

Involvement of the primary health care team in coronary heart disease prevention

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SUMMARY

Background. Recent years have seen a vast increase in the amount of health promotion activity undertaken in general practice.

Aim. This study set out to identify the level of general practitioner and nurse involvement in activities aimed at coronary heart disease prevention and to examine variations in involvement.

Method. A questionnaire survey was undertaken of a sample of general practitioners across England and the nurses who worked in their practices.

Results. Of 1696 randomly selected general practitioners 64% completed a questionnaire, of 928 practice nurses 71% responded and of 682 health visitors and 679 district nurses 52% and 40% responded, respectively. Of the general practitioners 94% reported that they were involved in assessing lifestyle risk factors in the routine consultation and regular assessments most commonly involved blood pressure testing and inquiry about smoking status. Eighty six per cent of practices were reported by the practice nurse as having well person clinics; these clinics were usually run by the practice nurse. Clinics for the management of specific lifestyle risk factors were also usually run by practice nurses, although many doctors were involved in hypertension clinics and cholesterol clinics. Health visitors and district nurses had a low level of involvement in this practice based clinic activity. Involvement of general practitioners and practice nurses in coronary heart disease prevention was associated with training in health promotion and positive attitudes towards prevention and health promotion. The level of involvement of practice nurses in health promotion was associated with the support received from primary health care facilitators, family health services authorities and district health authorities.

Conclusion. Members of the primary health care team appeared to have their own distinct area of preventive activity. However, this division did not appear to be a result of organized teamwork and deployment of skills and expertise according to a clearly defined management protocol. Instead it seemed to be a product of general practitioner contract and management arrangements which tended to encourage an approach to general practice health promotion which revolved around the practice nurse and which hindered the development of a broader team based

approach to planning and delivery of health promotion in relation to the needs of the practice population.

Keywords: coronary risk factors; coronary disease; health promotion; primary health care team; GP services.

Introduction

THE enthusiasm for anticipatory care in general practice which was generated in the early 1980s¹ has been supported by the government in the new contract for general practitioners,² and a key role is prescribed for the primary health care team in the white paper *The health of the nation* where one of the target areas is coronary heart disease prevention.³ Evidence from field trials and evaluation studies shows that general practitioners can be effective in modifying risk factors^{4,5} particularly in giving advice about stopping smoking which is claimed to be a cost-effective method of controlling coronary heart disease.⁶ Another low cost solution to health promotion has been said to be the employment of the practice nurse by the general practitioner to undertake delegated health promotion activities which are reimbursable.⁷ Attached nurses have played important health promotion roles within the practice⁸ and health visitors in particular learn about health promotion as a integral part of their post-basic training.⁹ Evidence from the United Kingdom⁷ and the United States of America¹⁰ shows that community nurses, with support from facilitators, can be effective in identifying risk factors for cardiovascular disease.

Despite this move towards anticipatory care in general practice there is still a dearth of evidence, at least at the national level, about the current level of provision of coronary heart disease related preventive activities. Local¹¹ and regional studies¹² and projects based on self selected samples¹³ suggest that hypertension screening and giving advice about stopping cigarette smoking are the more common practices adopted by general practitioners, although information about exactly what these activities involve is limited. Information on the extent of blood cholesterol level testing is rare.¹⁴ However, most of these studies were carried out before the new general practitioner contract was implemented and since then the changes in the remuneration system are believed to have led to an increase in the number of health promotion clinics provided by the practice nurse.

A study was therefore undertaken to provide information from a representative sample across England about the level of general practitioner and nurse involvement in activities aimed at coronary heart disease prevention. A further objective was to examine variations in involvement.

Method

Sample

An approximate one in 13 study sample of general practitioners was randomly selected from the *Doctors' list* for England which consisted of the population of unrestricted principals in England in 1990. After a check the original random sample of 2000 was reduced to 1696 owing to the exclusion of doctors who had recently retired, died, who were not working owing to long term illness, who no longer worked in England or had moved and their new address could not be traced. Previously piloted postal ques-

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© British Journal of General Practice, 1994, 44, 224-228.

tionnaires were sent out to the 1696 general practitioners in May 1991. Non-respondents received four reminders and a telephone call.

A sample of nurses was identified from the sample of general practitioners who completed the questionnaires and who reported employment of practice nurses or attachment of health visitors and district nurses (district health authority staff). A total of 928 practice nurses, 682 health visitors and 679 district nurses were identified and were each sent a questionnaire plus two reminders in summer and autumn 1991.

