

# Nutritional Status of Children Admitted at Regional Hospital Center of Maradi, Niger: Influence of Family Planning

Issoufou Amadou<sup>1, \*</sup>, Nazipa Ali Chaibou<sup>2</sup>, Habsatou Mahamane Ousmane<sup>2</sup>

<sup>1</sup>Food Science and Technology Laboratory, Faculty of Agronomy and Environmental Sciences, Dan Dicko Dankoulodo University of Maradi, Maradi, Niger

<sup>2</sup>Bouzou Dan Zambadi Institute of Health, Université Libre de Maradi, Maradi, Niger

## Abstract

The influence of family planning (FP) on mothers of malnourished children admitted at the Centre for Internal Nutritional Recovery (CRENI) of the Regional Hospital Centre (CHR) of Maradi, Niger republic was carried out with the aim of knowing the impact of PF in mothers of malnourished children admitted at CRENI/CHR of the Maradi. This study revealed how these mothers practice the FP and what are the means and type of FP mostly used by these mothers to space births in order to assure good health for their children and themselves healthy. The results of this study show that the majority of the mothers in this survey have a younger age and practice the modern type of FP with the pills which is the most used method of FP by these mothers in this study. However, most surveyed mothers believe that their children are not admitted to CRENI because of close births, illnesses or lack of hygiene, but believe that unbalanced diet is the biggest cause and maintenance of malnutrition of their children. This must call attention of all the actors to coordinate their actions for a better control of taking in charge of malnutrition towards a better awareness of the mothers of malnourished children in Maradi.

## Keywords

Family Planning, Malnourished Children, Malnutrition, CHR of Maradi

Received: October 16, 2020 / Accepted: April 28, 2021 / Published online: May 15, 2021

@ 2021 The Authors. Published by American Institute of Science. This Open Access article is under the CC BY license.

<http://creativecommons.org/licenses/by/4.0/>

## 1. Introduction

Family planning (FP) is the practice of controlling the number of children one has and the intervals between their births, particularly by means of contraception or voluntary sterilization. However, the use of contraceptives means is low in developing countries, more specifically in Niger where malnutrition is very worrying. This low use of contraceptive means is the basis of the very high demographic growth rate in Niger, especially in the south of the country, namely the regions of Maradi and Zinder. It is also in these most populous regions of the country that the rate of malnutrition is the highest, especially in

the region of Maradi, Niger. This strong population growth and the high rate of malnutrition can be explained on the one hand by the low use of FP methods or by the poor practice of contraceptive methods among some mothers [1, 2]. On the other hand, men prevent their wives from using FP because they think it is a way to avoid births and not a way to space births due to the lack of awareness, which makes that population growth is higher in these regions. This is perhaps due to the lack of awareness of FP, especially in our rural communities and sometimes even in urban areas [3]. In addition, in Niger, more than three-quarters of women aged of 20 to 24 nowadays get married before the age of 18, and almost

\* Corresponding author

E-mail address: [issoufsara@gmail.com](mailto:issoufsara@gmail.com) (I. Amadou)

half had already had a child by that age. It is in the region of Maradi, in southern Niger that the rate of child marriage is the highest but above all the rate of malnutrition is also the highest [4].

Malnutrition is a pathological condition resulting from the relative or absolute insufficiency or excesses of one or more essential nutrients, whether this state manifests itself clinically or can only be detected by biological, anthropometric and physiological [5] as well as malnutrition is a set of pathological conditions linked to the deficiency of one or more nutrients and results from the combination of several factors [6]. Furthermore, malnutrition is not only due to food insecurity or lack of food. Poor access to healthcare, drinking water and poor family practices are a pathway for infectious diseases which can develop in children under the age of 5, the most fragile and vulnerable age group. This explains the risk for these children to fall ill, as affected by respiratory infections, diarrhea, vomiting, malaria, moreover the unbalance between the intakes and the needs of the organism. The Intensive Nutritional Education and Recovery Center (CRENI) of the Regional Hospital Centre (HCR) of Maradi is a center which takes care of children suffering from severe malnutrition which takes charge of FP products for the mothers of these malnourished children admitted after having discussion FP with them.

Knowingly, FP protects the health of children and that of the mother; It is their right to be breastfed up to the age of two to avoid any risk of illness, especially malnutrition, because a child who is well fed with breast milk is more protected against malnutrition than the one who is not well breastfed. Unlike the woman who is pregnant and breastfeeding, her milk is not as nutritious as that of the pregnant one [7, 8]. Thus, it is important to space births and practice FP not only to space births but also to allow better health for the mother and her child [9]. This study aims to find out the impact of family planning on the nutritional status of malnourished children admitted to the CRENI of the CHR of Maradi, Niger which will allow to know whether or not their mothers practice FP and what are the means and types of FP they use to space births so that their children can be healthy and avoid malnutrition.

