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Comparison of complaints reported with clinical findings in old age persons or a rural area: An exploratory study

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Abstract

Complaints reported and findings of clinical examination are alternative data sources. These, for vision, hearing and cough, are compared in an exploratory study of 171 persons of age 60 years and above residing in 6 villages of Mehrauli Block, Delhi. Validity indices, namely, efficiency, sensitivity, specificity, positive predictivity and negative predictivity are reported. The agreement between complaints and clinical findings ranged between 61 percent and 84 percent. This suggests that a survey of complaints in this population is not entirely a futile exercise. For vision and for hearing, complaints are found to provide a good lower bound on prevalence rate. But cough complaints fail to provide any useful clue to the findings of clinical examination. Thus, some areas in which a survey of complaints on old age persons of our rural area could be useful are indicated.

Introduction

Old age persons in an Indian village command a lot of respect yet get little health attention. They may be socially secure but suffer from a variety of health problems. Even though only about 6 percent of India's population is 60 years and above but their problems are unique and need delineation. In appreciation of this need a study of persons of age 60 years and above was taken up in 6 villages of Mehrauli Block, Delhi. These people were first interviewed for various complaints and were later subjected to a clinical examination. At the time of data analysis, it was discovered that there are sometimes glaring disparities between the complaints reported and the findings of the clinical examination. This methodologic aspect of alternative sources of data has not yet received full attention but is of strategic importance because of the following reasons.

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- (i) Surveys on complaints are much more easy to carry out and are much less expensive. It would be immensely useful to epidemiologist to know which aspects of health are adequately studied merely by survey of complaints and for which aspects clinical examination (and/or investigations) would be necessary.
- (ii) If somehow a multiplicative factor could be reliably established which, when applied to the number of interview positive (negative) cases, could determine the number of examination positives (negatives) then, at least to find out incidence or prevalence rates, expensive examination surveys would not be necessary.
- (iii) Different data sources—interview on complaints against findings of clinical examination may lead to different results. Some times this methodologic variation is not fully appreciated as the cause of different results. The magnitude of association between any two factors could be substantially altered by the impact of different data sources in a case where one source happens to yield much higher estimate of prevalence/incidence than the other.
- (iv) Experience suggests that old age people generally are more amenable to interview than to examination, particularly when it is a community survey. It is therefore of special importance to evaluate "validity" of interview methods as a tool to elicit health condition of these people.
- (v) Old age persons in our rural area may be speculated to have typical perception of their personal health problems which could confound with the feeling of helplessness in some cases. Complaints when compared with the findings of clinical examination, may give some indication of this perception.

Material and Methods

The investigation was carried out in 6 villages of Mehrauli Block, Delhi. The field work was done from October to December, 1978. The total population of these villages was 9244 and the total number of families was 1326. All the persons of age 60 years and above in every third family were the respondents for the present study. The sampling fraction of one-third was determined on the basis of availability of time and resources. The selected families had 184 respondents in all, out of which 171 (92.97%) could be contacted. They were interviewed specifically on various complaints listed out in a drawn out schedule. For example it was asked if they have any complaint, among others on hearing, on vision and on cough. No reference to severity of complaint was made during the interview.

Thus, it was expected that the response will be according to their perception of the problem. Each person was later on subjected to complete clinical examination. The investigations on each respondent were done in a domiciliary setting by a qualified person—interviews by a medico-social worker and clinical examination by a doctor. Two social workers and a team of 6 doctors were engaged in the study, who were trained before hand to enhance uniformity. For the eye examination, they were requested to come to the health centre being run by the Department in each of these villages. Out of the 171 respondents, only 137 (80.1%) reported for eye

examination. Age-sex distribution of those 34 (19.9%), who did not report for eye examination, was apparently similar ($P>0.05$) to those who reported. There was no significant difference ($P>0.05$) in their education status as well. Out of the 34 non-respondents, 10 (29.4%) spontaneously reported vision complaints. In the remaining 137 who appeared for the eye examination, 46 (33.6%) had spontaneous vision complaints. This difference also is not significant ($P>0.05$). Thus, there is no reason to believe that this non-response could substantially vitiate the results.

The information was collected on several aspects of physical health of respondents. These findings are reported separately. On the three aspects, viz., vision, hearing and cough, information was available both from the complaints as well as from the clinical examination. These may not be the best aspects for studying differences between survey data and clinical examination, but happen to be the only aspects on which information from both sources was available. Thus, the findings are restricted to vision, hearing and cough only.

Snellen's chart was used for vision test and the condition was considered analogous to "severe" when both the eyes had diminished vision. For hearing, whisper test was used and mild/severe cases categorized accordingly. In relation to complaint of cough (of at least two week's duration), any established case of tuberculosis or a case with at least two of the findings—coughing, breathlessness and positive lung finding like rhonchi and crepitations—has been categorized as severe and all others with any positive findings as mild. Questions related to severity were not asked during the interview. Therefore, the complaints are not categorized as mild or severe.

