Attitudes toward preventive services and lifestyle: the views of primary care patients in Europe. The EUROPREVIEW patient study

Carlos Brotons[a],*, Mateja Bulc[b], Mario R Sammut[c], Mary Sheehan[d],
Carlos Manuel da Silva Martins[e], Cecilia Björkelund[f],
Antonius J M Drenthen[g], Didier Duhot[h], Süleyman Görpelioglui[i],
Eva Jurgova[j], Sirkka Keinanen-Kiukkanniemi[k], Péter Kotányi[l],
Valia Markou[m], Irene Moral[a], Achim Mortsiefer[n], Leo Pas[o],
Ingrid Pichler[p], Donatella Sghedoni[q], Revaz Tataradze[r],
Eleftherios Thireos[s], Leonas Valius[t], Jasna Vuchak[u], Claire Collins[d],
Esther Cornelis[o], Ramon Ciurana[v], Pilar Kloppe[w], Artur Mierzecki[x],
Kakha Nadaraia[y] and Maciek Godycki-Cwirko[z]

[a]Research Unit, EAP Sardenya, Biomedical Research Institute Sant Pau (IIB Sant Pau), Barcelona, Spain, [b]Community Health Centre Ljubljana, Ljubljana, Slovenia, [c]Malta College of Family Doctors, Gzira, Malta, [d]Irish College of General Practitioners, Dublin, Ireland, [e]Department of General Practice of the Faculty of Medicine of Porto, Portuguese Association of General Practitioners, Porto, Portugal, [f]Department of Primary Health Care, Institute of Medicine, University of Gothenburg, Gothenburg, Sweden, [g]Dutch College of General Practitioners, Utrecht, The Netherlands, [h]Département d'Information Médicale Société Française de Médecine Générale, Issy-les-Moulineaux, France, [i]Department of Family Medicine, Ankara, Turkey, [j]Postgraduate Medical University, Bratislava, Slovakia, [k]Institute of Health Sciences, University of Oulu, Oulu, Finland, [l]Hungarian College of Family Medicine, Budapest, Hungary, [m]Cyprus College of Family Medicine, Nicosia, Cyprus, [n]Medical Faculty Department of General Practice, University of Düsseldorf, Düsseldorf, Germany, [o]Scientific Society of Flemish General Practitioners, Berchem, Belgium, [p]Department for Family Practice/Medical University of Vienna, Vienna, Austria, [q]Centro Studi e Ricerca in Medicina Generale, Struttura Semplice Percorsi Integrati di Prevenzione e Cura in Medicina Generale, Azienda Sanitaria Locale of Milan, Milan, Italy, [r]School of Health Care, University of Georgia, Tbilisi, Georgia, [s]WHO NCD/PHC Consultant, Greek Association of General Practitioners Consultant, Vari Health Centre, Attica, Greece, [t]Department of Family Medicine, Kaunas University of Health Sciences, Kaunas, Lithuania, [u]Ordinacija op. med. Sukosan, DNOOM, Croatia, [v]CAP La Mina, San Adrià del Besos, Barcelona, Spain, [w]Centro de Salud Las Calesas, Madrid, Spain, [x]Pomeranian Medical University in Szczecin, College of Family Physicians in Poland, Szczecin, Poland, [y]Institute of Therapy, Tbilisi, Georgia and [z]Department of Family and Community Medicine. Medical University of Lodz, Lodz, Poland.
*Correspondence to Carlos Brotons, Research Unit, Sardenya Primary Health Care Center, Sardenya, 08025 Barcelona, Spain; E-mail: cbrotons@eapsardenya.cat

Background. For preventive interventions in general practice to succeed, patients' points of view must be taken into account in addition to those of GPs.

Objective. To explore patients' views and beliefs about the importance of lifestyle and preventive interventions, to assess their readiness to make changes to their lifestyle and their willingness to receive support from GPs.

Methods. Cross-sectional survey conducted by EUROPREV in primary care practices in 22 European countries. Patients were consecutively selected and interviewed from September 2008 to September 2009.

Results. Seven thousand nine hundred and forty-seven participants, 52.2% females. Only 30.5% of risky drinkers think they need to change, as opposed to 64% of smokers, 73.5% of patients with unhealthy eating habits and 73% with lack of physical activity. Risky drinkers reported that GPs initiated a discussion on alcohol consumption less often (42%) than on smoking (63%), eating habits (59%) or physical activity (55%). Seventy-five per cent, 66% and 63% of patients without hypertension, diabetes or hypercholesterolaemia, respectively, think blood pressure, blood sugar and serum cholesterol should be checked yearly. Women (80%) think they should be screened with the cervical smear test and 72.8% of women aged 30–49 years with mammography, yearly or every 2 years.

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Conclusions. A high proportion of patients attending primary care with unhealthy lifestyles (especially risky drinkers) do not perceive the need to change their habits, and about half the patients reported not having had any discussion on healthy lifestyles with their GPs. Patients overestimate their need to be screened for cardiovascular risk factors and for cancer.

Keywords. GPs, health promotion, lifestyle, patients, risk reduction behaviour.