## 2. Methodology

This is a prospective study over a three-month period from August to October 2017, corresponding to the peak period of malnutrition in the year in Niger. The study population is made up of mothers of malnourished children who are admitted to the CRENI in the CHR of Maradi during the period concerned. As part of this study, it was decided to discuss by asking questions to the mothers of

malnourished children admitted to the CRENI of the CHR of Maradi, of which 100 mothers of these malnourished children were questioned during this period. Questionnaires were used as means of collecting data related to FP from the mothers of these malnourished children. Prior to data collection the questionnaires were pre-tested using admitted mothers of malnourished children in another a nearby health center at Guidan Roudji in Maradi region, to ensure their quality.

### 2.1. Ethical Consideration

The study was approved by the National Ethics Committee and the Academic Scientific Council of Dan Dicko Dankoulodo University of Maradi and authorized by the authority of Regional Hospital Centre (CHR) of Maradi. The protocol was in accordance with Helsinki Declaration 1975 revised in 2008. Participation in the study was voluntary. The purpose of the study was explained to the mothers and consents were obtained. An individual questionnaire for data collection was used to record information obtained from the talk with the mothers of malnourished children admitted to the CRENI in the CHR of Maradi, practice of FP and its influence on nutritional status were observed. Furthermore, consent to administer pre-tested questionnaires was obtained also from the same authority of the CHR of Maradi before the start.

### 2.2. Data Analysis

Microsoft © software, Word and Excel 2016 version was used for the different data processing and presentation.

## 3. Results and Discussion

The analysis of Figure 1 shows that 41% of mothers of malnourished children admitted during the survey are age of 17 to 25 years old, meaning that the majority of them are young. This means that there is a greater chance of having a lot of births and especially close births at this age range of these mothers. This may be due to the lack of experience and awareness of motherhood among these mothers. Figure 1 shows that 98% of mothers are married, likely due to religious believe and society that banned births outside marriage, Niger account for almost 99% Muslims of its population. Furthermore, Figure 1 indicates that the majority of mothers of malnourished children admitted during the survey not only their young age yet they are more numerous under the monogamous regime. In addition, this age range constitute the majority of mothers who have been admitted for the malnutrition of their children in CHR. Furthermore, the mothers who are between 26 and 34 years old had much more

gestation and parity than the others. Although, there have been many more pregnancies among mothers who are in this age range. This means that there is a greater chance of having a lot of births and especially close births at the levels of these mothers. This may be due to the lack of experience and awareness of motherhood among these

mothers. However, by the fact that these mothers were married so young and do not practice FP or they use the it wrong or the wrong method and types of FP to space their births, thus justifying that they have had more pregnancies.

