**Prevalence of chronic diseases among young adult in Bangladesh:**

**Introduction**

Chronic disease refers to a medical condition that expected to last more than three months or not to be curable [1]. Chronic diseases in young adult are one of the major health challenges of this century. The young people today will live less healthy lives than their parents, in part because of higher rates and earlier onset of chronic diseases [2]. With the increasing of chronic condition in worldwide young population, in low- and middle-income countries (LMICs), an increase in number of young adults also developing long-term chronic conditions [3]. The Population Reference Bureau (PRB) has stated that, young adults developed choric diseases with four major primary risk factors, i.e., tobacco, alcohol, lack of exercise, and poor nutrition. This widespread concern reflects the emergence of a body of evidence linked to exposure to risk in early life and even during antenatal for the risk of chronic disease in adulthood[4]. Poorer countries see higher rates (29%) and richer countries rates (13%) the burden of deaths occur due to non-communicable diseases (NCDs) before age 60 [5]. In Australia, asthma and depression are the most common comorbidity among young people [6]. In America, it was estimated that 1% to 3% of children have hypertension, stroke is among the top 10 causes of childhood death and one in five has obesity[2]. In the Netherlands, 14% of children suffered from chronic disease and 90% of them will carry it in their youth [7].

However, most studies have focused on chronic disease in adults and paid very little attention to young adults who growing up with chronic conditions. In Bangladesh, there were no studies conducted on chronic diseases with young people. Recently, young adults maintain life in irregularity, this unhealthy lifestyles growing them poorer health conditions[8]. Thus, they can be considered as the most vulnerable stage with chronic conditions. Given the chronic condition of young adults increasing in developed countries[1], [2], [6] and Bangladesh developing so fastly[9], it is necessary to express the status of chronic disease in young people, to develop strategies to support this vulnerable population towards youth independence. The current study focuses on determining the incidence of chronic disease for 18- to 39-year-olds.

**Methods**

*Participants*

Participants were drawn from eight divisions and sixty-four districts of Bangladesh. From all division, we included 1830 individuals (1370 men and 458 women) aged 18 to 39 years. Our survey excluded less than 18 years old or non-adult participants because of some restriction to use smartphone or computer for kids in the family. The analytic sample was limited to those who fill-up the online questionnaire willingly during the study period and data for the present study were collected in first 2 weeks of June 2020 through questionnaire in Google Survey Form and these data have been used in this study. The institutional review boards of the Biomedical research foundation approved the study protocol.

*Measures*

Respondents were asked if they have any chronic disease on every questionnaire, with responses counted as (0) don’t have any diseases or (1) at least one disease held. Participants who did not specify their age to the online questionnaires are not included in the analysis.

*Analysis*

We calculated the percent of people by various chronic diseases than we also calculated the percentages of people who have at least one chronic disease by gender, age, education, employment status, division, location, smoking status and income. All analyses were conducted using IBM SPSS version 25.

**Results**

Of the 1830 young adults, 32.7% (598) had at least 1 chronic disease; 7.9% had obesity, 6.8% had asthma, 3.8% had hypertension, 3.7% had hypotension, and 1.5% (27) had diabetes, emerged as the top five chronic disease in young adults (Table 1). Kidney disease 0.9% (17), heart disease 0.6% (11), chronic liver disease 0.5% (10), thalassemia 0.3% (6), and chronic obstructive pulmonary disease 0.2% (3) followed.

Table 1 Percentage of chronic diseases

|  |  |
| --- | --- |
| **Comorbidity** | **Yes**  **n (%)** |
| Obesity | 144 (7.9) |
| Asthma | 124 (6.8) |
| High blood pressure/Hypertension | 70 (3.8) |
| Low blood pressure/Hypotension | 68 (3.7) |
| Diabetes | 27 (1.5) |
| Kidney disease | 17 (0.9) |
| Heart disease | 11 (0.6) |
| Chronic liver disease | 10 (0.5) |
| Thalassemia | 6 (0.3) |
| Chronic obstructive pulmonary disease (COPD) | 3 (0.2) |
| Others | 233 (12.7) |

