

Perception of preventive care and readiness for lifestyle change in rural and urban patients in Poland: a questionnaire study

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Abstract

Introduction and objective. The idiosyncrasies of rural health demand further research to instigate rural health initiatives and to monitor progress in rural health care. In 2008, a study examined health-related behaviour, perception of importance of preventive interventions, readiness to change lifestyle and willingness to receive support from GPs, according to gender and place of residence.

Materials and method. A cross-sectional survey was conducted among patients who visited any of ten randomly-selected general practices in Poland.

Results. Four hundred patients were enrolled: 50% from rural areas, 50.3% were females; 23.8% declared a primary level of education (35% rural vs. 12.5% urban) respondents; the median age was 50 years (IQR=18), The predicted means for prevention importance scores for rural residents were 0.623 and for urban residents – 0.682. Place of residence had a significant effect on the importance of prevention ($p<0.05$; ICC=0.048). Area and gender have a statistically significant effect on preventive behaviour importance scores ($p<0.05$; ICC=0.0526). Patient expectations of individual counselling by GPs were highest for eating habits – 35.5% rural vs. 16% urban residents ($p<0.0001$).

Conclusions. Patient importance scores for prevention were associated with residence and gender. The villagers attached less importance to prevention. They also declared less willingness to change their lifestyle. Women had higher scores regarding prevention than men. More rural respondents would like to receive individual counselling from their GP regarding eating habits, physical activity, body weight, giving up smoking and safe alcohol use. Urban respondents were more likely to expect leaflets from their GPs on normalizing body weight.

Key words

general practice, patients, preventive medicine, rural, urban, Poland, lifestyles

Acronyms

d.f. – degree of freedom; **EUROPREV** – European Network for Prevention and Health Promotion in Family Medicine and General Practice; **GP** – general practitioner; **ICC** – intraclass correlation coefficient; **IQR** – interquartile range; **LR** – Likelihood ratio test statistics; **mean.pred** – the predicted mean; **ref. cat.** – reference category; **RI** – random intercept model; **VC** – variance component; **VPC** – variance partition coefficient

INTRODUCTION

The World Organization of General Practitioners/Family Physicians ("WONCA") acknowledged the special problems existing in rural health and called for research to instigate rural health initiatives and to monitor progress in rural health care [1]. Studies showed significant differences in the overall health care assessment between rural and urban populations [2, 3]. Geographic accessibility has been shown

to be one of the barriers to accessing health services [4]. A study in the USA found that residents in rural counties reported significantly lower scores in health behaviour, morbidity factors, clinical care and the physical environment [5]. It has been shown that geographical location and limited availability of care represent barriers to accessing health services by rural residents [2]. Access to health facilities varies according to place of residence [6, 7], and another study has found that the rural population is more likely to buy drugs for medical treatment [8]. It has been shown that women living in areas with limited access to health care are more likely to be diagnosed with late-stage breast cancer [9].

The aim of the study was to determine whether patient knowledge, attitudes and beliefs towards health, preventive

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care, willingness to change their lifestyle and expectations for support from GPs in Poland are associated with their area of residence. With this in mind, the present study examined the influence of place of residence on aspects of preventive care, based on the 2008 study European Network for Prevention and Health Promotion in Family Medicine and General Practice (EUROPREV).

OBJECTIVES

To investigate whether patient perceptions of health-related behaviour, the need for preventive interventions, readiness to change lifestyle and willingness to receive support from GPs depend on gender and rural or urban place of residence in Poland.