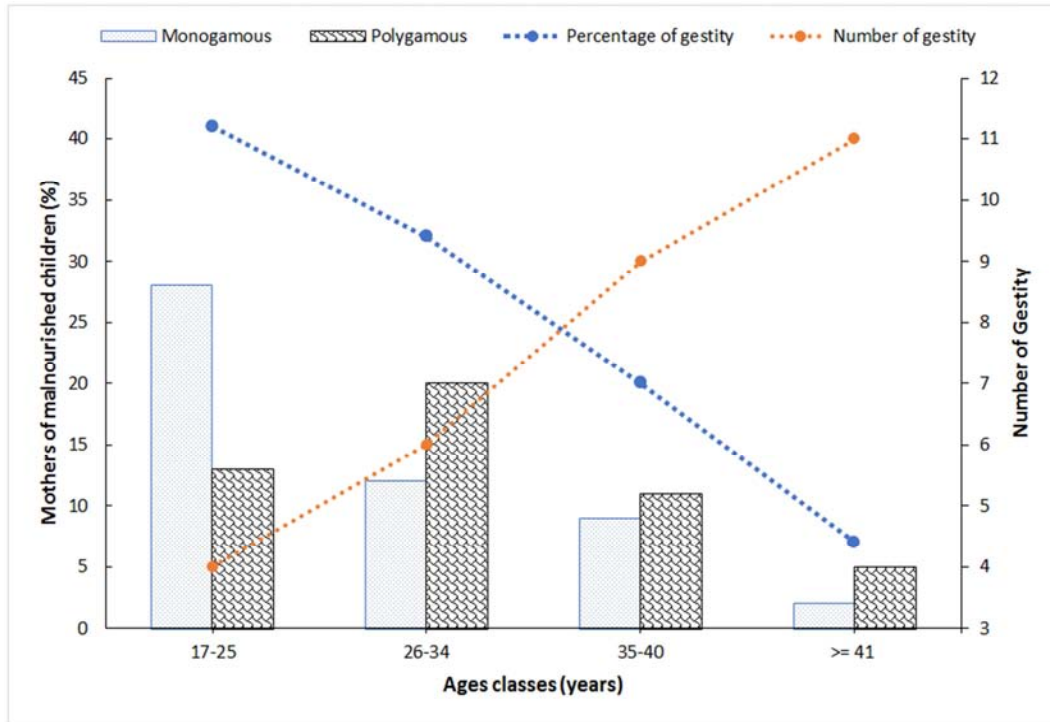


Figure 1. Mothers of malnourished children by age, marriage regime and gestity.

As can be seen in this Figure 2, 29% of women practiced FP only once, although among them there are those who have given birth several times. The results show that there were more pregnancies and children especially among mothers aged between 26 to 34 years old. This could be due to the fact that these mothers were married so young and had many children at a young age without practicing FP between births, on the other hand it is because it is the first times these mothers practice FP despite having given multiple births. We also note that the more the age increases, the higher the number of pregnancies in these mothers (Figure 2a). This can be explained by few FP practice or many of them miscarried out and even gave birth to stillborn. This explains why they do not take long intervals to get pregnant again, justifying that they have had more pregnancies (Figure 2b) and children (Figure 2a).

The Figure 3 shows that 86% of mothers are out of school. We see that 91% of the mothers who were admitted are housewives accordingly. The analysis of Figure 3a indicates that most of the mothers of malnourished

children admitted during the survey have not been to school, so they are out of school. This is explained by the fact that most of these mothers come from rural areas and that the rate of schooling that end is much lower [10]. Resistance to girls' schooling is a determining factor for this very high percentage. It can also be seen from Figure 3b that these out-of-school mothers, with the highest number are also, are also housewives. This is also due to the fact that the majority of them they do not have modern education that is they can't read or write; thus, they do not have opportunity of working public or private sector. In addition, the poverty of women is also another cause on the one hand. Whereas, the refusal of some husbands to allow their wives to work and trade may explain this high proportion of housewives in this sample. However, the standard of living of the household has a significant influence on the variation in the prevalence of child malnutrition, for both structural malnutrition and cyclical malnutrition. Children belonging to poor households are more affected by malnutrition than those living in moderate income households [11].

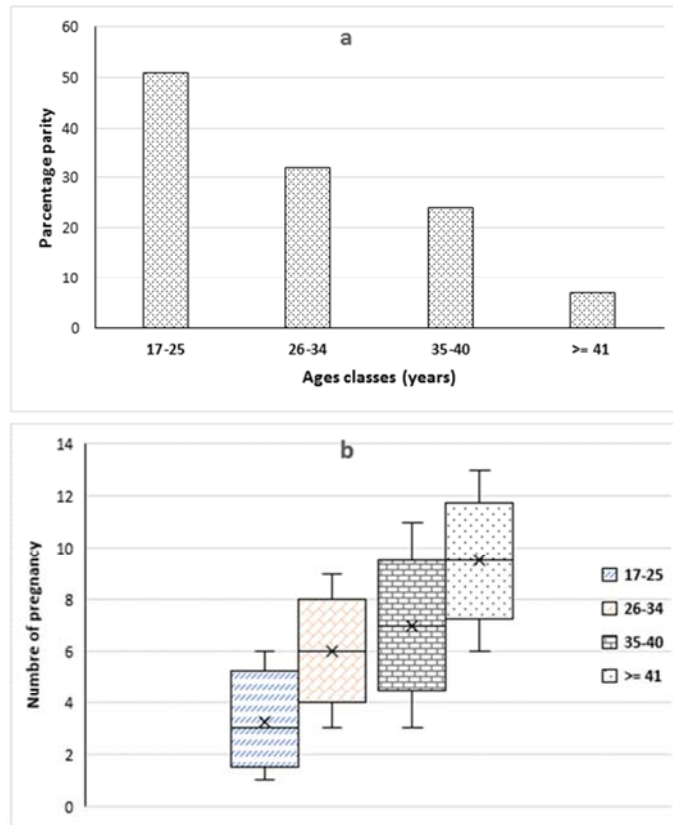


Figure 2. Mothers of malnourished children according to parity (a) and pregnancy (b).