Introduction

Behavioural risk factors such as smoking, unhealthy diet, risky alcohol consumption and physical inactivity are the main modifiable risk factors for prevention of chronic conditions which nowadays account for just >60% of the overall global burden of disease, rising to an expected 80% by the year 2020.[1] Two-thirds of the population visit their family doctor/GP at least once a year and 90% at least once in 5 years.[2] Therefore, primary health care is a suitable setting for interventions to identify and reduce behavioural risks factors and recommend preventive activities (including immunizations, screening for cardiovascular risk factors and cancer and counselling). The European definition of general practice/family medicine published by WONCA Europe in 2002 emphasizes the role of GPs in prevention, listing one of the core competences of the family doctor as the promotion of health and well-being by applying appropriate strategies.[3]

In a patient-centred approach, patients become important partners in medical care. When risk behaviours are viewed as a balancing act on the part of the patients, it becomes easier to appreciate that many patients take risks not because of ignorance but after weighing rewards against risk.[4] When clinicians counsel patients about any behaviour risk, the appropriate focus of discussion and the patients' receptivity can depend on patients' readiness to change. According to the trans theoretical model,[5] if an individual does not plan to change his/her behaviour, there will be no motivation to change. However, if a person is motivated to change his/her behaviour, there are specific principles and processes of change that can be applied during certain stages of change if progress through the stages is to occur.

The differences in structure and organization of primary health care in European countries are associated with a large variation in the degree of involvement of GPs in preventive activities.[6] Previous research about the role of GPs in prevention and health promotion has concentrated on specific topics such as attitudes to and involvement in health promotion and lifestyle counselling and GPs' perception of their ability to modify patients' behaviour.[7,8] A survey carried out among >2000 European GPs showed that significant gaps persist between GPs' knowledge and their practice in the use of evidence-based recommendations for health promotion and disease prevention in primary care.[9]

The Commonwealth Fund International Health Policy Survey, which took place from March to May 2004 in five countries (Australia, Canada, New Zealand, the UK and the USA), showed an overall lack of emphasis on prevention. At least half of adults in each country said that their doctor did not send reminders and had not recently provided advice or counselling on weight or exercise.[10] Local studies carried out in some European countries concluded that patients are infrequently reminded of important lifestyle-related risk factors and that some patients are unaware of their unhealthy lifestyles.[11,12] For preventive interventions in general practice to succeed, patients' points of view must be taken into account in addition to those of GPs.[13]

The aim of this study was to explore patients' views and beliefs about the importance of lifestyle and preventive interventions, to assess their readiness to make changes to their lifestyle (diet, physical activity, smoking and risky alcohol consumption) and to assess their willingness to receive support from GPs.

Methods

Sample

The EUROPREVIEW study consisted of a cross-sectional survey in 22 European countries (Austria, Belgium, Croatia, Cyprus, Finland, France, Germany, Greece, Hungary, Ireland, Italy, Lithuania, Malta, The Netherlands, Poland, Portugal, Slovakia, Slovenia, Spain, Sweden, Georgia and Turkey) conducted by EUROPREV—the European Network for Prevention and Health Promotion in Family Medicine/General Practice (www.europrev.org). Within each country, a national coordinator selected at least 10 practices from a list of GP trainers, colleges or University Departments. Each practice was asked to select 40 consecutive patients stratified by sex and age as follows: 10 males and 10 females aged 30–49 years (inclusive), 10 males and 10 females aged 50–70 years (inclusive), respectively.

Patients who visited the practice for any reason between September 2008 and September 2009 were eligible to be interviewed. Data collection was self-administered. GPs or research assistants (including nurses and trainees or medical students) checked the questionnaires to ensure completeness.

Patients were selected from primary care practices when attending GPs' consultations during different days of the week and from >1 week in a month if necessary to reach the estimated sample size. Patients

from the list of the GP investigator at national level were excluded to avoid potential biases.

Questionnaire

A structured questionnaire was originally developed by the researchers in English and then translated, back-translated and culturally adapted from English into the different languages of the participating countries (except for Ireland) prior to its use in the study.

The questionnaire contained four sections (see supplementary material online). The first one was designed to obtain data on socio-demographic and clinical characteristics. The second part looked at the lifestyle of patients seeking information on their eating habits, physical activity, smoking and alcohol consumption and also regarding screening for cervical and breast cancer in women. The third section gathered information on patients' stage of change: their perceived importance and awareness of the need to change and their readiness and confidence in their ability to make changes in diet, physical activity, body weight, smoking and alcohol intake. Information was also gathered on patients' perceived importance of, need for, suitability of and confidence in being able to undergo blood pressure, blood glucose and serum cholesterol checks, together with flu vaccination, cervical smear and mammography (these last two for women only). The patients' views on the optimal interval for screening for risk factors and willingness to receive advice from GPs were also assessed. The fourth part of the questionnaire collected information about the care provided by participants' family/general practice team. Patients were asked if their GP team had ever initiated a discussion on disease prevention and if they would like to receive advice and support from their GP team on the matter.

The questionnaire was piloted in each country with 10 patients who did not take part in the final sample.

Moreover, a specific short questionnaire was designed for the national principal investigators to gather relevant information regarding health services characteristics from the participating practices and countries.

