Attitudes of general practitioners towards prevention of cardiovascular disease in old age: a qualitative and quantitative study

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Submitted
Abstract

**Background:** Our objective was to explore attitudes and actual practices of general practitioners (GPs) in the Netherlands regarding prevention of cardiovascular disease (CVD) in older patients.

**Methods:** Six focus group interviews with GPs (n=37), followed by a nationwide survey among 700 GPs, based on six hypotheses as derived from the interviews.

**Results:** The survey was returned by 38% of GPs, who were a representative sample regarding sex, years of experience, urban/rural practices and degree of collaboration with other GPs. Responses indicated that 96% of GPs consider prevention of CVD in older patients to be part of their professional responsibilities; the actual preventive practices are driven by GPs' confidence in supporting medical evidence. Primary preventive measures reportedly were less frequently performed than secondary preventive measures. Offering primary prevention to patients declines with age: 54% of GPs stated that they offer primary prevention to patients aged 65-75 years with limited vitality, declining to 39% of GPs in comparable patients aged >75 years. Any influence of differences in patients' level of vitality on GPs' practices, which emerged from the focus group interviews, was not confirmed in the survey.

**Interpretation:** GPs consider prevention of CVD in older patients to be part of their responsibilities. The attitude of GPs towards CVD prevention in older patients is strongly associated with their confidence in supporting evidence. Older patients’ rising calendar age is an inhibiting factor to GPs offering CVD preventive measures, whereas the influence of their vitality on GPs' practices remains unclear and requires additional study.
Introduction

Despite the continuing decrease in risk of cardiovascular disease at all ages, cardiovascular disease remains the leading cause of death in Western societies and is also a principal contributor to chronic morbidity and loss of well-being.\textsuperscript{1-3} Since cardiovascular disease comes with age, and societies across the developed world are aging, a large volume of cardiovascular disease is upcoming.\textsuperscript{4} Contrary to the formerly prevailing view that preventive measures in older populations are not helpful, it is now recognized that, since the absolute risk of cardiovascular disease in old age is high, even small reductions in relative risk, as achieved by preventive measures, will result in a substantial number of prevented cardiovascular events and relatively low ‘numbers needed to treat’.\textsuperscript{5} Guidelines for secondary prevention after cardiovascular events have therefore gradually abandoned age restrictions.\textsuperscript{6-9} Still, secondary prevention of cardiovascular disease has repeatedly been shown to be less vigorously implemented in older populations.\textsuperscript{10-12} As for primary prevention of cardiovascular disease in old age, it is unclear which strategy, varying from ‘case finding’ to ‘systematic screening’, should be followed in older populations, because it is not only unknown which risk markers should be screened for, but also whether (programmatic) primary preventive measures in old age are effective at all in reducing cardiovascular disease risk.

In countries with primary care systems, general practitioners may seem prime candidates to take the lead in prevention of cardiovascular disease in old age. In the Netherlands, people aged 75 years and over have more than 16 contacts per year with their general practice, creating ample opportunities to reach nearly all older persons.\textsuperscript{14} However, earlier studies that focussed on disease prevention practices by general practitioners have listed numerous barriers, although these studies were not specifically aimed at older populations or cardiovascular disease prevention.\textsuperscript{15-20}

Therefore, we performed a qualitative analysis, followed by a quantitative survey on attitudes and current practices among general practitioners in the Netherlands regarding primary and secondary prevention of cardiovascular disease in old age, in particular in relation to calendar age and level of vitality of their patients. We also explored the barriers that general practitioners encounter when implementing cardiovascular disease prevention in older patients.

Methods

Design of the study

First a qualitative study, in which focus group interviews with general practitioners were conducted. The results of this study guided the subsequent survey, where hypotheses that emerged from the focus group interviews were quantified.
Focus groups
For the semi-structured focus group interviews we enrolled different groups of general practitioners; numbers per group varied from four to eight. One group comprised general practitioners who had attended a geriatric-medicine course, one group comprised general practitioners who also work at the department, and the other groups were recruited by a mailing to the department’s regional network. Sessions were moderated by two researchers, who reviewed field notes after each session. The interviews were all audiotaped and transcribed. Sufficient information was gathered (point of saturation) from six focus group interviews held in the period September 2007 through January 2008, with, in total, 37 general practitioners.