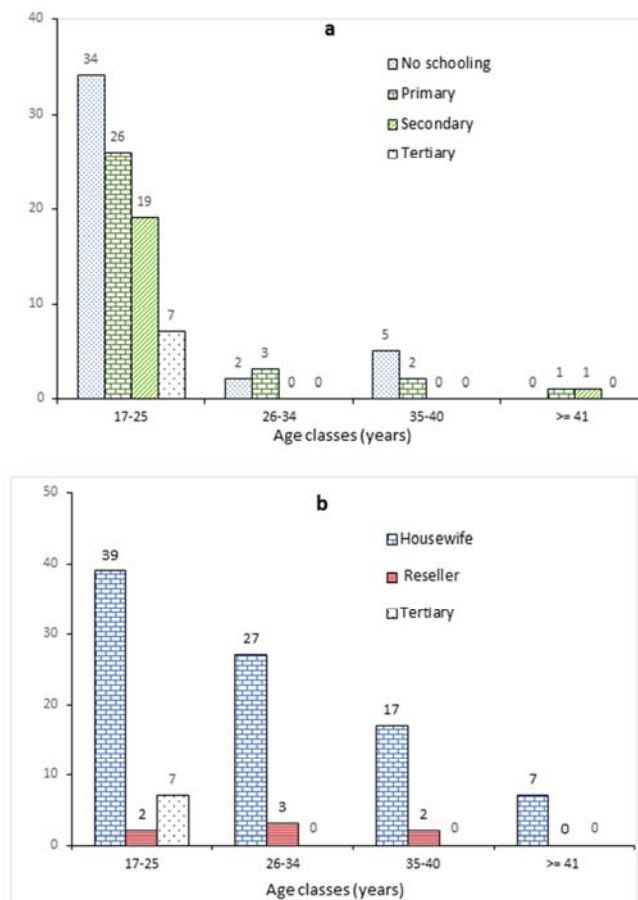


Figure 3. Mothers of malnourished children by level of education (a) and occupation (b).

The data from Figure 4 shows that among the 100 from the sample, only 29 used FP only once. This is because most of these mothers are young, so there are those who are in their first gestation. Moreover, majority of them have not attended school, so they do not know the importance and use of family planning [10]. On the other hand, this low percentage is explained by the fact that majority of the sample belongs to

rural population and they are less informed or trained on FP despite the awareness campaign effort by state authority through NGO's and governments health centers. In addition, resistance or even the refusal of some husbands to allow their wives to practice FP continue to play also an important role in explaining this percentage [3, 12].

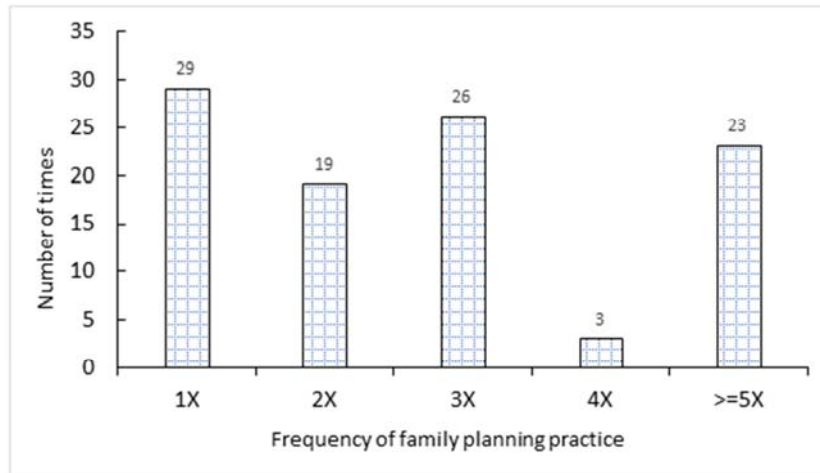


Figure 4. Classification of women according to the number of times they have practiced FP.

