Title: Health Status and Healthcare-Seeking Behavior Among Elderly Citizens in Bangladesh

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Objective: Population aging is one of the most significant demographic trends in the 21st century. Along with the developed and developing world, Bangladesh faces challenges as its elderly population, at high risk for diseases and disabilities, places urgent demands on healthcare systems. However, Bangladesh is not well-prepared to meet this growing healthcare demand. Due to a lack of research evidence, particularly concerning elder care accessibility, quality of life, health expectations, healthcare service utilization, and healthcare-seeking patterns, these critical public health issues remain under-addressed in Bangladesh. This study aims to fill this knowledge gap.

Method: A community-based cross-sectional household survey was conducted in Bangladesh using a mixed-methods approach, combining quantitative and qualitative research techniques. A total of 478 households with at least one elderly citizen (60 years or older) were surveyed between November 2019 and January 2020. A structured questionnaire captured self-reported illnesses, healthcare utilization, and health-related quality of life (HRQoL) at the community level. Additionally, 12 in-depth interviews (IDIs) were conducted with elderly citizens to supplement the quantitative data.

The background characteristics of the study participants were described using mean, standard deviation (SD), percentage, and frequencies with 95% confidence intervals (CIs). The study sample was categorized by demographic variables, including age, sex, ethnicity, dependency, income, education, employment, self-reported health status, healthcare utilization, and related expenditures. Bivariate statistical analysis was performed to examine the prevalence of diseases across various socio-demographic, economic, and community-level factors.

Healthcare-seeking behavior was categorized as no care, pharmacy care, public/government care, private care, and other sources to trace patterns among different economic groups. Logistic regression analysis was employed to identify factors affecting healthcare-seeking behavior, with results presented as odds ratios (ORs) with 95% CIs. Both adjusted and unadjusted ORs were presented to account for the effects of single and multiple covariates.

To assess HRQoL, t-tests measured average changes in EQ-5D index and EQ-VAS score outcomes. Chi-square tests identified associations within each EQ-5D dimension. Independent two-sample t-tests (or one-way ANOVA where appropriate) determined the association between socio-economic and demographic characteristics and EQ-5D index and VAS scores. Logistic regression models analyzed the likelihood of associations within each dimension, controlling for other influencing variables.

Inequality in disease prevalence and elder healthcare utilization was analyzed using the Lorenz curve. This graphical representation plotted the cumulative proportion of the population (ranked by wealth quintiles) against the cumulative distribution of household wealth. In public health, the x-axis represented the cumulative population at risk, ranked from lowest to highest risk. Inequality was quantified using the Gini coefficient, representing the area between perfect equality and perfect inequality lines (the 45° line of the Lorenz curve indicates no disparity in disease risk or healthcare utilization). Thematic analysis ensured methodological accuracy and transparency of qualitative data analysis, following Braun and Clarke's approach, which included familiarizing with the data, generating initial codes, defining and reviewing themes, and drawing general interpretations.

Results: A total of 585 elderly individuals participated in the study, with 49% from urban areas and 51% from rural areas. Approximately 93% of elderly individuals reported illness in the six months preceding the survey, with 84% suffering from chronic illnesses. The most common conditions were hypertension (15.6%), gastric or ulcer issues (14.3%), pain (13.6%), diabetes (8.9%), cardiac disease (7.6%), weakness (6.8%), asthma (5%), flu/cough (3.7%), arthritis (2.9%), and eye-related infections (2.7%).

Among the sick elderly, 95% sought healthcare services. Most utilized pharmacies (61%), followed by public facilities (33%) and private facilities (19%). Approximately 9% of the poorest elderly did not seek care, compared to 2% in the richest quintile. The average total cost of treatment was BDT 7,714 (SD ± 32,472), with 93% of expenditures being out-of-pocket. Costs for acute and chronic illnesses were BDT 4,918 (SD ± 9,948) and BDT 7,580 (SD ± 31,765), respectively.

Approximately 59% of elderly citizens reported some or extreme health-related problems. The average HRQoL for elderly citizens was 0.51 (SD ± 0.29) on a scale where 100 represents full health and 0 represents death. HRQoL was significantly higher for male than female elderly citizens ($P<0.001$). Inequality analysis revealed that the poorest income groups suffered more from hypertension, pain, and gastric/ulcer-related diseases, while diabetes was more prevalent among higher-income groups. Higher-income elderly individuals predominantly sought care from private facilities, with the Gini coefficient indicating persistent inequality in accessing private care during illness. The qualitative study revealed that elderly citizens faced critical health conditions and advocated for prioritizing affordable elder-friendly care in public hospitals.

Conclusions: It is recommended that health authorities and relevant stakeholders implement programs promoting elderly health, such as health education, health promotion, and resource allocation, to improve HRQoL among elderly citizens in Bangladesh. These findings could inform the design of financial risk protection schemes for elderly citizens, aligning with the core objectives of Bangladesh's Healthcare Financing Strategy to achieve universal health coverage by 2032.