Of all participants with at least one chronic disease during the study period, 72.9% (453) were male and 27.1% (162) were female; 54.5% (326) of participants with at least one chronic disease were aged 18 to 24 years, and 45.5% (272) were aged 25 to 39 years. Mean age of the total participants were 24.77 years (SD = 4.67). Of young adults with a chronic disease, a larger percentage 69.9% (418) were undergraduate or above and a lower percentage 30.1% (180) were primary to higher-secondary, on the basis of educational status. Young adults differed from each other with respect to employment status, in our study most of the participants were students 57.2% (342), followed by 27.1% (162) were employed, 10.4% (62) were unemployed, 3.5% (21) were businessmen and 1.8% (11) were housewife. It was found that 46.1% (275) of the respondents participate from Dhaka division, it was 26.7% (159) from Chittagong division and rest 27.2% (164) came from other six divisions. 22.5% (134) young adults came from rural area, half of the respondents (50.3%) came from urban and other came from district of sub-district areas. Among all young adult with chronic diseases, a large number of people (89.0%) were not smoker.

Table 2 Sample characteristics of young adult based on disease status (n=598)

|  |  |
| --- | --- |
| Variables | Disease Status (at least one disease) |
| **Sex** |  |
| Male | 435 (72.9) |
| Female | 162 (27.1) |
| **Age** |  |
| Mean (SD) | 24.77 (4.67) |
| 18-24 | 326 (54.5) |
| 25-39 | 272 (45.5) |
| **Education** |  |
| Primary to Higher-Secondary | 180 (30.1) |
| Undergraduate or above | 418 (69.9) |
| **Employment status** |  |
| Employed | 162 (27.1) |
| Unemployed | 62 (10.4) |
| Student | 342 (57.2) |
| Housewife | 11 (1.8) |
| Business | 21 (3.5) |
| **Division** |  |
| Barisal | 14 (2.3) |
| Chittagong | 159 (26.7) |
| Dhaka | 275 (46.1) |
| Khulna | 33 (5.5) |
| Mymensingh | 26 (4.4) |
| Rajshahi | 30 (5.0) |
| Rangpur | 30 (5.0) |
| Sylhet | 29 (4.9) |
| **Location** |  |
| Rural | 134 (22.5) |
| Sub-district | 80 (13.4) |
| District | 82 (13.8) |
| Urban | 300 (50.3) |
| **Smoking status** |  |
| Yes | 66 (11.0) |
| No | 532 (89.0) |
| **Income** |  |
| Below 15000 | 93 (15.6) |
| 15000-25000 | 139 (23.3) |
| 25000-50000 | 184 (30.9) |
| 50000-75000 | 100 (16.8) |
| 75000-100000 | 37 (6.2) |
| 100000+ | 43 (7.2) |
| Total | 598 (32.7) |

**Discussion**

The present study concentrating on the chronic illness of young adults with some socio-economic background to gain insight into the potential determinants of long-term adjustment in Bangladesh. As far as we know, this is the first study on chronic illness of young adults. The results show that chronic illness of these young adults is not negligible and possible background where they came from.

The prevalence of obesity is increasing in Bangladesh. It has not yet become an alarming situation for adolescents but it is increasing day-by-day[10]. The findings of this study indicate that the risk of being obese is notably higher than all other chronic diseases. Now-a-days, easily available ready meals and high sweetened drinks are especially convenient and highly desirable for young people. They are high in calories and fatty substances, make young people sensitive to an obesogenic environment, tend to unhealthy habits and make them obese [11]. In our study, the prevalence of asthma is also higher (6.8%) and second in position after obesity. The figure is also similar to some study of Argentina, France, Spain, and Portugal [12].

People in socio-economically disadvantaged areas suffer from higher chronic illnesses than those from the more affluent counterparts [13]. Male young adults are reported most that they are suffering from chronic illness. Most chronic illness are reported more often in the higher educational group. However, a contrasting result was observed by Mielck A et al, where they reported that lower educational young adults has higher prevalence’s chronic illness[14]. Mika Kivimäki and colleagues found that low socioeconomic status was associated with an increased risk of 18 (32·1%) of 56 conditions compared with more advantaged groups[15].

Some limitations need to be considered. This study is restricted to adults who are able to read and able to fill online survey tools. All information is based on self-report, including the information on chronic disease. This might be a reason to get more response from student, Dhaka and Chittagong division, urban background. Therefore, there is a need to invest in research in Bangladesh to study risk factors for chronic illness and the association of socioeconomic status alongside other factors—such as parents educational background, chronic illness in family members, and ethnicity—on chronic illness and clusters to inform public health and policy decisions globally.

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