Data entry

A specific secure web page was developed with all the items included in the questionnaire in each different language, and online data entry was carried out by a person specifically employed and trained for the study with the country language as his/her mother language.

Statistical analysis

Considering that a previous study showed that the percentage of patients who did not receive reminders for preventive care varied between 49% and 62%,[10] it would be reasonable to assume that the estimated true proportion could be of 0.5, adopting the most conservative option. Therefore, taking an estimated proportion of patients who do not receive reminders as 0.5, the maximum acceptable difference of 0.05 and an alpha error of 0.05, the required sample size calculated per country (assuming 10 GPs per country taking care of a population of 2000 patients per GP on average) was of 380 patients (8360 for 22 European countries).

All statistical analyses were done in the EURO-PREVIEW Patient Study coordinating centre using the STATA statistical software (Version 9.2), which allows the inclusion of clusters (practices) and strata (countries) in the specifications of the model for complex surveys, taking into account the design effect in data analysis.

Countries were considered as strata and practices as clusters. Post-stratification weights defined by sex and age per country were applied using the EUROSTAT database (http://epp.eurostat.ec.europa.eu). Mean and percentages and 95% confidence intervals (CIs) were used to describe the continuous and categorical variables. Comparisons by sex were performed using survey analysis tools to estimate the difference between means (lincom test) and to compare categorical variables (Pearson's chi-square).

Analysis focussed on the views of patients (importance, awareness, readiness and confidence) regarding changes in lifestyle, specifically for tobacco, alcohol, eating habits and physical activity and on the views of patients on the optimal intervals for screening for cardiovascular risks factors/cancer and for receiving vaccination.

A P-value of <0.05 was considered to be statistically significant and borderline when it equals this value.

Results

Participants were interviewed in 224 primary care practices from 22 countries in Europe (Fig. 1). The recruiting time per country ranged from 3 months to 12 months, with the mean being 7 months.

Overall, 45% of the practices were situated in an urban area, 32.5% in a rural area, 22.5% in a mixed area and 4.5% in hospitals (with the latter still being primary care practices although physically located inside hospitals). A total of 80% of the practices were public, 60% were teaching and 71.5% had electronic medical records. The average of hours worked per week per GP was 37.67 (SD 5.58), and the average of patients seen per week per GP was 151.43 (SD 68.40).

A total of 60 participants were excluded from the analysis because either they had missing data for gender or the age was out of range. The analysis was based on the remaining 7947 participants (52.2% females and 47.8% males).
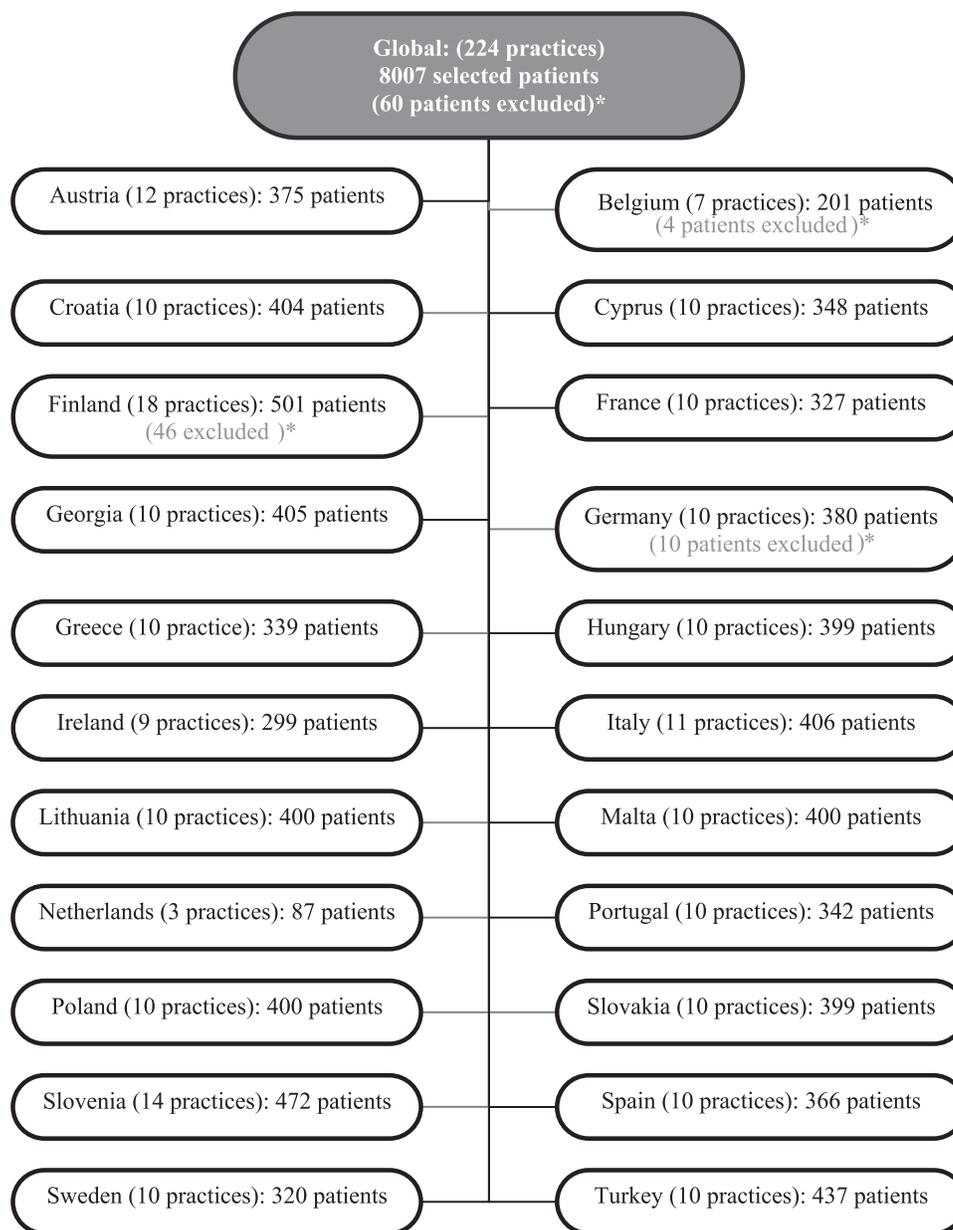
* Patients were excluded from Belgium, Finland and Germany due to missing data on gender or
because the age was out of range

