

## Research paper

# Gender makes the difference: the influence of patients' gender on the delivery of preventive services in primary care in Poland

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## ABSTRACT

**Objective** General practitioners' (GPs') time and resources for preventive services needs to be delivered equitably. We aimed to study the effect of patients' gender on the delivery of preventive procedures to adult patients aged 40 years and over.

**Method** An observational study was performed in primary care surgeries in Wielkopolska (Poland) as a part of the Improving Quality in Primary Care (PIUPOZ) programme carried out by Family Medicine Department of the University of Medical Sciences, Poznan. Trained observers directly observed GPs in their office, to register preventive procedures performed during the consultation and in the previous year (via the medical record) in patients aged 40 years and over.

**Results** A total of 1073 preventive procedures were registered among 450 patients (267 women and 183 men) by 113 doctors in one year. The most common were serum glucose, blood pressure and total cholesterol measurements. Six procedures were offered to less than 10% of patients: dietary advice, tobacco use and alcohol screening, exercise counselling,

body mass index (BMI) recording, and waist measurement. Men were more likely to receive tobacco use and alcohol screening and BMI measurement, while more women were offered a total cholesterol screen.

**Conclusions** The annual delivery rate of preventive procedures in patients aged 40 years and above is below the recommended level set by the Polish Ministry of Health. Procedures based on clinical examinations or laboratory tests were offered and performed more frequently than lifestyle advice. More men than women received preventive services for tobacco use or alcohol screening and BMI measurements. Patients' gender and physicians' engagement may influence GPs' preventive attitude and performance. These elements should be incorporated in the development of guidelines concerning prevention in primary care.

**Keywords:** health education, prevention, primary care

## How this fits in with quality in primary care

### What do we know?

Most healthcare systems have recommended that preventive services are delivered in primary care. Given the limited time and resources of general practitioners, it is necessary to deliver preventive procedures equitably. In primary care, women are more frequent attendees than men but little is known about the rate and types of prevention procedures offered to women compared to men.

### What does this paper add?

This study, based on direct observation of doctors' behaviour in combination with the patient record, demonstrates that the annual delivery of preventive interventions in primary care falls below recommended levels, especially for primary prevention. Although lifestyle counselling should be offered to the whole adult population, rates of delivery are low. Changing practitioners' beliefs about giving lifestyle advice during routine consultations is a complex challenge. Every effort should be made to introduce lifestyle advice and patient education as routine. We are planning to change doctors' behaviour through interactive workshops, which are the main intervention applied in the Improving Quality in Primary Care (PIUPOZ) programme. Preventive guidelines should take into account the finding that patient gender and practitioner attitude to health advice may influence GPs' performance in preventive care.

## Introduction

Primary prevention includes any intervention designed to reduce the risk of diseases occurring. It aims to promote wellbeing and to prevent the onset of disease by reducing risk factors in the population, either through changes in behaviour and lifestyle, or through changes in the environment supported by appropriate health education and public policies. Secondary prevention targets established disease, with the aim of avoiding recurrence or alleviating consequences by early detection and risk factor modification.<sup>1</sup> It is often not easy to evaluate the effectiveness of preventive services, especially lifestyle counselling, as part of primary prevention. Maciosek *et al* performed a systematic assessment of the value of preventive procedures, based on two dimensions: burden of disease prevented by each procedure and cost-effectiveness.<sup>2</sup> The most efficient preventive interventions were screening for tobacco use and alcohol consumption, followed by lipid profile measurement. Counselling about physical activity and healthy diet were less efficient at reducing outcomes.

Although prevention may be effective, it is not as widely used as it should be. The Polish Ministry of Health suggests offering preventive procedures relating to physical activity, alcohol consumption, tobacco use, diet, body weight and blood glucose and lipid measurement, to all patients aged 40 years or over, on an annual basis. Lack of time is one of the most cited barriers towards the delivery of prevention in primary care. A few studies have examined the actual time physicians spend on preventive services. Yarnall *et al* estimated that counselling and screening could be accomplished in 20 to 30 minutes and it would take

7.8 hours per working day for a physician to deliver recommended preventive services.<sup>3</sup> A discussion around prevention often requires 5 to 10 minutes; an average consultation in primary care lasts 10 minutes.

