

Contribution to the Study of the Nutritional Status of Children Aged 0-59 Months in the Province of Mahajanga

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Abstract: Madagascar is among developing countries with a public health problem such as malnutrition that requires effective measures. The Province of Mahajanga is made up of the Boeny Region, the Betsiboka, Region, the Sofia Region, and the Melaky Region. Using anthropometric measurements such as the child's weight, age, height, and socioeconomic status of the mothers are essential for specifying the characteristics of the parameters. Food security must be met in a household to fight against malnutrition. Food and food are linked to different parameters such as income, access to care, level of education of mothers, and community security. Sensitization for malnutrition, increase in rice production by various measures, management of household expenses help to improve the nutritional status of children from zero to 59 months in the Province of Mahajanga. The characteristics of the parameters either for the children or of the mothers specify the nutritional status of the children. Malnutrition is presented by food inadequacy, under nutrition, inadequacy of care, food insufficiency. They can lead to problems with the nutritional status of children under five. The survey of 210 mother-child couples was carried out in June 2021 in the Province of Mahajanga.

Keywords: Status, Nutritional, Child under 5 years old, Province, Mahajanga.

1. Introduction

Malnutrition is among the public health problem. Among the types of malnutrition, there is growth retardation which is carried out by 47% by modifying 33% in 2000 at the world level (WHO, 1980). Malnutrition leads to mortality. Infant mortality is 9, 7 million children under 5 in sub-saharan Africa (UNICEF, 1999-2000). Mortality in developing countries can reach ten to twenty times the figure in industrialized countries [4].

Madagascar is a poor country with a very low standard of living. The Province of Mahajanga is located in the northwest of Madagascar. Half of children under 5 suffer from chronic malnutrition, including 33% with low weight and 11% with severe cases. The wasting rate is 14% in addition, 21% of women of childbearing age suffer from chronic malnutrition with a body mass index of less than 18, 5kg/m², causing 54% of deaths [8].

The Mahajanga Province study on the nutritional situation of children fewer than 5 was considered with the following assumptions: the marital status of mothers has an influence on the nutritional status of their children in the event of acute malnutrition: Weight height. And the second hypothesis indicates that the profession of the mother has an effect on the nutrition status of their children for chronic malnutrition (Height/Age). The third hypothesis: the level of education of the mother has a consequence on the nutritional status of their children. Finally the fourth hypothesis: the number of dependent children determines the nutritional status of the child in a household.

According to the WHO, malnutrition is a pathological condition resulting from the deficiency of excess, relative or absolute, of one or more essential nutrients, whether

clinically manifest or detectable only by anthropometric analyses, biomedical or physiological (WHO 1982)[2]. The objectives are to reduce the number of malnourished children within five years in the province of Mahajanga. The specific objectives of the study are: Determine the prevalence of malnutrition in children under 5 in the Province of Mahajanga. Identify the socio-economic factors likely to determine malnutrition. Finally, to issue measures to be taken based on the resultants obtained. The article specifies the nutritional status of children under 5 years old as well as its determining factors in the Province of Mahajanga.

2. Materials and Methods

Anthropometric measurement using the child's weight, height and age is necessary during a survey in the Province of Mahajanga. The survey form must be identifiable for all mothers surveyed. During an interrogation, he can record sound by a device to simplify the collection of data.

2.1 Anthropometric measurements

The baby scale and height chart are used to detect malnutrition in children under five. You need to know the age of the child. To analyze the result, the survey of the couple 210 mothers-children used SPSS software and word, excel.

2.2 Population studied

These are mothers who have at least one child under the age of five living in the Province of Mahajanga during the survey.

2.3 Study location

The study is carried out in the Province of Mahajanga which requires investigation. The mother refuses to answer questionnaires and that she does not live in the Province of Mahajanga in excluded.

3. Results

The study of the nutritional status of children under 5 requires parameters such as the socio-economic factors of the mothers, the sector of activity, the recording of sampling sheets 210, and the use of software for the counting. The significant test is 0, 05(p value). The test with the null hypothesis will be carried out in different parameters of the survey in the Province of Mahajanga. The following table 1 indicates the relationship of the various components.

Table 1: Statistical test with different parameter with null hypothesis (according to SPSS).