FIGURE 1   *Flow chart of the study*

Tables 1 and 2 depict patients' demographics as well as clinical characteristics by sex. Men have significantly higher percentages of unhealthy habits than women. The prevalence of elevated blood pressure, glucose, cholesterol and myocardial infarction/angina is also significantly higher in men than women. On the other hand, the conditions of anxiety and depression are significantly more prevalent in women than in men.

The views of patients regarding changes in lifestyle, specifically for tobacco, alcohol, eating habits and physical activity, are shown in Figure 2. Patients considered that it is important or very important for health to improve eating habits (91.1%, 95% CI 89.9–92.3), undertake physical activity (87.2%, 95% CI 85.8–88.6), quit smoking (87.5%, 95% CI 85.7–89.0) and use alcohol safely (83.7%, 95% CI 81.7–85.7). Risky drinkers think they need to change their lifestyle less than patients with other unhealthy habits and also they are less likely to request advice or discuss with their GPs. Only 30.5% (95% CI 26.9–34.3) of risky drinkers think they need to change, as opposed to 63.6% (95% CI 59.4–67.6) of smokers, 73.5% (95% CI 68.6–78.2) of patients with unhealthy eating habits

TABLE 1 *Patients' demographics by sex*

	Men (*n* = 3800)	Women (*n* = 4147)	*P*-value
Age, mean (95% CI)	48.5 (48.0–49.1)	48.8 (48.4–49.3)	0.35
Marital status, % (95% CI) *n* = 7868			
Married or living with a partner	77.3% (74.8–79.7)	74.9% (71.9–77.6)	<0.001
Not married, nor living with a partner	13.5% (11.6–15.6)	9.9% (8.1–12.1)	
Separated or divorced	7.0% (5.7–8.6)	8.2% (6.8–9.9)	
Widowed	2.2% (1.5–3.1)	7.0% (5.9–8.3)	
Education, % (95% CI) *n* = 7421[a]			
Primary	30.7% (27.4–34.3)	35.4% (31.6–39.4)	0.018
Secondary	45.7% (42.5–49.0)	42.6% (39.3–45.9)	
Tertiary	23.5% (20.2–27.3)	22.0% (19.0–25.3)	
Employment, % (95% CI) *n* = 7871			
Employed/self-employed	70.3% (67.9–72.6)	50.5% (47.3–53.8)	<0.001
Student	0.4% (0.2–1.1)	0.7% (0.4–1.3)	
Housewife/husband or equivalent	0.6% (0.3–1.1)	24.5% (21.8–27.5)	
Pensioner	23.1% (21.1–25.3)	19.6% (17.7–21.6)	
Unemployed	5.5% (4.2–7.1)	4.6% (3.5–6.1)	

[a]Data from Finland was not included.

