Evaluation of Nutritional Status at Household in Elderly Assessed by Mini Nutritional Assessment (MNA) in West Africa Country, Niamey-Niger

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Abstract

Background: Elderly person has often poor nutrition may be due to inadequate energy protein and intake and age-related physiopathological changes in dietary habits. The low muscle strength by deficiencies micro and macronutrients is almost always associated with hyper catabolism due to polypathology occurred in those person and constituted a major risk factors for frailty.

Objective: Our aims were to evaluated nutritional status in elderly at home in Niamey.

Patients and Methods: it is a transversal descriptive study in community III and V at Niamey' city in Niger during 6 months (June to November 2016) about elderly person over 60 years who were present when our visit. It was not concerned those who were sick and non-collaborate. We used three (3) degree simple aleatory repertory technical to choose communities, district and household.

Result: 384 elderly persons were evaluated with a mean age 72 years old (60 to 100 ans) and sex ratio=0.53. More than half were married. According to MNA the rate of household denutrition was 7.8%; denutrition risk=58.5%. The rate of denutrition increasing with elderly: 5.8% (60 to 74 years); 13.6% (75 to 84 years) and 16.7% for more than 85 years old. The most comorbidity associated with malnutrition were frequently Heart vascular disease (37%) and no child working for best take care of elderly.

Conclusion: The elderly population at home in Niamey's community was characterized by malnutrition, comorbidities and difficult economics lives.

Keywords: Elderly; Nutritional status; Household; Niamey; Niger

Introduction

Malnutrition is a common problem in the older population and the prevalence in increasing probably due to an inadequate intake of nutrients and energy, and several age-related physiopathological, psychosocial and pharmacological factors determine changes in dietary habits, intake and use of nutrients, that lead to specific deficits [1,2]. Malnutrition is characterized by loss of body weight which includes loss of skeletal muscle mass and negatively affects muscle strength [3]. Different studies have described a prevalence of malnutrition or risk malnutrition risk in community older adults between 24% and 46%; between 30% and 50% in hospitalized patients in institutionalized ones [4-7]. According to the World Health Organization (WHO) the world demography of elderly (over 60 years old) will rise from 12% to 22% in 2050 and more than half of that population will live in developing countries [8,9]. In West Africa the information about the elderly health care are poor but instead of some studies, their situation was correlated globally with poverty and limited public politics. The global program health nutrition concerned children and pregnant women. In Senegal the prevalence of malnutrition according to results of studies in elderly could rise 28% in some localities [9]. In Niger the prevalence of elderly is 4.4% in 2012 but there is not study about elderly household nutritional status.

Materials and Methods

It is a transversal descriptive study in community III and V at Niamey' city in Niger during 6 months (June to November 2016) about elderly person over 60 years who were present when our visit. We had the agreement of head master of city (Niamey) and population verbal agree.

It was not concerned those who were sick and non-collaborate. We used three (3) degree simple aleatory repertory technical to choose communities, district and household. Technic of repertory: first degree: two communities under five (III and V) were choose aleatory. second degree: two districts were choosing aleatory in each community called Kalley North and Abidjan in community III then Kirkissoy and Nogare for community V. Thirdegree: arrived in the center district point, we choosed aleatory the direction by using a pen point and we walked in this direction and repertory each household until the end. One person was choosed in each household and for each district we had 96 persons. A total =96-person X 4 district =384 persons.

Nutritional status: nutritional status was characterized by BMI and the MNA. BMI was calculated as weight/height^2 (Kg/m^2). Patients were weighed in light clothing without shoes using a digital scale (Seca) with an accuracy of 0.1 Kg. Body height was measured in an upright position on a wall with an accuracy of 0.1 cm. For bedridden patients, the height was determined in a lying position. The MNA includes 18 questions from four categories: anthropometric assessment, general state, dietary assessment and self assessment. A maximum of 30 points can be achieved. A score of ≥ 24 points describes a well-nourished status. A score of 17 to 23.5 points indicates a risk of malnutrition, while less than 17 points indicate malnutrition [10].