MATERIAL AND METHODS

Sample

Data were obtained from the European Network for Prevention and Health Promotion in Family Medicine/General Practice (EUROPREV; <http://europrev.woncaeurope.org/>) cross-sectional survey performed in 22 European countries, described in detail elsewhere [10]. A subset of data collected in 10 primary care practices in Poland was used; the practices were randomly selected from a list of training practices with at least 2,500 patients each, stratified by rural and urban location. Each practice was requested to recruit, respectively, 40 consecutive adult patients (n=400) stratified by gender and age. Patients attending GP consultations for any reason, on any day of the week, between September 2008 – September 2009 were eligible. Data collection was self-administered. Research assistants checked the anonymous questionnaires to ensure completeness. These were hierarchical 2-level data with patients nested within practices. The sample was representative of the Polish population stratified for age, gender and area of residence. These areas were formally classified as rural or urban. Rural areas included units of compact or dispersed settlements functioning to provide agricultural or related services, or tourism, with no rights or status of a town, nor possessing any local community facilities, such as a town hall or public offices. Urban areas included settlements with concentrated housing and the rights or the status of a town, according to the provisions of various laws [11].

Questionnaire and data

The questionnaire has been presented in detail elsewhere [10]. The first section was related to the socio-demographic characteristics of the participants. The second concerned patient health-related behaviour, obtaining information on eating habits, physical activity, smoking and alcohol consumption, as well as screening for cervical and breast cancer in the women. The third section concerned the importance of preventive behaviour declared by the patients; and the fourth readiness for action, confidence in access and to interventions and plan for change.

Statistics

Statistica version 12 (Statsoft, Inc.) and MLwiN (Version 2.24, Centre for Multilevel Modelling, University of Bristol, UK)

were used for statistical analysis. Missing data was excluded from the analysis. Variables were coded into the categories and cross tables of pre-selected variables calculated for total respondents and those of rural and urban areas. To identify variables associated with setting (rural vs. urban), the Chi-square test and the Chi-square test with Yates correction for a small number of samples were employed. The answers were scored as 0 ('not important'), 1 ('of slight importance'), 2 ('important') or 3 ('very important'). Scores were calculated for all questions regarding perception of importance of preventive care (prevention importance scores) for the health of the respondent (separately for genders: 9 interventions for men and 11 for women) and scaled to a range of values between 0 – 1. Higher prevention importance scores indicated perceived higher importance of preventive care, with 1 as the maximum score. Variables associated with place of residence were identified using the χ^2 test. Normality of the data distribution was examined using the Shapiro-Wilk test. The results were presented as number (%) of responses, median, interquartile range (IQR), range (min., max.) or differences, and predicted means with 95% CI; p-values of 0.05 or less were considered statistically significant.

To identify the association between prevention scores with area of residence and gender, multilevel models for continuous responses were fitted in MLwiN. The variance partition coefficient (VPC) and intraclass correlation coefficient (ICC) were calculated. The intercepts for differences from the overall mean and predicted means (across practices) were calculated with corresponding 95% confidence intervals (CIs).

RESULTS

Sociodemographic characteristics

Four hundred adult patients completed the questionnaires, no participants were excluded from the analysis. Of all the respondents, 50% were from rural areas and 50.3% were female. The median age was 50 (IQR=18) years for all respondents and in both residential areas. More demographic details are shown in Table 1.

Health related behaviour

Of all respondents, 42.8% had visited their general practice once or twice in the previous year: 36% in rural areas vs. 49.5% in urban areas.

Thirty percent of all respondents declared that they currently smoke: 29% rural and 31% urban. Considering gender, 37.0% of rural men and 37.4% of urban men declared current smoking, compared to 21% of rural women and 24.8% of urban women. Four percent of total respondents were risky drinkers: 4.5% rural and 3.5% urban. In addition, 24.2% declared the wish to receive support/advice from their GP to increase physical activity: 29.5% rural and 18.8% urban. More detailed data, including healthy eating and exercise status are presented in Table 2.

Importance of preventive behaviour

Compared to 70.5% of rural respondents who declared that their regular physical activity was important for health, 89% of urban respondents made the same declaration. Normal body weight was declared as important by 80.5% rural vs. 92% urban respondents, respectively. The importance of not smoking and safe alcohol use, or no alcohol use at all, was

Table 1. Socio-demographic characteristics by area.

