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Socio-Economic Status and Health Issues of Older Adults in District Pabna, Bangladesh

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Abstract: Since the healthcare facilities for older adults are limited we were intended to examine the health status and concerning issues with the consequences in the ground of the socio-economic condition of the Pabna district of Bangladesh. A total of 316 older adults were selected from the five villages from five Upazilas of Pabna Zilla from February 26, 2019, to May 30, 2019, following a well-structured questionnaire under a multi-stage sampling methodology. About 67% of elderly peoples has been suffering from at least one disease during the three months have conferred by the statistical analysis. Also, the order of the factors that affect the health of the elderly is durability, high blood pressure, joint pain body aches, heart problem, and eye problem. A significant association between health issues and socio-economic status was observed in the study. Health condition of the elderly population, there will be a struggle for inadequate funds for health and medical services, particularly in rural areas since Bangladesh does not have a complete social welfare system. The identified socio-economic and demographic variables from the present study that have been conducted in the Pabna district will help to eradicate the hazards of the aged people of the whole of Bangladesh. The experiences and findings of the study could also help the policymakers in this regard.

Keywords: Aging, Health Status, Socio-Economic Status, Multi-Stage Sampling Procedure

Introduction

The difficulty of aging is directly or indirectly related to several topics, such as demography, food and nutrition, health, education, economics, and human rights. There is no perfect age bracket for the elderly people, but, in most literature, people who are 60 years or above are considered as 'old' and taken to be the 'elderly' portion of the population of a country (ISRT, 2015). Though several developed countries, consider the age of 65 as a reference point for elderly people and in developed societies, chronological age plays a significant role and the age of 65, lightly unique to retirement age, is deliberated to be the beginning of the old age. But in developing countries like Bangladesh, chronological age has a few appreciations in defining old age. The United Nations declared 60 years to refer to the elderly population. The study has used it as a real statistical definition in the circumstances of Bangladesh (UN, 2019a). For this study, those who have reached the age of 60, are considered older people. The complete number of older adults is thriving and prospective to increase in the future in Bangladesh (UN, 2007).

Bangladesh Bureau of Statistics (BBS) illustrated that about 7.5% (12.5 million) population of the country's entire population comprises older people. At the same time, the number is prospective to increase roughly and touch around 20% (above 40 million) by 2050 (ISRT, 2015). Population prospects suggest that one in ten individuals by 2020 will be aging people and one in five individuals will be aging people by 2050. Aging has emerged as a demographic issue is already on. That is already time to pin down the essential items that should be found and the country should be prepared to face the challenges of aging (ISRT, 2015).

Bangladesh is a country less developed, but it is not out of the current global aging stream. It is a country of about 163.04 million people (31.5% of people live in poverty), including more than 12 million older persons, and is facing the difficult challenge of providing social security, health care, and other supports and safety to the

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elders (UN, 2009). Only 38.6% of the population is urban and there are a lot of people who live in rural areas (61.4%) of the country (UN, 2019b). The human rights activists feel that the rights are not ensured now of aging people (in agriculture). Older persons deserve more attention and care from the state, as well as society. This condition demands more health and welfare prosperity services and more provisions for the old support system (Barikdar *et al*., 2016). It was impossible to study the situation of the rural elderly population all over the country. Therefore, this study has undertaken to explore the associated problems present among the elderly population lying in a selected rural area of Bangladesh.

Bangladesh is a country developing, but it is not out of the current global is in a stream. It is considered a developing country with the highest aging population (UN, 2017a). Due to recent socio-economic changes, the traditional support for older people is gradually changing its character. Because of the lack of adequate family support or a formal social support system, older people are now seeking alternative financial and health care support from society (Hamiduzzaman *et al*., 2018). As a result, coming up with new regulations and policies and growing awareness of this issue is now a necessity and the policymakers need to be created aware of the situation of the aging people of Bangladesh (Rahman, 2018).

Though Bangladesh Government has introduced several programs such as a pension, welfare fund, aging fund, insurance and another one is a provident fund for the retired government officials and employees. Though it is increasing alarmingly, the health care issues for the rural older adults have not yet received any consideration (ISRT, 2015).

This study has been undertaken to pursue the health problems attended among older people residing in a selected rural area. As a result, the present study would be an excellent resource for the administrative and non-administrative policymakers considering the later age allowance program, elderly national policy, and others like health, nutrition, population sector program, etc. It has anticipated that the results would have a significant impact on the provision of courses of action to be essential since it will explore the current tendency in the rural elderly population.

To address the challenges of growing older more efficiently, policy planners need to better appreciate the complex interrelationships of the work, health, economic status, and demographic structure of the elderly population. They need to see the big picture more clearly to make better decisions about how to cope with this monumental demographic shift, which will notice throughout Bangladesh in the next recent years.

