Do Chronic Diseased Conditions and Disabilities Make Elderly Poor in Social Networking? : A Community Based Cross Sectional Study

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Abstract

Background: Disability rate in elderly is much higher than other age groups. Rising needs of long term care and severity of disabilities may be reduced if disabilities in elderly are identified as early as possible. Aim of the study was to identify elderly with disabilities and to study their socio-demographic factors, unmet needs and social networking.

Material and methods: A community based cross sectional study of elderly in rural field practice area of one of the medical colleges in Pune during 1st June- 30th July 2012. Using a convenient sampling, elderly were interviewed to get socio-demographic variables. BRIGHT questionnaire was used to detect disability and unmet needs. Social networking was assessed using social network index questionnaire developed by Cohen et al.

Results: 23.1% (80/346) had disabilities according to BRIGHT questionnaire. 58.75% (47/80) of disabled had diagnosed chronic disease. Remaining, 41.25% (33/80) disabled had not consulted to physician for their disability, considered as part and parcel of aging. 34% (16/47) of disabled diagnosed with chronic disease were taking treatment appropriately. Factors associated with disabilities were rural residence, unemployment, presence of diagnosed chronic disease. 51.4% (178/346) had poor social networking and it was associated with presence of disability and diagnosed chronic conditions.

Conclusions: There is a need to identify hidden burden of disabilities and unmet needs among elderly to decrease magnitude of disabilities. Periodic use of tools like BRIGHT questionnaire by health workers, relatives or by elderly themselves may serve the purpose. Social networking of elderly needs to be re-inforced.

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Introduction

The world population is ageing rapidly. Proportion of the world's population over 60 years will double from about 11% to 22% between 2000 and 2050.[1] The absolute number of people aged 60 years and over is expected to increase from 605 million to 2 billion over the same period. Low and middle-income countries will experience the most rapid and dramatic demographic change. In the next one year, the population of elderly people in 'young India' is expected to reach the 10 crore (100-million) mark. And by 2050, the figure will reach 32.6 crore (326 m).[2] It will impose a greater burden on already out-stretched health services in developing countries including India.[3]

Disability rate in elderly is much higher than other age groups and it is an important public health problem. Elderly are more prone for disabilities. This may be due to limited mobility, or other physical or mental health problems. These are often taken as part of ageing that they think

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which need not be consulted with physician. The problem will increase in future due to change in age structure of the population, increase in life expectancy and increasing trend of non-communicable diseases. In India, accessibility, availability and utilization of rehabilitation services for elderly and its cost-effectiveness are the major issues to be considered. Research on disability burden among elderly, appropriate intervention strategies and their implementation to the present context in India is a big challenge.[4]

The number of elderly who are no longer able to take care of themselves due to disabilities is forecast to quadruple by 2050 in developing countries. It points to rising need for long-term care which can include assisted living, home nursing, community care and residential care and/or long stays in hospitals. These needs and severity of disabilities may be reduced if disabilities are identified as early as possible in elderly. Proper management of underlying causes of disabilities at the earliest may help elderly to regain independence in their life. Thus, there is a need to identify disabled elderly earlier in their life.[5] Preclinical disabilities among elderly can be targeted by risk assessment, screening and case-finding.[6]

In the present study, we assessed magnitude of disability among elderly using BRIGHT QUESTIONNAIRE, a case finding tool for disability in elderly. It also helped to identify unmet needs of elderly. We also aimed to assess risk factors for disabilities among elderly and their social relationships.[7]

Material and Methods

A community based cross-sectional study was carried out in rural and urban field practice area of Padmashree Dr D Y Patil Medical College, Pimpri during 1st June- 30th July 2012. It caters to the rural population of 37,496 in Alandi and 1,10,000 urban population at Bhosari. Elderly were defined as persons aged 60 years or more.