As a consequence, general practitioners (GPs) have to establish priorities on which preventive interventions to deliver and to whom. We were interested, especially for patients aged 40 years and over, in which preventive procedures were offered during routine primary care consultations. Women are more frequent attendees to primary care than men.<sup>4</sup> Do they receive more prevention procedures, compared to men? Is there a difference between the categories of preventive procedures offered to male and female patients?

This study was designed to investigate the effect of patients' gender on annual delivery of preventive procedures in patients aged 40 years and over.

The study was performed during a baseline audit in surgeries in 2008 as a part of the PIUPOZ programme carried out by the Family Medicine Department of University of Medical Sciences, Poznan, Poland. The acronym PIUPOZ stands for *Poprawa Jakosci Uslug w Podstawowej Opiece Zdrowotnej* which means 'improving quality in primary care'. The aim of the PIUPOZ is to improve the quality of primary care in Poland by offering training in preventive medicine for GPs. In the PIUPOZ programme, lectures and interactive workshops were undertaken with groups of 15 people, lasting 25 hours during two weekends. The main topics were prevention, diagnosis and treatment of coronary heart disease (CHD) and chronic obstructive pulmonary disease (COPD), and breast and colon cancer screening. Participation, accommodation and course materials were provided free of charge. After completing the course, participants received a certificate and educational credits. Data presented in this

paper were collected prior to participation of physicians in the programme.

## Method

The study population consisted of all GPs working in the Wielkopolska region recruited to the PIUPOZ programme. Doctors working or training in family medicine or those in internal medicine working in primary care settings were included as GPs invited to take part in the project. Invitations were sent by mail and email. Recruitment to the programme was extended through personal contacts, at medical conferences or with the aid of adverts in the medical press. Candidates were registered through the family medicine department until the sample size of 120 GPs was achieved. Of the 120 doctors who volunteered to participate, 113 were included in the present study; seven were excluded because of subsequent withdrawal.

Observers (two men and two women) were recruited from final-year medical students with an interest in family medicine. They received a four-hour training session on preventive guidelines from a member of the research team. They were also instructed about the study registration form and how to perform an audit regarding confidentiality rules. The observers were exclusively involved in collecting data in the offices (surgeries) of participating GPs. They monitored GPs during consultations and observed each GP for preventive procedures undertaken with four consecutive patients aged 40 years and over. The observers had access to patients' medical records and recorded, in addition to the observed preventive procedures during the consultation, all preventive procedures noted in the patient's medical record during the previous year.

The recording form used by the observers collected information on 11 preventive procedures: screening for tobacco use, alcohol consumption, body weight, body mass index (BMI), waist measurement, physical activity, diet (fat or fruits and vegetables intake), blood pressure, blood glucose and lipid profile. For each procedure, the observer recorded whether it was performed (or not) during the observed consultation or recorded in the previous year. The physician identity was not recorded on the study form and the observed doctors did not have access to the forms.

## Statistical analysis

Descriptive statistics were used to characterise the observed patients. The analysis focused on delivery

rates of different preventive procedures and the differences between female and male patients. Chi-square tests were used to compare quantitative data. All tests were analysed at the significance level of 0.05, and analyses were performed using STATISTICA v.7.1 (StatSoft Inc, [www.statsoft.com](http://www.statsoft.com)).

## Results

### Study sample

A total of 450 patient consultations and medical records (from 113 GPs) were collected and analysed. For each patient only one consultation was registered. There were 267 (59.3%) women and 183 (40.7%) men observed. The GPs had a similar mixed patient population of men and women. The proportion of men and women on the patient lists of the doctors was comparable. All study patients were aged 40 years or over; the mean age was 59.5 (standard deviation (SD) = 11.23): 60.2 years (SD = 11.25) for women and 58.6 years for men (SD = 11.14);  $P = 0.13$ .