The present study, that's why, will focus mainly following objectives:

- To investigate the demographic and socio-economic characteristics of the elderly population
- To explore the health status to assess the health problem they suffer from and at the same time to find the main factor that affects their health
- To portray the future situation of the older people at the provincial level

Review of Related Literature

The aging problem is gradually emerging as a new threat to a global perspective. Hence aging and its socio-economic and health-related results are drawing increased attention of policymakers worldwide. In Bangladesh, aging is one of the outbound issues that have been serially accumulating with its far-reaching effects. The elderly class has been steadily increasing in number both in absolute terms and relative to the whole population.

Aging is a natural process that starts at birth or can be more appropriate, at conception, a process that betterment throughout one's life and ends at death. The study (Rahman, 2018) examined the aging problem from legal and ethical perspectives with their relevance to the elderly population in Bangladesh, highlighting the needs and challenges encountered by the elderly. He also reviews the Parents Maintenance Act of 2013 (Act no. 49 of 2013) and the services for the elderly and their limitations in Bangladesh but our concern is to find the relationship between health problems and the socio-economic condition of the respondents.

UN (2007) revealed that older people in Bangladesh had got almost a different perspective. The elderly here is not encouraging. Mainly they are being supported and nursed by their adult children. When an older parent lives with married children, particularly younger ones, it is rather challenging to identify whether support is flowing from the children to the procreator and vice versa. At times the aged parents are nursed by their children out of total reluctance only for face-saving due to deteriorating economic conditions; this support could not expect for a lifelong time. Besides, the migration of the rural-urban adult members of the family is a growing concern.

It has already been more than ten years that the best comprehensive study on the subject has been conducted by the Bangladesh Association for the aged and the Institute of Geriatric Medicine. These two organizations in the rural areas and also urban areas gathered data on the socio-economic and other related problems. In that study, standard information came out and that most of the aged people in Bangladesh still live in joint families for which they had worked so hard one day (UN, 2013).

The maturing procedure is boundless and includes individuals, families, and subpopulations the old and the

working-age populace specifically. Bangladesh is one of the twenty creating nations with the most significant number of older people. The development of the matured populace will proceed and that has set out a few issues identified with their status and jobs, care and living, wellbeing, social help, and considerable prosperity (UN, 2017b).

Maturing is one of the upcoming issues in Bangladesh. This issue has been munched by somewhat developing with its far-reaching results. A full-scale level evaluation of the creation of Bangladesh to see the genuine area issues has been finished (Nesa *et al*., 2013). They have noticed that the Bangladesh individuals create a will when all is said in done expanding budgetary requests on the association, particularly for money sponsorship, success, and social associations.

This research (Vijayanchali and Gandhi, 2012) illustrated that, in our modern society, where money is the scale of everything, the old age people have measured as an economic liability and a social burden. Old age has been audited as a necessary, unwanted, problem-ridden period of life that we all are obliged to live, locating time until our exit from existence itself. So they felt a need to study the life of older people and discuss the plight of older adults in an urban setup.

Hossain (2014) made a study that aims to investigate what socio-economic, health, and psychological matter problems of older Bangladeshi experts in other life and what members of the Bangladeshi people comprehend to be the sake of these difficulties. His study also focused on family roles and relationships changed as a consequence of immigration and with impact.

Erb (2011) provides analysis for the better intellect of the convenience and obstruction faced by older people to income indemnity. She identifies capacity, impotence, accessibility, and dissent as they anticipate subsisting as well as the influence of Older People's Associations regarding the dispensation of the economic confirmation.

The nutrition and health condition of older people rely on adequate food-safe water, proper sanitation facilities, and maintaining hygienic standards (Islam and Rahman, 2017).

Haque *et al*. (2014) conducted a study to evaluate the hygiene and nutritional condition of the elderly population in a chosen hospital in Dhaka. He finds that most of the individuals belong to the 60-64 years, age group. Overall nutritional status, as well as health status, was not excellent and appeasement. Most of the elderly are suffering from malnutrition and arthritis, as well as very usual diabetes. Partially reduced hunger was seen among respondents. The dietary model was not good. Besides, the health and nutritional status of aged people in this study were not appeasement. He recommended that Intercession programs related to health and nutritional status may be stationed.

