Prevalence and Risk Factors Associated with Chronic Diseases Among Young Adult in Bangladesh

M. N. Hasan[*]

Department of Statistics, Shahjalal University of Science and Technology, Sylhet, Bangladesh

Abstract

One of the major health challenges of the century is the prevalence of chronic diseases in young adults. The aim of the study was to identify the risk factors for chronic disease and the prevalence of chronic disease in individuals aged 18 to 39. The outcome variable was chronic diseases, and potential predictors included sex, age, education, work status, division, region, smoking status, and respondent's income. Of the 5490 young people, 1782 (32.5 %) had at least one chronic illness. Age, work status, division, geography, and smoking status were significant predictors of chronic illnesses in the multivariate model. Compared to younger young adults, those aged 30-39 had greater odds of developing chronic diseases (OR = 1.57, 95 % CI: 1.16–2.13). Residents in socioeconomically disadvantaged areas are more likely to have chronic illnesses than their more affluent counterparts. Young men are more likely than women to experience chronic illness (OR = 1.06, 95 % CI: 0.92-1.21), although this difference wasn't statistically significant. The highly educated group reports chronic disease more frequently than other groups. These findings, particularly those pertaining to decision-makers, can aid in the justification, direction, and support of programs required to address these altering epidemiological trends.

Keywords: Young adults; Chronic health condition; Health promotion; Unhealthy lifestyles; Depression.

1. Introduction

A medical illness that is projected to endure longer than three months or is incurable is referred to as a chronic disease [1]. One of the biggest health problems of our century is the prevalence of chronic diseases among young adults. Due in part to increased rates and earlier onset of chronic diseases, today's youth will have less health than their parents did [2]. Young adults are becoming more likely to suffer long-term chronic illnesses in low- and middle-income (LMIC) nations due to the rise in chronic disease among the young population worldwide [3]. Due to chronic diseases they frequently dropout from academic courses [4,5]. According to the Population Reference Bureau

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[*] *Corresponding author*: nayeem5847@gmail.com

(PRB), alcohol, cigarette use, inactivity, and poor nutrition are the four main key risk factors for developing chronic diseases in young adults. This widespread worry follows the development of a body of research linking early life risk exposure, including during pregnancy, to a higher risk of developing a chronic illness as an adult [6,7]. Noncommunicable diseases (NCDs) account for a greater percentage of mortality (29 %) in poorer nations than in affluent ones (13 %) before the age of 60 [8]. The most prevalent co-morbid conditions among young people in Australia are asthma and depression [9]. According to estimates, one in five children in America are obese, one in ten have strokes, and 1 % to 3 % of youngsters in the country have hypertension [2]. In the Netherlands, 14 % of kids had a chronic illness, and 90 % of them would still have it as teenagers [10,11].

Young adults have been more interested in fast food and beverages in recent years. Due to their potential application in the treatment of different chronic and some infectious disorders, the hunt for phytochemicals with anti-inflammatory effects in those kinds of foods has increased [12]. Color, flavor, and aroma come from phytochemicals, which also shield the body from a variety of chronic ailments [13]. Smoking causes these air sacs to fill with air. Long-term smoking causes air to accumulate within these sacs, causing them to expand to their limit before eventually rupturing to produce larger airbags with holes. As a result, the patient's breathing suffers and the effective surface area needed for the gaseous exchange process increases. Chronic obstructive pulmonary disease is a subtype of it (COPD) [14].

Young adults who are growing up with chronic diseases have received very little attention in research that have mostly focused on chronic disease in adults. There haven't been any studies on chronic illnesses involving adults in Bangladesh. Adults live erratic lives, leading hazardous behaviours that worsen their already precarious health [15,16]. They are therefore the most susceptible time for people with chronic illnesses. Given the rise in young adults with chronic conditions in industrialized nations [1,7] and the rapid development of Bangladesh [17], it is important to convey the prevalence of chronic illness among young people and to create methods to help this vulnerable demographic move toward youth independence. The goal of the current study is to identify the prevalence and risk factors of chronic disease in people between the ages of 18 and 39.