### Preventive procedures

During the observed consultations, 1073 preventive procedures were performed, 645 (60.1%) in women and 428 (39.9%) in men. This difference was not statistically significant. The mean number of procedures per patient was 2.37 (SD = 1.6): 2.4 (SD = 1.4) for women and 2.33 (SD = 1.6) for men. The numbers of procedures performed in women and men are presented in Table 1 and the rates of specific preventive procedures are presented in Table 2. The most frequently recorded procedures were serum glucose in 68.0% of the patients, blood pressure in 58.4% and total cholesterol measurement in 55.6% of the patients. In 81 (18%) patients who received only one preventive procedure at the observed consultation or during the previous year, 35.8% had serum glucose measured and 34.6% had blood pressure checked. A high number of preventive procedures (six out of 11) were offered to less than 10% of patients: dietary, tobacco use and alcohol drinking screening, exercise counselling, BMI and waist measurement.

The correlation between gender and the delivery of preventive procedures is presented in Table 3. There was a statistically significant difference between patients' gender and some preventive procedures. Men were more likely to receive screening for tobacco use, alcohol consumption, and BMI measurement, whereas women had their blood cholesterol checked more frequently.

**Table 1** Rate of preventive procedures observed or offered (in the previous year) for 113 observed GPs and 450 patients

	Preventive procedures performed by patient gender		
	Total ( <i>n</i> = 450)	Women ( <i>n</i> = 267)	Men ( <i>n</i> = 183)
Annual number	1073	645	428
Mean <sup>a</sup>	2.37	2.4	2.33
SD	1.6	1.4	1.6
Median <sup>a</sup>	2	2	2

<sup>a</sup> Per patient per year**Table 2** Rate of preventive procedures observed or offered (in the previous year) by 113 observed GPs for 450 patients

	Overall	Women		Men		Number of procedures	
	percentage ( <i>n</i> = 450)	<i>n</i> = 267	(%)	<i>n</i> = 183	(%)	<i>n</i> = 1073	(%)
Tobacco use screening	10.6	21	(7.9)	27	(14.7)	48	(4.5)
Alcohol screening	3.8	3	(1.1)	14	(7.7)	17	(1.6)
Weight measurement	18.6	53	(19.9)	31	(16.9)	84	(7.8)
Body mass index	4.4	7	(2.6)	13	(7.1)	20	(1.9)
Waist measurement	2.2	5	(1.9)	5	(2.7)	10	(0.9)
Physical activity counselling	8.2	23	(8.7)	14	(7.7)	37	(3.4)
Dietary advice about fat	4.2	12	(4.5)	7	(3.8)	19	(1.8)
Dietary advice about fruits and vegetables	4.2	12	(4.5)	7	(3.8)	19	(1.8)
Blood glucose	68.0	190	(71.2)	116	(63.4)	306	(28.5)
Blood pressure	58.4	157	(58.8)	106	(57.9)	263	(24.5)
Lipid profile	55.6	162	(60.7)	88	(48.4)	250	(23.3)
Total number of procedures		645		428		1073	(100)

**Table 3** Differences in preventive procedures by gender undertaken by 113 GPs in 450 patients in the previous year

Procedure	Women (%)	Men (%)	P value
Tobacco use screening	7.9	14.8	0.02
Alcohol drinking screening	1.1	7.7	0.00036
Weight measurements	19.9	16.9	NS
Body mass index	2.6	7.1	0.02
Waist measurements	1.9	2.7	NS
Physical activity counselling	8.7	7.7	NS
Dietary advice about fat	4.5	3.8	NS
Dietary advice about fruits and vegetables	4.9	3.3	NS
Blood pressure	58.8	57.9	NS
Blood glucose	71.2	63.4	NS
Lipid profile (and cholesterol)	60.7	48.4	0.0099

## Discussion

During the observed consultations, screening for alcohol consumption, tobacco use and BMI was more frequently offered to men than to women, while women were more likely to have a laboratory test for cholesterol.

