive design
- **Sampling**: The data were collected from 50 respondents sampled/selected randomly from the parents attending Muyumbu Health Center.
- by using a well-structure questionnaires in a month of March 2021
- **Data collection tools**: A well-structure questionnaires were prepared and distributed to the respondents
- **Data analysis**: Quantitative and qualitative data were put through standard analysis using descriptive analysis design and then the results were presented in tables.

Results and discussions

Table 1: Gender of children attended health center

Gender		
Gender of children	**Frequency**	**Percentage (%)**
Male	20	40
Female	30	60
Total	**50**	**100**

Source: Primary data, 2021

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Table 2: Education level of parents

Level of education		
Education level of the parents	**Frequency**	**Percentage (%)**
Not attend formal education	0	0
Attended Primary Education	17	34
Secondary certificate	28	56
Bachelor's degree holders	5	10
Master's and above	0	0
Total	**50**	**100**

Source: Primary data, 2021

Table 3: The Knowledge and skills of the parents on balanced diet

The Skills of Balanced Diet	Frequency	Percentage (%)
Hygiene practices	9	18
Farming crops on balanced diet	6	12
Home gardening	8	16
Eat/feed based on food categories (energy giving, bodybuilding, body protecting food)	12	24
Meal planning	15	30
Total	**50**	**100**

Source: Primary data, 2021

Respondents showed that the majority of the parents know the meal planning 30%. It is important to plan for meal because during meal planning a cook consider the dietary diversity (Weerasekara et al., 2020). 24 % of the parents affirmed that they consider hygiene practices of children

Mumma et al. (2020) who clarifies that during preparation of foods hygiene has to be much upgraded in order to reduce infant/toddler exposures to enteric pathogens responsible for diseases.

18% of respondents said that children are fed based on food categories, 16% of respondents said that are home gardening and 12% of respondents said that are farming crops on balanced diet. WHO (2018) explained that different categories of ages need different nutrients but daily energy as well as other food nutrients requirements have to be respected for good body functioning

Anthropometric measurements

Table 4: Anthropometric Measurements

Anthropometric Measurements	Frequency			Percentage	
	Normal range	Out of range	Total	Normal range (%)	Out of range (%)
Height-for-age	39	11	50	78	22
Mid-Upper Arm Circumference (MUAC)	41	9	50	82	18

Source: Primary data, 2021

Considering Height for age (Z-scores) 78 % found normal while 22% suffer from stunting (malnutrition) as indicated by Z-scores table low height for age falling under the range of between -3 and -2 standard deviation (Martinez-Millana et al., 2018).

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For this reason, this 22% children have a shortage of consuming balanced diet (Healthy diet) which result in stunting (Vassilakou, 2021). Mid-Up Arm Circumference (MUAC) measurement 18% of children fell pain of wasting but they do not fall under severe wasting because all them found in this rage <125 mm for wasting based on Baro et al., (2021) who point out that MUAC <125 mm for wasting and MUAC <115 mm for severe wasting

Contribution of balanced diet to the children

Response	Frequency	Percentage (%)
Control body weight	7	14
Fight of disease	18	36
Have more energy	6	12
Sleep better	3	6
More brain power	16	32
Total	**50**	**100**

Primary data, 2021

- 36% emphasized that a balanced diet protect children against diseases. Vassilakou (2021) highlighted that lack of regular balanced nutrition for young ones like infants is associated with different diseases like wasting, stunting and obesity. 32% of respondents reported that balanced diet facilitate brain development of their children. Cusick and Georgieff (2016) revealed that the foundation of brain development is shaped at early age before the age of 3 years. good sleep of the children and it was confirmed by 12 % and 6% respectively. Healthy nutrition and bedtime routine results in healthy sleep (Mindell and Williamson, 2018).

