

A postal screening questionnaire in preventive geriatric care

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SUMMARY. A postal questionnaire was introduced as a screening procedure for a comprehensive geriatric assessment programme in general practice. It had a response rate of 81 per cent, a sensitivity of 0.95, a specificity of 0.68, and a predictive value of 0.91. The use of this screening procedure could reduce the workload of an assessment programme by one fifth.

Introduction

REPORTS from both hospital and general practice have stressed that there is an iceberg of unreported ill health in the elderly (Williamson *et al.*, 1964; Thomas, 1968; Lowther *et al.*, 1970; Irwin, 1971). Ill health in old age is made up of many and varied problems, a large proportion of which are unrecognized by the patient but can be alleviated to a degree if a system of screening and assessment is introduced.

A programme of geriatric assessment is now part of the routine general practitioner service offered at Woodside Health Centre (Barber and Wallis, 1976). Its benefits to the elderly population have been reported (Barber and Wallis, 1978) but it has the major drawback of being available only to those patients selected by the general practitioner or health visitor for comprehensive assessment. The introduction of a system of routine periodic assessment of all elderly patients, however laudable, becomes less practical when the implications of time, cost, and manpower are considered. Assessment of selected elderly patients is possible as part of routine general practice work: a comprehensive system of preventive geriatric care requires that those who might benefit from assessment can be identified by some simple but effective screening procedure.

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Aim

This paper describes the development and validation of a postal screening questionnaire in the identification of those elderly patients in need of assessment. The study attempted to answer two questions: was this relatively impersonal approach acceptable to elderly patients, and was the screening letter sufficiently sensitive in that it would identify those patients in need of assessment?

Method

The study was completed in a group practice in Woodside Health Centre, Glasgow. The centre is in an area of intense urban redevelopment and the population served is biased towards social classes 3, 4, and 5. The practice has a list of 7,862 patients of whom 362 (4.6 per cent) are aged 70 or over. Of this group, 121 patients were already receiving supportive visiting so the sample used for this study was drawn from a total of 241 patients. The practice has three full-time and two part-time partners, two health visitors, and one district nurse.

Records

The geriatric assessment record used at Woodside Health Centre is concerned with medicosocial problems, social needs, and symptoms. Its development and content have been reported (Barber and Wallis, 1976). From this record nine questions were chosen (Table 1), each of which represented an important aspect of health and well-being and was so phrased that the answer 'Yes' to any one would be considered an indicator of an 'at risk' state, the patient thus being in need of assessment. The selection and phrasing of the questions involved discussions with members of the University Department of Geriatric Medicine at Glasgow and several trial runs of the questionnaire to ensure that each question was unambiguous and easily understood.

The names of the elderly patients of 70 years or over were selected at random from the practice age/sex register, excluding all those patients who had previously

been assessed and were receiving supportive visiting. Groups of 20 patients were selected at about four-weekly intervals until a total of 100 patients had been included in the study. Each patient was sent a cyclostyled letter from the general practitioner, the screening letter, and a stamped addressed reply envelope. Two weeks were allowed for reply. The patient was considered to require assessment if he answered 'Yes' to any of the nine questions or if no reply was received within two weeks. The completed screening letters were divided into two groups depending on whether or not they indicated that assessment was required. Each patient was then assessed and the results compared with the impressions given by the screening letter reply.

Results

The age/sex distribution of patients included in the study is given in Table 2.

Of the 102 questionnaires sent, 83 (81 per cent) were completed and returned. Of the 19 non-responders, all of whom were visited, six refused to complete the questionnaire and eight were not located at the home address. The remaining five accepted the questionnaire. Of the 88 patients who thus completed the questionnaire, 83 agreed to subsequent assessment. Of the other five patients, one refused assessment, three were out at work all day, and one was to be away from home for a prolonged period (Table 3).

