Association between socio-economic status and health of older adults in rural Bangladesh and India: a comparative cross-sectional study

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Objective

This study attempts to examine the effects of SES on health of older adults, and related gender differences, in rural Bangladesh and India using standardized data collection instruments .

Target Population

People of aged 50 and over at Matlab, Bangladesh and Vadu HDSS site Pune district , India.

Data Source

World Health Organization Study on Global Ageing and adult health (SAGE) International Network for the Demographic Evaluation of Population and Their Health (INDEPTH) in the eight developing countries in Asia and Africa, 2007.

Methods

Bangladesh data set was collected from a rural Upazilla "Matlab"under Chandpur District where the International Centre for Diarrhoeal Diseases Research, Bangladesh (ICDDRB) has been maintained a field work station since 1963. Using the SAGE short version of questionnaire, a sample of 4004 people of aged 50 and over was randomly selected from the Matlab HDSS database of 31,400 people. The data was collected through face-to-face interviews by a team of college graduate who received extensive training on data collection and have previous experience of data collection. India data set was collected from the Vadu HDSS site, Pune district in Maharashtra. This HDSS site consist of some 80,000 people spread over 22 villages. The data was also collected from a sample of randomly selected 6000 individual of aged 50 and over by field-based trained graduates using SAGE short version of questionnaire.

This table represents the socio-demographic profile of people aged 50 and over both in Matlab, Bangladesh and Pune district, India.

Variables	Classification and their measurement	Bangladesh n (%)	India n (%)
Age group			
	50-59=1	1812 (45.25)	1768 (39.17)
	60-69=2	1379 (33.79)	1691(37.46)
	70-79=3	687 (17.16)	828 (18.34)
	80 and over=4	152 (3.8)	227(5.03)
Sex			
	Male=1	1999 (49.93)	2351 (52.08)
	Female=2	2005 (50.07)	2163 (47.92)
Education			
	No formal education=0	2257 (56.37)	259 (5.74)
	<= 6 years of education=1	1149 (28.70)	3221 (71.36)
	> 6 years of education=2	598 (14.94)	1034 (22.91)
Asset quintiles			
	1st quintile=1	611 (15.26)	514 (11.39)
	2nd quintile=2	667 (16.66)	686 (15.20)
	3rd quintile=3	701 (17.51)	994(22.02)
	4th quintile=4	930 (23.23)	963 (21.33)
	5th quintile=5	1095 (27.35)	1357 (30.06)
Marital status			
	In current partnership=1	3049 (76.15)	3595(79.64)
	Now single=2	955 (23.85)	919(21.36)

Analysis

Bivariate and multivariate analysis was performed in order to assess the effect of socio-economic status on the health of older adults in both countries. Quintiles of wealth and educational attainment are used as the indicators of socio-economic status, while, self-rated health, quality of life, health state, and disability level are used as health indicators. The independent variables are age , sex, marital status,, educational attainment and asset quintiles of the respondents. The dependent variables are dichotomous in case of self rated-health (0= bad , very bad & 1= moderate, good, very good), continuous scores (0-100) for health state, quality of life and disability level which were calculated using the WHO tested instruments. In order to assess the associates of socio-economic variables with health indicators, multiple logistic regression was performed on self-rated health and multiple regression were performed on other health indicators.

This table shows the results of multiple logistic regression models and multiple regression models for both countries.

Independent Variables	Bangladesh (n=4004)				India (n=4514)			
	Self-rated Health, exponent of β (SE)	Health state β (SE)	Quality of life, β (SE)	Disability level, β (SE)	Self-rated Health, exponent of β (SE)	Health state, β (SE)	Quality of life, β (SE)	Disability level, β (SE)
Age groups								
50-59 (ref.)	1.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00
60-69	0.52 (0.46)*	-2.82 (0.29)*	-2.04 (0.25)*	-7.44 (0.65)*	0.76 (0.14)	-1.22 (0.33)*	-0.17 (0.16)	-1.26 (0.47)**
70-79	0.26 (0.03)*	-6.24 (0.37)*	-3.87 (0.32)*	-16.5 (0.83)*	0.52 (0.1)**	-3.12 (0.42)*	-0.80 (0.21)*	-4.07 (0.59)*
80 and over	0.13 (0.02)*	-8.85 (0.67)*	-5.16 (0.58)*	-25.71(1.53)*	0.32 (0.09)*	-3.67 (0.71)*	-0.60 (0.34)	-5.34 (0.99)*
Sex								
Male (ref.)	1.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00
Female	0.44 (0.04)*	-7.05 (0.30)*	-2.95 (0.26)*	-20.05 (0.68)*	0.75 (0.13)	-1.54 (0.32)*	0.03 (0.16)	-2.14 (0.45)*
Education								
No formal education	1.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00
<= 6 years of education	1.17 (0.1)	0.48 (0.30)	0.79 (0.26)**	1.66 (0.67)**	0.66 (0.23)	0.91 (0.63)	-0.50 (0.31)	0.92 (0.89)
> 6 years of education	1.34 (0.17)**	1.28 (0.40)*	1.56 (0.34)*	4.48 (0.90)*	0.91 (0.37)	2.92 (0.70)*	0.19 (0.34)	3.15 (0.45)*
Asset quintiles								
1st quintile (ref.)	1.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00
2nd quintile	1.10 (0.14)	-0.29 (0.44)	1.01 (0.38)**	0.36 (1.00)	0.82 (0.20)	-0.42 (0.57)	0.18 (0.28)	-2.26 (0.8)**
3rd quintile	1.07 (0.13)	0.15 (0.43)	2.38 (0.38)*	0.94 (0.99)	1.17 (0.29)	-0.02 (0.53)	0.30 (0.26)	-1.29 (0.74)
4th quintile	1.28(0.16) **	0.49 (0.42)	3.09 (0.36)*	1.70 (0.95)	1.77 (0.48)**	1.41 (0.53)**	0.50(0.26)**	-0.46 (0.75)
5th quintile	1.39 **	1.08 (0.41)**	4.66 (0.36)*	2.54 (2.54)**	1.62 (0.40)**	0.97 (0.51)**	0.66(0.25)**	-0.20 (0.71)
Marital status								
In current partnership	1.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00
Now single	1.03 (0.10)	0.04 (0.35)	-6.52 (0.31)*	-0.11 (0.80)	0.87 (0.16)	-0.39 (0.39)	-0.35 (0.19)	-0.41 (0.55)

Note: * p<0.001, ** p<0.05 & (ref.) means reference category

Results

In Bangladesh, level of education is significantly associated with all the four health indicators while in India level of education is not significantly associated with most of the indicators of health of older adults. Similarly, quality of life is significantly associated with asset quintiles in Bangladesh whereas it is not significantly associated in India. However, all other health indicators in most cases are not significantly associated with asset quintiles in both countries. Older women are likely to experience worst health in both countries but it is more widespread in Bangladesh compare to India.

Conclusion

Education is the better predictor of health of older adults than wealth, and it is more obvious in Bangladesh than in India. As the proportion of older people rapidly increasing in both countries, the findings of this study have profound implications with regard to designing health intervention programmes for older adult populations in the forth-coming years.