TABLE 2 *Patients' clinical characteristics by sex*

	Men (*n* = 3800)	Women (*n* = 4147)	*P*-value
Visits to GPs during last year, % (95% CI) *n* = 7828			
1–2 times (including visit)	33.6% (30.0–37.5)	25.0% (22.2–27.9)	
3–4 times	29.9% (27.8–32.1)	31.9% (29.8–34.1)	<0.001
≥5 times	36.4% (33.1–39.9)	43.1% (40.0–46.2)	
Smokers, % (95% CI) *n* = 7878	33.2% (29.9–36.5)	23.4% (21.2–25.8)	<0.001
Risky drinkers[a], % (95% CI) *n* = 7541	23.9% (21.3–26.7)	8.8% (7.5–10.3)	<0.001
Lack of physical activity, % (95% CI)	16.45% (14.3–18.9)	12.68% (10.5–15.2)	0.0285
Unhealthy eating habits, % (95% CI)	17.62% (15.8–19.6)	11.6% (9.9–135)	<0.001
Co-morbidity (self-reported), % (95% CI)			
Pre-existing condition of high blood pressure	32.9% (30.9–34.9)	27.8% (25.9–29.8)	<0.001
Pre-existing condition of high blood glucose	11.9% (10.0–14.1)	9.6% (8.0–11.6)	0.0317
Pre-existing condition of high blood cholesterol	24.9% (22.6–27.5)	21.4% (18.9–24.1)	0.0358
Pre-existing condition of myocardial infarction/ angina	5.4% (4.3–6.8)	2.8% (2.0–3.8)	<0.001
Pre-existing condition of heart failure	4.5% (3.7–5.4)	3.5% (2.8–4.3)	0.11
Pre-existing condition of low back pain, diseases of the musculoskeletal system	45.3% (41.8–48.9)	47.9% (44.8–50.9)	0.22
Pre-existing condition of chronic bronchitis, asthma or emphysema	11.4% (10.1–12.9)	13.2% (11.0–15.7)	0.18
Pre-existing condition of anxiety	13.9% (11.7–16.3)	20.9% (19.2–22.7)	<0.001
Pre-existing condition of depression	7.3% (6.1–8.7)	15.9% (14.0–18.0)	<0.001
Pre-existing condition of cancer *n* = 7492[b]	1.9% (1.3–2.7)	2.7% (2.1–3.6)	0.12

[a]Risky drinkers were defined as binge (5 or more drinks per day), hazardous (20 or more drinks per week) or dependent drinkers (CAGE > 01).
[b]Data from Finland was not included because an involuntary omission of the question during the translation back-translation process.

or 73.4% (95% CI 68.6–78.2) of patients with lack of physical activity. Also, only 21.1% (95% CI 17.4–25.4) of risky drinkers would like to receive advice from GPs as opposed to 46.3% (95% CI 42.6–50.1) of smokers, 51.0% (95% CI 46.3–55.9) of patients with unhealthy eating habits and 49.2% (95% CI 43.7–54.7) of patients with lack of physical activity. Interestingly, risky drinkers reported that GPs initiated a discussion on alcohol less often (42.3%, 95% CI 37.5–47.4) than on smoking (63.4%, 95% CI 59.3–67.3), eating habits (59.2%, 95% CI 54.3–63.7) or physical activity

(54.6%, 95% CI 49.4–59.6). Once patients accept they need to change, differences are not so obvious with regard to having plans to change or in being confident that they can change (~50% of patients).

Table 3 shows the views of patients regarding the optimal interval for screening for cardiovascular risk factors and cancer and for vaccination. About 75%, 66% and 63% of the patients without a diagnosis of hypertension, diabetes or hypercholesterolaemia, respectively, think that blood pressure, blood sugar and serum cholesterol should be checked yearly. Most
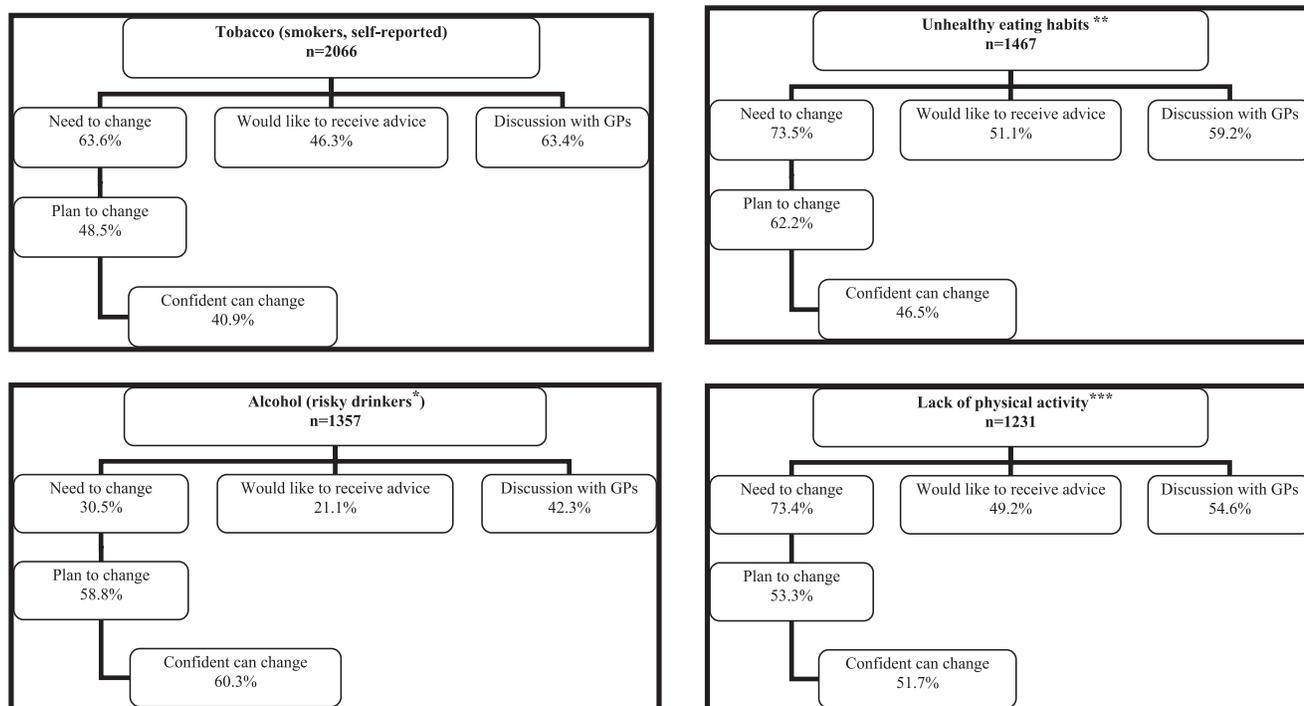
* Risky drinkers were defined as binge (5 drinks / day or more), hazardous (more than 20 units / week) or dependent drinkers (CAGE≥01)