A descriptive cross-sectional study has paddled out over 516 older adults selected purposively from some urban slums of Dhaka city from July to December 2013. This discussion illustrated that a significantly higher ratio of women had diabetes, hearing impairment, vertigo, joint pain, and depression. In contrast, chest pain, chronic cough, difficulty in micturition, and anxiety were observed more in older men. The discussion circulates new light, which may help to provide an ample guideline for the senior inmates to overcome old age health problems. As there is a rapid increase in the number of the elderly population, there is an indispensable need to develop affordable and accessible health care services (Farah *et al*., 2015).

In Bangladesh, adult offspring, particularly sons, is considered to be the primary source of security and economic support to their parents, particularly in times of disaster, sickness, and old age. As an Asian country, Bangladesh has a long cultural and religious tradition of looking after the elderly and it has expected that families and communities will care for their elderly members (Nath and Islam, 2009).

But rapid socio-economic and demographic transitions, mass poverty, changing social and religious values, the influence of western culture, and other factors have broken down the traditional extended family and community care system (Munsur *et al*., 2010). Most of the older people in Bangladesh suffer from some fundamental human problems, such as poor financial support, senile diseases and the absence of proper health and medicine facilities, exclusion and negligence, deprivation, and socio-economic insecurity (Islam and Nath, 2012).

It is generally realized that populace maturing is a demographically unavoidable procedure since it has connected to the segment progress (Uddin *et al*., 2010). Contingent upon the set, speed, and power of the segment progress, the maturing process will fluctuate both in speed and in degree on a topographical premise. The pace of populace maturing is a lot quicker in creating nations contrasted with created nations (Ali *et al*., 2013).

Grundy and Holt studied the socioeconomic status of older adults in Great Britain to identify its indicators using representative samples of 3543 and 2243 adults aged 55-69 for the years 1988-89 and 1994 respectively (Grundy and Holt, 2001).

A grim picture came out about the elderly class from several studies. Most of the surveys reviewed are concerned about the suffering from economic hardship and various difficulties with the basic amenities of life. As such what are the concerning issues in healthcare facilities on the ground of the socioeconomic condition is the research question in this study. Therefore the aforesaid issues and their supporting factors could be justified the study conducted in the Pabna district will contribute to the betterment of the older population of Bangladesh.

Materials and Methods

Study Site

Pabna is an old district in Bangladesh, where a large section of older people lives. Moreover, this area (Fig. 1) was selected for the study because the researcher has had sufficient familiarity with this particular site. Therefore the target population was aged (over age 60). The district has several Upazilas, namely Santhia, Faridpur, Bhangra, Chatmohar, and Sujanagar-which has selected using simple random sampling from the study site. Then one village from each Upazila is selected conveniently for data collection. A well-learned data collection team was appointed to collect the data under the direct supervision of the authors. The total population of this district is 2523179 and the older adult population is 197990 (population and housing census 2011 from BBS) the ratio of the aged (over age 60+) population is 7.84%.

Questionnaire Survey

Data were collected from all the respondents using a pre-designed questionnaire prepared inconsistently with the objectives of the study that comprised close-ended questions. This survey contains five parts, which has given in Table 1. Part-1 provided present and personal information with sex, age, family size, marital status, religion, and offspring of the respondents. Part-2 included education and occupation, for example, the educational level and working status of the respondents. Part-3 included socio-economic conditions like monthly income, family income, homestead land, agricultural land, etc. Part-4 contained social status like basic needs, social security, etc. Part-5 included health conditions like disease status, going health center, loneliness, treatment, etc.