Hypothesis Test Summary				
	Null Hypothesis	Test	Sig.	Decision
25	The categories of Patrimoine des familles occur with equal probabilities.	One-Sample Chi-Square Test	,000	Reject the null hypothesis.
26	The categories defined by Maison des familles = Locateur and Propriétaire occur with probabilities 0,5 and 0,5.	One-Sample Binomial Test	,000	Reject the null hypothesis.
27	The categories defined by Qualité d'élevage = Volaille and Boeuf occur with probabilities 0,5 and 0,5.	One-Sample Binomial Test	,850	Retain the null hypothesis.
28	The categories of Revenu mensuel de la mère occur with equal probabilities.	One-Sample Chi-Square Test	,000	Reject the null hypothesis.
29	The categories defined by Revenu mensuel de père = Inférieur à 400 000 fmg and Entre 400 000 fmg à 500 000 fmg occur with probabilities 0,5 and 0,5.	One-Sample Binomial Test	,000	Reject the null hypothesis.
30	The categories defined by Secteur d'activité = Secteur primaire and Secteur secondaire occur with probabilities 0,5 and 0,5.	One-Sample Binomial Test	,000	Reject the null hypothesis.
31	The distribution of numero de la fiche is normal with mean 105,50 and standard deviation 60,77.	One-Sample Kolmogorov-Smirnov Test	,457	Retain the null hypothesis.
32	The distribution of Date d'enquete is normal with mean 01-10-1969 and standard deviation 0 00:00:00.	One-Sample Kolmogorov-Smirnov Test	.	Unable to compute.

Asymptotic significances are displayed. The significance level is ,05.

¹Exact significance is displayed for this test.

The association between beef and poultry farming is significant by null hypothesis. On the other hand, the income of the mother, the cultivable land, the level of education of the mothers, the opposite case by null hypothesis. But the distribution of the file number is significant by Kolmogorov-Smimov test with the null hypothesis.

The different bindings can be demonstrated but, the extracted result must be run. Figure 1 below explains the connection between the different determining parameters of malnutrition in children under five in the Province of Mahajanga, such as the weaning of the child and their gender, living child.

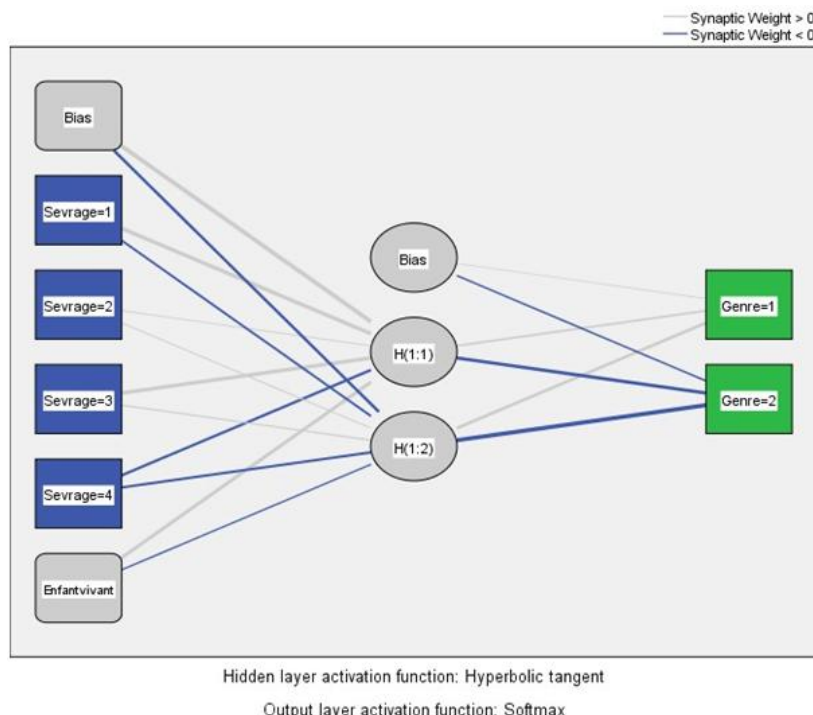


Figure 1: Link between different parameters (according to SPSS).

The figure above presents the relationship of weaning children in relation to their gender with the number of children living. The age of weaning occurs after the sixth month of childhood. The survey specifies that the age of weaning in the Province of Mahajanga is divided between six, seven and eight months of their childhood. There is a nuance of weaning before the sixth month, this is the exception.