Characteristics	Respondents n (%)	Rural n (%)	Urban n (%)
Population	400 (100)	200 (50.0)	200 (50.0)
Female	201 (50.3)	100 (50.0)	101 (50.5)
Male	199 (49.8)	100 (50.0)	99 (49.5)
Age [in years]: median (IQR)	50.0 (18.0)	50.0 (17.0)	50.0 (20.5)
Highest level of education:			
Primary	95 (23.8)	70 (35.0)	25 (12.5)***
Secondary	208 (52.0)	99 (49.5)	109 (54.5)
Tertiary	97 (24.3)	31 (15.5)	66 (33.0)
Marital status:			
married or living with a partner	292 (73.2)	149 (74.5)	143 (71.9)
not married, nor living with a partner	40 (10.0)	20 (10.0)	20 (10.1)
separated or divorced	44 (11.0)	19 (9.5)	25 (12.6)
Widowed	23 (5.8)	12 (6.0)	11 (5.5)
Current employment status:			
employed/self-employed	255 (63.8)	119 (59.5)	136 (68.0)**
Pensioner	103 (25.8)	51 (25.5)	52 (26.0)
Unemployed	42 (10.5)	30 (15.0)	12 (6.0)

*- p<0.05; **- p<0.01; ***- p<0.001;

for living area comparison, Chi-square test and Chi-square test with Yates correction was employed for a small number of samples.

'What is your current employment situation?' – group with a small number of samples 'Unemployed' including 'Student' + 'Housewife/husband or equivalent' + 'Unemployed'

IQR – interquartile range

Table 2. Patients' health related behaviour

	Respondents n (%)	Rural n (%)	Urban n (%)	Males n (%)	Females n (%)	Respondents n (%)
Number of GP visits in the last 12 months:						
1–2 times	171 (42.8)	72 (36.0)	99 (49.5)**	91 (45.7)	80 (39.8)	171 (42.8)
3+	229 (57.3)	128 (64.0)	101 (50.5)	108 (54.3)	121 (60.2)	229 (57.3)
Smoking status:						
current smoker	120 (30.0)	58 (29.0)	62 (31.0)	74 (37.2)	46 (22.9)***	120 (30.0)
non-smoker	171 (42.8)	85 (42.5)	86 (43.0)	65 (32.7)	106 (52.7)	171 (42.8)
previous smoker	109 (27.3)	57 (28.5)	52 (26.0)	60 (30.2)	49 (24.4)	109 (27.3)
Alcohol consumption status						
Not a risky drinker	384 (96.0)	191 (95.5)	193 (96.5)	188 (94.5)	196 (97.5)	384 (96)
risky drinker	16 (4.0)	9 (4.5)	7 (3.5)	11 (5.5)	5 (2.5)	16 (4.0)
Declared eating habits:						
not healthy	100 (25.1)	44 (22.1)	56 (28.0)	64 (32.2)	36 (18.0)***	100 (25.1)
healthy	299 (74.9)	155 (77.9)	144 (72.0)	135 (67.8)	164 (82)	299 (74.9)
Number of days a week with exercise:						
no exercise (0 days)	43 (10.8)	31 (15.5)	12 (6.0) **	25 (12.6)	18 (9.0)	43 (10.8)
1–7 days	357 (89.3)	169 (84.5)	188 (94.0)	174 (87.4)	183 (91.0)	357 (89.3)
Declared wish for support from GP to increase physical activity? 'Yes'	96 (24.2)	59 (29.5)	37 (18.8)*	39 (19.6)	57 (28.8)*	96 (24.2)

*- p<0.05; **- p<0.01; ***- p<0.001.

for living area comparison, Chi-square test and Chi-square test with Yates correction was employed for a small number of samples.