Considering the prevalence of disabilities among geriatric people as 23% from previous studies, at 95% confidence limit and allowable error 4.5%, the sample size was calculated using Epi Info Version 3.5.1. It came out to be 336. Adding 10% non- response, the total number came out to be 369, making the round figure 370 study subjects.

Households were selected by convenient sampling to get required number of study subjects. Inclusion criteria were elderly aged ≥ 60 years, willing to participate in the study. Exclusion criteria were study subjects not willing to participate, seriously ill or not present at home during the visit. If selected study subject was not able to speak, information was obtained from near relative/ other person present in the house.

Study was executed at the same time in both, rural and urban areas and continued till required study subjects were interviewed. After taking verbal consent, selected study subjects were interviewed by using a pre-tested semi-structured proforma, BRIGHT questionnaire and WHO's social network index questionnaire.[8] Proforma included socio-demographic character-istics like age, sex, religion, level of education, past and present occupation, per capita income, etc.

(BRIGHT) *(Brief Risk Identification of Geriatric Health Tool)* questionnaire is designed to find cases of older people with disabilities (case-finding) living in the community by Faculty of Medical and health sciences, University of Auckland. It is validated to a sensitivity of 0.86 and specificity of 0.86 observed for a score of 3 or more on the questionnaire in relationship to the IADL CAP (*instrumental activities of daily living clinical assessment protocol*) which is taken as gold standard for assessment of disability.[9]

BRIGHT questionnaire is designed and proved to be useful to find cases of older people with disabilities (case-finding) living in the community. It is excellent to rule them out of needing further assessment. This tool may be useful as part of an intervention process to detect unmet needs and to improve systematic surveillance of primary care populations.[7,9]

Responses on the BRIGHT questionnaire were summed as one point per response indicating need; that is '1' for 'no' on question 1 and '1' for 'yes' on questions 2–11. BRIGHT QUESTIO-NNAIRE score 3 or more indicated disability.

Social networking of study subjects was assessed by Social Network Index (SNI) questio-nnaire (refined according to study population) developed by Cohen to assess social relationships of elderly.[8] Responses were scored with minimum score as 1 and maximum as 52. If person met >20 people in two weeks, it was taken as good social interaction. It approximated to the score of 20 as per SNI questionnaire. Hence, score of 0-20 was taken as poor social interaction while > 20 was taken as poor social interaction good social interaction.

Identified disabled elderly were referred to Dr D Y Patil Medical College, Hospital and Research Centre for further management. Data were analysed using SPSS version 15.0 developed by

IBM, USA, November 2006. As it was qualitative data frequencies and proportions were enlisted and Pearson's Chi square test was used as tests of significance. Odds ratio with 95% confidence interval were found for significant associations.

Results

Sociodemographic characteristics

Out of 370 subjects enrolled, 348 (94.05%) could be contacted, 2 refused to participate in the study. So, analysis was done for 346 study subjects. 48.3% (167/ 346) were females, 51.7% (179/346) were males. 36.4% (126/346) were living with spouse, 63.6% (220/346) were single. 71.1% (246/346) were from rural residence, 28.9% (100/346) were urban. 72.25% (250/346) were 60-69 year old, 23.12% (80/346) were 70-79 year old, 2.89% (10/346) were $\geq$ 80 year old.

44.22% (153/346) were illiterate, 0.87% (3/346) were graduate and 2.02% (7/346) completed (11th 12th) junior college. Rest attended till any of primary or secondary school. In past, 34.4% (119/346) were labourers, 33.8% (117/346) were farmers, 7.8% (27/346) were servicemen, 13% (45/346) were housewives, 3.76% (13/346) were unemployed. Rests were self employed as tailors, shopkeepers etc. Presently, 15.9% (55/346) were labourers 23.4% (81/346) were farmers service 2.3% (8/346)17.6% (61/346) were housewives, 37% (128/346) were unemployed and 6.1% (21/346) were engaged in some sort of self employment currently as tailors, shopkeepers etc. 0.58% (2/346) cases were receiving pension after retirement. Total 37% (128/346) were presently unemployed. Out of that, 82.03% (105/128) became unemployed due to old age, out of that 58.10% (61/105) were females. 61/167 females left job d/t old age while 70/179 males became unemployed due to old age. Mean family income was Rs 8357 (SD= $\pm$6469) per month. Majority of cases belonged to class 4 and 5 SEC according to modified proposed Prasad's classification for 2012.

