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HEALTH RELATED QUALITY OF LIFE, BEHAVIORAL FACTORS, AND FOOD SECURITY AMONG THE RURAL ELDERLY OF BANGLADESH

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Abstract: *The present study was designed to evaluate the health related quality of life among the rural elderly of Bangladesh. Recent statistics show that older people are about 7% of the country's total population and it will rise to 20% by 2050. The nutrition and health are beset with many problem which is reflected by high prevalence of malnutrition, as shown by results of BMI and MAC. The olders have food in security in terms of availability of essential protein and calorie. Health related quality of life is beset with physical and mental illness, as there needed service available in right time and adequate.*

Key words: *Prevalence of older citizen, BMI, MAC, Food insecurity, Status of Phsical and Mental Health. Prevalence of Malnutrition, Diabetes, Hypertension and Mental problem*

Introduction

The available researches suggest that well targeted nutrition interventions through public health care have considerable potential to improve the health and quality of life of older people in any country[1]. Effective nutrition interventions can reduce the burden of demands for health services at the tertiary level as well as improves the well-being of elderly people in the grass root level. It is a well documented worldwide that elderly population is increasing and the incidence of malnutrition is increased. Malnutrition is associated with significantly increased morbidity and mortality in independently living older people as well as in nursing home residents and hospitalized patients[2] .The causes of malnutrition are extremely varied, and it can be divided into three main types: medical, social, and psychological. Less the food security is the nutrition balance intake resulting macro and micronutrient deficiency. Mineral and vitamin deficiency is more common in elderly person.

Poor appetite or anorexia is probably the major cause of malnutrition and is mediated by a variety of factors. Taste and smell are also implicated in the loss of appetite through a perceived decline in the pleasantness of food. Taste is also an important part of the cephalic phase response that prepares the body for digestion.[3-8]. British Association for Parenteral and Enteral Nutrition (BAPEN NSW 2007) revealed a high prevalence of malnutrition amongst elderly population by 35% in adults over 80 years of age, by 25-

35% in adults 60-80 years, and 25% in adults less than 60 years of age[12]. While changing lifestyles, urbanization, and decline of traditional family support and value system have increased the plight of elderly people, especially the poor and the women little attention has been given by the planners and policy makers to their health and social needs, old age, high prevalence of morbidity is a common feature and health care expenditure for the elderly persons is much higher compared to the younger adult In literature, evidence suggests that Bangladeshi population is in transition due to its socioeconomic changes in recent years[13] Elderly in Bangladesh do suffer from more than two diseases. Many drugs can change taste and smell. Oral Health and Dental Status: Oral health and dentition have been shown to significantly affect food intake and generally deteriorate with ageing. Disease and Disability: There are some diseases associated with higher rates of malnutrition in the older population. The rates of hospital malnutrition, and worsening malnutrition during illness, both suggest that disease increases the risk of malnutrition.[9]Lifestyle and Social Factors: Lifestyle and social factors included cooking knowledge, loneliness and isolation, food beliefs and attitudes, psychological factors such as depression, stress and bereavement, services and assistance available, dentition, food availability, food expenditure, functional disability, appetite, and disease status. Although lifestyle factors may influence the development of malnutrition.

There is no clear cut information on morbidity among elderly in Bangladesh relating to breakage of traditional family bondage, food security and health related behavior .Therefore, in this paper an attempt has been made to explore the most common morbidities among elderly people in Bangladesh and to identify factors associated with health situation in old ages. This study is designed to find factors affecting nutritional status of the rural elderly to measure food security and the health related quality of life of the rural elderly[6-13].

Materials and Methods

We review of existing available secondary sources on the problem area namely, behavioral factors, food security and health related quality of life of the rural elderly population (60 years and above)[16]. For collection of primary data we developed a questionnaire for measuring nutritional status, behavioral for (QHR) and weighted data selecting randomly 32 PSU from all administrative divisions of the country[2,10]. Samples of 1503 respondents comprising 718 male and 785 female were taken from 32 primary sampling units (PSUs) from 16 districts under 7 divisions and related primary data was collected.

We selected all the 60+ people by verifying the National identity card and those who have given consent to participate in the study. We collected age, sex, socio economics conditions, Physical, social and mental health issue. The trained men power examined Height in cm, weight in kg and personal life style. Blood Pressure-after absolute rest for 5 minutes using Blood Pressure Instrument and Stethoscope. The Blood Sugar was examined by a trained field staffs using glucometer (glucoleder) and enzymatic strips. Collected data were checked and entered into the computer and were analyzed using SPSS program.