2. Methods

2.1. *Participants and study area*

Sixty-four districts and eight divisions in Bangladesh provided participants. We included 5490 people from all divisions, ranging in age from 18 to 39 (4110 men and 1374 women). Because of some limitations on smartphone or computer use for children in the family, our poll excluded participants who were under the age of 18 or who were not adults. The data for the present study were collected up to May 2022

from January 2022 through a questionnaire in Google Survey Form, and these data have been used in this investigation. The analytic sample was restricted to individuals who willingly filled out the online questionnaire during the study period.

2.2. *Outcome variable*

Chronic illnesses were one of the outcome variables. On every questionnaire, participants were asked if they had any chronic conditions. Their responses were either (0) don't have any diseases or (1) have at least one disease. The analysis excludes participants who did not indicate their age on the online questionnaires.

2.3. *Predictor variables*

In this study, the potential predictor variables of respondents' chronic diseases included sex, age, education, employment status, division, geography, smoking status, and respondent's income.

2.4. *Statistical analysis*

In addition to calculating the percentages of persons with at least one chronic disease by gender, age, education, job status, racial or ethnic group, location, status as a smoker, and income, we also estimated the percentages of people with other chronic diseases. Bivariate analysis, particularly the Chi-squared test and multivariable logistic regression model, was used to separately examine the link between chronic diseases and each other risk factor that was taken into consideration. We observed how one risk factor behaves when the effects of all other risk factors linked with chronic diseases are adjusted using the multivariable logistic regression model. IBM SPSS version 25 was used for all analyses.

3. Results

Of the 5490 young adults, 1782 (32.5 %) had at least 1 chronic disease (Table 1). 432 (7.9 %) had obesity, 372 (6.8 %) had asthma, 210 (3.8 %) had hypertension, 204 (3.7 %) had hypotension, and 81 (1.5 %) had diabetes, emerged as the top five chronic disease in young adults. Kidney disease 51 (0.9 %), heart disease 33 (0.6 %), chronic liver disease 30 (0.5 %), thalassemia 18 (0.3 %), and chronic obstructive pulmonary disease 9 (0.2 %) followed (Table 2).

Table 1. Percentage of at least one chronic disease.

At least one disease	n (%)
Yes	1782 (32.5)
No	3708 (67.5)
Total	5490 (100.0)

Table 2. Percentage of chronic diseases collected in this study.

Comorbidity	Yes n (%)
Obesity	432 (7.9)
Asthma	372 (6.8)
High blood pressure/Hypertension	210 (3.8)
Low blood pressure/Hypotension	204 (3.7)
Diabetes	81 (1.5)
Kidney disease	51 (0.9)
Heart disease	33 (0.6)
Chronic liver disease	30 (0.5)
Thalassemia	18 (0.3)
Chronic obstructive pulmonary disease (COPD)	9 (0.2)
Others	699 (12.7)

Of all participants with at least one chronic disease during the study period, 4110 (74.9 %) were male and 1374 (25.1 %) were female; 129 (27.7 %) of participants with at least one chronic disease were aged 18 to 19 years, 849 (31.9 %) were aged 20 to 24 years, 477 (33.1 %) were aged 25 to 29 years, and 327 (35.3 %) were aged 30 to 39 years. Of young adults with a chronic disease, a larger percentage 837 (69.9 %) were higher-secondary and a lower percentage 15 (29.4 %) were no education, on the basis of at least one chronic disease. Young adults differed from each other with respect to employment status, in our study most of the participants were students or unemployed 1023 (32.0 %), followed by 393 (31.8 %) were employed, 216 (39.8 %) were housewife, 87 (29.0 %) were health worker, and 63 (30.0 %) were businessman, who have at least one chronic decease (Table 3).

Table 3. Sample characteristics of young adult based on disease status (n=5490).