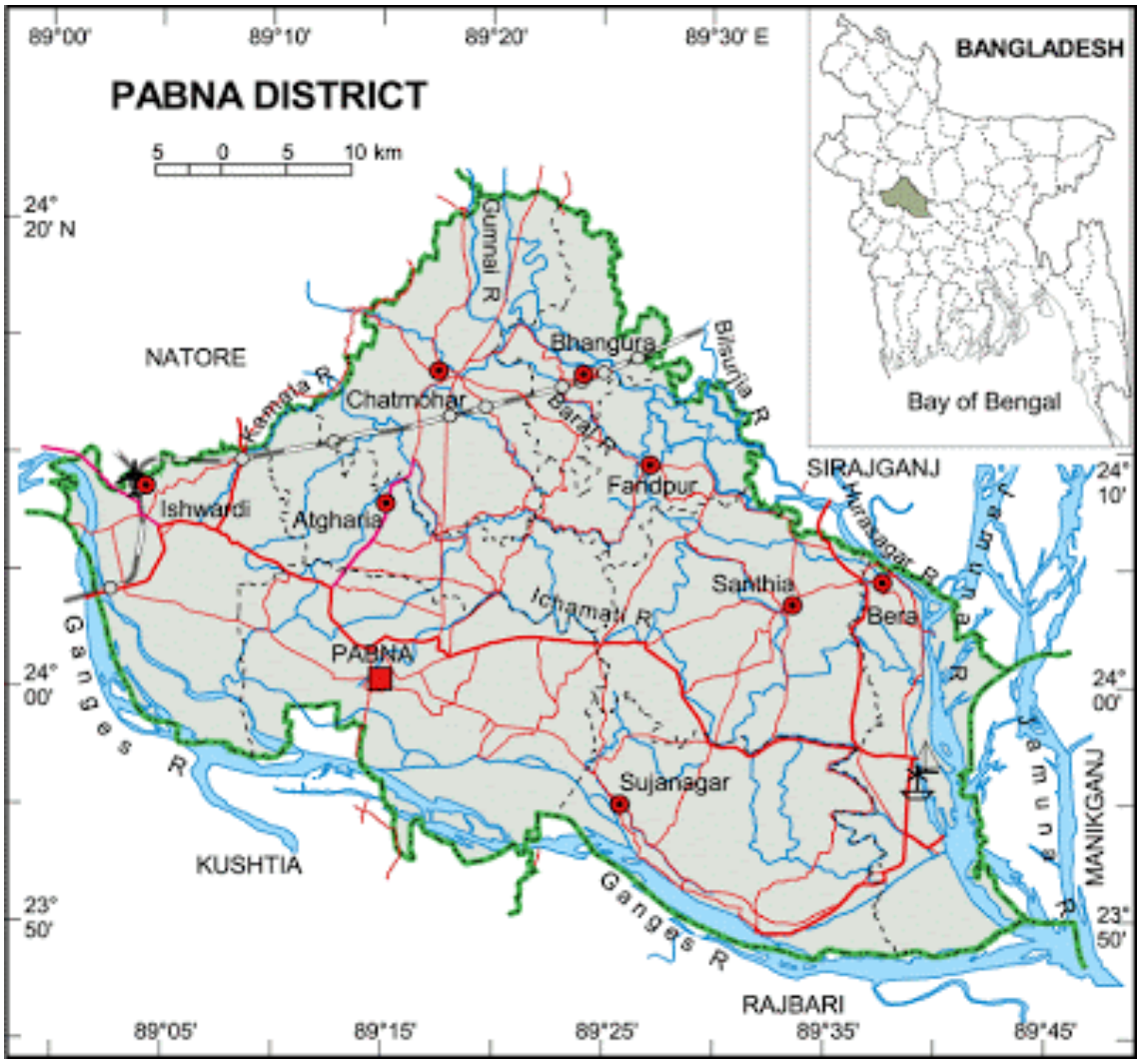

Fig. 1: Map of the study area (source: Banglapedia)

Table 1: A questionnaire regarding the socio-economic status and health issues of the elderly population

Question
Part 1: Basic information
1. Gender, age, marital status., family size, marital status, religion, and offspring
2. Family size, religion, and offspring.
Part 2: Education and occupation
1. Education level
2. Working status, income source.
Part 3: Socio-economic condition
1. Family income, monthly income.
2. Homestead land, Agricultural land.
3. Home quality, monthly expenditure.
Part 4: Social status
1. Availability of basic needs and social security.
2. Availability of electricity
3. Use of electronic goods.
Part 5: Health condition
1. Disease status, going to the health center, loneliness, treatment expenditure.
2. Leisure time status, Sleep per day status.

The aim of the study has been clearly articulated to each of the respondents. The participation was voluntary; all their information was kept confidential-data compiled from February 26, 2019, to May 30, 2019. A dataset from 316 participants has been maintained for final analysis following the removal of incomplete questionnaires.

Sampling Procedure

After a preliminary audit and review of the literature, a questionnaire was developed, most of which have been drawn from previous similar studies and modified authors themselves. The study questionnaire was translated beneath Bangla and then translated abaft to English by different individuals to assess validity. By multi-stage sampling procedure, we recruit subjects for the study. In the first phase, five Upazilas (Santhia, Faridpur, Bhangra, Chatmohar, Sujanagar) has selected using simple random sampling from the study site. Then five villages from the selected Upazila are selected conveniently. In the third phase, a structured develop semi-questionnaire was used to gather the data from the study respondents from the selected villages. A well-learned data collection team was appointed to collect the data under the forthright overseeing of the authors. Three hundred twenty questionnaires have surveyed from these five villages, which resulted in 64 from each community. This study took a total of 316 questionnaires because of remaining were incomplete. The survey was clarified to reduce the hesitation of the participants or the possibility of being biased. All the interviewees remained anonymous.