Results

Socio-economic status of rural elderly people

Figure 1: Age and Sex Distribution of Subject:

Male **Female**

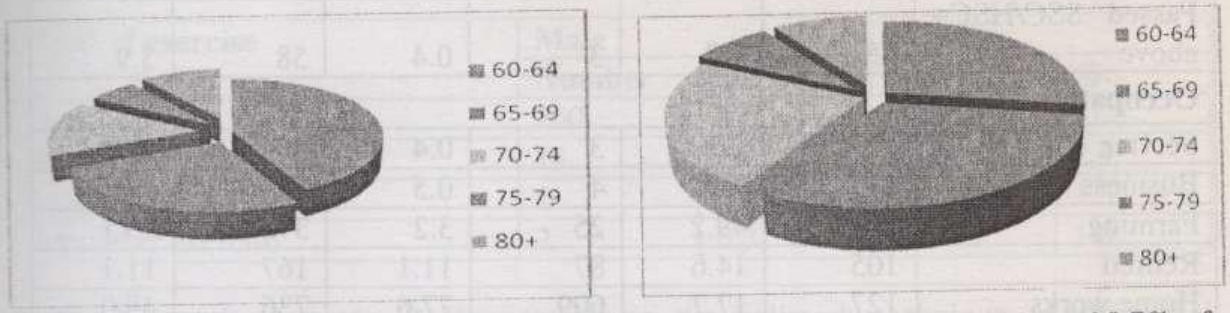


Figure 1 shows distribution of the elderly people by age group and sex. About 35.7% of the elderly are in 60 to 64 years age group, contributing 27.9% male and 42.9% female. In age group 60 to 69 years 30.9% male and 26.2% are female and the total is 28.5% age group. Eighty plus group have 9.6% population contributing by 9.2% male and 9.9% female.

Marital status: Majority male respondents are married (87%) followed by widower (10%) while majority female respondents are widow (61%) followed by married (38%). Marital status of the respondents are presented at Table1.

Education: Majority of respondents are illiterate (57%) among them male is 45.8% and female is 69.8%. Respondents having education SSC and above is 4% and among them 8% is male and 2% is female. The rest of the respondents had educational qualification from class one to class ten. Educational qualification of respondents is presented at Table 1.

Occupation of the Respondents: The main occupation of the male and female is different. Main occupation of male respondents is farming (49%) while main occupation of female respondents is household works (78%).he main occupation of respondents is presented at the Table 1.

Table 1: Marital Status, Educational Qualification and Occupation of Elderly People by Gender of the respondents are as follows: married 61.6% and 37.4% are Widowed/ Widower more than 57.4% is illiterate, the rest have education at various level. 49% of female are housewife and the rest have occupation like service, business, farming and 25.1% are retired.

Marital status	Male [n=718]		Female [785]		Total [n=1503]	
	Number	Percent	Number	Percent	Number	Percent
Married	626	87.2	300	38.2	926	61.6
Unmarried/single	7	1.0	5	0.6	12	0.8
Divorced	0	0.0	1	0.1	1	0.1
Widowed/ Widower	84	11.7	479	61.1	563	37.4

Separated	1	0.1	0	0.0	1	0.1
Educational status						
Illiterate/never attended school	322	44.8	540	68.8	862	57.4
Passed class I-V	282	39.3	226	28.8	508	33.8
Passed class VI-IX	59	8.2	16	2.0	75	5.0
Passed SSC/HSC+ above	55	7.7	3	0.4	58	3.9
Occupation						
Service	12	1.7	3	0.4	15	1.0
Business	71	9.9	4	0.5	75	5.0
Farming	353	49.2	25	3.2	378	25.1
Retired	105	14.6	87	11.1	167	11.1
Home works	127	17.7	609	77.6	736	49.0
Others	50	7.0	57	7.3	107	7.1

Food Security status: Meat is one essential sources of protein nutrition in Bangladesh. About 40% respondents reported that they take meat daily, 25% take meat often, 22% take meat rarely, 12% eat meat mostly, and the rest 1% do not eat meat. Frequency of eating meat by elderly female is less than elderly male. Pattern of eating meat by elderly people is at Table 2.

In the study 18.5% elderly persons interviewed reported that they eat big fish most week days, 30.3% eat few times every month, and 26.5% eat fish sometimes in a month. More than 24% rarely or never eat big fish. One out of every two reported that household members mostly or often eat big fishes like carp and hilsha. Frequency of eating big fishes is at Table 2.

Table 2: Pattern of Eating Big Fish and meat by sex.