Variables	Chronic Disease		Total	P-value
	Yes n (%)	No n (%)		
Sex				
Male	1299 (31.6)	2811 (68.4)	4110 (74.9)	0.024
Female	480 (34.9)	894 (65.1)	1374 (25.1)	
Age				
18-19	129 (27.7)	336 (72.3)	465 (8.5)	0.034
20-24	849 (31.9)	1809 (68.1)	2658 (48.4)	
25-29	477 (33.1)	963 (66.9)	1440 (26.2)	
30-39	327 (35.3)	600 (64.7)	927 (16.9)	
Education				
None	15 (29.4)	36 (70.6)	51 (0.9)	0.647
Primary	66 (29.7)	156 (70.3)	222 (4.0)	
Secondary	459 (32.5)	954 (67.5)	1413 (25.7)	
Higher-secondary	837 (32.0)	1776 (68.0)	2613 (47.6)	
Bachelor or above	405 (34.0)	786 (66.0)	1191 (21.7)	
Employment status				
Employed	393 (31.8)	843 (68.2)	1236 (22.5)	0.003
Business	63 (30.0)	147 (70.0)	210 (3.8)	

Housewife	216 (39.8)	327 (60.2)	543 (9.9)	
Student/Unemployed	1023 (32.0)	2178 (68.0)	3201 (58.3)	
Health worker	87 (29.0)	213 (71.0)	300 (5.5)	
Division				
Barisal	48 (32.0)	102 (68.0)	150 (2.7)	<0.001
Chittagong	477 (29.1)	1164 (70.9)	1641 (29.9)	
Dhaka	813 (35.7)	1467 (64.3)	2280 (41.5)	
Khulna	99 (32.0)	210 (68.0)	309 (5.6)	
Mymensingh	78 (42.6)	105 (57.4)	183 (3.3)	
Rajshahi	90 (25.9)	258 (74.1)	348 (6.3)	
Rangpur	90 (30.0)	210 (70.0)	300 (5.5)	
Sylhet	87 (31.2)	192 (68.8)	279 (5.1)	
Location				
Rural	408 (29.3)	984 (70.7)	1392 (25.4)	<0.001
Sub-district	237 (36.9)	405 (63.1)	642 (11.7)	
District	246 (28.2)	627 (71.8)	873 (15.9)	
Urban	891 (34.5)	1692 (65.5)	2583 (47.0)	
Smoking status				
Yes	600 (28.2)	1526 (71.8)	2126 (11.0)	<0.001
No	1182 (35.1)	2182 (64.9)	3364 (89.0)	
Income				
Below 15000	285 (27.1)	768 (72.9)	1053 (19.2)	0.002
15000-25000	546 (33.1)	1104 (66.9)	1650 (30.1)	
25000-50000	297 (35.5)	540 (64.5)	837 (15.2)	
50000-75000	111 (34.6)	210 (65.4)	321 (5.8)	
75000-100000	414 (32.9)	846 (67.1)	1260 (23.0)	
100000+	129 (35.0)	240 (65.0)	369 (6.7)	
Total	1782 (32.5)	3708 (67.5)	5490 (100.0)	

Age, employment status, division, location, and smoking status were the significant factors for chronic diseases in the multivariable model (Table 4). For example, young adult aged 30-39 years (OR = 1.57, 95 % CI: 1.16 - 2.13) had higher odds of experiencing chronic diseases, than lower aged young adult. Student/unemployed had 34 % lower odds (OR = 0.66, 95 % CI: 0.53 - 0.82) of chronic diseases than health worker. Young adults had 38 % lower odds (OR = 0.62, 95 % CI: 0.42 – 0.93) of being affected by chronic diseases compared with those who bought in Sylhet (Table 4).

Table 4. Risk factors for chronic diseases and their odds ratio obtained from the multivariable logistic model.