Involvement in coronary heart disease prevention

To assess the extent of general practitioner and nurse involvement in coronary heart disease prevention, information was collected about assessment of lifestyle risk factors in routine consultations and in clinics. It had been assumed that opportunistic work would be general practitioner led and that clinics would be more likely to be run by a nurse. Hence, more detailed information was gathered from general practitioners about the content of opportunistic work and from nurses about the content and operation of clinics. However, both groups were asked if they carried out opportunistic risk assessment and if a range of tests and measurements were undertaken: measurement of blood pressure, cholesterol level, height, weight, and urine tests. The general practitioners were also asked about which, if any, of the following factors they investigated: oral contraceptive use, smoking status, alcohol intake, diet, exercise, stress, menopause, working environment, housing and socioeconomic status and the regularity of each of these assessments (always, occasionally or whether a protocol was used).

Questions were also asked about health promotion clinics, namely the type of clinic, which primary health care team members worked in the clinic, and the number of hours each of them spent in the clinic each week. Data are presented from the general practitioner survey about the number of general practitioners involved in health promotion clinic work. The practice nurse survey was the source of information about activities in the clinics. Cross-referencing of the two surveys was carried out to validate data.

To gain a broader picture of levels of doctor and nurse involvement in prevention more general indices were constructed. For nurses, involvement was measured by the number of hours spent in health promotion clinics per week to determine the percentage of the working week spent in health promotion. It was more difficult to quantify doctors' involvement because the majority of their health promotion work was carried out opportunistically in the consultation. Thus, indices for their involvement incorporated risk factor assessment both in the consultation and in the clinic. The scale of overall general practitioner involvement in health promotion was made up of three subscales: involvement in opportunistic risk assessment, in well person clinics and in risk management clinics.

To determine general practitioners' involvement in opportunistic risk assessment, two points were allocated if they carried out both multiple risk factor assessment and single risk factor assessment or multiple risk factor assessment only and one point if they carried out single risk factor assessment. The questions about which tests, measurements and factors were used as part of the opportunistic risk assessment, as described earlier, were also included in the scale. For each test, measurement and factor assessed, two points were allocated if the response was 'always' or 'according to a defined protocol' and one point for 'occasionally'. It was possible, therefore, to score a maximum of 32 points.

To measure general practitioners' involvement in well person clinics two points were allocated if the general practitioners car-

ried out the risk assessment in the clinic by themselves and one point if they carried it out jointly with the practice nurse.

Regarding the level of general practitioner involvement in risk management clinics, for each type of clinic two points were allocated if they ran it by themselves and one point if they ran it jointly. Given that eight types of clinics were specified it was possible to score 16 points.

These three subscales contributed to the main scale of general practitioner overall involvement but were weighted with 25% of the score being made up from the opportunistic risk assessment score, 25% from the well person clinic scale and 50% from the risk management clinic scale. The aim was to weight risk assessment and risk management equally, and for the sake of simplicity the scores were converted into percentages.

Variations in involvement

To explore variations in levels of general practitioner and nurse involvement in prevention, information was collected about the organization and location of the practice, the characteristics of the catchment population, and the workload of the practice. Data were collected on whether or not there was support from the district health authority, family health services authority and primary health care facilitator. Information was also gathered on whether respondents had had training in health promotion, their personal characteristics, and their attitudes to the prevention of coronary heart disease. The doctors were asked if they agreed strongly, agreed a little, neither agreed nor disagreed, disagreed a little or disagreed strongly with 16 piloted, attitude statements concerning the role of the general practitioner specifically in prevention and the possible obstacles to involvement. Seventeen similar Likert type attitude statements with five point scales were given to the practice nurses.

Data were analysed using the chi square test and *t* tests.

Results

Of the 1696 general practitioners sent questionnaires, 1092 (64.4%) responded. Respondents were compared with non-respondents by age, sex, partnership size, list size, regional location and Jarman index score. The only marked difference between respondents and non-respondents was that women doctors were more likely to take part in the study than men doctors.

A total of 661 practice nurses (71.2%), 355 health visitors (52.1%) and 271 district nurses (39.9%) responded to the questionnaire. There was no information available on the characteristics of health visitor and district nurse non-respondents, so the representiveness of the sample cannot be judged.

Involvement in coronary heart disease prevention

Opportunistic risk assessment. Of the general practitioners 94.3% reported that they were involved in assessing lifestyle risk factors in routine consultations. Most doctors (968, 88.6%) were involved in multiple risk factor assessment. In terms of tests and measurements, only blood pressure measurement was reported to be always carried out by the majority of doctors and smoking status was the only other risk factor to be consistently enquired about as part of opportunistic risk assessment (Table 1).