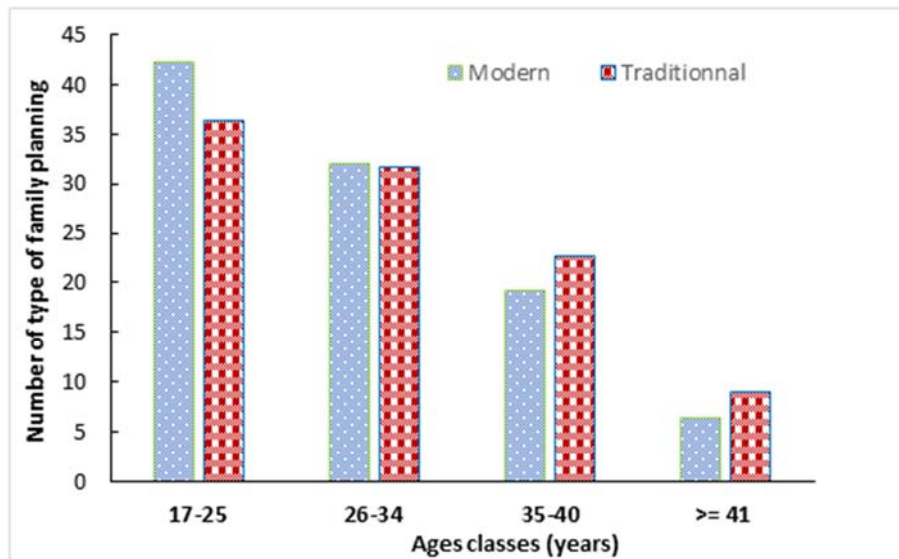


Figure 5. Mothers of malnourished children by type of family planning.

Figure 5 shows that 42% of mothers of malnourished children who practice modern FP are from the age range of 17 to 25 years old. Otherwise, 36% of this class age used traditional method of PF such as charm. This could be explained by the fact that among these mothers some are aware of modern FP practice at the same time believe on the efficacy of traditional method of FP [13]. Likewise, they also conformed with their faith (Islam) because Niger and Maradi in particular are predominantly Muslim, and Islam itself recommends spacing births at least 2 years (Quran Verse 2

'albaquarat ', Ayat 233) for the good health and well-being of mother and child [14]. The Figure 5 revealed that side by side these mothers performed both modern and traditional type of FP. This could be due to the awareness on FP carried out by health workers and the distribution and free application of FP products in the health centers supported by NGOs, as it was the case at CHR, Maradi. Indeed, this modern method of FP came to be the safest and most suitable for these mothers of malnourished children. Even though, the local practice remains the high in population despite the effort of awareness.

Figure 6 indicate that out of the means of contraception used, the pill came out as the most used with 31% of women among these mothers. This shows that it is the simplest and easiest method for these mothers to use, which corroborates with the pill method, the most used in the whole of Niger [15, 16]. It should be noted that the function of contraceptives mostly is to prevent fertilization or implantation, such as the condom, the diaphragm, the cervical cap and the vaginal sponge (or tampon), form a physical barrier between the sperm and the egg. Others have a chemical action, which destroys sperm, such as spermicidal creams, while the contraceptive pill contains hormones that block ovulation. The mode of action of the intrauterine device is not yet fully understood, but it is believed that its essential role is to prevent implantation [17, 18]. It can be seen that this is why the pill recorded the highest used by these mothers.

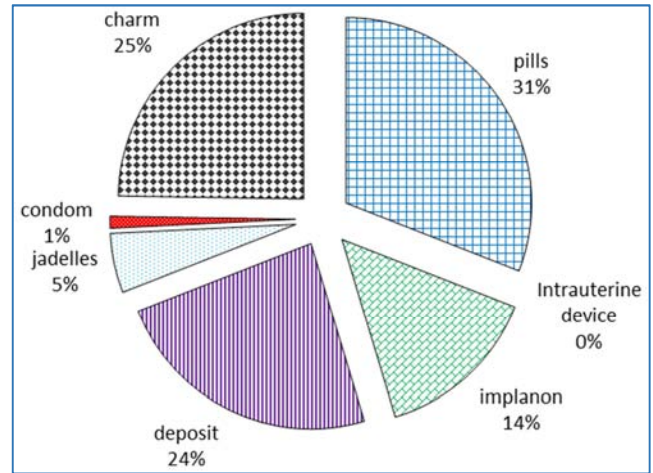


Figure 6. Mothers of malnourished children according to the means or access of contraception used.