Results

384 elderly persons were evaluated with a mean age 72 years old (60 to 100 ans) and sex ratio=0.53. More than half were married. According to MNA the rate of household denutrition was 7.8%; denutrition risk=58.5%. The rate of denutrition increasing with elderly: 5.8% (60 to 74 years); 13.6% (75 to 84 years) and 16.7% for more than 85 years old. The most comorbidity associated with malnutrition were frequently Heart vascular disease (37%) and no child working for best take care of elderly.

Discussion

The mean age of our population concerned the old person and was 72 years old ± 1.26. It was globally showed the tendance

Figure 1: Nutritional status by global MNA assessment. 66.6% of elderly had nutritional deficiency
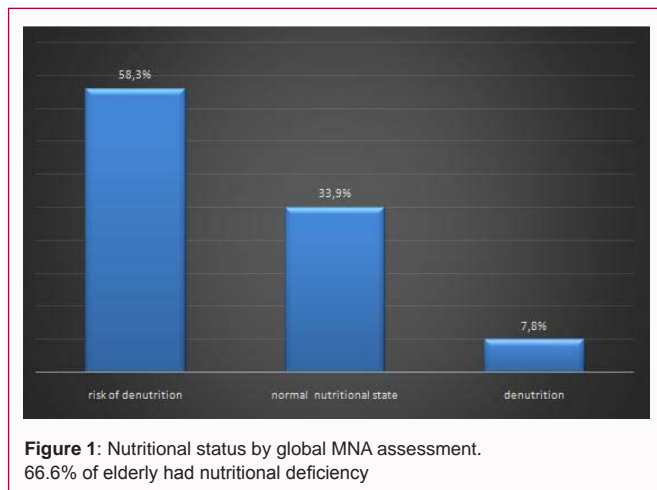
of West African population aging as Diagne et al., [11] study in Senegal who found 70 years old. In France, Torres M found 74 years old about a mean age of their population confirm In Europe a demographic transition with a largest years old [12]. The female sex was preponderate in order of 65.4% in our study and in Diagne et al., [11] study (54.2%). There was not different in TORRES M study (61%) in Europe [12]. Globally the women old person were more frequently stay at home and take care of common house activities like control babies, domestic animals and others activities. The major part of our population was married (57.1%) as soon as Diagne et al., [11] (66.26 %) and TORRES M [12] (57.1%) studies and may confirm the presence and practical monotheists religion in the West Africa. The principal factors risk cardiovascular in our study was high blood pressure (31.2%) and diabetes (6.7%).

The annual report WHO found 25% to 32% of those two cardio vascular risk factor [8]. The epidemiological transition become a reality in West Africa with those heavy and no correctly treat cardiovascular diseases then infectious diseases are still constituted a real health public problem [13]. In our study the rate of malnutrition was 66.1% classification by: risk of malnutrition (58.3%) and real malnutrition in 7.8%. It was 42.16% in Diagne et al., [11] study. In

Table 1: Socio-demography aspects.

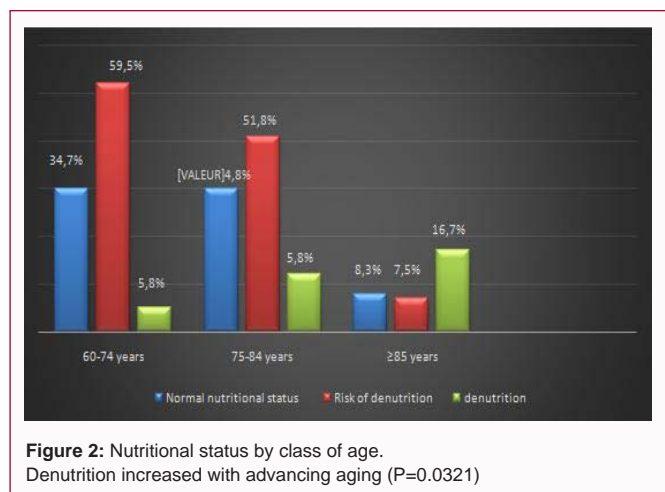| Socio-demography	Number (n)	Percentage (%)
Sex ratio	Female=252; Male=132	65.6%; 34.4%
Class of age		
[60-74], [74-84 and 85 years	294/78 /12	76.6%/20.3% /3.1%
Matrimonial status		
Married/single/celibatair	219/152/13	57%/39.6% /3.4%
Child had salary		
0/1/2/3/4	95/122/67/42/29	22.4%/29.9% /17.5% /11% /7.5%
Comorbidities associated		
Cardiovascular affections	117	31.2%
Digestives affections	115	30.7%
Bones joint affections	62	16.6%
Metabolic (Diabetes)	25	6.7%
Ocular	8	2.1%
respiratory affections	5	1.3%
urologic affections	1	0.3%

