Project Report on Determination of Nutritional Factors Associated with Physical Function Among Elderly Population in Bangladesh

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Letter of Approval

12-12-2019

Subject: An announcement regarding the approval of the project Report.

This   is my truthful declaration that the "Project Report" the said student has prepared is not copy of any Internship Report previously made by any the students.

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Dedication

By the grace of almighty Allah, Which kindness help me to done my project work properly. This project is dedicated to my father, who see his dream to inside me. Also dedicated to my mother, who always support me in every situation . I also dedicated this to my supervisor, who support me to complete the project and dedicated to my co-supervisor, who helped me to complete this project.

Abstract

Aging is a process where people are becoming older with suffering many types of chronic diseases. Aging is directly associated with a decline in the most physiological systems that the culminate limit of physical capacity. Considering the importance of identifying by long term and short term outcomes that help to the elderly person to maintain the adequate nutritional status and functionally independent, need to identify the intervention strategies which are Target to improvement the dietary intake with physical performance.

In many country of Asia, like Bangladesh, people are growing too fasting over age 60 or more segment of the population. One of the major risk factors mortality and morbidity in this age group disability by the mobility. There are more evidence that can reduce the risk developing in the older age with improved nutrition. Mobility underlies to ability to perform basic activities by the daily living necessary for the independence, Heath, mental and physical function in aging.

In older adults there are a many types of risk factors by compromised the nutritional status couse of the physical changes which are associated aging, including Physiological, cognitive, depression, isolation and limited income. Malnutrition most probably affects in the elderly of quality of life, to increase health care cost and to increase the risk of short time mortality. If people do not consumed proper nutrient foods and habitually poor dietary intake in the aging, then elderly people are loss their weight, loss muscle and deficiency like protein energy malnutrition. So for the minimize and prevent malnutrition, must be following nutritional status and intake properly nutrient food with dietary intake.

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Chapter -1

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1.1 Introduction

This study aimed at determining the factors associated with nutritional status based indicators of physical function among the elderly population in the community setting in Bangladeshi people.

Aging

In humans, aging is the process of becoming older and represents the accumulation of changes being over time, phycological, encompassing physical, physical activity and function and social change. The causes of aging are uncertain and to the accumulation of damage that may cause the biological systems to change,to the damage concept and also the physically damaged by the decline of bone mass.

Effect of aging on health

Aging is directly associated with a decline in the most physiological systems that the culminate limit of physical capacity. The physical function change in the elderly people actually to develop the wrinkles all throughout life, skin is less elastic and thinner and attacked by many disease.

There are also common health condition that effect associated with aging included hearing loss,back and neck pain, characters and refractive errors, osteoarthritis, depression, diabetes etc.

Physical Activity

Physical activity (PA) in more established individuals is fundamentally significant in the aversion of disease, support of autonomy and improvement of personal satisfaction. Little is thought about the physical movement of the older people or their consistence with current physical action rules. Physical activity that may play an important role in maintain the health and physical funmction.

Physical Function

Physical function (PF) is the ability to perform basic and instrumentals both activities of daily living,but there are a major source of disability in elderly people by physical function including the exercise capacity decline, weight lose,bone loss, muscle loss with age. Good nutritional status is the more important for the physical function of the elderly people.

Elderly people in World

Every nation in the world is facing a demographic challenge because of the dramatic growth of population over 60 years. The proportion of this growing population is projected to grow by 56% between 2015 and 2030, and by 2050 the global proportion of elder populations is projected to be double than its size in 2015. The pace of population aging in many developing countries today is noticeably faster than occurred in developed countries in the past.

Elderly people in Bangladesh

Bangladesh, as with other countries in Asia, has been successful in increasing the life expectancy of people. This results in an increased proportion of elder peoples along with social, economic and health problems in the population. The nutritional needs of the elderly population are not recognized as a felt need by the government of Bangladesh and the working agencies.Nutritional assessment is the systematic process of collecting and interpreting information in order to make decisions about the nature and cause of nutrition related health issues that affect an individual.

As of 2019,in Bangladesh,there are over 13 million people living are aged over 60 or more which is 8% of the countrys total population. In 2050, the proportion of older people is expected to double to 21.9% with 36 million people aged over 60 or more.That means for every five Bangladeshis, one will be a senior citizen.