Results

Table I, II & III show cross tabulation of reporting of complaints with the related findings on clinical examination. Such tabulation was initially done for males and females separately but the data were finally pooled when no sex difference was observed. The results of Tables I, II & III, in brief are as follows. For vision and for hearing, the proportion of positives on clinical examination is higher than the proportion reporting complaint. This is not so for cough. In each case, positive finding on clinical examination was significantly ($P<0.01$ in each case) more common in those reporting complaint than those not reporting complaint. The odds ratio for

Table 1
Reporting of complaint of diminished vision compared to examination findings

Vision complaint	Findings on examination			Vision not diminished	Total examined
	Diminished vision		Total		
	One Eye	Both eyes			
Reported	9	43	52	4	56 (40.9)
Not Reported	21	29	50	31	81 (59.1)
Total	30	72	102	35	137*(100.0)
			(74.5)	(25.5)	(100.0)

Table 2
Reporting of hearing loss compared to findings of clinical examination

	Findings on examination		Total

Hearing complaint	Positive			Negative	examined
	Mild	Severe	Total		
Reported	10	4	14	1	15(8.8)
Not Reported	27	0	27	129	156(91.2)
Total	37	4	41	130	171*(100.0)
			(24)	(76)	(100.0)

Table 3

Reporting of cough complaint compared to findings of clinical examination

Cough complaint	Findings on examination			Negative	Total examined
	Positive				
	Mild	Severe	Total		
Reported	25	18	43	31	74(43.3)
Not Reported	17	6	23	74	97(56.7)
Total	42	24	66	105	171*(100.0)
			(38.6)	(61.4)	(100.0)

Table 4

Values of various validity indices of reporting of complaints against findings of clinical examinations

Index	Complaint of		
	Vision	Hearing	Cough
Efficiency	0.61	0.84	0.68
Sensitivity	0.51	0.64	0.65
Specificity	0.89	0.99	0.70
Positive predictivity	0.93	0.93	0.58
Negative predictivity	0.38	0.83	0.76

positive clinical finding in the presence of complaint was as high as 66.9 for hearing and relatively lower for vision (8.1) and for cough (4.5). For vision as well as for hearing, reporting of complaint was significantly ($P < 0.01$ in each case) associated with the severity of the condition. This was not so for cough related findings.

Table IV shows values of the various "validity" indices (6). The present data fulfills conditions for calculation of these indices. Usefulness of these indices in comparison studies is amply demonstrated (6). In the present context, the values of these indices indicate various aspects of 'goodness' of complaints in assessing the condition revealed by examination.

Discussion

Interview and examination methods to assess health condition have their own merits and demerits. Doubt has been expressed about the utility of interview method for science of medicine (7). Nevertheless, in a society like ours in India, which lack qualified personnel to examine each case, complaints could be an important source of information. Efficiency values obtained in the present study show that complaints were in agreement with examination findings in a minimum of 61% cases.

This suggests that a survey of complaints on old age person of our rural area is not entirely a futile exercise. However, because of widely different odds ratios, the present study does not suggest any multiplicative factor which could be applied to the number of complaints positives to obtain the number of examination positives. Perception of illness, not the disease, prompts the person to complain (8). Old persons in rural area do not attach much importance to their illness is clear from the fact that the percentage reporting complaint was less than the percentage found positives on examination in case of both vision and hearing. In both cases, the positive predictivity of complaints is very high (0.93), i.e., once complaint was reported, there was a high likelihood of the person to be positive on examination as well. Thus, not many of the old persons unnecessarily reported complaint. Since there were examination positives among those who did not report complaint, a survey of complaints on vision and hearing provides a 'good' lower bound on the prevalence rate. Other positives may not have reported complaint because of lack of awareness of the problem or because they thought that reporting of complaint would not serve their purpose.

A high specificity – 0.99 for hearing and 0.89 for vision – is a corollary to the high positive predictivity discussed above. No other index allows any other useful conclusion. Value of each "validity" index for cough was low. This is not unexpected because of non-specific nature of the complaint of cough. Also, our clinical examination in the context of cough complaint is not comprehensive because of absence of investigations like x-ray, sputum test, etc. A survey of complaints on a parameter like cough may not be useful at all.

In a study in the U.S.A., it was observed that conditions which are chronic, causing pain, disability, which are severe or are costly in treatment are well reported. The present analysis substantiates that the conditions which cause disability (diminished vision in both eyes) or are severe (hearing loss) are well reported. However, this analysis is exploratory only as it covers limited aspects, is a by-product of a study done with some other objective, and is based on a sample from a specific area. Further studies are needed to find out the magnitude and direction of the differences between complaints and the findings of examination and to establish factors responsible for this difference. Then only the areas where interviews on complaints could be useful can be fully identified.

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