'Number of visiting GP in last 12 months': '3+'='3–4 times' and '5 times or more';

'Smoking status': current smoker as 'I currently smoke'; 'non-smoker'='I have never smoked'; previous smoker as 'I gave up smoking'='I gave up smoking one year ago or less' + 'I gave up smoking more than one year ago';

Alcohol consumption status from question: 'How often do you consume alcohol (beer wine or spirits)?': 'not risky drinkers'='never + monthly or less +2–4 times a month +2–3 times a week'; 'risky drinkers'='4 or more times a week';

Declared eating habits from question: 'I think my eating habits are': 'not healthy'='Very unhealthy+Rather unhealthy'; 'healthy eating'='Relatively health+ Healthy + Very healthy'; ('No' = Not applicable, because I control my eating habits+ No+ I don't know. 'Yes'='Yes)

Number of days a week with exercise: from question: 'How many days a week do you exercise' 'no exercise'='0 days'; 'exercise'='1+2+3+4+5+6+7 (every day) [in days].

declared by 76.4% and 72.5% of rural respondents vs. 89% and 88% of urban, respectively.

The flu vaccination was declared as important by 32% rural vs. 28.1% urban respondents. Eighty-four percent of

rural women regarded a mammogram as important for their health vs. 91.1% of urban respondents. The area had an effect on prevention importance scores (p<0.05; ICC=0.0476). Area and gender had a statistically significant effect on preventive

Table 3. Importance of preventive behaviour

Importance of: answer: 'important'	Respondents n (%)	Rural n (%)	Urban n (%)	Males n (%)	Females n (%)	Respondents n (%)
healthy eating habits	325 (81.3)	158 (79.0)	167 (83.5)	147 (73.9)	178 (88.6)***	325 (81.3)
regular physical activity	319 (79.8)	141 (70.5)	178 (89.0)***	153 (76.9)	166 (82.6)	319 (79.8)
normal body weight	345 (86.3)	161 (80.5)	184 (92.0) ***	165 (82.9)	180 (89.6)*	345 (86.3)
non smoker	330 (82.7)	152 (76.4)	178 (89.0) ***	159 (80.3)	171 (85.1)	330 (82.7)
safe alcohol use or no alcohol use at all	321 (80.3)	145 (72.5)	176 (88.0) ***	151 (75.9)	170 (84.6)*	321 (80.3)
normal blood cholesterol level	339 (85.0)	160 (80.0)	179 (90.0)**	157 (78.9)	182 (91.0)***	339 (85.0)
normal blood sugar level	344 (87.1)	162 (81.8)	182 (92.4) ***	158 (79.4)	186 (94.9)***	344 (87.1)
normal blood pressure level	369 (92.7)	182 (91.0)	187 (94.4)	176 (88.4)	193 (97.0)***	369 (92.7)
flu vaccination	120 (30.1)	64 (32.0)	56 (28.1)	51 (25.8)	69 (34.3)	120 (30.1)
having a cervical smear (only for women)?	186 (93.0)	90 (90.0)	96 (96.0)	0 (0.0)	186 (93.0)	186 (93.0)
having a mammogram (for women only)	176 (87.6)	84 (84.0)	92 (91.1)	0 (0.0)	176 (87.6)	176 (87.6)

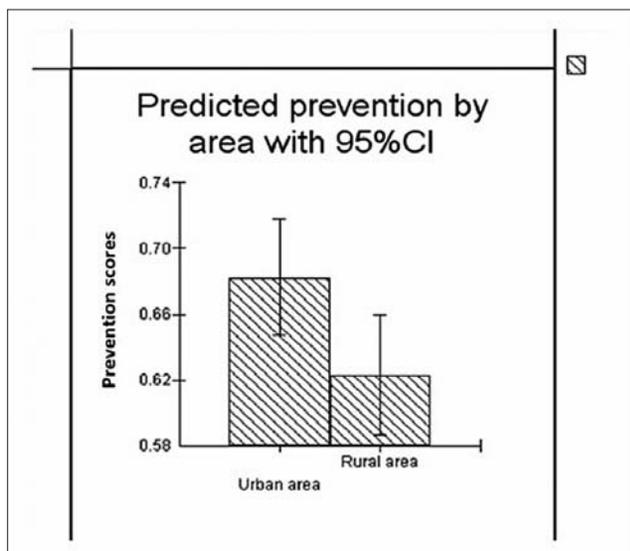
*- p<0.05; **- p<0.01; ***- p<0.001.