Using the criterion that one or more 'Yes' answers to the screening letter indicated that the patient was 'at

risk' and thus in need of assessment, 67 patients (81 per cent) were identified as having problems and 16 as being in satisfactory health.

All 83 patients were seen by the authors and the Woodside assessment record was completed for each patient. Hitherto unknown problems requiring attention were found in 61 of the 67 patients identified as having problems (91 per cent). In the remaining six patients no problems were detected. The 16 patients identified by the screening questionnaire as having no active problems were found on assessment to have this confirmed in 13 (81 per cent). The remaining three patients were found to have problems in need of action which had not been indicated by the questionnaire answers (Table 4).

Discussion

The high level of unknown active problems in the elderly patients sampled in this study confirms the findings of other workers. The results of assessment, however, show that 19 patients (22 per cent) were in normal health and thus not in need of assessment.

Ideally, perhaps, all patients over 70 years of age should be assessed periodically and comprehensively but this work is expensive in terms of health visitor and doctor time. The use of a screening letter, however, seems to be acceptable to the elderly patient and can reduce this workload by 20 per cent.

Kreig and colleagues (1975) have pointed out that clinicians ordering laboratory tests should consider the measures of reliability of the test. Unless the sensitivity,

Table 1. Questions in the screening letter.

Do you live on your own?	Yes	No
Are you without a relative you could call on for help?	Yes	No
Do you depend on someone for regular help?	Yes	No
Are there any days when you are unable to have a hot meal?	Yes	No
Are you confined to your home through ill health?	Yes	No
Is there anything about your health causing you concern or difficulty?	Yes	No
Do you have difficulty with vision?	Yes	No
Do you have difficulty with hearing?	Yes	No
Have you been in hospital during the past year?	Yes	No

Table 3. Acceptability of screening and assessment.

Questionnaires sent	102	
Questionnaires returned	83	
Questionnaires not returned	19 — Visited	
	Refused questionnaire	6
	Not located	8
	Accepted questionnaire	5
Accepted questionnaire	88	
Accepted assessment	83 — Refused assessment	1
	'Out at work all day'	3
	Away	1

Table 2. Age/sex analysis of patients in study.

	Age groups								Totals
	70 to 74		75 to 79		80 to 84		85 to 89		
	Male	Female	Male	Female	Male	Female	Male	Female	
Patients receiving questionnaire	32	31	10	21	0	5	0	3	102
Patients accepting assessment	26	26	8	17	0	4	0	2	83

Table 4. Results of screening letter.

Number of patients assessed	83
True positive replies (problems confirmed)	61
False positive replies	6
True negative replies (no problems confirmed)	13
False negative replies	3

specificity, and predictive values are assessed, the test loses much of its value. The same argument can be used in respect of other aspects of clinical work.

The sensitivity of the screening letter indicates the proportion of 'positive problem' replies in patients who are found to have hitherto unknown problems. From this study the sensitivity of the letter is 61/64 (0.95). The specificity of the letter indicates the proportion of 'no problem' replies in those patients in good normal health (13/19 or 0.68). The predictive value varies not only with sensitivity and specificity but also with the incidence of unknown problems in elderly patients. The letter has a predictive value of 61/67 or 0.91 and can thus be expected to predict correctly which patients do and which patients do not require assessment in 91 out of every 100 patients.

It is important that the screening procedure should be biased more towards false positives so as to minimize the possibility that patients with real and important problems might go undetected. The study shows that while six false positives were reported, in only three patients (3.6 per cent) would reliance on the letter have meant that assessment was not completed and that the active problems found in these patients would not thus have been recognized. In matters of life and death even a low false-negative rate would be unacceptable: the problems found in these three patients were not, however, of this degree (loss of energy, dyspepsia, defective diet due to absence of teeth).

Work that has been reported on the Woodside geriatric assessment system has strengthened the belief that there is a need for such a comprehensive service to be available to those patients who require it. Our findings suggest that a simple screening letter is an acceptable method of detecting those elderly patients who would benefit from assessment.

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