Extended Abstract

Social networks among older persons in rural Uttar Pradesh, India

Author: Lucky Singh

Introduction:

Life expectancy improvement and population ageing are regarded as one of the greatest public health achievements over the past few decades. The impact of widespread ageing of population around the world has become a matter of vital interest to both researchers and policymakers who wish to understand the broad socio-economic and health implications of demographic changes. One of the areas of utmost interest has been the potential impact of population aging on the provision of support to older persons by family and friends. These concerns have encouraged various researchers to focus on changes in demographic compositions and socioeconomic arrangements which affect the availability of family members providing emotional, financial and instrumental support to the aged population (Mason, 1992; Palloni, 2001).

The recent trends of population growth in India show substantial and rapid increase in older population as a result of increase in life expectancy and fertility decline. The United Nations statistical projection indicate that the size of India's older population aged 60 and above is expected to increase 117 million in 2015, 193 million in 2030 and further to 335 million in 2050 .The proportion is likely to reach 13 percent of the population in 2030 and 20 percent in 2050 (United Nations, 2006).

Given the fast paced trend of population ageing in the country, the older population faces a number of problems in adjusting to them in varying degrees. In developed countries, the situation is taken care by providing support through institutionalized systems. Researchers have substantially examined the relationship of social networks with the health and wellbeing of the older population, and have concluded that social networks have positive effect on both mental and physical well-being in developed countries, while less is known about these relationships in developing countries (Berkman *et al*., 2000; Litwin, 2001). Especially in rural areas, where most of the aged population live with scarce social security support and resources, it is no longer possible to ignore the liaison, linking social ties and social support

with the health of the older population. Assessments of social network dynamics are necessary in the backdrop of a rising tendency of migration among economically productive rural dwellers towards urban areas (Mainous & Kohrs, 1995).

Objective:

The purpose of this study was to develop a measurement model of social network, and to investigate the association of social network with socioeconomic and demographic variable.

Data:

Although, the elderly are highly heterogeneous group in relation to public health; no large or small socio-economic survey in India collects empirical data among elderly. Keeping the data constraints, the objectives of the present study is accomplished through primary data collection. A sample of 600 older persons aged 60 years or older living in the 12 village in the rural Uttar Pradesh was recruited using Multi-stage random sampling. Data were collected by face-to-face interviews using a structured questionnaire.

Methods:

Applicability of the Glass et al. (1997) multidimensional model in the derivation of suitable social network scores for India was tested by confirmatory factor analysis (CFA). Social networks were broken down into four sub-groups: children, relatives, friends, and confidant. For children, relatives, and friends, social network scores were derived based on the number, proximity, and frequency of contact. For confidants, scores reflected the number, and whether the confidant was a spouse. Socioeconomic and demographic variables: gender, age-group, marital status, educational attainment, working status, caste, wealth index and living arrangement were also measured, and social networks were compared for categories of these variables.

Results:

The results of the CFA demonstrated that the four specific social network types of children, relatives, friends and confidant proposed by Glass et al. were tenable (shown in **Table 2**). Large differences in specific social networks and total social networks by categories of age-group, marital status, educational attainment, working status, caste, wealth index and living arrangement were evident. Gender was not statistically significantly associated with any of the specific social network and total network.

The average children network and total network were lowest among youngest-old, while it was highest among elderlies belonged to oldest-old. The mean of all three network – relatives (Mean= 1.095; SD= 1.171), confidant (Mean= 0.525; SD= 0.377) and total network (Mean= 7.2356; SD= 2.709) were highest among elderlies who were currently married at the time of interview than widowed/single/divorced. The mean relative network was highest among older persons who had completed 10 and above years of schooling (Mean= 1.371; SD= 1.199), followed by those who had completed 6-9 years of schooling (Mean= 1.253; SD= 1.185). Children social network score was higher among not working elderly (Mean= 4.833; SD= 2.113) than working elderly. However, working elderly had higher score than not working elderly for network with relatives (Mean= 1.128; SD= 1.212), friends (Mean= 1.101; SD= 1.199) and confidant (Mean= 0.554; SD= 0.357).

The average score of friends network was lowest among older persons who belonged to SC/ST social groups (Mean= 0.888; SD= 1.141), whereas the same was highest among those who were from the others social groups (Mean= 1.147; SD= 1.219). Household wealth index was positively associated with relatives specific network. However, no significant difference was observed for total social network and specific network with children, friend and confidant by household wealth quintile.

Total social networks and all specific social networks significantly differed by co-residence of older persons. Living without spouse but at least one child had highest mean score for children network (Mean= 4.970; SD= 2.120) followed by living with spouse and at least one child (Mean= 4.607; SD= 1.804). The mean score for children network was lowest among those older persons who were living alone (Mean= 3.034; SD= 2.958).