Of the 661 practice nurses 98.0% said they enquired about risk factors in consultations and of these 61.0% reported they did this regularly. Of the 661 practice nurses 98.2% stated that they routinely asked about smoking status, weight (97.3%), blood pressure level (97.4%) and cholesterol level (86.5%).

Risk assessment in well person and risk management clinics. Information from both general practitioners and practice nurses corresponded concerning provision of clinics. According to prac-

Table 1. Tests and measurements carried out and factors enquired about by general practitioners when assessing risk opportunistically.

	% of 1030 GPs undertaking assessment ^a			
	Always	Using a protocol	Occasionally	Never
<i>Tests and measurements</i>				
Blood pressure	63.8	18.1	17.0	0
Weight	36.4	22.9	31.6	2.6
Urine	32.0	22.5	35.7	3.7
Height	27.4	20.3	29.0	12.8
Cholesterol	7.7	50.3	34.3	2.2
<i>Risk factor enquiry</i>				
Smoking status	66.3	14.5	15.4	0.9
Alcohol intake	51.1	17.5	25.9	0.8
Oral contraceptive use	46.9	18.1	21.9	5.6
Diet	36.6	21.7	34.8	1.7
Exercise	32.4	18.6	38.3	3.3
Stress	22.0	14.8	46.7	6.8
Menopause	17.1	18.7	44.2	8.1
Working environment	14.0	8.3	50.9	15.3
Socioeconomic status	8.2	5.1	34.4	26.0
Housing	7.6	7.0	45.4	26.3

^aEach row does not equal 100% as not all general practitioners answered every question.

tice nurse reports, 86.4% of 661 practices held well person clinics, 80.8% well woman clinics, 71.9% diabetes clinics, 77.5% hypertension clinics, 74.0% weight clinics, 59.3% well man clinics, 41.6% cholesterol clinics, 34.0% smoking cessation clinics, 20.3% stress clinics and 8.3% alcohol management clinics.

More practice nurses were involved in clinics than general practitioners. Of the general practitioners 5.2% reported that they carried out the risk assessment in clinics and 19.8% said they collaborated with the practice nurse in these assessments. Of the 661 practice nurses, 46.1% reported that general practitioners were involved in well woman clinics and 30.1% reported that doctors were involved in well man clinics although much of this involvement was in the form of advice rather than practical assistance. Few health visitors and district nurses were involved in well person clinics (Table 2). In relation to clinics for the management of particular risk factors, the largest percentages of general practitioners reported that they were involved in hypertension clinics (43.2%) and cholesterol clinics (40.2%). High percentages of practice nurses were involved in these clinics and they worked mainly in conjunction with the general practitioner. A similar pattern of working was also reported for diabetes clinics. Once again, few health visitors or district nurses were involved. General practitioners' involvement in other risk management clinics was low according to both general practitioners and nurses. Although fewer practice nurses were involved in clinics for smoking control and stress management than in other clinics, this was compensated for by the involvement of higher numbers of other nurses.

Of the 661 practice nurses 90.6% reported that they measured height, 92.0% measured weight, 92.1% measured blood pressure, 91.4% undertook urine analysis and 92.4% enquired about lifestyle in well person clinics. In the risk management clinics, measurements varied according to the risk factor, although blood pressure recording, enquiry about lifestyle and family history were undertaken consistently. The majority of practices had a

Table 2. Practice nurse, health visitor and district nurse involvement in well person and risk management clinics.

Clinic	% involved in clinics		
	Practice nurse	Health visitor	District nurse
Well person (<i>n</i> = 571/234/172)	91.1	11.5	12.2
Well man (<i>n</i> = 392/192/155)	87.5	10.4	7.1
Well woman (<i>n</i> = 534/268/205)	88.2	12.7	58.5
Hypertension (<i>n</i> = 512/205/190)	83.4	8.8	10.0
Weight (<i>n</i> = 489/215/173)	81.2	19.1	6.4
Diabetes (<i>n</i> = 475/186/177)	79.6	25.3	11.3
Cholesterol (<i>n</i> = 275/81/89)	83.6	9.9	9.0
Alcohol (<i>n</i> = 55/31/31)	70.9	9.7	9.7
Smoking (<i>n</i> = 225/125/106)	65.8	39.2	7.5
Stress (<i>n</i> = 134/67/48)	49.3	25.4	4.2

n = number of practice nurses/health visitors/district nurses reporting presence of clinic in their practice.

protocol which outlined procedures to be undertaken in the well person clinics (between 82.3% and 89.6% of practices). It was reported by 82.8% of the practice nurses that smoking control clinics had a protocol, 93.6% reported protocols in hypertension clinics, 77.0% in stress clinics, 79.1% in weight clinics and 65.1% in alcohol clinics. Of the general practitioners 46.4% reported that they audited their records at least once a year; 51.4% of practice nurses reported that they evaluated their clinics and of these 70.1% audited notes.