Statistical Analysis

The raw data reviewed after the interviews and the answers to the question were coded and entered into SPSS, version 25.0. Statistical analysis has steered out using the (SPSS, Version 25.0). Percentage mean and standard deviation were enumerated wherever applicable. In this study, a Chi-square test with (95% CI) has used to explore the bivariate associations between health status and socio-economic characteristics. A p-value of less than 0.05 indicates the results are statistically significant at a 5% level of significance. For finding the essential factor in health status, this study has used a logistic regression scheme (Montgomery *et al*., 2021). The dependent variable used in this analysis is the present health status of the elderly, which takes a value of 0 if there is no problem and one otherwise. The independent variables included in the model are age, education, working status, monthly income, whether it goes to the health center, and whether feeling lonely. In the result section, the logistic regression model has described broadly.

Results

Socio-Demographic Characteristics of the Elderly Population

A total of 316 older people participated in the present study with a mean (± SD) age of 70.81 (±9.152) years (Table 2). The average family size of the respondents is 3.52 (SD ±2.125). The majority of the respondents, about 218 (69%) were married and divorced people were only 1 (0.3%). Approximately 56 (17.7%) and 40 (12.7%) was widow and widower respectively. Regarding educational status, 183 (57.9%) were illiterate, 87(27.5%) were primary school going, 30 (9.5%) were secondary school going, and only Higher Secondary and Graduate were 7 (2.2%) and 9 (2.9%) respectively. Most 289 (91.5%) of the respondents belonged to the Muslim and the other 27 (8.5%) (Table 2) are Non-Muslims.

Socio-Economic Characteristics of the Elderly Population

A total of 316 older adults participated in the present study with a mean (± SD) monthly individual income of 4604.43 (±6750.317) taka (Table 3). The economic activity of the overall elderly population indicates that there is a low proportion of economically active persons among the 60+ people in the study area and about 54.7 percent of the elderly are economically inactive. The 7.86, 7.30 and 0.56% male respondents are businessmen, day labor, and service holder respectively, whereas there is no business person and service holder female respondent. The mean (± SD) monthly family expenditure of the older people was 15874.05 (±9566.816) taka. The mean (± SD) homestead land and agricultural land of the older adult was 14.61 (±22.772) decimal and 85.70 (±146.626)

decimal, respectively. It also showed that in (Table 3), in both males and females, the home quality is so unfortunate because the number of tin shade houses is significantly higher as compared to other house quality. Only a few names of older people have good home quality for living life. A large number of older adults, about 51.6% (Table 3), have no other income source.

Health Status of the Elderly Population

A total of 212 (67.1%) of the elderly population are suffering from at least one disease and 104 (32.9%) of the older adults are disease-free (Table 4). The study shows that the maximum number of participants are suffering from Durability 39 (12.3%), Diabetes, and High Blood Pressure 36 (11.4%). They are also suffering from several types of disease in which Eye problems 20 (6.3%), Listening problems 11 (3.5%), Heart problems 22 (7.0%), Body aches 24 (7.6%), Joint pain 25 (7.9%), Gastric 33 (10.4%) are severe. The figure shows that about 13 (4.1%) older adults have cancer and about 33 (10.4%) people are affected by other diseases. It is alarming that 147 (46.5%) older people did not get treatment for their condition (Table 4). The mean (± SD) spending money for treatment was 741.61 (±1397.04). About 196 (62.0%) respondents did not visit the health center regularly. Most people were spending their leisure time Praying 195 (61.7%), Watching TV 110 (34.8%), and Gossiping 161 (50.9%). The mean (± SD) loneliness time of the older people was 2.33 (±2.089) and the mean (± SD) sleeping hour per day of the respondent was 7.67(±1.118) (Table 4).

Table 2: Socio-demographic characteristics of study people (n = 316)

Variables	Category	Frequency (n)	Percentage (%)
Age (years)	Mean ± SD	70.81±9.152	
Gender	Male	178	56.3
	Female	138	43.7
Family size	Mean ± SD	7.53±4.162	
Number of offspring	Mean ± SD	3.52±2.125	
Marital status	Married	218	69.0
	Divorced	1	0.3
	Widow	56	17.7
	Widower	40	12.7
	Others	1	0.3
Educational level	Illiterate	183	57.9
	Primary	87	27.5
	Secondary	30	9.5
	Higher secondary	7	2.2
	Graduation	9	2.8
Religion	Muslim	289	91.5
	Non-Muslim	27	8.5

Table 3: Socio-economic characteristics of the study people (n = 316)