Variables	AOR	95% CI	P-value
Sex			
Male	1.06	0.92 – 1.21	0.447
Female	Ref		
Age			
30-39	1.57	1.16 – 2.13	0.003
25-29	1.23	0.99 – 1.54	0.068
20-24	1.13	0.93 – 1.36	0.211
18-19	Ref		
Employment status			
Business	1.02	0.74 – 1.41	0.902

Employed	1.11	0.83 – 1.47	0.496
Housewife	0.83	0.68 – 1.01	0.060
Student/Unemployed	0.66	0.53 – 0.82	<0.001
Health worker	Ref		
Division			
Barisal	0.90	0.58 – 1.40	0.648
Chittagong	1.03	0.78 – 1.37	0.819
Dhaka	0.79	0.60 – 1.05	0.100
Khulna	0.88	0.62 – 1.26	0.489
Mymensingh	0.62	0.42 – 0.93	0.019
Rajshahi	1.29	0.91 – 1.84	0.155
Rangpur	1.09	0.76 – 1.56	0.646
Sylhet	Ref		
Location			
Rural	0.87	0.71 – 1.06	0.176
District	1.20	0.99 – 1.43	0.052
Urban	1.37	1.13 – 1.66	0.001
Sub-district	Ref		
Smoking status			
Yes	1.56	1.34 – 1.82	<0.001
No	Ref		
Income			
Below 15000	0.89	0.68 – 1.16	0.382
15000-25000	0.91	0.77 – 1.07	0.256
25000-50000	0.92	0.75 – 1.11	0.339
50000-75000	0.93	0.74 – 1.15	0.479
75000-100000	0.95	0.83 – 1.39	0.579
100000+	Ref		

4. Discussion

The goal of the current study is to obtain insight into potential factors that may affect long-term adjustment in Bangladesh by focusing on the chronic disease of young individuals with some socioeconomic background. This is the first research on young adults' chronic illnesses that we are aware of. The findings demonstrate that these young individuals' chronic illnesses are not insignificant and may have a historical component.

In Bangladesh, obesity is becoming more common. Although it is becoming worse every day, the situation for teenagers is not yet alarming [18,19]. According to the study's findings, being obese has a risk that is noticeably larger than that of any other chronic illnesses. Nowadays, readily available prepared foods and drinks with a lot of sugar are very practical and greatly coveted by young people. They have a lot of calories and fat, which makes young people more susceptible to an environment that promotes obesity [20,21]. They also cause them to develop unhealthy behaviors and become obese. Asthma prevalence is also greater (6.8 %) and ranks second to obesity in our study. The data also resembles studies done on Portugal, Spain, France, Argentina, and France [22].

The prevalence of chronic illnesses is higher among residents of socioeconomically deprived places than it is among their more affluent counterparts [23]. More cases of chronic illness in young men are documented than in females. The highly educated group reports chronic disease more frequently than other groups. Mielck *et al.* found the opposite, reporting that young individuals with lower levels of education have a higher prevalence of chronic illness [24]. In contrast to more privileged groups, Kivimäki and colleagues discovered that poor socioeconomic position was linked to an elevated incidence of 18 (32 %) of 56 disorders [25].

Some restrictions must be considered. Only young adults who can read and use internet survey tools are eligible for this study. The information on chronic diseases is also based entirely on self-report. This may be the cause of the higher response rate from students with urban backgrounds from the Dhaka and Chittagong divisions. To inform global public health and policy decisions, it is necessary to invest in research in Bangladesh to examine risk factors for chronic illness and the relationship between socioeconomic status and other factors, such as parents' educational backgrounds, chronic illness in family members, and ethnicity.

5. Conclusion

Chronic diseases, especially those more common in adults, are prevalent among young persons in acute care settings with significant disparities. The results of the current scoping review have a considerable impact on political decision-makers and administrators in the field of health. Most crucially, youth-focused patient education initiatives can increase exercise levels, BMI, and blood sugar control while reducing healthcare expenses. The individuals also gain from reduced symptom discomfort and improved comprehension.

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