The mean score on the scale of overall general practitioner involvement in health promotion was 21% (standard deviation (SD) 10%) or, in other words, on a 10 point scale the mean was 2.1. The range was 0% to 83% and the median score was 19%. For the subscales, the mean percentage score on the scale measuring general practitioner involvement in opportunistic risk assessment was 68% (SD 20%). The scores ranged from zero points to 32 points and the median percentage score was 72%. On the subscale measuring general practitioner involvement in well person clinics 76% had no involvement (zero points), 19% collaborated with a practice nurse (one point) and 5% made risk assessments by themselves (two points). On the subscale measuring involvement in risk management clinics the mean percentage score was 4% (SD 8%, median score 0%); 69% of the doctors scored zero points.

Variations in involvement

To identify the factors that might explain why some general practitioners and nurses were more involved in coronary heart disease prevention than others, statistical analysis was carried out on the relationship between a range of practice and personal characteristics and indices of involvement. The index for nurse involvement was the number of hours they spent working in health promotion clinics each week, and for the general practitioner the scale of overall general practitioner involvement was used. For practice nurses the mean number of hours spent in health promotion clinics each week was 11.4 hours, for health visitors it was 3.5 hours and for district nurses it was 0.5 hours.

Of the general practitioners 71.7% reported that they had had training in health promotion and disease prevention and this training most commonly occurred as part of in-service continuing education (in 89.0% of cases). These doctors with relevant training had a mean score on the 10 point index of involvement of 2.2 compared with a score of 1.9 for those doctors without relevant training ($P < 0.001$). The 899 general practitioners who were not trainers had a mean score of 2.1 compared with the 186

doctors who were trainers who had a mean score of 1.9 ($P<0.05$). The doctors who spent more hours on research and training per week had a higher mean score compared with those doctors who spent fewer hours on research and training ($P<0.001$). Three of the statements regarding general practitioners' attitudes to prevention were found to be significantly correlated at the $P<0.001$ level with low scores on the index of involvement: 'I find health education dull and boring', 'General practitioners should not be involved in prevention because they do not have appropriate skills,' and 'Screening creates more problems for the patient than it solves'. Doctors' workload and personal list size were not associated with level of involvement.

Practice and personal characteristics significantly associated with practice nurses' level of involvement in coronary heart disease prevention are shown in Table 3. Practice nurses who received support from the primary health care team, family health services authority and district health authority, from the facilitator and from their own support group were more involved in coronary heart disease prevention than those without such support. Moreover, the more involved the nurses were the more likely they were to have support needs. There was a significant correlation between greater involvement and higher number of courses undertaken in health promotion ($P<0.001$). Of the practice nurses 53.6% had undertaken specific training in coronary heart disease prevention but 145 nurses (41.0%) had attended only one course of one day's duration. Also, greater involvement was significantly correlated with larger practices ($P<0.01$), a higher salary ($P<0.001$) and greater degree of autonomy ($P<0.01$). Four of the statements regarding practice nurses' attitudes to prevention were found to be significantly correlated with a low level of involvement in coronary heart disease prevention: 'In general patients pay little attention to what they have been told' ($P<0.001$), 'Nurses are less qualified than general practitioners to be involved in health promotion' ($P<0.001$). 'Nurses are asked to do health promotion because general practitioners find it boring' ($P<0.05$), and 'Health education leaflets are of little use' ($P<0.01$).

Discussion

Before the results of the study can be discussed in detail, some methodological problems need to be highlighted. The smaller sample of nurses compared with general practitioners in the study was because the doctors were slow to return initial questionnaires which prolonged the sampling period and health visitors and district nurses were poor respondents. Also, there were problems with inaccuracy in general practitioner reports and unwillingness of general practitioners to cooperate further with the study. Caution must be attached to the interpretation of the results concerning health visitors and district nurses because of their low response rate. The results may distort the picture of these nurses' involvement as it is likely that nurses who were more involved in prevention returned the questionnaire. The low response rate might be because some health visitors and district nurses felt their health promotion role had been reduced and in some cases taken over by the practice nurse. Although data were cross-referenced for validation, they were based on reported information and there was no follow-up auditing of records. Self-reported information may lead to an inflation of activities and thus it may be a better indicator of what is not done than what is done.¹²

It has been suggested that there has been a vast increase in clinic based health promotion work which is mainly carried out by practice nurses and these results appear to confirm this.¹⁵ This apparent increase has probably resulted from changes in financial reimbursement with the introduction of the 1990 general practitioner contract. It is difficult to judge whether such an increase

Table 3. Practice and personal characteristics significantly associated with practice nurses' level of involvement in coronary heart disease (CHD) prevention.