Frequency of eating meat	**Total [n=1503]**	
	Number	**%**
Mostly	176	11.7
Often	371	24.7
Sometimes	599	39.9
Rarely only	334	22.2
Never	23	1.5
Frequency of consumption of big fish		
Mostly (most days and week)	278	18.5
Often (a few times each month)	456	30.3
Sometimes (only a few months in a year)	399	26.5
Rarely (only 1 to 6 months in a year)	302	20.1
Never	68	4.8

Physical activities affecting Nutritional Status : Physical activities like walking, running and jogging and others are practiced by 36.2%, 1.9%, 0.1% and 0.3% for male and 31.3%, 2.4%, 1.3% and 1.0% for female. Type of physical exercises practiced by respondents is at Table 3.

Table 3: Performance of Regular Physical Exercise by Type and Sex

Type of exercise	Male		Female	
	Number	%	Number	%
Walking	260	36.2	246	31.3
Running	14	1.9	19	2.4
Jogging	1	0.1	10	1.3
Any other exercise	2	0.3	8	1.0

Anthropometric Aspects: Anthropometry is the hallmark technique of biological anthropology, and has become increasingly important in health assessments across this century.

Mid Arm Circumference: The Mid Arm Circumference of 76.8% respondents are more than 21 cm indicating no malnutrition-87.9% male and 66.6% female. Further MAC of 21.6% respondents is between 18.5 and 21 cm indicating moderate malnutrition-11.8% male and 30.6% female. Again 1.6% respondents have MAC less than 18.5 indicating severe acute malnutrition-0.3% male and 2.8% female. Both moderate and severe malnutrition is higher among the female as shown at Table 4.

Table 4: Mid Arm Circumference (MAC) of Respondents

MAC	Male (n=718)		Female (n=785)		Total	
	Number	%	Number	%	Number	%
No Malnutrition (MAC>21 cm)	631	87.9	523	66.6	1154	76.8
Moderate acute Malnutrition (MAC 18.5-21 cm)	85	11.8	240	30.6	325	21.6
Severe acute Malnutrition (MAC < 18.5 cm)	2	0.3	22	2.8	24	1.6

Body Mass Index: Body mass index (BMI) of the majority respondents (58.3%) are within normal range (18.5 to 24.9) – male 61.0% and female 55.9%. There are 31.9% male and 34.4% female malnourished respondents Chronic Energy Deficiency (CED). There is over weight among 9.8% people of 60 years and above – indicating obesity among 9.9% male and 9.7% female. Details of BMI of elderly population are given at Table 5.

Table 5: Body Mass Index (BMI)

BMI	Male (n=718)		Female (n=785)		Total	
	Number	%	Number	%	Number	%
<18.5	209	29.1	270	34.4	479	31.9
18.5 – 24.9	438	61.0	439	55.9	877	58.3
25 and above	71	9.9	76	9.7	147	9.8

Blood Pressure: Blood pressure of about 56.8% respondents are within normal range this compare with 18.6% pre hypertension, 17.2% stage 1 hypertension, and 7.5% stage 2 hypertension. Details of blood pressure are at table 6.

Table 6: Distribution of Blood pressure in the elderly

Category of Hypertension	Systolic	Diastolic	Number	Percent (%)
Normal	<120	<80	854	56.8
Pre hypertension	100-139	81-90	278	18.6
Stage 1 hypertension	140-159	90-100	259	17.2
Stage 2 hypertension	≥160	≥1o0	112	7.5

Blood Sugar Level: Level of blood sugar found within normal range of 91.9% respondents, IGT (Impaired glucose tolerance) among 6.0% respondents, and DM (Diabetes mellitus) among 2.1% respondents. Details of blood sugar are at Table 7.

Table 7: Blood Sugar Level of Respondents

Category of Diabetes	Blood Sugar Level (Random)	Number	%
Normal	<7.8	1382	91.9
IGT	7.8 – 11	90	6.0
DM	11.1>	31	2.1
Total		**1503**	**100.0**

Incidence of Infectious Diseases: Some of the respondents reported that they usually suffer some diseases such as cold and cough (67% male and 64% female), frequent motion (27% male and 23% female), constipation (30% male and 32% female), and fungal infections (21% male a 33% female). Details are at Table 8.

