

Development and validation of perceived health problem questionnaire for elderly population

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Abstract:

Introduction: Health problem screening can assist in the timely provision of healthcare services to older adults with declining function and improve their quality of life. There is limited tool to measure perceived health problem of elderly people in India. **Materials and Methods:** A non-experimental approach as well as descriptive survey was conducted to collect the data after taking written consent from the participants. The data were collected from 239 elderly people (>65yrs) who were selected with help of random sampling from Paschim Medinipur, W.B in community setting. They were assessed using 23 item questionnaire developed by selecting items from two other questionnaires and based on expert opinion. Reliability and validity were estimated. Factor analysis was done for item reduction. Items which had negative correlation with full scale form were removed from the questionnaire. **Results:** The final questionnaire (Bengali) had 19 items -12 items for activities of daily living, 5 items for perceived health problem and 2 items for psychological problems. Internal consistency reliability was 0.86. **Conclusion:** The perceived health problem questionnaire is reliable enough to measure perceived health problem of elderly people.

Key words: Elderly people, Perceived health problem,

I. Introduction

Worldwide increase in longevity has shifted the age distribution toward older populations.^[1] Globally, the number of older persons (60 years or over) will nearly triple, increasing from 606 million in 2000 to nearly 1.9 billion by 2050. 6 of every 10 of those older persons live today in less developed regions, by 2050, 8 of every 10 will do so. An even more marked increase is expected in the number of the oldest-old (80 years or over) at the global level: from 69 million in 2000 to 377 million in 2050. In less developed regions, the rise will be from 32 million to 265 million, again implying that most oldest old will live in less developed countries by 2050. In India the size of the elderly population, that is, persons above the age of 60 years is growing fast. The absolute number in India increased from 76 million in 2001 to 100 millions in 2011.^[2] Population aging generates many challenges and sparks concerns about the pace of future economic growth, the operation and financial integrity of healthcare, pension systems and the well-being of the elderly.^[3]

With a rapidly ageing population, a major public health concern is the increasing proportion of the population that is at higher risk of acquiring disabilities that affect independence, such as reduced mobility, vision loss, hearing loss and dementia. Health status is an important factor that has a significant impact on the quality of life of an elderly population. The major elements of health status are perceived health, especially psychological well-being, chronic illnesses, and functional status^[4]. Various studies have shown that perceived health declines with age, and the effects of ill health impact on many areas of daily activity. Moreover, elderly patients are generally perceived to be more reluctant to seek health care for ailments.^[5,6] Therefore, understanding elderly health problems and health-seeking behaviour is prerequisite for providing comprehensive geriatric care to them.

Well-conducted epidemiological studies in different populations of community-dwelling older adults have shown that screening of physical function, when conducted by trained personnel using a variety of tools, is able to identify older persons who are at risk of adverse outcomes^[7]. Functional screening can assist in the timely provision of healthcare services to older adults with declining function and improve their quality of life. However, studies show that primary care physicians do not address geriatric conditions adequately in practice and most efforts to change physicians' practice behaviors have been ineffective or too expensive to implement and sustain^[8]. Most of the community dwelling elderly are not economically solvent so they can spare money to do so many investigations, and it is also troublesome for them to attend outpatient department which are overcrowded and time consuming to consult with a medical person. So it will be easy if there is availability of a simplified tool to screen out the problem by health worker at primary health sector.

Assessment of frailty has the potential to aid in prognostication for the older community dwelling palliative population The Vulnerable Elders Survey (VES) is an easy to administer validated screening tool to detect a frail population^[9], but the main limitation of this tool is that it is assessing only three domains like falls, incontinence, cognitive impairment and it was developed based on population of western United States. Another tool like 'the Comprehensive Geriatric Assessment' (CGA) takes long time to administer and is based on

population of united states.^[10] In Indian context so far no standard tool has been developed to measure perceived health problem. Therefore it is a dire need to develop a tool of this type so that community health workers can screen the geriatric population easily.

Objectives:

To develop a perceived health problem questionnaire (Bengali) to identify older persons at risk for health deterioration and can be administered by primary health workers at the community level.

II. Materials and Methods:

A non-experimental approach as well as descriptive survey was conducted to collect the data after taking written consent from the participants. The data were collected from 239 elderly people (>65yrs) who were selected with help of random sampling from Paschim Medinipur, W.B in community setting.

Development of Perceived Health Problem Questionnaire

Item generation: items to assess perceived health problems were selected from two questionnaires vulnerable elderly survey (13 items)^[8] and comprehensive geriatric assessment (8 items).^[11] 2 additional items to enable comprehensive coverage of all systems were added on expert advice. Thus, a 23-item questionnaire was developed to assess perceived health problems among elderly people. There are 11 items to assess functional status (Activities of daily living) and rest 12 items to assess physiological components of body system, addiction and self rated health. The questionnaire was in the checklist format that is each item should be answered as 'yes/ No'.