** Patients who reported rather unhealthy or very unhealthy eating habits

*** Patients who reported they never exercise for at least 30 minutes per day

FIGURE 2   *Views of patients regarding changes in tobacco, alcohol consumption, eating and physical activity habits*

TABLE 3   *Views of patients regarding the optimal interval for vaccination and screening for cardiovascular risk factors and cancer*

How often do you think it would be appropriate to have … , % (95% CI)	Not at all	I do not know	Yearly or more often	Every 2 years	Every 3 years	Less often than every 3 years
Blood pressure check ($n = 5085$)[a]	1.2% (0.8–1.7)	15.5% (13.7–19.7)	75.1% (72.0–78.0)	5.2% (4.3–6.3)	1.1% (0.7–1.7)	0.9% (0.5–1.6)
Blood sugar check ($n = 6865$)[b]	1.1% (0.8–1.6)	16.7% (14.5–19.3)	66.0% (63.3–68.7)	12.4% (10.9–13.9)	2.3% (1.7–3.0)	1.5% (1.1–2.2)
Blood cholesterol check ($n = 5805$)[c]	1.3% (0.9–1.8)	17.5% (14.8–20.5)	62.6% (59.6–65.5)	14.3% (12.5–16.3)	2.7% (2.1–3.4)	1.7% (1.2–2.5)
Flu vaccination (≥65 years old) ($n = 928$)	14.4% (10.9–18.7)	15.2% (11.7–19.5)	67.6% (61.1–73.5)	2.0% (1.0–3.7)	0.6% (0.2–2.4)	0.2% (0.0–1.1)
Cervical smear test (only women) ($n = 4007$)[d]	1.9% (1.2–2.8)	8.5% (7.1–10.3)	58.2% (54.9–61.5)	23.3% (20.8–26.0)	5.9% (4.6–7.6)	2.2% (1.6–2.9)
Mammogram (only women) ($n = 3650$)[e]						
30–49 years ($n = 1919$)	1.4% (0.7–2.8)	14.4% (12.0–17.1)	43.1% (38.9–47.4)	29.7% (26.5–33.3)	6.6% (5.0–8.7)	4.8% (3.5–6.5)
≥50 years ($n = 1731$)	2.8% (1.7–4.5)	8.2% (6.2–10.6)	41.7% (38.3–45.2)	40.6% (37.1–44.2)	4.5% (3.2–6.1)	2.3% (1.5–3.6)

[a]Excluding patients diagnosed with high blood pressure.
[b]Excluding patients diagnosed with high blood glucose.
[c]Excluding patients diagnosed with high blood cholesterol.
[d]Excluding women diagnosed with cervical cancer.
[e]Excluding women diagnosed with breast cancer.

patients think they should be screened for all risk factors and vaccinated against influenza on a yearly basis or more often.

Regarding cancer screening, 80% of women think they should be screened with the cervical smear test yearly or every 2 years and 72.8% of women aged 30–49 years think they should be screened with mammography also yearly or every 2 years.

Discussion

The results of the EUROPREVIEW survey should concern all primary care professionals and health policy makers, as they show the perception of patients attending primary care practices in Europe regarding changes in lifestyle and their views of screening for cardiovascular risk factors and for cancer.

Our results show that alcohol drinkers (as opposed to smokers or patients with other unhealthy habits) do not see, or fail to admit, that alcohol use is a risky habit that needs to be changed. Less than one-third of risky drinkers would like to receive advice concerning alcohol intake from their GPs. It seems that patients are much more conscious about the risk of tobacco, unhealthy diet or sedentary lifestyle than the risk of alcohol. Other studies have reported that patients who screen positive for alcohol misuse will deny that they misuse alcohol or will not be interested in discussing or changing their drinking habit when the issue is raised.[14] Contrary to this stereotype of denial, another study supported the notion that greater readiness to change was significantly associated with greater severity of alcohol misuse.[15] Also, patients reported that they had received less advice (in a discussion initiated by GPs) for alcohol than for tobacco, diet and physical exercise. Fear of disturbing the relationship with the patient is an often mentioned barrier to giving advice on alcohol consumption.[16] In a study regarding lifestyle advice in the USA, advice concerning alcohol (reported by 16%) was also less common than advice on smoking (49%), exercise (47%) and eating habits (45%).[17] In another study done in Sweden, only 18% of patients reported that they had received advice at least in one area, with a 4-fold variation between the most common type of advice (exercise in 16%) and the rarest type (alcohol in 5%).[18]