for living area comparison, Chi-square test and Chi-square test with Yates correction was employed for a small number of samples.

'How important for your health is', including answer: important = important+very important.

behaviour importance scores ($p<0.05$; ICC=0.0526). People living in rural areas scored lower compared to urban, dominant for gender at the 5% level (rural z-ratio=-2.320). Women scored higher than men in preventive behaviour importance controlling for area of residence at the 5% level (gender z-ratio=6.214). More results on attitudes towards preventive, including gender related data are presented at Table 3.

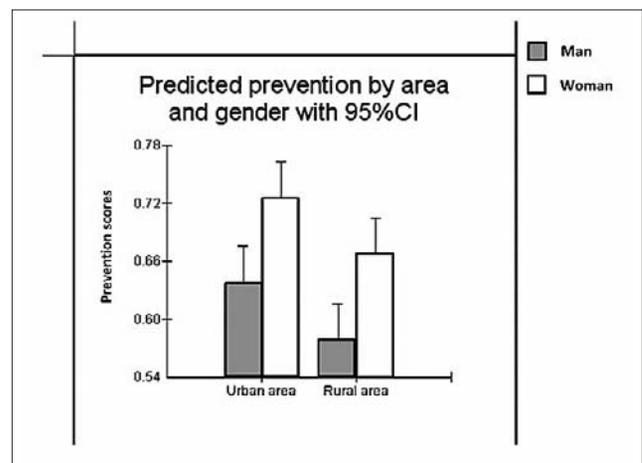
Predicted mean (mean.pred) prevention importance scores were 0.623 for rural residents (0.588. 0.658) and 0.682 for urban residents (0.647. 0.717) (Fig 1).

**Figure 1.** Perceived prevention importance scores by area with 95%CI

Predicted mean prevention scores were 0.580(0.543. 0.617) for rural men, 0.667(0.630. 0.704) for rural women, 0.725(0.688. 0.762) for urban women and 0.638(0.601. 0.675) for urban men (Fig. 2).

Declared readiness for action, confidence in access and plan for change

A total of 56.6% of rural patients were confident that they would routinely receive the flu vaccination, compared to 72.4% of urban patients. Of the women, 54.3% were confident/sure that they would routinely receive a cervical (pap) smear

**Figure 2.** Perceived prevention importance scores by area and gender with 95%CI

(63.9% rural vs. 45.0% urban) and 59.8% of rural women vs. 41% of urban women would routinely receive a mammogram (Tab. 4). No statistically significant differences were found between area and gender with regard to any perceived need to change lifestyles (eating habits, physical activity, body weight, smoking habit and alcohol use) (Tab. 4)

Support expected from GP / GPs' team

It was found that 59% of rural respondents vs. 41% of urban would like their GP to provide a cervical (pap) smear test; 24.2% of total respondents (29.5% rural vs. 18.8% urban) would like to receive support or advice from their GP regarding increasing physical activity; 31.6% to improve eating habits; giving up smoking; 17.7% of the total and only 4.3% of the total would you like to receive support/advice from a GP to reduce their alcohol use (5.5% rural vs. 3.1% urban). The most popular source of support or advice from the GP concerned attaining a normal weight: 36.2% of the total (38% rural vs. 34.3 urban). More details on support expected from GP are presented in Table 5.