Variables	Category	Frequency (n)	Percentage (%)
Home quality	Tin Shade	176	55.7
	Semi Wall	77	24.4
	Building	58	18.4
	Others	5	1.6
Other income sources	Yes	153	48.4
	No	163	51.6
Earning person of the family	Mean ± SD	2.34±1.296	
Monthly personal income	Mean ± SD	4604.43±6750.317	
Monthly family income	Mean ± SD	20584.81±13387.304	
Monthly family expenditure	Mean ± SD	15874.05±9566.816	
Homestead land (in decimal)	Mean ± SD	14.61±22.772	
Agricultural land (in decimal)	Mean ± SD	85.70±146.626	
Availability of electricity	Yes	302	95.6
	No	14	4.4
Electronics goods*	Television	219	69.3
	Freeze	106	33.5
	Cooker	79	25.0
	Mobile Phone	268	84.8
	Others	49	15.5
	No electronics goods	37	11.7

*Multiple responses

Table 4: Health status of the elderly population

Variables	Category	Frequency (n)	Percentage (%)
Suffering from disease	Yes	212	67.1
	No	104	32.9
Disease*	Diabetes	36	11.4
	High blood pressure	36	11.4
	Durability	39	12.3
	Eye problem	20	6.3
	Listening problem	11	3.5
	Heart problem	22	7.0
	Tooth problem	9	2.8
	Body aches	24	7.6
	Joint pain	25	7.9
	Gastric	33	10.4
	Rheumatic fever	5	1.6
	Skin disease	7	2.2
	Asthma	8	2.5
	Cancer	13	4.1
	Tuberculosis	3	0.9
	Kidney problem	3	0.9
	Bone erosion	8	2.5
	Paralysis	2	0.6
	Others	33	10.4
	No disease	104	32.9
Treatment for disease	Yes	169	53.5
	No	147	46.5
Spending money for treatment	Mean ± SD	741.61±1397.04	
Visiting health centre	Yes	120	38.0
	No	196	62.0
Spending leisure time*	Praying	195	61.7
	Keeping house	88	27.8
	Watching TV	110	34.8
	Gossiping	161	50.9
Loneliness time (in an hour)	Mean ± SD	2.33±2.089	
Sleeping per day (in an hour)	Mean ± SD	7.67±1.118	

*Multiple responses

Bivariate Analysis

In (Table 5), a significant distinction was found among individuals who suffered from the disease in the last three months and who did not suffer regarding the gender of the respondents, a certain age, respondent family size, and their loneliness feeling ($p<0.05$). Nevertheless, the study could not find any significant association between educational qualifications, marital conditions, and present working status with the health status of older adults (Table 5).

Comparative Study between under Age and over Age of the Respondents

The economic activity of the overall aged population indicates that there is a low proportion of economically active persons among the 60a+ people in the study area and about 54.7% of the elderly are financially inactive (Fig. 2). The 7.86, 7.30 and 0.56% male respondents are businessmen, day labor, and service holder, respectively, whereas there is no person in business and service holder female respondents.

Logistic Regression Model

The dependent variable used in this analysis is the present health status of the elderly which takes a value of 0 if there is no problem and 1 otherwise. The independent variables included in the model are age, education, working status, monthly income, whether it goes to the health center, and whether feeling lonely.

The independent variables are defined below:

X_1: Age of the respondent}0 Less or equal to 75 years 1 Above 75 years
X_2: Respondent's education} 0 Literate 1 Illiterate
X_3: Respondent working status} 0 Working 1 Not working
X_4: Monthly income} 0 Above2500 tk. 1 Less or equal 2500 tk
X_5: In case goes to health center} 0 Yes 1 No
X_6: Feeling loneliness} 0 No 1 Yes

This study has used SPSS, version 25.0, for the analysis. In multiple regression, three major types of

logistic regression are (a) Direct (standard), (b) Sequential, and (c) stepwise (forward or backward). This study uses the 'Direct logistic regression' method. In this method, all predictor variables enter the equation simultaneously (provided the tolerance is not violated). This method of choice is applicable if there are no specific hypotheses about the order of importance of predictor variables. Each predictor has been evaluated as if entered the equation last. Consequently, a predictor that is highly correlated with the result by itself may show slight predictive ability in the appearance of the other predictors.