Nutritional factors of aging

Adequate diet and nutritional status are important determinants of health among the elderly. Nutritional factors of elderly is defined as a state of faulty or inadequate nutritional status; undernourishment characterized by insufficient dietary intake, poor appetite, muscle wasting and weight loss, bone loss that causes adverse effects on physiological functions and another clinical outcomes such as decreased quality of life, higher infection and complications, muscle wasting, hospitalization and even higher mortality. There is evidence to support the claim that adequate nutrition can prevent, delay or significantly improve the number of chronic diseases that affect elder people. Research evidence also indicates that nutrition and social support interventions result in better health outcomes among the elderly population and shows that timely interventions can prevent weight changes among those who are at risk of malnutrition.

Despite the evidence highlighting the nutrition status of the elderly population in old age home, there continues to be a dearth of evidence examining the nutritional status at the community level in the rural plain region of Bangladesh.

1.2 Factors affecting physical function and mobility in aging

Aging process leads to adverse changes in habitually physical activity, in body composition, decline in muscle capacity are all important factors that contributing to declines in physical function. Factors known to affect in physical function and in elderly people included gender, race, age, general health, different types of disease, physical activity, emotional stressors, bodily pain, depression, number of medication taken per day and body mass index.

Mobility limitations cause weaknesses in body capacities and structures happen, and identify with levels of action and cooperation. Hindered versatility at the action level might be depicted as weakened step speed or parity unsettling influence, which can be estimated by surveying execution in a separated, clinical setting. Disabled versatility at the investment level might be portrayed in

the social setting, as when a person's ambulation is impeded to the point that the individual in question can't stroll around their home autonomously.

Proportions of portability at this level could incorporate fundamental exercises of every day living (ADLs) and could be operationally characterized as utilizing the ambulation segment of essential ADLs.

1.3 Nutrient intake pattern of elderly people

Nutrient intake pattern (NIP) can be define as the quantity, variety and combination of daily intake of nutrients like carbohydrates, proteins, fats, vitamins and minerals in a diet and the frequency with which elderly people habitually consumed.

Elderly people have detrimental physical changes due to aging. Due to their less muscle and bone density, they face enormous problems with their day to day physical activity. They face noticable weight loss in this stage. So intensive care must be given on their Nutrient Intake Pattern to ensure that they are fulfilling their losses of with those nutrient Intake.

Example can be looking for important nutrients of elderly people like lean protein (lean meats, eggs, beans, seafood), vegetables and fruits (think orange, green, red and purple), whole grains (brown rice and whole wheat) and low fat dairy (milk and it's other alternatives).

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2.1 Materials

Sampling of Data Collection

The study was a cross sectional was study. We have collected our data of from remote villages of Faridpur. The places we have visited are Komlapur, Bhanga, Aliabad and Charchadpur. We have talked to elderly people aged 60 years or more habituated in these areas. We also went to some community clinic of these area to collect data about the geriatric nutrition with the socioeconomic status, mobility, activities of daily living performance (ADL),the mini nutritional assessment (MNA) and with a structured questionnaire where used to assess the physical function, nutritional status and health status respectively.

Study population

We have talked to elderly people aged 60 years or more belonging to any religion, cast, class, living in these areas.

Data collection

Data was collected from October 2019 to November 2019 and following this period was utilized for data entry analysis and final presentation of the study.

Development of questionnaire

A standard questionnaire was developed to obtain relevant information regarding the general information, socio-economic information, individual diseases and illness related information. A Mini Nutritional Assessment was done by questions developed by Nestle. A dietary diversity questionnaire was developed from 17 food groups and Food frequency Questionnaire FAO. Anthropometric measurements and physical ability related questions were also included in the questionnaire. Before final sample collection a pre test data collection was done.

Instruments

For measuring anthropometric parameter the followings instruments were used

- Weight scale: For weight measurement

- Height scale: For height measurement

- MUAC tape : For mid upper arm circumference measurement

Collection of Socioeconomic information

The socioeconomic status such as family size, monthly income or received money, monthly expenditure, education level, marital status, employment history were taken from the respondent.