Characteristic	Mean no. of hours in CHD prevention each week	t value (df)	P value
<i>Health promotion is in job description</i>			
Yes (n = 595)	10.8		
No (n = 66)	6.2	3.64 (545)	<0.001
<i>Have outside collaboration in health promotion</i>			
Yes (n = 411)	11.0		
No (n = 216)	9.3	2.52 (615)	<0.05
<i>Primary health care team helps in CHD prevention</i>			
Yes (n = 527)	10.7		
No (n = 124)	8.3	3.01 (649)	<0.01
<i>Facilitator helps in CHD prevention</i>			
Yes (n = 473)	10.9		
No (n = 170)	8.7	3.25 (641)	<0.001
<i>Assistance received from FHSA and DHA in prevention</i>			
Yes (n = 437)	10.7		
No (n = 211)	9.3	2.17 (646)	<0.05
<i>Would like more support from DHA</i>			
Yes (n = 182)	11.6		
No (n = 407)	9.7	2.89 (587)	<0.01
<i>Would like more support from FHSA</i>			
Yes (n = 113)	12.0		
No (n = 302)	9.9	2.67 (413)	<0.01
<i>Have received CHD prevention training</i>			
Yes (n = 354)	11.4		
No (n = 305)	9.0	3.94 (650)	<0.001
<i>Member of a nurse support group</i>			
Yes (n = 501)	10.7		
No (n = 145)	8.9	2.49 (644)	<0.01
<i>Would like role extension</i>			
Yes (n = 510)	10.7		
No (n = 140)	8.7	2.52 (648)	<0.05
<i>Want more training in prevention</i>			
Yes (n = 409)	10.6		
No (n = 251)	8.0	2.46 (624)	<0.05

n = number of practice nurses in group (not all nurses answered each question). df = degrees of freedom. FHSA = family health services authority. DHA = district health authority.

has influenced general practitioner involvement, although evidence from a study of consumers' views of primary care suggests a reduction of the level of general practitioner involvement in health promotion work in the consultation since the new contract.¹⁶ The recent revisions to the new contract, however, may lead to an increase in general practitioner involvement.¹⁷

The high level of clinic based health promotion activity raises

a number of concerns. First, although general practitioner and practice nurse involvement was found to be related to health promotion training this training tended to be of a basic level. General practitioner training was often limited to in-service courses and similarly, practice nurse training in health promotion tended to be limited to short courses. Many practice nurses have expressed anxiety about their competence to undertake extended duties which have emerged out of the general practitioner contract.¹⁸ They had similar training needs to general practitioners although they particularly wanted training in counselling and in smoking control and diabetes control.¹⁸ Multidisciplinary training could address these training needs. Skills mix and teamwork need to be developed and these may be encouraged by the opportunities created under the fundholding scheme.

The second concern involves the lack of audit and evaluation of health promotion activities which clearly raises questions about the quality and effectiveness of the work carried out in the clinics. Also, there was little evidence of overall assessment of the health needs, systematic screening of the practice population and targeting of specific groups.

The third concern involves the question of lack of time which is believed to be an important barrier to involvement.¹³ However, the statistical analysis showed little support for this in relation to general practitioners, as their workload and personal list size were not associated with level of involvement. This still appears to be an issue for general practitioners and may be more so for community nurses.

Finally, there was evidence of variable attitudes towards health promotion and to roles in health promotion. In face-to-face interviews, general practitioners have expressed concern about the benefits of the clinics because they felt clinics attracted the worried well rather than those at most risk.¹⁹ Thus, they put a greater value on opportunistic health promotion in the consultation. However, practice nurses were enthusiastic about the value of the clinics, and although they recognized the clinic might be monitoring those least at risk they believed that they had a significant impact upon patients' personal behaviour.¹⁸

In conclusion, the evidence from this national study shows that members of the primary health care team appeared to have their own distinct area of activity. However, this division of activities appears to be less a result of organized teamwork and deployment of skills and expertise to a clearly defined management protocol, and more a product of the general practitioner contract and management arrangements which tended to encourage an approach to general practice health promotion revolving around the role of the practice nurse. This has also hindered the development of a broader team based approach to planning and delivery of health promotion in relation to the needs of the practice population. However, it remains to be seen which, if any, of these approaches is the most effective.

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Acknowledgements

This research programme was funded by the Department of Health and the Health Education Authority.

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