Chronic diseased conditions

While 54.9% (190/346) had no chronic disease, rest 45.1% (156/346) were diagnosed to have chronic disease/ diseases. 14.5% (50/346) had arthritis, 9.5% (33/346) had hypertension, 8.1% (28/346) had diabetes, 5.8% (20/346) had asthma.1.4% (5/346) had low vision, 0.9% (3/ 346) had weakness in lower limbs. 73.72% (115/156) of elderly with chronic disorders were taking regular treatment, 28.70% (33/115) being disabled. 33/50 arthritis, 30/33 hypertension, 21/28 diabetes mellitus, 13/20 asthmatics, 9/10 backache were on regular treatment for their chronic illness. Most of them were being treated from GHF. 30.1% (47/156) of with chronic disorder were disabled according to BRIGHT questionnaire.

Disability

Mean score of BRIGHT Q was 1.41 ($\pm$ 1.613) with range 7 (1-7). 23.1% (80/346) had disabilities according to BRIGHT questionnaire. Table 1 shows gender-wise distribution of disability as per residence. Factors associated with disabilities were rural residence, unemployment, presence of diagnosed chronic disease, marital status as single (Table 2). Gender, age, literacy and socio-economic status were not associated with disabilities.

Table 1. Genderwise disability as per residence.

Residence	Gender	Disability		Total
		Yes	No	
Rural	Female	23 (19.5)	95 (80.5)	118
	Male	16 (12.5)	112 (87.5)	128
	Total	39 (15.9)	207 (84.1)	246
Urban	Female	19 (38.8)	30 (61.2)	49
	Male	22 (43.1)	29 (56.9)	51
	Total	41 (41.0)	59 (59.0)	100

Unmet needs identified

While 58.75% (47/80) of disabled diagnosed chronic disease, 41.25% (33/80) disabled had not consulted to physician for their disability. Only 34% (16/47) of disabled diagnosed with chronic disease were taking treatment appropriately.

Table 3 shows responses BRIGHT q and whether physician's consultation was obtained for that or not. 52.9% (27/51) elderly who had a fall in last 3 months, 52.6% (10/19) with difficulty in performing day to day activities, 39.2% (20/51) who bothered by feeling down, depressed or hopeless, 30.1% (28/93) with short of breath walking across the room had not consulted physician for these problems.

Table 2. Associated factors with disability.

Associated factors		Disability		P value	OR	95% CI
		Yes	No			
Gender	Female	42 (25.1)	125 (74.9)			
	Male	38 (21.2)	141 (78.8)	0.387		
Residence	Rural	39 (15.9)	207 (84.1)			
	Urban	41 (41)	59 (59)	<0.001	0.387	0.267- 0.561
Marital status	Married & spouse living	41 (32.5)	85 (67.5)			
	Single	39 (17.7)	181 (82.3)	0.002	1.836	1.256- 2.684
Age	60-69	52 (20.8)	198 (79.2)			
	≥70	28 (29.2)	68 (70.8)	0.098		
Diagnosed chronic disease	Present	47 (30.1)	109 (69.9)			
	Absent	33 (17.4)	157 (82.6)	0.005	1.735	1.173- 2.566
Social networking	Poor	64(24.6)	196 (75.4)			
	Good	16 (18.6)	70 (81.4)	0.252		
Employment	Unemployed	53 (28.0)	136 (72.0)			
	Employed	27 (17.2)	130 (82.8)	0.017	1.631	1.080- 2.463
Literacy	Illiterate	48 (24.4)	149 (75.6)			
	Literate	32 (21.5)	117 (78.5)	0.528		
Socio-economic status	1,2,3	36 (28.6)	90 (71.4)			
	4,5	44 (20)	176 (80)	0.069	1.429	0.975- 2.094

Table 3. Responses to items in BRIGHT questionnaire and if consulted with physician when help is needed.