The overall health status as perceived by the participant was rated using a scoring system giving 1 point for the presence of each complaint or symptom of poor health and zero points for the absence of such complaints or symptoms. Content validity of the questionnaire was established with the help of experts. 10% of elderly with problem as detected by the investigator sent to S.S.K.M hospital, Kolkata, for multi departmental investigation by the respective clinician, they also agree with the same problems among elderly. 10 % of elderly who had no health problem, selected randomly and sent to clinicians for identification of health problem, the findings were the same with the investigator. Sensitivity of the instrument was 90% and specificity was 80%.

III. Results:

Socio demographic characteristics of the subjects

The age of the subjects ranged from 65-75 with the mean age of 69 years. Three fourth of the subjects who have participated in the study were female. Majority (87%) of the subjects were having the primary level educational background. 96.4 % of the subjects reported that they are having their children.

Factor analysis and item reduction:

Factor analysis was carried out using item-item correlation (tetracoric) matrix data.

Out of the 23 item questionnaire self rated health was answered same by all subjects so this item was removed from the factor analysis. The 22 item scale initial Cronbach alpha was 0.829. As per table No 2 principal component factor analysis was done to extract the initial factors. Hearing, malnutrition and addiction had negative correlation with full scale form hence these items were removed. After removing these items the Cronbach alpha of 19 items was 0.868.

As shown in table No: 3 rotated factor structures of the 19 items yielded six factors with Eigen value greater than 1. However factor 6 had only one item loading to it, so this (Respiratory problem) factor was deleted. Therefore, together 5 factors determined 72.63% of the variance among the observed variables. The final questionnaire had 19 items -12 items for activities of daily living, 5 items for physical problem and 2 items for psychological problems.

IV. Discussion

One of the major elements of health status of elderly is perceived health^[4] and early surveillance of the health needs of this population is required for the provision of cost effective services. However no adequate tool has been developed to measure subjective component (perceived health) of health of elderly. Hence this study was undertaken with objective of developing a questionnaire related to perceived health problem of elderly and the study has developed a short tool to detect health problem of elderly and the tool has adequate psychometric property. The instrument compared favorably with other available instruments by being in local language and reasonably in short form.

Limitation

19 items perceived health problem questionnaire does not include objective measures of disease of elderly people and the data was collected from the local elderly people of West Bengal. However in the absence of any other similar validated questionnaire, perceived health problem questionnaire is a viable and easy method to assess the problems of elderly. Moreover, large scale surveys to find out the problems of elderly are expensive, time consuming and may be plagued by non response.^[12,13] In this context perceived health problem questionnaire is inexpensive and can be administered by grass root health workers.

V. Conclusion

Based on the analysis of questionnaire it can be concluded that the 19 item perceived health questionnaire is a reliable and valid tool for assessing the perceived health problems among elderly people.

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**Table No 1: Frequency and percentage of problems based on perceived health problem scale:
N=239**

S.No	Items	Frequency	Percentage
1	Bathing	36	15.1
2	Shopping	63	26.4
3	Money Management	80	33.4
4	Transfer	62	25.9
5	Light housework	27	11.3
6	Kneeling	178	74.5
7	housework	187	78.2
8	Lifting	45	18.8
9	carrying	80	33.5
10	Walking	54	22.6
11	Writing	90	37.7
12	Visual	144	60.3
13	Urinary	18	7.5
14	Gait	80	33.5
15	Cardio vascular	72	30.1
16	Respiratory	71	29.7
17	Endocrine	35	14.6
18	Depression	81	33.9
19	Cognition	178	74.5

**Table No 2: Item correlation of 22 item perceived health problem scale
N=239**

Item	ITC*	§if Item Deleted
Bathing	.508	.796
Shopping	.720	.783
Money management	.612	.788
Transfer	.613	.789
Light housework	.686	.791
Kneeling,	.574	.791
Housework	.544	.793
Lifting	.569	.792
Carrying	.463	.795
Walking	.592	.790
Writing	.448	.796
Visual	.493	.793
Hearing	-.083	.840
Urinary	.004	.812
Malnutrition	-.120	.823
Gait	.732	.771
Cardiovascular	.103	.821
Respiratory	.204	.808
Endocrine	.361	.801
Addiction	-.227	.819
Depression	.472	.795
Cognition	.323	.802

*item-total correlation, § Cronbach alpha

Table No 3: Rotated component matrix of 19 item perceived health questionnaire after factor analysis and item reduction

Item	Factor loadings					
	I	II	III	IV	V	VI
Bathing		.780				
Shopping		.920				
Moneymanagement		.860				
Transfer		.778		.402		
Light housework	.732	.519				
Kneeling,			.903			
housework			.905			
Lifting	.829					
Carrying	.767					
Walking	.779				.422	
Writing	.565			.514		
Visual					.673	
Urinary					.811	
Gait	.655			.441		
Cardiovascular		.454		-.545	.381	
Respiratory						.925
Endocrine	.788					
Depression		.360		.670		
Cognition			.355	.738		

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