The view of patients that GPs initiated a discussion on smoking in 63% of cases, eating habits (59% of cases) and physical activity (55%) shows some correlation with the views of GPs in Europe as surveyed by EUROPREV in 2000.[9] Then GPs had declared that they advised smokers to quit in 61%–71% of cases and counselled overweight and sedentary patients in 59%–62% and 54%–57% of cases, respectively. However, in this study, patients identified as risky drinkers said that their GPs had only initiated a discussion of their

alcohol use in 42%, while in the EUROPREV study in 2000 doctors said they would advise heavy drinkers to reduce consumption in 57%–64% of cases. Thus, while patients and doctors seem to agree regarding the frequency of discussions between them on smoking, healthy eating per weight and physical activity, patients seem to have a more negative viewpoint on how often doctors give advice on alcohol use.

Most healthy patients without a diagnosis of hypertension, diabetes mellitus or dyslipidaemia still think that cardiovascular risk factors (especially blood pressure) should be checked yearly or more often. Although there is high certainty that the net benefit of screening for high blood pressure in adults is substantial, evidence is lacking for the recommendation of an optimal interval for screening adults for hypertension. The seventh report of the Joint National Committee on Prevention, Detection, Evaluation, and Treatment of High Blood Pressure (JNC 7) recommends screening every 2 years in persons with blood pressure <120/80 mmHg and every year with systolic blood pressure of 120–139 mmHg or diastolic blood pressure of 80–89 mmHg.[19] The optimal interval for screening for lipid disorders is uncertain. On the basis of different guidelines and expert opinion, one reasonable option is to do so every 5 years, with shorter intervals for people who have lipid levels close to those warranting therapy and longer intervals for those not at increased risk who have had repeatedly normal lipid levels.[20] Also, the optimal interval for screening for diabetes is not known. The American Diabetes Association, on the basis of expert opinion, recommends a 3-year interval.[21]

More than 80% of women think they should be checked for cervical cancer yearly or every 2 years. However, old and newly revised guidelines recommend Pap test screening every 3 years for women age ⩾30 years.[22,23] These findings reflect overuse of Pap test screening, which is expensive for the health care system and may result in unnecessary follow-up testing and increased risk for colposcopy-associated illnesses and adverse birth outcomes as well as distress for patients.[24] Our results are consistent with overuse of Pap testing reported by women in the USA, although more recent studies suggest that women are receptive to being screened less often after a negative Pap test result.[25,26]

The EUROPREVIEW survey also showed that 43% of women aged 30–49 years thought that screening for breast cancer should be done yearly or more often and that 30% felt that screening should take place every 2 years. The US Preventative Services Task Force recommends that women <50 years should not undergo routine mammography and that women aged 50–74 years should have a mammogram every 2 years.[27] This recommendation is a direct challenge to the strong message from massive campaigns women in some countries have

been receiving for two decades that they should have yearly screening starting at the age of 40 years and also is reflected in the results of our study. Other studies also have found that opportunistic mammography screening in excess of the recommendation is common and persists despite explicit advice about recommended screening frequency.[28]

The study has some limitations that should be mentioned. Lifestyle habits were self-reported by patients and could thus be inaccurate or biased. The most common problems could be under-reporting of their actual lifestyle or under-reporting of the advice given at their last practice visit, either because of the sensitivity of some of the lifestyle areas or due to forgetfulness. For example, patients may find it hard to quantify the extent of their alcohol drinking as alcohol units are less tangible and more difficult to calculate than, for example, the number of cigarettes smoked.

Primary care teams that took part in the study were selected based on an expression of interest. Hence, these may have been more interested and motivated to address lifestyle risk factors compared to other teams and also may have not provided a representative sample of patients in each country.

The generalizability of the results could have been influenced by the participation rate of those invited. Unfortunately, the relevant data were recorded in only 11 countries, with the mean participation rate of these countries being 90.7%.

Another limitation is that sample size in some countries did not reach the estimated size of 400 patients per country. Consequently, precision of the estimates in these countries might be affected.

On the other hand, an important strength of the EUROPREVIEW survey is that it was a multinational survey following one protocol and using standardized methods.

In conclusion, this study raises a number of health promotion and prevention issues of interest to primary health care providers. A high proportion of patients attending primary care with unhealthy lifestyles (especially risky drinkers) do not perceive the need to change their habits, and about half the patients reported not having had any discussion on these topics with their GPs or primary care team. Further studies are needed to investigate the reasons behind these results so that suitable strategies may be devised to tackle them. Health professionals should be conversant with the recommended testing intervals for cardiovascular risk factors and for screening for cancer in order to better educate patients in the judicious use of such tests.

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Supplementary material

Supplementary material is available at *Family Practice* online.