It was found that 25.8% of respondents would like to receive from their GP or the GP's team, individual counselling on their eating habits (35.5% rural vs. 16% urban); physical activity (22.8% of all respondents; 32.5% rural vs. 13% urban); body weight (25.3% of all respondents; 36% rural vs. 14.5% urban); smoking cessation (11.3% of all respondents; 15.0%

Table 4. Declared readiness for action, confidence in access and plan for change

Declared readiness to answer: 'Yes'	Respondents n (%)	Rural n (%)	Urban n (%)	Males n (%)	Females n (%)	Respondents n (%)
improve your eating habits	187 (46.9)	98 (49.0)	89 (44.7)	90 (45.2)	97 (48.5)	187 (46.9)
do more physical activity	165 (41.3)	91 (45.5)	74 (37.0)	76 (38.2)	89 (44.3)	165 (41.3)
improve body weight	176 (44.0)	87 (43.5)	89 (44.5)	78 (39.2)	98 (48.8)*	176 (44.0)
stop smoking	86 (21.5)	43 (21.5)	43 (21.5)	54 (27.1)	32 (15.9)***	86 (21.5)
reduce alcohol use	25 (6.3)	12 (6.0)	13 (6.5)	20 (10.1)	5 (2.5)***	25 (6.3)
have blood cholesterol checked	281 (70.3)	131 (65.5)	150 (75.0)*	136 (68.3)	145 (72.1)	281 (70.3)
have blood sugar checked	275 (68.9)	134 (67.3)	141 (70.5)	137 (68.8)	138 (69.0)	275 (68.9)
have blood pressure checked	298 (74.5)	145 (72.5)	153 (76.5)	144 (72.4)	154 (76.6)	298 (74.5)
get a flu vaccination	108 (27.1)	50 (25.0)	58 (29.2)	53 (26.8)	55 (27.4)	108 (27.1)
get a cervical (pap) smear	140 (70.4)	69 (69.0)	71 (71.7)	0 (0.0)	140 (70.4)	140 (70.4)
get a mammogram (for women only)	136 (67.7)	61 (61.0)	75 (74.3)*	0 (0.0)	136 (67.7)	136 (67.7)
Confidence to have routine access to answer: 'Confident'						
the flu vaccination	256 (64.5)	112 (56.6)	144 (72.4)***	128 (64.3)	128 (64.7)	256 (64.5)
a cervical (pap) smear	107 (54.3)	62 (63.9)	45 (45.0)**	0 (0.0)	107 (54.3)	107 (54.3)
a mammogram (for women only)	99 (50.3)	58 (59.8)	41 (41.0)**	0 (0.0)	99 (50.3)	99 (50.3)
Plan to change: answer: "Yes"						
eating habits	136 (34.1)	67 (33.7)	69 (34.5)	60 (30.3)	76 (37.8)	136 (34.1)
physical activity	108 (27.1)	54 (27.1)	54 (27.0)	42 (21.2)	66 (32.8)***	108 (27.1)
body weight	156 (39.1)	76 (38.2)	80 (40.0)	66 (33.3)	90 (44.8)**	156 (39.1)
smoking habit	64 (16.1)	28 (14.1)	36 (18.2)	43 (21.7)	21 (10.6)***	64 (16.1)
alcohol use	17 (4.3)	8 (4.0)	9(4.6)	14 (7.1)	3 (1.5)**	17 (4.3)

* - p<0.05; ** - p<0.01; *** - p<0.001.

for living area comparison, Chi-square test and Chi-square test with Yates correction was employed for a small number of samples.

'How confident/sure are you that you can/could routinely receive the following care': including answers 'Confident'.

Table 5. Areas and means of support expected from GP/ GPs' team.