Survey
The survey was sent to a random representative sample of 700 general practitioners (9% of all general practices in the Netherlands), obtained from the database of the Netherlands Institute for Health Services Research (NIVEL). Non-responders received a reminder notice three weeks after the initial questionnaire was sent. The survey started with questions concerning characteristics of the general practitioners and their practices, followed by questions on different topics of cardiovascular disease prevention in old age. General practitioners were asked to grade their opinions on statements in the questionnaire according to a 5-point scale, ranging from ‘strongly disagree’ to ‘strongly agree’. Younger elderly were defined as people aged 65 through 74 years, and older elderly as people aged 75 years and over. All older persons were divided into those with full vitality, and those with limited vitality, according to subjective assessments by the responding general practitioners. Primary and secondary cardiovascular disease prevention were defined according to the guideline ‘Cardiovascular Risk Management’ published by the Dutch College of General Practitioners; primary prevention denotes medication and/or life-style interventions in people without history of cardiovascular disease, secondary prevention denotes the same interventions but in people with such history.

Data analysis
Focus groups
All transcripts were coded and analysed, both inductively and deductively, using appropriate software (ATLAS.ti 5.0 Scientific Software Development GmbH, Berlin, Germany). Outcomes were discussed by all authors and translated into hypotheses that were tested in the subsequent survey.

Survey
Answers were dichotomised into ‘agree’ (‘agree’ and ‘strongly agree’ combined) and ‘do not agree’ (‘no opinion’, ‘disagree’ and ‘strongly disagree’ combined). Results were presented as percentages with corresponding 95% confidence intervals. The influence of self-reported descriptive characteristics of general...
Results

Focus groups
None of the general practitioners uttered fundamental objections to cardiovascular disease prevention in older patients. They stated that most of their current preventive practices are tailored to the needs of individual patients, and are usually driven by requests from patients themselves or their close relatives. Regular ‘social visits’ to older patients are made by some general practitioners, and used ‘to keep an eye on patients’. However, systematic cardiovascular screening activities are not routinely performed. A common concern of general practitioners was for those older patients who actively or passively avoid contact with their general practitioner. General practitioners indicated that, given a certain calendar age, the level of vitality of their older patients plays an important role in disease prevention in general. The greater their vitality, the more general practitioners are likely to offer preventive health care. Despite a current lack of programmatic prevention, general practitioners were strongly convinced that cardiovascular disease prevention in older patients is part of their professional responsibilities. Outsourcing of preventive health care to other public health organizations, let alone health insurance companies or home care organisations, was robustly rejected. Finally, many practical barriers to cardiovascular disease prevention were mentioned, lack of time, resources and practical support being the most important.

General practitioners were commonly convinced that secondary prevention of cardiovascular disease should be continued up to the highest ages, but also that quality of life is more important than prolonging duration of life per se. According to general practitioners, side-effects of multiple drug regimens after cardiovascular events should be carefully balanced against the future benefit, which is a theoretical risk reduction. They felt that this is even more applicable when secondary prevention is started at very high ages.

Primary prevention of cardiovascular disease was a more controversial topic. Many general practitioners revealed that when older patients do not ask for their risk factors to be assessed, they hesitate to actively offer to measure them: “…and if you do take their blood pressure you always fear that it will be too high, because then you have to do something about it.” Also it was a commonly held belief among general practitioners that evidence for cardiovascular disease prevention must be very robust in order to justify troubling very old patients with primary preventive interventions such as antihypertensive and lipid-lowering drugs. These considerations in particular concerned those older patients with limited vitality. The same reserve among
general practitioners was noticeable for life-style interventions, such as stop-smoking advice or dietary guidance. Indeed the usefulness of these interventions at very high ages was questioned by the focus group participants.

The focus groups resulted in the formulation of six hypotheses concerning prevention of cardiovascular disease in old age, which were tested in the subsequent survey:

1. General practitioners consider prevention of cardiovascular disease as part of their professional responsibilities.
2. General practitioners believe that evidence supporting secondary cardiovascular disease prevention is more robust than evidence supporting primary prevention.
3. General practitioners believe that the level of evidence supporting cardiovascular disease prevention decreases with increasing age of patients.
4. With regard to actively offering cardiovascular disease prevention, general practitioners act in keeping with their own level of confidence in existing relevant evidence.
5. Within age groups of patients, general practitioners differentiate between various levels of vitality (limited versus full vitality) when offering cardiovascular disease prevention.
6. The more barriers general practitioners encounter, the more their actual preventive practices are hampered.

Quotes from the participating general practitioners that illustrate the hypotheses are shown in the textbox.
Textbox. Quotes from general practitioners in the focus groups underlying the hypotheses about prevention of cardiovascular disease in old age, which were tested in the subsequent survey.