Table 5: Association between health status and some demographic and socioeconomic variables

		Suffering from disease; n (%)			
Characteristics	Category	Yes	No	Pearson χ^2	p-value *p<0.05
Gender	Male	111 (62.36)	67 (37.64)	4.1280	0.042*
	Female	101 (73.18)	37 (26.82)		
Age (in years)	60-64	50 (68.49)	23 (31.51)	25.829	0.000*
	65-69	56 (62.92)	33 (37.08)		
	70-74	30 (49.18)	31 (50.82)		
	75-79	22 (64.71)	12 (35.29)		
	80-84	29 (90.63)	3 (9.37)		
	85-89	7 (87.5)	1 (12.5)		
	90 and above	18 (94.73)	1 (5.27)		
Educational level	Illiterate	131 (71.58)	52 (29.42)	6.3050	0.178
	Primary	52 (59.77)	35 (40.23)		
	Secondary	21 (70.00)	9 (30.00)		
	Higher secondary	4 (57.14)	3 (42.86)		
	Graduation	4 (44.44)	5 (55.56)		
Marital status	Married	143 (65.60)	75 (34.40)	6.7610	0.149
	Widow	43 (76.79)	13 (23.21)		
	Widower	26 (65.0)	14 (35.0)		
Present occupation	Farmer	21 (60.0)	14 (40.0)	8.0460	0.235
	Housewife	40 (67.80)	19 (32.20)		
	Businessman	6 (42.86)	8 (57.14)		
	Day labor	9 (64.29)	5 (35.71)		
	Retired	124 (71.68)	49 (28.32)		
	Others	11 (55.0)	9 (45.0)		
Family size	Less or equal 4	42 (60.87)	27 (39.13)	10.099	0.014*
	5-9	107 (62.94)	63 (37.06)		
	10-14	45 (81.82)	10 (18.18)		
	15 and above	18 (81.82)	4 (18.18)		
Feeling loneliness	Yes	145 (75.92)	46 (24.08)	17.041	0.000*
	No	67 (53.60)	58 (46.40)		

Table 6: Logistic regression model one having dependent variable health status of the elderly population

Variables	Coefficient	Standard error	Wald	p-value	OR (95% CI)
Age of the respondents, X_1	-1.217	0.413	8.695	0.003*	0.296 (0.132, 0.665)
Education, X_{12}	0.573	0.297	3.719	0.054	1.774 (0.991, 3.176)
Working status, X_3	0.253	0.333	0.578	0.447	1.288 (0.670, 2.476)
Monthly income, X_4	-0.662	0.306	4.659	0.031*	0.516 (0.283, 0.941)
Incase goes to Health Centre, X_5	2.914	0.433	45.222	0.000*	18.433 (7.884, 43.097)
Feeling loneliness, X_6	-0.825	0.306	7.256	0.007*	0.438 (0.240, 0.799)
Constant	1.171	0.416	7.924	0.005*	3.225
-2 Log-likelihood	288.286				
Chi-square value	112.117				
Degrees of freedom	6.000				
P-value	0.000				
Number of cases	316.000				

*p<0.05

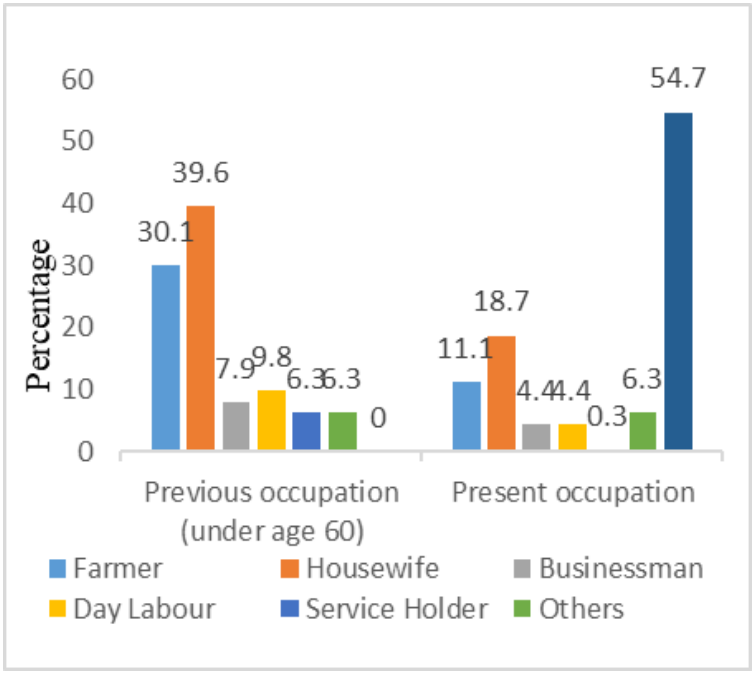

Fig. 2: Distribution of economic activity of older people according to their occupations

The logistic regression equation for the probability of the existing health problem is:

$$P_i = \frac{e^{\left(\left(\sum_{j=0}^{p} b_j x_{ij}\right)\right)}}{1+e^{\left(\left(\sum_{j=0}^{p} b_j x_{ij}\right)\right)}} i.e. \lambda_i = \log\frac{p_i}{1-p_i} = b_0 + b_1 x_{i1} + ... + b_p x_{ip.}$$

By using the above table, the logistic regression model has written as:

$$\lambda_i = 1.171 - 1.217X_1 + 0.573X_2 + 0.253X_3 - 0.662X_4 + 2.914X_5 - 0.825X_6$$

The logistic regression coefficient for different independent variables, four of which (X_1, X_4, X_5, and X_6) are statistically significant (Table 6). The positive sign of the coefficient suggests that if the corresponding independent variable changes to 1, then the proportion of the older adults having health problems thrives. The vice versa result is true for the negative coefficient.