During the survey, mothers at least one child under five will be surveyed to have a result proportional to the nutritional status of children. The gender is divided into two, either masculine or feminine, the combination of the differences parameters is presented on the one hand in a normal way, and on the other hand there is anomaly it is the "bias" other study of the connection of the various parameters will be presented in the following figure 2.

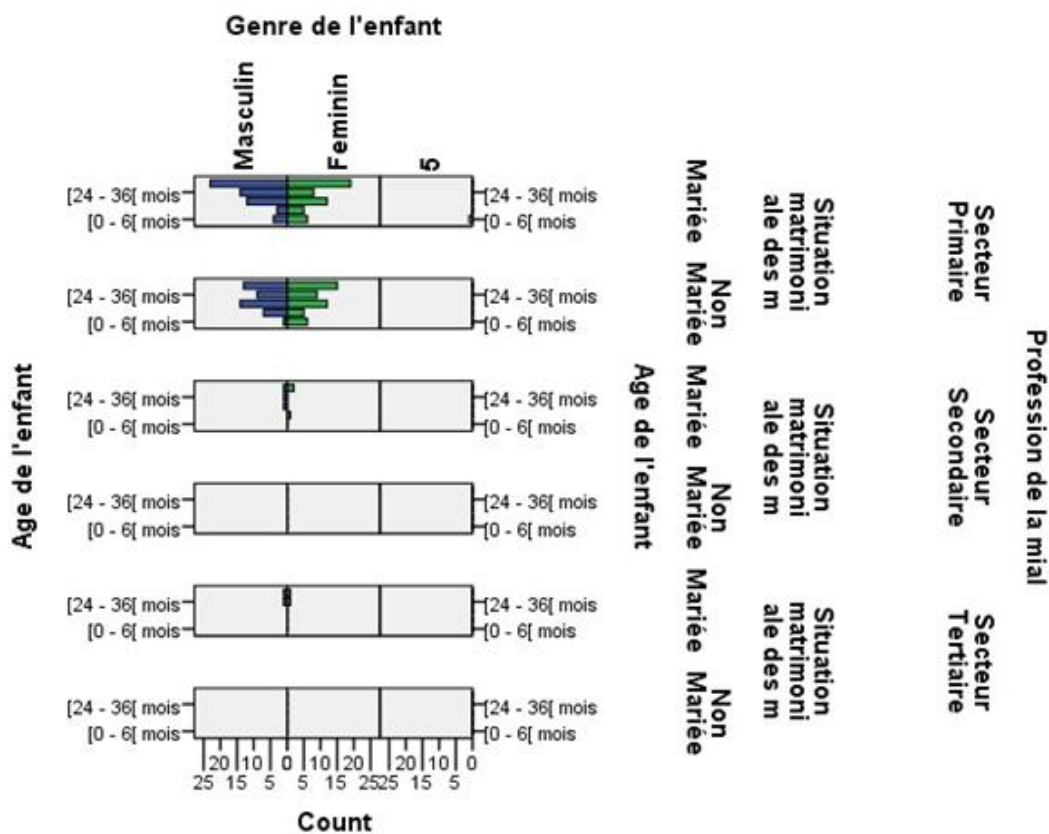


Figure 2: Link between parameters of children and their mothers (according to SPSS).

There is the relationship between the profession of the mother and their marital status in relation to the gender of their child and the age of the child which are specified by figure 2 above. Unmarried mothers are at risk of malnourished children compared to married mothers. In Madagascar, the primary sector is still dominant due to the presence of informal work.

During the survey, most mothers are classified the primary sector or even agriculture in this case, unmarried mothers who are not living together promote the malnutrition of their child. It is not remarkable that the genre having risk for this figure. The age group describes that the oldest child has a risk of malnutrition compared to a small child. This explains why exclusive breast-feeding until the sixth month protects the child against malnutrition.

Malnutrition or lack of nutrients in certain food promotes malnutrition in the Province of Mahajanga which is not the quantity administered. Child age group pyramid indicates characteristic of young population in future. The survey results will need to be interpreted.

4. Discussion

The rate of underweight among children under 5 years old is 45, 81% of children are girls and 54, 18 % of boys in the Province of Mahajanga .This minimal difference between the two sexes justifies the situation. A notable drop in the level of underweight is noted compared to the results of the DHS survey of 1997-1998, found in 42, 4% cases of global malnutrition in children less than 3 years old [9].