<table>
<thead>
<tr>
<th>Hypothesis</th>
<th>Quotes</th>
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| 1. General practitioners consider prevention of cardiovascular disease as part of their professional responsibilities. | ‘At one point there were several places in our district where people could measure their cholesterol, blood sugar or their blood pressure. Just like that, out of the blue. So, in that sense I feel that the prevention of cardiovascular disease better belongs with us because we know much more about a person.’  
‘Indeed, precisely that forgotten group doesn’t visit such a preventive health center for seniors. So I think that prevention of CVD should remain with the general practitioner.’ |
| 2. General practitioners believe that evidence supporting secondary cardiovascular disease prevention is more robust than evidence supporting primary prevention. | ‘What I think is a bit scary is those healthy old people who never had any health problems, eh. They are healthy 80 plus. Look, then I can of course measure the blood pressure and when I measure 180 over 80, I always think: “Gee, should I actually do something now?” Maybe somebody is that healthy thanks to that blood pressure.’ |
| 3. General practitioners believe that the level of evidence supporting cardiovascular disease prevention decreases with increasing age of patients. | ‘I would admit that we actually don’t know very well how it works with 75-plus-year-olds who are on this preventive medication. If it really works or not.’  
‘But if they don’t have a strict indication: with increasing age, the cholesterol level increases, and the question then is if you should artificially decrease the cholesterol in somebody who doesn’t really have a strict indication for it.’  
‘I don’t have any kind of risk score table which shows the mortality risk of somebody who is eighty or seventy, and how much preventive medication for CVD reduces mortality.’  
‘I think that active prevention purely based on age, that should at least be supported by scientific evidence before I harass those people.’ |
| 4. With regard to actively offering cardiovascular disease prevention, general practitioners act in keeping with their own level of confidence in existing relevant evidence. | ‘With those very old groups I tend to show a rather modest attitude.’  
‘These elderly still value the notion “when in doubt, do nothing”. So there shouldn’t be too much doubt, otherwise I do nothing.’ |
| 5. Within age groups of patients, general practitioners differentiate between various levels of vitality (limited versus full vitality) when offering cardiovascular disease prevention. | ‘On the other hand, a 75-year-old who just had a nice game of tennis, that makes me think along the lines of: “Well, that’s a pretty vital 75-year-old.”’  
‘You also see 55-year-olds in your practice of whom you think, they are totally old and worn out. In that sense I think we should let go of the biological age and instead consider how somebody is actually doing.’ |
| 6. The more barriers general practitioners encounter, the more their actual preventive practices are hampered. | ‘Yes, but in practice you are often just hampered by time.’  
‘It must also remain affordable and, you know, we are general practitioners, eh. We are not the prevention outpatient clinic for all patients.’ |
Survey
The survey was returned by 263 (38%) of the representative sample of 700 general practitioners. Characteristics of the general practitioners who returned the survey are summarised in Table 1.

Table 1. Self-reported characteristics of general practitioners participating in the survey (n=263*).

<table>
<thead>
<tr>
<th>Characteristics</th>
<th>%</th>
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<tbody>
<tr>
<td>Male GPs</td>
<td>64</td>
</tr>
<tr>
<td>GPs with &gt;10 years experience</td>
<td>72</td>
</tr>
<tr>
<td>GPs from urban practices</td>
<td>84</td>
</tr>
<tr>
<td>GPs with &gt;3000 patients enlisted</td>
<td>11</td>
</tr>
<tr>
<td>GPs in group practices (≥2 GPs)</td>
<td>71</td>
</tr>
<tr>
<td>GPs with practice nurse</td>
<td>82</td>
</tr>
<tr>
<td>GPs in low SES area</td>
<td>13</td>
</tr>
<tr>
<td>GPs with ethnic groups over-represented</td>
<td>12</td>
</tr>
<tr>
<td>GPs with patients &gt;65 over-represented</td>
<td>37</td>
</tr>
</tbody>
</table>

GP = general practitioner; SES = socio-economic status
* missing data in n=2 up to n=4 per characteristic

They were compared to reference data on the entire population of general practitioners in the Netherlands in 2007. The survey population included 64% male general practitioners (71% nationwide), 72% general practitioners with more than 10 years experience (67% nationwide), 84% general practitioners from urban practices (88% nationwide), 71% general practitioners from group practices (78% nationwide), and 82% had a practice nurse (62% nationwide).

Table 2 presents the general practitioners' confidence as to whether there is robust evidence for cardiovascular disease prevention in old age, depending on type of prevention, and age and vitality of their patients, followed by current preventive practices by GPs. Several trends were apparent. In general, significantly more (approximately 20%) general practitioners were confident that robust evidence exists for secondary prevention than for primary prevention. Furthermore, confidence in evidence and actively offering preventive care is higher, but not always statistically significant, for younger elderly than for older elderly. Remarkably, in all age groups and both types of prevention, general practitioners did not indicate that they differentiate by patients' vitality; this applies to their confidence in evidence, as well as to their actual preventive practices.
When general practitioners' descriptive characteristics (Table 1) were entered into a logistic regression model, general practitioners working in single-handed practices more frequently reported offering primary, but not secondary, cardiovascular disease prevention in both age- and vitality groups (data not shown). No other characteristics were associated with general practitioners' actual preventive practices, irrespective of type of prevention, age and vitality group.