Table 2: Number of elderly person had children with salary by nutritional status.

Number of Child	Normal Nutritional state n(%)	Risk of denutrition n(%)	Denutrition n(%)	Total (percentage) n(%)
0	17 (14.8%)	38 (22.4%)	14 (58.3%)	69 (22.4%)
1	29 (25.2%)	58 (34.3%)	5 (20.8%)	92 (29.9%)
2	20 (17.4%)	31 (18.3%)	3 (12.5%)	54 (17.5%)
3	14 (12.2%)	19 (11.2%)	1 (4.2%)	34 (11%)
4	10 (8.7%)	12 (7.1%)	1 (4.2%)	23 (7.5%)
5	14 (12.2%)	5 (3%)	0 (0)	19 (6.2%)
5	11 (9.5%)	6 (3.6%)	0(0%)	17 (5.5%)
Total	**115 (100%)**	**169 (100%)**	**24 (100%)**	**308 (100%)**

Table 3: Nutritional status of elderly by comorbidities.

Comorbidities	Normal nutritional status n(%)	Risk of denutrition n (%)	Denutrition n (%)	Total (%)
No one	60 (49.1%)	57 (46.7%)	5 (4%)	120
Monopathology	53 (27.8%)	116 (61%)	21 (11%)	190
Polypathologie	17 (23.6%)	51 (70.8%)	4 (5,5%)	30
Total				384 (100%)

P=0.0065

Figure 2: Nutritional status by class of age.
Denutrition increased with advancing aging (P=0.0321)

Bordeaux at France the rate of malnutrition was 9.5% [12]. Those high rate of malnutrition at domicile in West Africa showed that there are a non developing countries confirm by the range of those African countries according by Human developing Index instead of a high rate of geriatrics patients with comorbidities associated (76.3%) against 50.7% without the literature found too, comorbidities were increasing a risk of malnutrition (RC=3.14, p<0.001) [14]. The mean number of child by women was 6.54 in our study almost equal of Niger's global rate (7.6) child by women [15]. In West Africa, this number could be explained by woman early marriage, absence of family planning and a high rate of non scolarized person (68.5%). In our study 58.3% of geriatric person with real malnutrition did not have any salary's child against more than five salary's child for any one real malnutrition geriatric person. In these conditions, instead of retire, all the family depending to geriatric person for economic spend. So it's become twice really and heavy difficult for those persons at this period.

Our study realizing in the capital of Niger is one of the first in West Africa so we did not found enough literature for this subject. Classically a high number of children those are working is better for a best take care of parents. Globally there is not a real take care health politic for the African seniors instead of the increasing of health care problem. Heath problem came after notional, transport, habitation and poverty ones [16].

The rate of malnutrition increased statically with advancing age with 16.7% over 85 years old against 5.8% years old between 60 to 74 years old (p=0.001). In Europe at Nancy, it was 4% for the age range between 65 to 75 years old and 15% to 30% in Aigle [17] study. In developing countries there is a lot of program and planning about geriatric population take care. According to the WHO, Europe and America had the old demographic population improving by medical scientific progress and continued planning a geriatric health care program.

The rate of house malnutrition (66.1%) globally different off in the hospitalized ones (76%) in Andia et al., [18] study and 100% of cases in Kouassi and Lamboni study [19] increased by high nutritional need due to hypercatabolism found in a lot of diseases.

Conclusion

More than half percent of population over than 65 years old presented malnutrition at home and it was frequently associated with multimorbidity, poor live conditions and without real no political health care for geriatric person in West Africa.

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