Items in BRIGHT questionnaire	Yes (n, %)	Consulted to physician		No (n,%)
		Yes	No	
Do you need someone to help you get around indoors?	120 (34.7)	76 (63.3)	44 (36.7)	226 (65.3)
Have you tripped or fallen?	51 (14.7)	24 (47.1)	27 (52.9)	295 (85.3)
Do you get short of breath walking across the room?	93 (26.9)	65 (69.9)	28 (30.1)	253 (73.1)
Do you usually need someone to help you bathe or shower?	21 (6.1)	12 (57.1)	9 (42.9)	325 (93.9)
Do you usually need someone to help you comb your hair, brush your teeth, shave, apply makeup or wash/dry your face and hands?	19 (5.5)	9 (47.4)	10 (52.6)	327 (94.5)
Do you usually need someone to help you dress your lower body?	24 (6.9)	14 (58.3)	10 (41.7)	322 (93.1)
Have you been bothered by feeling down, depressed or hopeless?	51 (14.7)	31 (60.8)	20 (39.2)	295 (85.3)
Do you have any difficulties making decisions about everyday activities?	23 (6.6)	17 (73.9)	6 (26.1)	323 (93.4)
Do you have memory problems that make everyday activities difficult?	25 (7.2)	14 (56.0)	11 (44.0)	321 (92.8)
Do you usually need any help with ordinary housework?	60 (17.3)	32 (53.3)	28 (46.7)	286 (82.7)

Table 4. Poor social networking and associated factors.

Associated factor		Social networking		Total	P value	OR	95% CI
		Poor	Good				
Disability	Yes	51 (63.8)	29 (36.3)	80 (100)			
	No	127 (47.7)	139 (52.3)	266 (100)	0.012	1.335	1.085- 1.643
Chronic disease	Yes	97 (62.2)	59 (37.8)	156 (100)			
	No	81 (42.6)	109 (57.4)	190 (100)	<0.001	1.459	1.188- 1.791

53.2%(184/346) elderly were not satisfied with government health facilities and major reasons noted were long waiting period, low efficacy and lack of politeness among health care workers. 46.8% (162/346) elderly were satisfied to some extent with services at these centres. 29.2% (100/346) did not often visit to private health facilities. 17.9% (62/346) were more comfortable with private health facilities. Major reasons identified in favor of private health facilities were less time consuming, adequate politeness and efficacy. 39.9% (138/346) opined that charitable health facility is better than PHF.

Social networking

While 51.4% (178/346) of study participants had poor social networking, 48.6% (168/346) had good social networking. Poor social networking was associated with presence of disability and diagnosed chronic conditions (Table 4). It was not associated with any other socio-demographic factor. 6.6% (23/346) were engaged in recreational activities like worship, walk, gossiping with friends at least once in two weeks regularly.

Discussion

The study identified 23.1% (80/346) elderly as disabled using BRIGHT questionnaire tool. This is quiet higher than what reported in situation analysis of elderly by Government of India in 2010. It reports about 64 per 1000 and 55/1000 elderly rural and urban areas respectively suffer from disabilities.[11]

Though, disabilities were more in ≥ 70 year old elderly as compared to 60-70 year old elderly (29.2% vs 20.8%), relationship was not significant in our study. Other study in suburb of Bangalore reported 27% of study subjects with mild disability and 31% had higher level of disability as per ADL scores.[12]

Many studies especially from rural area report that female gender, age >70 years and illiteracy have positive association with disability.[10,13] We did not find any such association. Similar to our findings, study in suburb of Bangalore, gender, education, income did not influence disability. But it reported no association of disabilities with current health status. 85% study subjects had current medical problems.[12,14]

We found association of chronic diseases with disabilities. We didn't find urban advantage among elderly for disabilities as what other studies had found. This advantage is mainly due to higher socio-economic status.[15,16] But, rural and urban elderly in our study were socio-economically comparable (p=0.727). It was due to population catered by urban health training centre (UHTC) contained a semi-urban area, which was not representative of whole urban population.