The observation of health problem and malnutrition is started by the knowledge of the nutritional state of health in general. Knowledge of risk factors determines an individual's health status. The nutritional state helps on the intervention of the adequacy in terms of nutrition, for example in the event of malnutrition, its state becomes unacceptable hence the rehabilitation of the unbalanced states to have in good condition in the Province of Mahajanga. According to the analysis report for the years 1997-1998, conducted in Antananarivo by INSTAT, SECCALINE, 32% of girls are underweight compared to 35, 6% of males [5].

Approximately two-thirds of low birth weight cases in developing countries are due to fetal growth retardation, largely attributable to maternal malnutrition before and during pregnancy. There is a close relationship between a woman's low weight before pregnancy and intrauterine growth retardation [6]. The case of being underweight in relation to marital status is significant. The married are made 56, 2% against unmarried 43, 8% married women prefer to make a life as a couple, distribute the tasks between the couples in relation to the preparation of food or resources or income or production in the case of rice growing or other crops.

The situation indicates that the 26, 2% are illiterate but the academics give 1, 9%. In the developed countries, the university levels are dominant compared to the illiterates. The main risk factors for nutrition-related non-communicable diseases, especially in adults, are poor dietary habits including low consumption of fruits and vegetables, excessive consumption of salt and animal fats, physical inactive (92% in urban areas), consumption of alcohol (82%), smoking (5%). [10].

Education requires conditions like high-level and well-motivated teachers; in addition students must know the specialty he is doing. In the case of Madagascar, it is the opposite; the teachers are not motivated, not retraining in the areas of professionalization. The standard of living favors the development of education in developed countries, but the opposite in developing countries such as the Province of Mahajanga.

The height/age indicator, which reflects chronic malnutrition, indicates 82, 9% of children are within two standard deviations of the median value. Chronic malnutrition compared to the owner of the houses is significant, the owners of the houses have stocks on to save their money.

By way of comparison, the rate of chronic malnutrition in the Province of Mahajanga is 86, 8% coming from tenants of the houses. An increase in the rate of chronic malnutrition specifies the situation in an underdeveloped country.

The height/age indicator indicates chronic malnutrition. This indicator specifies the effectiveness of the correlation between the existence of housing and child malnutrition. According to survey, 17, 1% of children come from families who own a house.

On the other hand, the overall acute malnutrition rate among Malagasy children was 11, 7% and the severe acute malnutrition rate was 2, 8% in 2008. [7].

By way of comparison, in a hospital setting in Moundou, Chad, many hospitalized children died of malnutrition. Statistically 85, 2% of hospitalized cases are due to illnesses as well as 76% of observed deaths. Out of the 63, 1% of children declared malnourished ((P/T) less than two standard deviations). And 16, 1% of children are stunted ((T/A) less than two standard deviations). [3]. On the other hand, a survey carried out in the regions of Maradi and Zinder reported an acute malnutrition rate of 13, 4% according to the ratio between the weight and height of an individual. [1].

5. Conclusion

To conclude, the socio-economic characteristics of mothers such as mother's age, marital status, level of education, ownership of the house, knowledge of malnutrition take into consideration for the assessment of nutritional status children.

Anthropometric measurements such as the child's age, weight, and height help provide the information needed to study the nutritional status of children under five. Acute malnutrition, chronic malnutrition, underweight are the type of malnutrition. The test with the null hypothesis was carried out with binomial.

Satisfactory economics like affordable income, profitable production, market existence give good nutrition in a household. Female heads of household undermine community food security. In the Province of Mahajanga, the nutritional status depends on the marital status of the mothers and their level of education. The house-owning mother benefits in the daily expense compared to otherwise.

Acute malnutrition relative to mother's age, chronic malnutrition relative to marital status, and mother's level of education relative to home are influenced by the nutritional status of children in addition, the child's gender, marital status, and home with underweight considered determinants of children's nutritional status.

Knowledge of malnutrition in the home facilitates the fight against child malnutrition, but this learning depends on the efforts of the head of the family including the standard of living, intellectual level. The permanent availability of food, the project to improve the nutritional status of children, and adequacy of care, food production are among the solutions to be recommended to eliminate child malnutrition in the Province of Mahajanga. The treatment of malnutrition in the hospital takes symptomatic measures for the case of malnutrition, but awareness remains prevention which is vital.

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