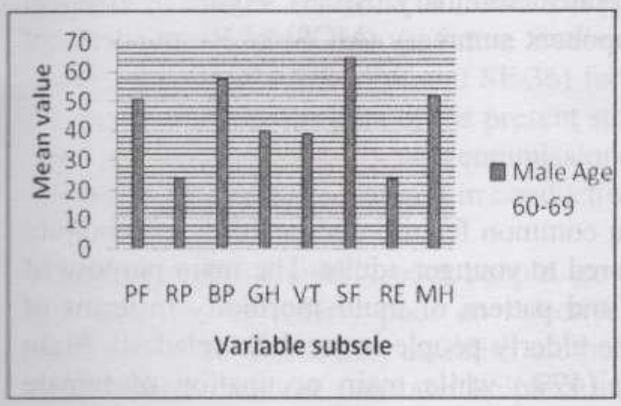
Table 8: Incidence of Infectious Diseases

Infectious disease	Male		Female	
Cold and cough: *Times per month:*	Number	%	Number	%
1-4 (average)	1.02		1.00	
Frequent motion: *Times per day:*				
1 – 4	190	26.5	192	24.5
5 – 7	12	1.7	9	1.1

***Constipation:** Times per month:*				
1 – 4	178	24.8	197	25.1
5 – 8	40	5.6	46	6.4
8>	10	1.4	17	2.4
***Fungus between the fingers:** Times*				
Always	15	2.1	24	3.3
Frequently	17	2.4	42	5.8
Occasional	118	16.4	172	24.0

Assessment of Health related Quality of Life: Health-related quality of life (HRQOL) is a multi-dimensional concept that includes domains related to physical, mental, emotional and social functioning. It goes beyond direct measures of population health, life. expectancy and causes of death, and focuses on the impact health status has on quality of A related concept of HRQOL is well-being, which assesses the positive aspects of a person's life, such as positive emotions and life satisfaction.

Figure 2: Health Profile of Respondents of 60-69 Years of Age



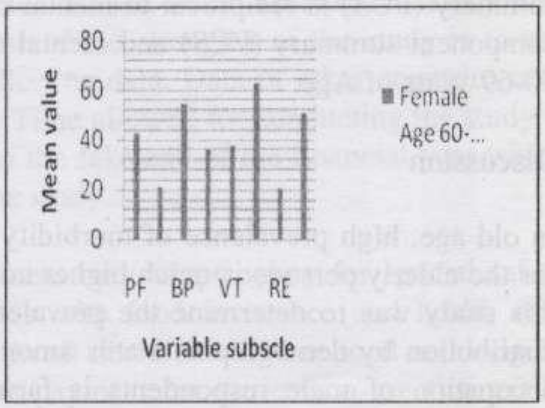
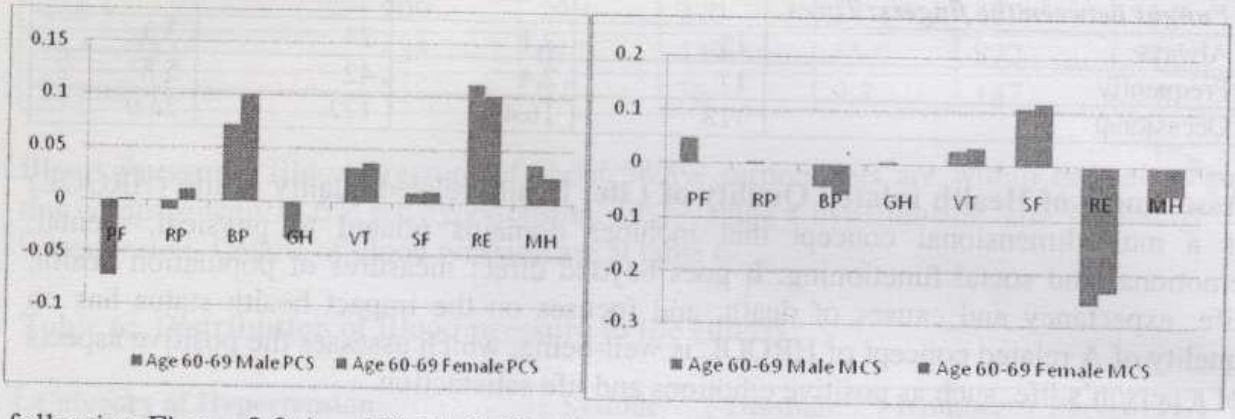


Table 9: Mean and Standard Deviation (SD) of SF-36 Subscales of 60-69 Years of Age and sex.