Collection of anthropometric information

Height, weight, MUAC, CAFF muscle's circumference were taken from the respondents

Mini nutritional Assessment related information

In this section respondent were asked about weight loss over last 3 month, their mobility, psychological stress, neuropsychological disorders and other diseases, BMI, medicine, feeding condition, dietary habit and scoring these questions. After completion of the questionnaire, the final score (a maximum of 30 points) allows grading the nutritional status according to clearly defined thresholds:

scores above 24, good status; scores 23.5–17, risk of malnutrition; scores below 17, malnutrition.

Collection of dietary information

The respondents were asked about last 24 hours food intake

Data Analysis:

Data were analyzed by SPSS 22.0 version of computer technology

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3.1 Results

A total of 108 elderly participated in the study. Their various characteristics are shown in table 1.

**Table 1: characteristics of respondents**

Population characteristics	Frequency	Percentage
Total participants	108	
Age		
I. 60-80	103	95
II. 81 and above	5	5
Employment status		
I. Unemployment	46	42.6
II. Retired Govt. Officer	6	5.6
III. Businessman	4	3.7
Marital status		
I. married	72	66.7
II. Unmarried	1	.9
III. Widow	14	13.0
IV. widower	21	19.4
V. married	72	66.7
Education status		
I. Illiterate	65	60.2
II. Primary	26	24.1
III. Secondary	9	8.3
IV. Tertiary and above	8	7.4
Monthly income (money received from family)		
I. 10000 or less	66	61
II. Above 10000	37	34
Sex		
I. Male	52	48.1
II. Female	56	51.9

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Majority of patients were within the age range of 60 to 80 years of age. Most of them had a monthly income of 10000 tk or less. There was an equal distribution of male and female participants.

Table2: Percent distribution of respondents according to their BMI

BMI	Frequency	Percentage
Malnourished(<18.5)	3	2%
Normal(18.5 -24.9)	50	47%
Obese(>30))	0	0%
over weight(25-29.9)	55	51%
Total	108	100%

Figure 1: Nutritional status of respondents according to MNA score
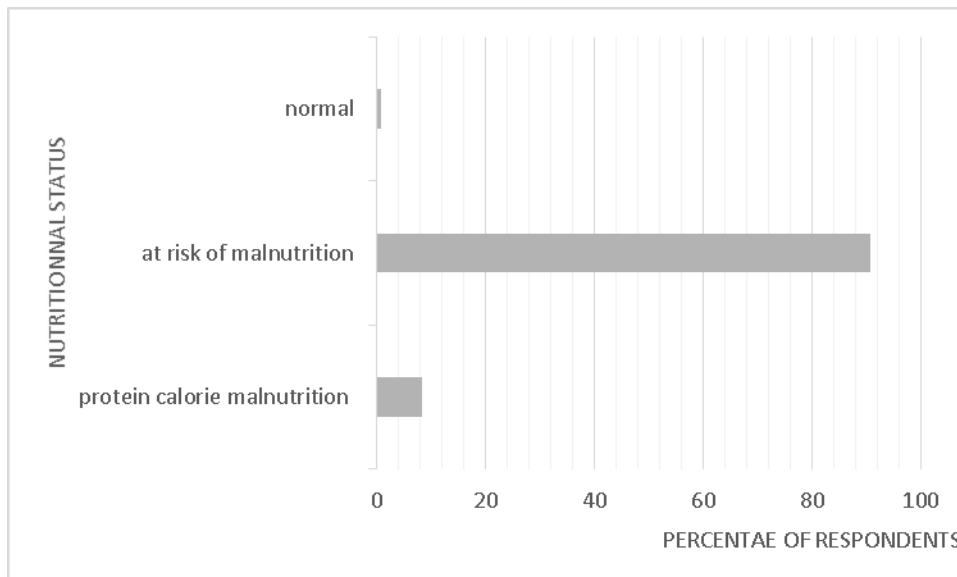
The above figure shows that majority of participants were at risk of malnutrition while the number of elderly with normal nutritional status was negligible. The rest were suffering from protein calorie malnutrition.