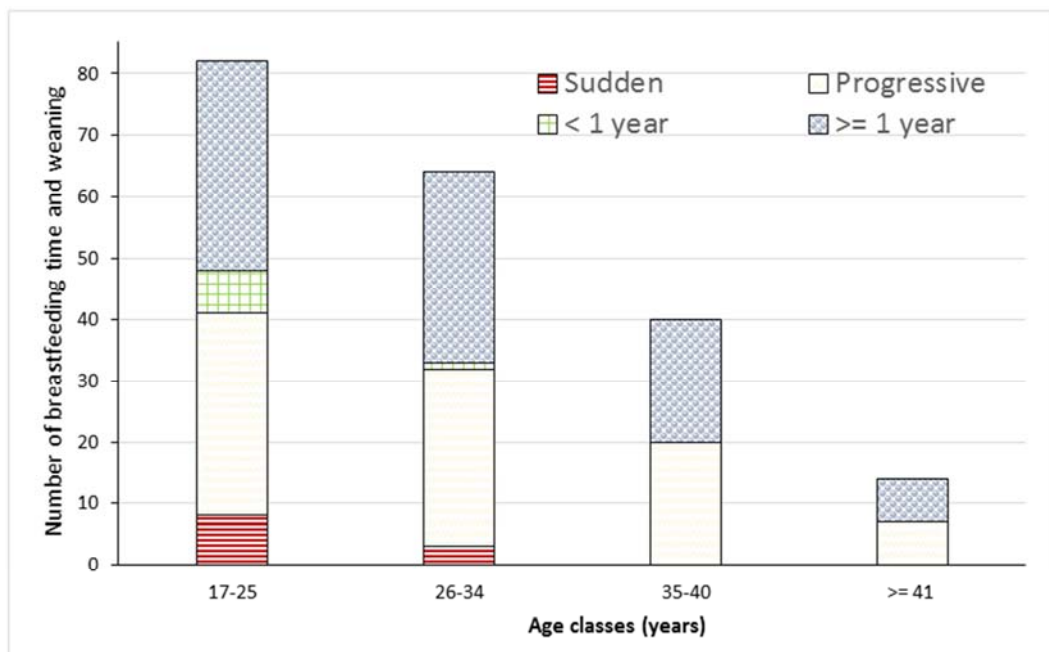


Figure 7. Mothers of malnourished children according to breastfeeding and weaning time of their children.

This Figure 7 shows that 88% of mothers of malnourished children who are admitted practice progressive weaning. These results indicate that 93% the mothers of malnourished children in CHR Maradi (Figure 7) breastfed their children over one-year age and also practice progressive weaning of their children (88%). This means these mothers understand the importance of breastfeeding until the age of weaning because it protects them against all risk of disease and especially child malnutrition [16, 19]. It is also possible to consider gradual weaning for the well-being of the child because a child who is well breastfed is different from one who is not. This is the recommended way by health authority of the country so to ensure a smoother weaning that guaranty a healthy child [17, 18, 20]. Indeed, breast milk is the best

form of nutrition during infancy and breastfeeding protects infants from a spectrum of infectious and non-infectious diseases and breast milk alone meets all the nutritional needs of infants up to six months. This is why the World Health Organization recommends exclusive breastfeeding for the first six months of life, in both developing and industrialized countries [9, 21].

It emerges from the Figure 8 that the majority (47%) of mothers of malnourished children admitted to CRENI/CHR of Maradi believe that unbalanced diet is the cause of malnutrition in their children. In addition, Figure 8 shows that 41% of mothers believe that unbalanced diet is what contributes to the maintenance of malnutrition. This resulted from the lack of macronutrients such as carbohydrates,

protein and fat or micronutrients (vitamins and minerals), or both in their foods [22, 23]. This can also be explained by the fact that these mothers cannot afford to eat a well-balanced diet due to poverty or do not know how to prepare a balanced diet because they are almost all unschooled housewives. The results presented in Figures 8 also show that other mothers of these malnourished children believe that the diseases are caused by the malnutrition of their children and contributes to the maintenance of this malnutrition. This can be explained by the fact that there is a vicious circle between

malnutrition and disease that is the malnourished child is more vulnerable to disease, because of his weakened immune system, and the disease worsens the malnutrition because the child burns more energy and lack of appetite [24, 25]. Although, the unbalanced diet and relatively the disease interrelated are the highest causes and maintenance of malnutrition of these admitted children in CHR of Maradi. Therefore, there are much to do with nutrition awareness, especially among mothers who have children between 0 and 59 months old who are the most vulnerable to malnutrition.