The overall delivery of preventive procedures (2.4 per patient per year) in primary care fell below the levels recommended by the Polish Ministry of Health for people aged 40 years in the target group to have the listed preventive procedures each year. The finding of a low rate of preventive interventions in primary care is consistent with previous studies in other European countries.<sup>5</sup> The need to improve prevention is of particular interest to primary care. According to American, European, Australian and World Health Organization (WHO) guidelines, preventive activities such as tobacco use screening, alcohol screening, weight measurement, BMI, waist circumference, blood pressure, diet and physical activity counselling should be offered to all adult patients.<sup>6–9</sup> Lipid profile and blood glucose should be checked in older patients, but cut-off points are different in different countries. According to Polish guidelines they should be checked annually in patients aged 40 years and older. Women or men should be offered prevention in the same way.

In our study, five primary prevention procedures represented 13% of all reported interventions, and together with blood pressure measurements, lipid profile

and blood glucose comprised 76.3% of all procedures. According to the literature, the secondary–tertiary prevention model leads to primary prevention being undervalued.<sup>10</sup> It is a challenge for educational programmes to target GPs to focus on the real priorities in prevention efforts for adults aged 40 years and over.

## Gender differences

Although women are more frequent attendees than men in primary care, this is not always reflected in their receiving more preventive interventions.<sup>11,12</sup> Some studies show that women receive less prevention, whereas others conclude the opposite. Most investigators agree that women receive less lifestyle advice.<sup>4,13</sup> Compared with men, more women had their total serum cholesterol measured. For laboratory-based procedures, not only is a physician's action involved but so also is a patient's co-operation. If doctors offer these tests without patients' agreement, they will not be performed. The difference between clinically based preventive procedures and lifestyle advice may be partly explained by the doctor–patients interaction. Brotons *et al*, in a study among GPs in 11 European countries, observed that more than half of GPs were sceptical of helping patients to reduce tobacco use, decrease alcohol consumption, achieve or maintain normal weight, and practise regular physical exercise.<sup>14</sup> It is unusual for patients to ask for lifestyle advice as a specific reason for a consultation, but many will ask doctors for laboratory tests. Many GPs experience pressure from

patients who demand unnecessary tests or medical treatment. According to van Steenkiste *et al*, patients often perceive cholesterol as a very important risk factor, even more important than smoking.<sup>15</sup> Women are often more concerned about their health and may insist on their GP performing laboratory tests to prevent disease or to maintain their healthy state.<sup>13</sup>

## Tobacco use screening

It is widely accepted that brief advice against smoking can be effective. For every 50 smokers who receive advice to stop from their GP, one or two will do so.<sup>16</sup> Anti-smoking advice is one of the three most highly ranked preventive interventions.<sup>2</sup> According to Australian guidelines, smoking status should be checked annually in all patients older than 12 years of age.<sup>8</sup> In our study only 11% of patients were asked about smoking in the previous year. According to the literature, GPs use few opportunities for discussing smoking with patients, advising only a minority of those who consult.<sup>17</sup> In our study, a higher proportion of men received anti-smoking advice, but GPs need to be aware that the number of women smoking is increasing. In Poland, 33.9% of adult men and 19.3% of women are current smokers.<sup>4</sup> As a consequence, the incidence of lung cancer in women is also increasing. Research suggests that patients can become irritated by GPs' questions about tobacco use.<sup>17</sup> The anticipation of patients' irritation may explain why GPs are more likely to discuss smoking with patients who have smoking-related problems.<sup>18</sup>

A concern about patient irritation may also explain other missed opportunities for health promotion by GPs. Counselling about obesity is not well received by patients.<sup>19</sup> Obese persons and those who are overweight are often self-conscious about their weight,<sup>20</sup> which may explain why doctors are not keen to discuss body weight, waist circumference, BMI or dietary advice. It is estimated that in Poland, despite 27% of women and 33% of men being obese, BMI is not frequently measured. In our study it accounted for only 1.9% of the performed preventive procedures (see Table 2). Discussing obesity, in particular with female patients, may be very difficult and lead to GPs avoiding such uncomfortable situations by simply not discussing them.