SCALE	Transformed Score	Age 60-69			
		Male		Female	
		Mean	SD	Mean	SD
PF	43.16	50.55	40.2	43.03	40.12
RP	22.62	24.05	42.75	20.89	40.67
BP	65.28	57.3	40.76	54.42	40.45
GH	35.77	39.8	27.79	35.86	28.5
VT	46.63	38.84	32.27	37.91	31.99
SF	80.41	64.36	37	62.89	37.2
RE	2.59	23.54	42.44	20.73	40.55
MH	48.00	51.81	27.65	50.76	29.07

Derived Variables subscales:- PF (Physical Functioning); RP (Role Physical); BP (Bodily Pain); GH (General Health) ; VT (Vitality) ; SF (Social Functioning); RE (Role Emotional); MH (Mental Health) Physical component summary (PCS) and mental component summary (MCS) of the respondents of 60-69 years of age are presented in the



following Figure 2,3,4 and Table 8. Health condition of female respondents is better than health condition of male respondents while mental health of male respondents is better than mental health of female respondents. The figure shows physical component summary (PCS) is reciprocal to mental component summary (MCS). Figure 3: Physical component summary (PCS) and mental component summary (MCS) of Respondents of 60-69 years of Age.

Discussion

In old age, high prevalence of morbidity is a common feature and health is expenditure for the elderly persons is much higher compared to younger adults. The main purpose of this study was to determine the prevalence and pattern of multi morbidity in terms of distribution by demographic status among the elderly people in rural Bangladesh. Main occupation of male respondents is farming (49%) while main occupation of female respondents is household works (78%).Majority male respondents are married (87%) followed by widower (10%) while majority female respondents are widow (61%) followed by married (38%). Daily quality of Food intake is insucured, interm of avilibility eating.

The Mid Arm Circumference (MAC) of 76.8% respondents are more than 21 cm indicating no malnutrition – 87.9% male and 66.6% female. Further MAC of 21.6% respondents is between 18.5 and 21 cm indicating moderate malnutrition – 11.8% male and 30.6% female. Again 1.6% respondents have MAC less than 18.5 indicating severe acute malnutrition - 0.3% male and 2.8% female. Both moderate and severe malnutrition is higher among the female as shown at table 3. Anthropometric measurement showed higher prevalence of malnutrition. Blood pressure of about 56.8% respondents are within normal range this compare with 18.6% pre hypertension, 17.2% stage 1 hypertension, and 7.5% stage 2 hypertension. Details of blood pressure are at table.

The research assessed certain behavioral problems of the 60 years and above elderly surveyed. The behavioral problems observed in the elderly are normal behavior, mental disorder, abnormal behavior due to physical disorder, litharge, apathetic, and abnormal weight lost. The field researchers observed normal behavior among more than 50% respondents. Among less than 50% respondents some deficiencies are observed probably due to malnutrition observed. Among the behavioral problems mental health problem, abnormal behavior due to physical disorder, litharge, apathetic, abnormal weight loss, weight loss are noted and details are at table 8 and Figure 2,3.

Conclusion and Recommendation

It is particularly important for Bangladesh where recourses are limited, poor socio-economic instability secured intake of quality food may be due to lack of nutritional education and non availability at right time and right kind of food. It is true for rural elderly for lowering of family value system, though the elderly desire to live near and dear one. There are Constitutional provision in Bangladesh for national health policy and strategy but application of the provision is not enough alone due to improper implementation people cannot utilize the services as required. Comparison of data of the study could not be done due to absence of previous studies. Data of the present study may serve as the baseline data in future studies. One of the strengths of the study is to use standardized tools (FANTA and SF-36) for collecting data. Data of other countries may be compared with the data of the present study. Time allowed for conducting the study is very limited and the study was commissioned at the fake end of the financial year which in turn posed serious constraint in conducting the study.

For betterment of elderly poor people, government may adopt policy for special safety net program for elderly poor on selective basis with food assistance and health care facilities, government may establish old homes in all districts with free food and lodging and medical care for poor and helpless and on payment for those who are financially sound but lack family support, government may take steps to generate awareness on health, nutrition and other behavioral factors of the elderly concerned authorities, NGOs and international agencies may be invited to generously provide financial and technical support including medical care facilities. Primary Health Care network in the country needs to be fully utilized to make the elderly aware about their own health and welfare issues and to provide necessary regular health care through static and domiciliary services, Referral system between different levels of PHC system needs to be introduced to help elderly in priority basis, to provide appropriate care in Geriatric Medicine be available using qualified doctors and registered nurses, to meet the challenge of rapid increase of elderly population and to continue providing old age allowance and increase its coverage the national policy makers and planners should develop strategic plan within the framework of a long term plan, and allocate funds to concerned authority and all NGOs working on elderly issues, In the changed socioeconomic and cultural environment resulting migration of younger section of the population to city centers and other industrialized countries the concept of establishing homes for the elderly in Bangladesh context needs due consideration. Efforts may be made to retain joint family system,

Provide necessary medical care to sick and poor elderly patients the public/private sector should take initiative for the establishment of adequately equipped geriatric hospital; both print and electronic media need to disseminate information amongst general public regarding elderly issues including their health and welfare.

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