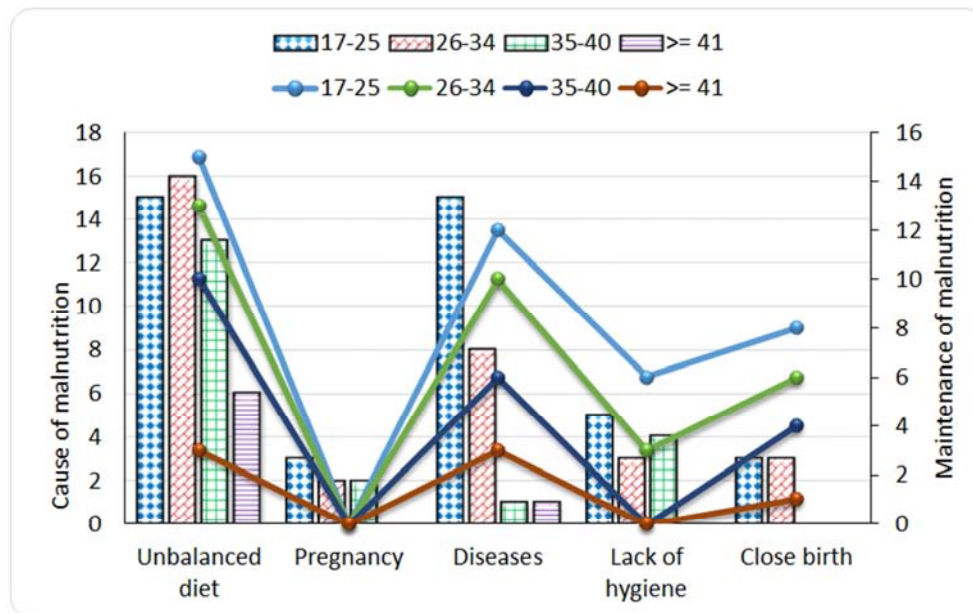


Figure 8. Cause and maintenance of malnutrition of malnourished children admitted in regional hospital center of Maradi.

## 4. Conclusion

It can be concluded that this study on the impact of family planning on the nutritional status of malnourished children admitted to the CRENI of the CHR of Maradi was a medium to show how the methodology of application of family planning on the mothers of these malnourished children admitted in this center. The results showed that despite the efforts made by the state and its various partners, malnutrition still remains a big concern in this center. The causes of status of malnutrition of these children in this center are the unbalanced diet, hygiene and diseases in its maintenance. There is need for all stakeholders to coordinate their actions within a larger framework for better control of the problem. Better awareness can be a solution to better practice of family planning for the well-being of women and their children and also for the causes of the malnutrition.

## Acknowledgements

Sincere thanks to the NGO FUDEN for the support to the

Centre for Internal Nutritional Recovery (CRENI) of the Regional Hospital Centre (CHR) of Maradi on family planning program.

## Conflict of Interests

The authors state that they have no competing interests.

## References

- [1] Benevides, R., Chau, K., Ousseini, A., Innocent, I., & Simmons, R. (2019). Engaging students to improve sexual and reproductive health: a report of the university leadership for change initiative in Niger. *African journal of reproductive health*, 23 (1), 55-64.
- [2] Langer-Gould, A. M. (2019). Pregnancy and family planning in multiple sclerosis. *CONTINUUM: Lifelong Learning in Neurology*, 25 (3), 773-792.
- [3] Wulifan, J. K., Jahn, A., Hien, H., Ilboudo, PC., Meda, N., Robyn, PJ.,... & De Allegri, M. (2017). Determinants of unmet need for family planning in rural Burkina Faso: a multilevel logistic regression analysis. *BMC pregnancy and childbirth*, 17 (1), 426.