	A kind of support from GP: answer "Yes"	Responders n (%)	Rural n (%)	Urban n (%)	Males n (%)	Females n (%)	Respondents n (%)
Eating habits	Leaflets	145 (36.3)	68 (34.0)	77 (38.5)	70 (35.2)	75 (37.3)	145 (36.3)
	Individual counseling	103 (25.8)	71 (35.5)	32 (16.0)***	53 (26.6)	50 (24.9)	103 (25.8)
	group counseling	5 (1.3)	4 (2.0)	1 (0.5)	1 (0.5)	4 (2.0)	5 (1.3)
	referral to special care	33 (8.3)	18 (9.0)	15 (7.5)	14 (7.0)	19 (9.5)	33 (8.3)
Physical activity	leaflets	122 (30.5)	59 (29.5)	63 (31.5)	58 (29.2)	64 (31.8)	122 (30.5)
	individual counseling	91 (22.8)	65 (32.5)	26 (13.0)***	45 (22.6)	46 (22.9)	91 (22.8)
	group counseling	10 (2.5)	6 (3.0)	4 (2.0)	3 (1.5)	7 (3.5)	10 (2.5)
	referral to special care	16 (4.0)	10 (5.0)	6 (3.0)	7 (3.5)	9 (4.5)	16 (4.0)
Body weight	leaflets	143 (35.8)	57 (28.5)	86 (43.0)**	66 (33.2)	77 (38.3)	143 (35.8)
	individual counseling	101 (25.3)	72 (36.0)	29 (14.5)***	52 (26.1)	49 (24.4)	101 (25.3)
	group counseling	7 (1.8)	5 (2.5)	2 (1.0)	3 (1.5)	4 (2.0)	7 (1.8)
	referral to special care	32 (8)	21 (10.5)	11 (5.5)	12 (6.0)	20 (10.0)	32 (8.0)
Give up smoking	leaflets	118 (29.5)	67 (33.5)	51 (25.5)	63 (31.7)	55 (27.4)	118 (29.5)
	individual counseling	45 (11.3)	30 (15)	15 (7.5)*	29 (14.6)	16 (8.0)*	45 (11.3)
	group counseling	7 (1.8)	4 (2.0)	3 (1.5)	3 (1.5)	4 (2.0)	7 (1.8)
	referral to special care	33 (8.3)	23 (11.5)	10 (5.0)*	16 (8.0)	17 (8.5)	33 (8.3)
Alcohol use	leaflets	107 (26.8)	61 (30.5)	46 (23.0)	51 (25.6)	56 (27.9)	107 (26.8)
	Individual counseling	24 (6.0)	19 (9.5)	5 (2.5)**	17 (8.5)	7 (3.5)*	24 (6.0)
	group counseling	2 (0.5)	2 (1.0)	0 (0.0)	0 (0.0)	2 (1.0)	2 (0.5)
	referral to special care	14 (3.5)	8 (4.0)	6 (3.0)	8 (4.0)	6 (3.0)	14 (3.5)

* - p<0.05; ** - p<0.01; *** - p<0.001

for area of residence comparison, Chi-square test and Chi-square test with Yates correction was employed for a small number of samples.

'If you want support – what kind of support would you like to receive from your GP/team?' – answer 'Yes' by living area.

rural vs. 7.5% urban); and alcohol use reduction (6% of all respondents; rural 9.5% vs. urban 2.5%). Out of 26.8% of risky drinkers, 30.5% of rural and 23% of urban participants would like to receive support in the form of information leaflets. In addition, 38% of rural men would like individual counselling on improving their eating habits and 38% on normalizing their body weight ($p < 0.0001$); and 33% of rural men on regular their physical activity vs. rural women. However, 35.8% of total respondents would like access to information leaflets regarding normalizing body weight: 28.5% people in rural areas (26% rural men vs. 31% rural women) vs. 43.0% in urban areas (45.5% urban women vs. 40.4% urban men). Only 0.5% of total respondents would like group counselling to reduce their alcohol use: 1% in rural and nobody in urban areas (Chi-Squared Yates correction). Regarding giving up smoking, 11.5% of rural inhabitants vs. 5% of urban residents would like a referral to special care.