Declaration

References

1 WHO. *Innovative Care for Chronic Conditions: Building Blocks for Action.* Geneva, Switzerland: WHO, 2002.
2 Fraser RC. Setting the scene. In: Fraser RC (ed.). 2nd edn. *Clinical Method. A general Practice Approach*, Oxford, UK: Butterworth Heinmann, 1992.
3 WONCA Europe. *The European Definition of General Practice/ Family Medicine.* WONCA Europe, 2002. http://www.woncaeurope.org/Web documents/European Definition of family medicine/The European Definition of General Practice and Family Medicine.pdf (accessed on 20 June 2007).
4 Gervas J, Startfield B, Heath I. Is clinical prevention better than cure? *Lancet* 2008; **372:** 1997–9.
5 Prochaska JO, DiClemente CC. Stages and processes of self-change of smoking: toward an integrative model of change. *J Consult Clin Psychol* 1983; **51:** 390–5.
6 Buerma WG, Van der Zee J, Fleming DM. Service profiles of general practitioners in Europe. *Br J Gen Pract* 1997; **47:** 481–6.
7 Luckmann R, Melville SK. Periodic health evaluation of adults: a survey of family physicians. *J Fam Pract* 1995; **40:** 547–54.
8 Coffield AB, Maciosek MV, McGinnis JM *et al.* Priorities among recommended clinical preventive services. *Am J Prev Med* 2001; **21:** 1–9.
9 Brotons C, Björkelund C, Bulc M *et al.* Prevention and health promotion in clinical practice: the views of general practitioners in Europe. *Prev Med* 2005; **40:** 595–601.
10 Schoen C, Osborn R, Huynh PT *et al.* Primary care and health system performance: adults' experiences in five countries. *Health Aff (Millwood)* 2004; W4-487-503. http://content.health affairs.org/cgi/content/full/hlthaff.w4.487/DC1.
11 Little P, Slocok L, Griffin S, Pillinger J. Who is targeted for lifestyle advice? A cross-sectional survey in two general practices. *Br J Gen Pract* 1999; **447:** 806–10.
12 Silagy C, Muir J, Coulter A, Thorogood M, Roe L. Cardiovascular risk and attitudes to lifestyle: what do patients think? *BMJ* 1993; **306:** 1657–60.
13 Fuller TL, Backett-Milburn K, Hopton JL. Healthy eating: the views of general practitioners and patients in Scotland. *Am J Clin Nutr* 2003; **77 (suppl):** 1043S–7S.
14 Arborelius E, Damstrom-Takker K. Why is it so difficult for general practitioners to discuss alcohol with patients? *Fam Pract* 1995; **12:** 419–22.
15 Williams EC, Kivlahan DR, Saitz R *et al.* Readiness to change in primary care patients who screened positive for alcohol misuse. *Ann Fam Med* 2006; **4:** 213–20.
16 Wallace PG, Brennana PJ, Haines AP. Are general practitioners doing enough to promote healthy lifestyle? Findings of the Medical Research Council's general practice research framework study on lifestyle and health. *Br Med J (Clin Res Ed)* 1987; **294:** 940–2.
17 Arndt S, Schultz SK, Turvey C, Petersen A. Screening for alcoholism in the primary care setting. *J Fam Pract* 2001; **51:** 41–6.
18 Johansson K, Bendtsen P, Akerlind I. Advice to patients in Swedish primary care regarding alcohol and other lifestyle habits: how patients report the actions of GPs in relation to their own expectations and satisfaction with the consultation. *Eur J Public Health* 2005; **15:** 615–20.
19 Joint National Committee on Prevention, Detection, Evaluation, and Treatment of High Blood Pressure. National Heart, Lung, and Blood Institute. Seventh report of the Joint National Committee on Prevention, Detection, Evaluation, and Treatment of High Blood Pressure. *Hypertension* 2003; **42:** 1206–52.
20 U.S. Preventive Services Task Force. *Screening for Lipid Disorders in Adults: U.S. Preventive Services Task Force Recommendation Statement,* 2008. http://www.uspreventiveservicestaskforce.org/uspstf08/lipid/lipidrs.htm (accessed on 3 December 2010).
21 ADA. Executive summary of standards of medical care in diabetes. *Diabetes Care* 2010; **33 (suppl 1):** S4–10.
22 U.S. Preventive Services Task Force. *Screening for Cervical Cancer,* 2003. http://www.uspreventiveservicestaskforce.org/uspstf/uspscerv.htm (accessed on 11 January 2011).
23 Cervical cytology screening. *ACOG Pract Bull* 2009; **109:** 1–12.
24 Yabroff KR, Saraiya M, Meissner HI *et al.* Specialty differences in primary care physician reports of papanicolaou test screening practices: a national survey, 2006 to 2007. *Ann Intern Med* 2009; **151:** 602–11.
25 Sirovich BE, Woloshin S, Schwartz LM. Screening for cervical cancer: will women accept less? *Am J Med* 2005; **118:** 151–8.
26 Huang AJ, Perez-Stable EJ, Kim SE *et al.* Preferences for human papillomavirus testing with routine cervical cancer screening in diverse older women. *J Gen Intern Med* 2008; **23:** 1324–9.
27 U.S. Preventive Services Task Force. Screening for breast cancer: U.S. Preventive Services Task Force Recommendation statement. *Ann Intern Med* 2009; **151:** 716–26.
28 Chamot E, Charvet A, Perneger TV. Overuse of mammography during the first round of an organized breast cancer screening programme. *J Eval Clin Pract* 2009; **15:** 620–5.