Table 3 shows barriers that general practitioners reported that they encounter when implementing cardiovascular preventive measures in older patients. General practitioners more often reported 4 or more barriers for primary prevention than for secondary prevention. Lack of time, insufficient financial compensation and practical support were reported by more than half of general practitioners surveyed. The cost-effectiveness of primary prevention was questioned by 52% of general practitioners and that of secondary prevention was questioned by 43% of practitioners. Fewer than 20% of general practitioners believed there is no demand amongst older patients for primary and secondary prevention of cardiovascular disease. A very small minority of general practitioners felt that primary and secondary prevention are not part of the professional responsibilities of general practitioners.

The majority of general practitioners who were confident in robust medical evidence supporting cardiovascular prevention, act in line with their belief (Table 4). This applied to both primary and secondary prevention, and in all age and vitality groups. However, roughly one in three general practitioners who reportedly have confidence in evidence supporting primary prevention, still do not actively offer such preventive care to older patients.
Interpretation

In our two-step study, we showed that general practitioners strongly believe that prevention of cardiovascular disease in older patients is part of their professional responsibilities. However, they feel much less confident about the medical evidence supporting primary prevention than that supporting...
secondary prevention, especially in patients over 75 years of age, and are consequently often hesitant in offering primary preventive care. General practitioners also seemed to believe that medical evidence for cardiovascular disease prevention in younger elderly is stronger than the evidence for prevention in older elderly, and this line of thought influences their actual preventive practices. Contrary to our conclusions from the focus group meetings, responses to the survey suggested that patients’ vitality did not play a role in general practitioners’ confidence in medical evidence and actual preventive practices. Although the credence given to medical evidence was a strong predictor of actual preventive practices, general practitioners were noticeably restrained in offering primary prevention to older patients even when they felt confident about the supporting evidence. Lack of time, insufficient financial compensation and lack of practical support were the most frequently mentioned barriers to cardiovascular disease prevention, particularly regarding primary preventive care.

With regard to prevention of cardiovascular disease by general practitioners, no earlier studies, to the authors’ knowledge, have exclusively focussed on older patients, let alone subgroups of older patients according to calendar age and level of vitality. A strength of our study is that the focus group interviews explored the direction and content of the subsequent survey. Another strength is that the responders to our survey were a representative sample of the population of general practitioners working in the Netherlands, despite a low response rate to the survey. A further strength of our study was that we reduced the possibility of selection bias by including various health topics in the survey (non-cardiovascular disease data not shown), thus avoiding an over-representation of general practitioners with a special interest in cardiovascular disease.

A possible limitation of our study was the use of two grades of the concept ‘level of vitality’ in the survey, which were left to individual general practitioners to assign to patients. This may have caused confusion and non-differential responses to statements regarding the role of patients’ level of vitality in general practitioners’ preventive care practices. It is possible that the use of unequivocal clinical vignettes may have overcome this limitation.

Actual preventive practices were shown in the present study to be driven by general practitioners’ confidence in supporting medical evidence, and when they perceive that evidence is lacking, their preventive care actions decrease accordingly. This behavior calls for regular updates for practitioners on the medical evidence for cardiovascular disease prevention in older patients. The influence of patients’ vitality, regardless of age, on general practitioners’ preventive care practices requires further study, as our findings from the focus group interviews suggest that general practitioners are unlikely to consider merely calendar age, without taking level of vitality into account. Barriers to implementation of cardiovascular disease prevention in old age can be overcome, since they were considered by general practitioners to be largely practical ones (time, money, practical support). Future studies should, however, also include the cost-effectiveness of cardiovascular disease
prevention in old age, as roughly 50% of the general practitioners indicated that evidence for preventive measures based on this issue is lacking.

In conclusion, general practitioners consider prevention of cardiovascular disease in older patients part of their professional responsibilities, but their actual preventive practices are forcefully driven by their confidence in the existence of supporting scientific evidence, as well as by the (mainly practical) barriers they encounter in day-to-day preventive practices. Rising calendar age of their patients is an important inhibiting factor to implementing prevention of cardiovascular disease in old age; the role of patients’ level of vitality requires additional study. As more evidence for preventive measures is gathered and adequately passed on to the point of delivery, the challenge will be for general practitioners to act according to the evidence and extend their preventive practices to patients of old age, especially regarding primary preventive care in older patients aged 75 years and over.

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References