Conclusions and recommendations

- Balanced diet is one of the mainstays of health, which is particularly important for the growing young organism. It was clearly affirmed that parents do not have full skills on healthy meal and other good practices supporting good children growth and development. It was approved by the anthropometric measurement that pointed out children who are still in the malnutrition zone and present children stunting as well as wasting.
- The research recommend Muyumbu health center to increase the parents sensitization to provide a balanced diet to children. Also, encourage parents to cultivate fruits and vegetables in their kitchen gardens in order to fight against malnutrition in young children. Moreover, health center should keep training parents on life facets supporting children wellbeing like provision of hygiene, good bedtime sleeping routine

References

1. Ahishakiye, J., Vaandrager, L., Brouwer, I. D., & Koelen, M. (2021). Life course learning experiences and infant feeding practices in rural Rwanda. *Maternal & child nutrition*, *17*(2), e13126. https://doi.org/10.1111/mcn.13126
2. Barro, M., Baro, M. D., Cisse, D., Zagre, N., Ba, T., Neff Baro, S., & Diagana, Y. (2021). Upper arm length along with mid-upper arm circumference to enhance wasting prevalence estimation and diagnosis: sensitivity and specificity in 6-59-months-old children. *Family medicine and community health*, *9*(2), e000748. https://doi.org/10.1136/fmch-2020-000748
3. Birch, L., Savage, J. S., & Ventura, A. (2007). Influences on the Development of Children's Eating Behaviours: From Infancy to Adolescence. *Canadian journal of dietetic practice and research: a publication of Dietitians of Canada = Revue canadienne de la pratique et de la recherche en dietetique: une publication des Dietetistes du Canada*, *68*(1), s1–s56.

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4. Cusick, S. E., & Georgieff, M. K. (2016). The Role of Nutrition in Brain Development: The Golden Opportunity of the "First 1000 Days". *The Journal of pediatrics*, *175*, 16–21. https://doi.org/10.1016/j.jpeds.2016.05.013

5. Mahmood, L., Flores-Barrantes, P., Moreno, L. A., Manios, Y., & Gonzalez-Gil, E. M. (2021). The Influence of Parental Dietary Behaviors and Practices on Children's Eating Habits. *Nutrients*, *13*(4), 1138. https://doi.org/10.3390/nu13041138

6. Martinez-Millana, A., Hulst, J. M., Boon, M., Witters, P., Fernandez-Llatas, C., Asseiceira, I., Calvo-Lerma, J., Basagoiti, I., Traver, V., De Boeck, K., & Ribes-Koninckx, C. (2018). Optimisation of children z-score calculation based on new statistical techniques. *PloS one*, *13*(12), e0208362. https://doi.org/10.1371/journal.pone.0208362

7. Mindell, J. A., & Williamson, A. A. (2018). Benefits of a bedtime routine in young children: Sleep, development, and beyond. *Sleep medicine reviews*, *40*, 93–108. https://doi.org/10.1016/j.smrv.2017.10.007

8. Mumma, J., Cumming, O., Simiyu, S., Czerniewska, A., Aseyo, R. E., Muganda, D. N., Davis, E., Baker, K. K., & Dreibelbis, R. (2020). Infant Food Hygiene and Childcare Practices in Context: Findings from an Urban Informal Settlement in Kenya. *The American journal of tropical medicine and hygiene*, *102*(1), 220–222. https://doi.org/10.4269/ajtmh.19-0279

9. National Institute of Statistics Rwanda, NISR., Ministry of Health, MOH., & ICF. (2021). 2019-20 Rwanda Demographic and Health Survey Summary Report. Kigali, Rwanda, and Rockville, Maryland, USA: NISR and ICF.

10. Savanur, M. S., & Ghugre, P. S. (2015). Magnitude of undernutrition in children aged 2 to 4 years using CIAF and conventional indices in the slums of Mumbai city. *Journal of health, population, and nutrition*, *33*, 3. https://doi.org/10.1186/s41043-015-0017-x

11. Scaglioni, S., De Cosmi, V., Ciappolino, V., Parazzini, F., Brambilla, P., & Agostoni, C. (2018). Factors Influencing Children's Eating Behaviours. *Nutrients*, *10*(6), 706. https://doi.org/10.3390/nu1006070

12. Vassilakou T. (2021). Childhood Malnutrition: Time for Action. *Children (Basel, Switzerland)*, *8*(2), 103. https://doi.org/10.3390/children8020103

13. Weerasekara, P. C., Withanachchi, C. R., Ginigaddara, G., & Ploeger, A. (2020). Understanding Dietary Diversity, Dietary Practices and Changes in Food Patterns in Marginalised Societies in Sri Lanka. *Foods (Basel, Switzerland)*, *9*(11), 1659. https://doi.org/10.3390/foods9111659

14. World Health Organisation, WHO. (2010). Indicators for assessing infant and young child feeding practices: Part II measurement. Geneva: WHO

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