Older persons living with spouse and at least one child were found to have higher relatives social network score (Mean= 1.142; SD= 1.178) than those older persons living with others categories of living arrangements. However the lowest mean score for relative specific networks was observed among elderlies living without spouse but at least one child (Mean=0.806; SD=1.035). The mean score for friends network was higher among living alone older persons (Mean=1.103; SD=1.152), while living with spouse only had a lowest mean score for the friends network (Mean=0.759; SD=1.029).

The average score for confidant network was lowest among elderlies who were living alone (Mean=0.190; SD=0.247). However, older persons living with spouse only had the highest confidant network score (Mean=0.603; SD=0.437), followed by elderlies living with spouse and at least one child (Mean=0.511; SD=0.364).

As far as the total social network is concerned, older persons living with spouse and at least one child had the highest mean total social network (Mean=7.325; SD=2.660), followed by elderlies who were residing without spouse but at least one child (Mean=6.957; SD=2.690). The mean score for total social network was lowest (Mean=5.397; SD=3.629) among older persons who were living alone followed by those elderlies who were living with spouse only (Mean=6.756; SD=2.929).

Conclusion:

Greater comparability between studies of older persons will be allowed with these proposed measures. The effect of the specific and total social network variables could lead to a better understanding of the effects of social networks upon health. Our preliminary findings suggest that the relationship between socioeconomic and demographic status and social networks may be quite complex.

Reference:

Mason, K.O. (1992) Family change and support among the elderly in Asia: What do we know?" *Asia Pacific Population Journal* **7**(3), 13-32.

Palloni, A. (2001) Living arrangements of the older persons. In United Nations (eds) *Living arrangements of older persons: Critical issues and policy responses*. Population Bulletin of the United Nations, Special Issues Nos. 42/43, United Nations, New York, pp. 54-110.

United Nations Population Division (2006) Revision World Population Prospects. United Nations, New York.

Berkman, L. F.; Glass, T.; Brissette, I. & Seeman, T. E. (2000) From social integration to health: Durkheim in the new millennium. *Social Science and Medicine* **51**(6), 843-847.

Litwin, H. (2001) Social Network Type and Morale in Old Age. *The Gerontologist* **41**(4), 516-524.

Mainous, A. G., & Kohrs, F. P. (1995) A comparison of health status between rural and urban adults. *Journal of Community Health* **20**(5), 423-431.

Glass, T.A., Mendes De Leon C.F., Seeman T.E. & Berkman L.F. (1997) Beyond Single indicators of Social networks: A LISREL analysis of social ties among the elderly. *Social Science and Medicine* **44**(10), 1503-1517.

Table 1: Correlation matrix for twelve observed variables (X_1 to X_4 are indicator of children network, X_5 to X_7 are indicator of relatives networks, X_8 to X_{10} are indicator of friends network and X_{11}, X_{12} for confidant network.

	X_1	X_2	X_3	X_4	X_5	X_6	X_7	X_8	X_9	X_{10}	X_{11}	X_{12}
X_1	1.00											
X_2	-0.28	1.00										
X_3	0.49	-0.52	1.00									
X_4	0.23	-0.49	0.25	1.00								
X_5	-0.10	0.08	-0.11	0.03	1.00							
X_6	-0.10	0.05	-0.05	0.07	0.67	1.00						
X_7	-0.07	0.11	-0.08	0.08	0.62	0.64	1.00					
X_8	-0.02	0.05	-0.08	0.06	0.14	0.07	0.12	1.00				
X_9	0.00	0.01	0.00	0.12	0.05	0.11	0.15	0.69	1.00			
X_{10}	0.01	0.01	0.02	0.13	0.15	0.12	0.13	0.63	0.73	1.00		
X_{11}	-0.03	0.04	-0.03	0.00	0.17	0.01	0.19	0.11	0.06	0.19	1.00	
X_{12}	-0.09	-0.01	-0.06	-0.04	0.14	0.09	0.10	0.05	0.09	0.05	0.32	1.00

Table 2: Factor loadings and reliabilities for latent variable measurement model

	λ_{ij}	$se(\lambda_{ij})$	λ^s_{ij}	Reliability $[\lambda^s_{ij}]^2$	Composite reliability
Children network					0.83
Number of living children	0.71	0.03	0.56	0.31	
Proximity children	0.22	0.01	0.63	0.4	
Contact children	1.11	0.05	0.96	0.92	
Phone children	1.00		0.78	0.61	
Relatives network					0.78
Number of close relatives	0.74	0.03	0.54	0.29	
Contact relatives	0.83	0.04	0.79	0.62	
Phone relatives	1.00		0.86	0.74	
Friends network					0.69
Number of close friends	0.92	0.08	0.54	0.29	
Contact friends	0.91	0.03	0.69	0.48	
Phone friends	1.00		0.73	0.53	
Confidant network					0.68
Existence of confidant	1.21	0.11	0.73	0.53	
Spouse is a confidant	1.00		0.71	0.5	