DISCUSSION

Countries face challenges in eliminating health risks and discrepancies associated with factors such as ethnicity, gender, culture, health literacy and access to health care facilities. Efforts to address these issues in rural settings were initiated in the mid-1990s [12, 13], and this was soon followed by rural-based preventive research which set an agenda for this field and identified related topics [14, 15]. A wide range of rural prevention research needs were identified through this process, including barriers to the implementation of intervention in rural areas [16].

The presented study focuses on the geographic and gender aspects of preventive care in Poland where rural residents constituted 38.8% of total population at the time of the study [17]. A difference in respondent education level needs to be noted which could bias the results. More rural respondents smoked. Urban patients visited their GPs more often and seemed to take part in more exercise, while more rural respondents declared only an intention to do so. In both locations, most respondents reported that preventive behaviour was important. However, slightly more so in urban areas; the rural population reported a greater need for flu vaccination. Rural respondents were more confident about routine access to flu vaccination, and urban women to cervical smear and mammography.

No difference was found between areas of residence with regard to confidence in ability to improve eating habits, increasing physical activity, attaining a normal weight, quitting smoking or reducing alcohol intake. Less than half of the respondents planned to change their preventive, health-related behaviour, with no significant difference observed between locations. More respondents planned to change body weight, compared to those who wanted to improve eating and smoking habits, or increasing physical activity. Generally, one in three respondents expected some support from the GP/GPs team. Rural respondents received such support in healthy eating habits (in the form of individual counselling, group counselling and referral to special care), in physical activity (with information leaflets), in body weight control (with information leaflets and group counselling), to give up smoking (with information leaflets, individual counselling and in alcohol use (with information leaflets, individual counselling, group counselling) and referral to special care.

The gender difference was in line with study findings in the USA which indicated that women were more proactive in their health beliefs towards preventive care and getting regular check-ups than men [18]. In general, it seems that Polish patients assigned great importance to preventive care with a relatively low level of willingness to change their lifestyle. Rural residents assigned a lower importance to prevention with less willingness to change their lifestyle than city dwellers. The expectation of GP assistance guidance was higher in rural areas than in urban areas.

The current study shared the limitations of international studies. Lifestyle habits were self-reported by patients and could thus be inaccurate or biased. Common problems could be under-reporting of true lifestyle traits or under-reporting of the advice given during their practice visits, either because of the sensitivity of some of the lifestyle areas or simply due to forgetfulness. Patients might find it hard to quantify their behaviour measures. Primary care teams that took part in the study 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. The generalizability of the results could have been influenced by the participation rate of those invited. Another limitation was the sample size.

On the other hand, an important strength of the survey was that it was performed in a community which hopefully reflected the picture of the general population by using standardized methods. The study raised a number of health promotion and prevention issues of interest to primary health care providers in Poland and elsewhere.

CONCLUSIONS

Place of residence, urban or rural, plays a role in patients' attitude towards preventive care and can potentially determine health choices. The understanding of gender and social circumstances may reinforce the ability of the GP to act and help overcome some of these identified obstacles. One of these is health illiteracy which may prevent a person from following health instructions. The strong association between illiteracy and poverty may exert powerful negative influences on health outcomes. Therefore, family physicians need a deeper understanding of patients' beliefs prior to promoting certain health interventions.

The participants in this study assigned high importance to prevention, with little readiness to change lifestyle. People living in rural areas assigned a lower level of importance to prevention and with less willingness to change their lifestyle than residents living in urban areas. Rural patients expected more support from their GP, such as individual counselling, than urban patients, regarding eating habits, physical activity, body weight and giving up smoking.

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Ethics

This anonymous survey did not require ethical approval in Poland. Participation in the survey was voluntary and written

informed consent was obtained from every participant before the questionnaire was completed. No sensitive personal data were collected. Data was made anonymous and confidentiality maintained by data coding to eliminate identification of data with personal information.

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