## Alcohol screening

GPs' desire for harmonious relationships with patients also appears to influence the way they discuss alcohol drinking with patients. In general, only 3.8% of the observed patients were asked about alcohol consumption, and the gender difference is remarkable: 1.1% of the women, compared to 7.7% of the men ( $P = 0.0004$ ).

Although Poland belongs to countries with a large average alcohol consumption and men drink on average 4.5 times more than women, the rate of annual alcohol screening in primary care is five times less than that in the UK.<sup>4,21</sup> It is clear that educational programmes for GPs to ameliorate preventive counselling needs to pay attention to discussion of alcohol consumption, especially in female patients.

## Strengths and limitations of the study

There are several weaknesses in our study. The study sample of doctors was not randomly selected, but based on active recruitment of interested volunteers for a training programme. Recruited physicians may have been more motivated than the average doctor to incorporate prevention in their consultations. The real preventive performance of the average GP in Poland may therefore be lower than that in the current study.

Reported rates of delivered procedures may have been influenced by the presence of an observer. We assumed that doctors performed and offered preventive procedures unaffected by the observer. The recording of preventive procedures in the medical records may vary between physicians, but when a particular intervention was observed we assumed that this was effectively performed. We believe that direct observation in combination with inspection of the patient record gave fairly reliable estimates of the preventive activities of GPs with any particular patient.

Although we performed our study in one region, many of the factors identified are not unique to Poland and are probably seen in different primary care settings in Europe.

In this study we did not explore the effect of doctors' gender on the delivery of preventive procedures because participating physicians were anonymous. This will be studied during the second phase of the PIUPOZ programme. In the literature, there is evidence that doctors' gender may affect their performance in prevention activities. Bertakis and Rahman found that female physicians were slightly more likely to check patients' blood pressure, but no significant differences were seen in other non-gender-specific prevention procedures.<sup>22</sup> According to Frank and Harvey, female physicians were reported to undertake systematic patient counselling more often than male physicians.<sup>23</sup>

A strength of the present study was the direct observation of doctors' preventive behaviour by trained observers. Many previous estimates of the delivery of preventive procedures are based on doctors' self-assessment or on patients' medical records, particularly electronic records. In Poland, electronic patient records are not common. Direct observation of the doctor and inspection of the patient record was the

most appropriate way to study doctors' behaviour in real life. The healthcare system in Poland is organised by registering patients in a specific primary care setting. Patients cannot follow their personal preference for a particular doctor, which means that every GP has a variety of patients of different ages and gender and limits the possibility of a gender bias whereby female patients register preferentially with female doctors, or male patients with male doctors.

## Conclusion

This study is based on direct observation of doctors' behaviour in combination with the patient record and demonstrated that the annual delivery of preventive interventions in primary care fell below recommended levels. Limited time and resources encourage GPs to perform certain preventive procedures in preference to others. In particular, preventive procedures based on clinical examinations and laboratory tests were performed more often than lifestyle advice.

Education and lifestyle counselling need doctors' personal engagement and specific communication skills. Preventive guidelines should take into account that patients' gender and personal attitude to health advice may influence GPs' performance in preventive procedures. Men are more likely to receive preventive procedures such as tobacco screening, drinking screening and BMI measurement.

Changing beliefs and attitudes of GPs about giving lifestyle advice during routine consultations remains a challenge. Effort made to introduce lifestyle advice and education into the consultation may bring about long-term health benefits and it is planned to encourage this change in doctors' behaviour through interactive workshops as part of the PIUPOZ programme.

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#### ETHICAL APPROVAL

The PIUPOZ programme was approved by the Bioethics Committee of the Poznan University of Medical Sciences, Poland. Informed patient consent

was obtained from all patients. All patient/personal identifiers were removed or disguised so the patient/person(s) described are not identifiable and cannot be identified through the details of the story.

#### PEER REVIEW

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#### CONFLICTS OF INTEREST

None.

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