Discussion

The aging of the population is a natural and unavoidable demographic process (Islam, 2015). Around the world, all countries have to face this reality with time. Although the majority of the elderly population in rural Bangladesh is suffering from several socio-economic and health problems, the health care services are somewhat insufficient in some situations. The study tried to assess the socio-economic condition of the elderly population and identify their health problems in a selected area of the Pabna district and also tried to inquire about the association between health status and some demographic and socio-economic variables. Out of 316 elderly respondents, the majority 183 (56.3%) were male and 138 (43.7%) were female and their mean age has found to be 71.81 years; (SD ±9.152) (Table 2).

An Empirical Study on "Elderly Population Care in Bangladesh," (Rahman, 2018) have performed where analysis finding correlates with our study. Regarding educational status, 183 (57.9%) were illiterate and only 133 (42.09%) (Table 3) older people were literate, which is almost similar to the findings done by Russell Kabir. The majority of the male people were working as a farmer and a little portion of the elderly male people were businessmen and Service holders. Their average monthly personal income was 4604.43±6750.317 taka (Table 3). In both males and females, the percentage of economically inactive people is significantly higher as compared to their counterparts. About 57% of aged people lived in Tin Shade houses, while only a minor fraction (18.4%) lived in building a house (Table 3). The most (56%) used housing material was found to be Tin. Haque *et al*. (2014) conducts a study on the Health and Nutritional Status of Aged People. These findings corresponded with the present findings. The health status of elderly respondents is a major problem. The present study showed that a significantly higher proportion of the elderly population suffered from diabetes 36 (11.4%) (Table 4). Eye problem 20 (6.3%), Listening Problem

11 (3.5%), Heart Problem 22 (7.0%), Body aches 24 (7.6%), Joint pain 25 (7.9%), Gastric 33 (10.4%), High Blood Pressure 36 (11.4%), were observed more in an elderly population (Table 4). These findings were similar to the findings of the study done by (Munsur *et al*., 2010).

This study has found a significant difference between subjects who suffer from the disease in the previous three months and who are not suffering regarding gender, age category, family size, and feeling loneliness ($p<0.05$) (Table 5). Nevertheless, there was no meaningful association between the educational level, marital status, and present occupation with suffering from the disease (Table 5). A similar observation was made by (Farah *et al*., 2015) logistic regression analysis found that the age of the participants, monthly income, whether goes to the health center and feeling of loneliness had significant predictors in determining health conditions.

The identified socio-economic and demographic variables from the present study that have been conducted in the Pabna district will help to eradicate the hazards of the aged people of the whole of Bangladesh. The experiences and findings of the study could also help the policy decision-makers in this regard.

Conclusion

Considering the neglecting attitude to the aged population, the objectives of this study were to examine health status and concerning issues with the consequences of aging in the Pabna district of Bangladesh. It is evident from the survey that aging and illness are interrelated inherent processes. While several diseases infect most aged people, only 33% of the respondent found to be disease-free. Although the overall health status is not excellent and the majority of them are found to be suffering from chronic diseases, their appetite is decreasing day by day. The population-based estimates of health-related issues, specifically among elderly populations in rural settings, could be considered a unique and significant potency of the study. Finally, the findings of the study could help policymakers to offer a better society in the future with the help of the experiences of older people as valuable human resources.

Recommendation

As the average life expectancy is raising the aged people are seen to be facing some hazards practically. Although the Bangladesh government has launched some programs for the elderly population of the country, to get relief from such problems it needs to be strengthened in aspects of some parameters by taking care of the following issues:

i) To way out how to reduce the feeling of loneliness of the aged persons
ii) Help to increase the monthly income
iii) To extend the facilities in health centers
iv) To increase the inadequate funds for health and medical services

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Author's Contributions

Sharmin Islam: Conceptualization, Methodology, and writing original draft preparation.

Razibul Islam: Data curation, Software Visualization, Investigation.

Farhad Hossain: Writing- Reviewing and Editing.

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Ethics

This article is original and contains unpublished material. The corresponding author confirms that all of the other authors have read and approved the manuscript and no ethical issues are involved.

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