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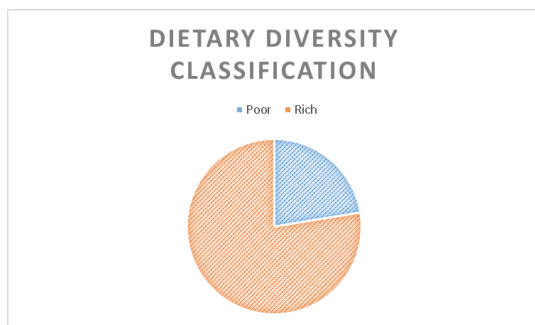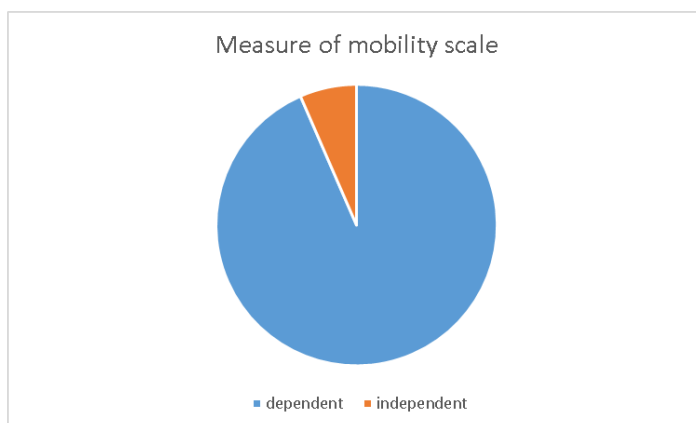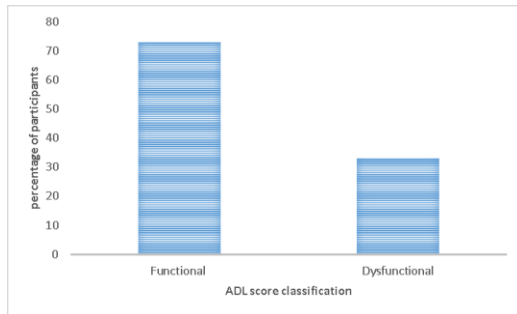**Figure 2: Dietary diversity among participants**

Figure 3: Mobility test score distribution

The above figure shows that according to mobility score test, most participants were unable to walk indoors and outdoors or stand by themselves

Figure 4 no: ADL score distribution

The above figure demonstrates that most participants were functional in their daily activities such as going to toilet or eating food by themselves

Table 3: relationship of nutritional status with mobility of patients

		MNA score		Dietary diversity	
Mobility scale		Malnourished	Not malnourished	Poor	Rich
	Dependent	1	99	72	28
	Independent	8	0	5	2

The above table shows that subjects who were unable to move freely were not malnourished. So nutritional status has poor association with dependency in movement. But dietary diversity was found to be poor among majority of participants who were dependent compared to participants who moved freely

Table 4: Association of Activity of Daily Living (ADL) with nutritional status and dietary diversity

		MNA score		Dietary diversity	
		Malnourished	Not malnourished	Poor	Rich
AODL scale	Functional	7	68	53	21
	Dysfunctional	7	26	24	9

Subjects who were functional in their activites, majority of them were not malnourished but had poor dietary diversity. Most subjects who need assistance in their daily activities were not malnourished but had less instances of rich diet consumption

3.2 Discussion

Mobility is a significant part of physical working which is basic to keeping up freedom among the elderly. In our study we did not find any association of current mobility state and physical functioning with nutritional status. But from results it was apparent that those who suffered mobility loss also consumed diet which lacked in variety of foods rich in micronutrients. Recent studies suggested a connotation between low intake and low serum concentrations of micronutrients, such as antioxidants and vitamins, with processes of physical performance, muscle strength and disability among the elderly induviduals. This study gives a basic initial step to future longitudinal investigations and mediation concentrates to investigate the worldly connections of mobility and associated among people and to consider the focusing of future intercession methodologies planned for improving or keeping up related factors diversely among people. In particular, we have to more readily comprehend why the watched directions among people show distinctive transient patterns and how this effects counteractive action and treatment procedures conveyed by clinicians. For instance, consistence to proposals (a standard of conduct) among people might be an illustrative factor. Provided that this is true, this would feature that clinicians need to tailor treatment and the executives for people in an unexpected way. Future studies should consist of detailed estimation of micronutrient intake among the elderly population and admister robust statistical analysis to unveil the true relationship between elderly population and diet quality.

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4.1 Conclusion

A decline in mobility, which could ultimately affect the quality of life. Defining which factors increase risk for mobility decline among older adults is an initial step to developing interventions to reduce mobility loss and eventually hospitalization as well medical cost burden.

Chapter -5

5.1 Reference

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