Disability can be viewed as a stage in the course of chronic disease processes that will ultimately lead to death. It is possible that the same mechanisms that enable older adults to reduce the disability associated with chronic diseases, such as greater resilience, also allow them to prolong life in the face of declining health.[17] Study of elderly with chronic diseases in West Bengal reported 17.47% (80/458) elderly with chronic diseases were disabled and disabilities were more among >70 year old, females and in illiterate elderly. Activities of Daily Living scale was used to ascertain disabilities while we used BRIGHT questionnaire.[13]

14.7% (51/346) showed symptoms of psychological morbidities like feeling down, depressed or hopeless and 6.6% (23/346) had difficulties in making everyday activities decisions.

20/51 and 6/23 respectively had not yet consulted to physicians for these symptoms.

The proportion of unemployment due to old age increased from 19.08% to 54.6%. More proportion of females became unemployed due to old age (58%). 45.4% elderly in our study were working for livelihood. As per NSSO survey in India, nearly 40 % of persons aged 60 years and above were working. 66% and 23% elderly men and women in rural area were still working while in urban area 39% and 7% elderly men and women were working.[11] Hidden and unidentified burden of disabilities may contribute to increased and earlier onset of unemployment in elderly. As fertility is declining and life expectancy is increasing we are observing shift from child dependency to old age dependency.[3] Disabilities among elderly were associated with unemployment in our study.

Social relationships affect a range of health outcomes, including mental health, physical health, health habits and mortality risk. Socially active lifestyle is associated with better health and longer life.[13,18] Losses in physical function and self-care capacities in elderly lead to reduced social interactions. In our study too, disabled elderly as well as elderly with diagnosed chronic conditions had poor social interactions. Extent of social relationship may be as much a consequence of disability as it is a cause. Social engagement may enable older persons to help maintain their functional abilities to some extent.

As secondary outcome, study highlights general dissatisfaction of elderly for government health facilities over private health facilities and points to need of establishment of specialised geriatric clinics with geriatric counseling centers. They can also identify elderly with disability at the earliest and can also help them to cope up with problems of ageing.

Participation in recreational activities unrelated to fitness increases survival and has other positive health effects for older adults.[19] But very few (6.6%) elderly in our study had recreational activities at least once in two weeks.

Case finding of geriatric disability requires to be improved. About 65% of elderly depend on others for day to day activities and situation is even worse for elderly females as only 14 to 17% were economically independent as compared to elderly males (51-56%).[11] Elderly in our study who depended on others for different activities were 6.1% for bathing, 5.5% for combing, brushing teeth, washing hands; 6.9% for dressing. Large proportion of them had not consulted to physicians for their disabilities (Table 3).

We used BRIGHT questionnaire to assess disability. It considers dependency for day to day activities. It is useful to identify community dwelling older people with disability and excellent to rule them out of needing further assessment.[20] It can be used as part of an intervention process to detect unmet needs and to improve systematic surveillance of elderly primary care populations of the country. [9] A tool like BRIGHT questionnaire can be used as screening tool by grass root level worker. Well educated elderly can be trained for periodical self assessment; even any family member near relative can have check on disability status of elderly using such kind of tool.

Unmet needs identified were improved case finding of disabilities among elderly and improved geriatric care. Operational research is required to leverage life skills of elderly for betterment of new generation, so that they will feel to be needed by the community.

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