- [4] Brooks, M. I., Johns, N. E., Quinn, A. K., Boyce, S. C., Fatouma, I. A., Oumarou, A. O.,... & Silverman, J. G. (2019). Can community health workers increase modern contraceptive use among young married women? A cross-sectional study in rural Niger. *Reproductive health*, 16 (1), 38.
- [5] Akombi, B. J., Agho, K. E., Merom, D., Renzaho, A. M., & Hall, J. J. (2017). Child malnutrition in sub-Saharan Africa: A meta-analysis of demographic and health surveys (2006-2016). *PLoS one*, 12 (5), e0177338.
- [6] Guero HDM., Yami C., et Atebo E. Al., (2012). Prise en charge de la malnutrition aiguë au Niger: Un programme national, Protocole national de la PEC intégrée de la malnutrition aiguë au Niger.
- [7] Huysentruyt, K., Hulst, J., Bian, F., Shamir, R., White, M., Galera-Martinez, R.,... & Gerasimidis, K. (2018). Opinions and practices of healthcare professionals on assessment of disease associated malnutrition in children. *Clinical Nutrition*.
- [8] Harlap, S., Kost, K., & Forrest, J. D. (1991). Preventing pregnancy protecting health: a new look at birth control choices in the United States
- [9] Singh, S., & Maddow-Zimet, I. (2016). Facility-based treatment for medical complications resulting from unsafe pregnancy termination in the developing world, 2012: a review of evidence from 26 countries. *BJOG: An International Journal of Obstetrics & Gynaecology*, 123(9), 1489-1498.
- [10] Stoner, M. C., Edwards, J. K., Miller, W. C., Aiello, A. E., Halpern, C. T., Julien, A.,... & Wagner, R. G. (2017). The effect of schooling on age-disparate relationships and number of sexual partners among young women in rural South Africa enrolled in HPTN 068. *Journal of acquired immune deficiency syndromes (1999)*, 76 (5), e107.
- [11] Guegant J. P. and Maga H. I. (2015). Exploitation des données brutes de la CAP 2013 et de l'EDSN-MICS 2012 Page 8.
- [12] Aleni, M., Mbalinda, S. N., & Muhindo, R. (2020). Birth Intervals and Associated Factors among Women Attending Young Child Clinic in Yumbe Hospital, Uganda. *International Journal of Reproductive Medicine*, 2020.
- [13] Bakibinga, P., Mutombo, N., Mukiira, C., Kamande, E., Ezeh, A., & Muga, R. (2016). The influence of religion and ethnicity on family planning approval: a case for women in rural Western Kenya. *Journal of religion and health*, 55 (1), 192-205.
- [14] Potts, M., Graves, A., & Gillespie, D. (2017). Population statistics: Does child survival limit family size?. *Nature*, 542 (7642), 414.
- [15] González Bango, M. A., Blanco Pereira, M. E., Ramos Castro, G., Martínez Leyva, G., Rodríguez Acosta, Y., & Jordán Padrón, M. (2018). Education in sexually-transmitted diseases from the early adolescence: unarguable necessity. *Revista Médica Electrónica*, 40 (3), 768-783.
- [16] Cahill, N., Sonneveldt, E., Stover, J., Weinberger, M., Williamson, J., Wei, C.,... & Alkema, L. (2018). Modern contraceptive use, unmet need, and demand satisfied among women of reproductive age who are married or in a union in the focus countries of the Family Planning 2020 initiative: a systematic analysis using the Family Planning Estimation Tool. *The Lancet*, 391 (10123), 870-882.
- [17] Ibrahim, F. M. (2020). Current Use of Modern Family Planning and Fertility Intention Among Women Farmers of Reproductive Age in Ido and Ona-ara Local Government Areas of Ibadan, Nigeria. *Rural Sustainability Research*, 43 (338), 9-19.
- [18] Villalobos, A., Avila-Burgos, L., Hernández-Peña, P., Cahuana-Hurtado, L., Heredia-Pi, I., & Montañez-Hernández, J. C. (2020). Government expenditure on maternal health and family planning services for adolescents in Mexico, 2003–2015.
- [19] Guengant, J. P., & Maga, H. I. (2017). Bilan des d'activités de planification familiale au Niger depuis les années 1990.
- [20] Fortney, J. A., Susanti, I., Gadalla, S., Saleh, S., Rogers, S. M., & Potts, M. (1986). Reproductive mortality in two developing countries. *American Journal of Public Health*, 76 (2), 134-138.
- [21] Labbok, M. Cooney, K. et Coly S. (1994), *Guidelines: Breastfeeding, Family Planning, and the Lactational Amenorrhea Method - LAM* (Washington, DC: Institute for Reproductive Health).
- [22] Ghosh-Jerath, S., Singh, A., Jerath, N., Gupta, S., & Racine, E. F. (2017). Undernutrition and severe acute malnutrition in children. *bmj*, 359, j4877.
- [23] Chungkham, H. S., Sahoo, H., & Marbaniang, S. P. (2020). Birth interval and childhood undernutrition: Evidence from a large scale survey in India. *Clinical Epidemiology and Global Health*.
- [24] Isanaka, S., Berthé, F., Nackers, F., Tang, K., Hanson, K. E., & Grais, R. F. (2019). Feasibility of engaging caregivers in at-home surveillance of children with uncomplicated severe acute malnutrition. *Maternal & child nutrition*, e12876.
- [25] Kangaye, S., Moumouni, K., Soumana, A., Ibrahim, A., Ousman, M., Moumoni, H., & Sadou, H. (2018). Réhabilitation nutritionnelle à base des laits F75 et F100 de patients âgés de 6 à 59 mois en phase de stabilisation en milieu hospitalier à Niamey (Niger). *International Journal of Biological and Chemical Sciences*, 12 (5), 2016-2029.