

Preventive health examinations in the adult population – analytical study

Mária Kilíková, Stanislav Sabo

St. Elizabeth University of Health and Social Work, Bratislava, Slovakia

Medical Studies 2025; 41 (4): 405–409
DOI: <https://doi.org/10.5114/ms.2025.157968>

Key words: adults, health, preventive examination.

Abstract

Introduction: The adult population in the Slovak Republic can undergo free preventive health check-ups, which are an opportunity for early detection of the disease, allowing the disease to be brought under control.

Aim of the research: To evaluate the attitudes of the adult population towards preventive health check-ups.

Material and methods: The sample consisted of 257 adult individuals. We used a questionnaire of our own design and assessed attitudes on a five-point Likert scale. The data were evaluated using the statistical description method. We used the Mann-Whitney U test and the Kruskal-Wallis test. We expressed the order of attitudes by Spearman's ordinal correlation coefficient.

Results: Women's attitudes are more positive ($\bar{x} = 4.12$) than men's attitudes ($\bar{x} = 4.00$). The highest score of ordinal correlation in the whole cohort and in men was for prevention at the dentist ($\bar{x} = 4.33$). In women, it was a stool examination for hidden bleeding ($\bar{x} = 4.38$). The age category 18–30 years considers the least that the preventive examinations are active care for the health ($\bar{x} = 3.83$). Individuals ($n = 257$) did not consider preventive check-ups as a tool for active care of their health ($\bar{x} = 4.09$) and did not attach importance to them ($\bar{x} = 4.08$). The results ($p > 0.05$) confirmed that age and gender do not affect the attitudes of respondents.

Conclusions: Preventive health check-ups at the general practitioner are most neglected by the adult population aged 18–30 years. They are a high-risk age group. Men prefer prevention at the dentist, and women prefer stool examination for hidden bleeding.

Introduction

Preventive examinations are an organised activity that has legislative support. Their aim is to actively search for the risks of damage to health, hidden diseases and education in health care [1]. Experts appeal to the need to increase the interest of the population in prevention. The argument is the result of studies conducted in the USA by Aflax [2]. The results showed that during preventive examination, 51% of individuals were diagnosed with cancer. Among the community of Hispanic respondents, as many as 72% of individuals said that the new diagnosis was discovered in them during a preventive examination. The challenge is the changes in attitudes of the population, which condition the practice of healthy lifestyle activities. Farský [3] states that lifestyle changes can prevent up to 80% of cardiovascular diseases. Marcinekóvá [4] claims that in Slovakia, less than 40% of the adult population undergoes a preventive check-up at a general practitioner. Women are more disciplined than men in this regard. The population aged 60 years is the age category with a higher interest in prevention.

Despite this, European Observatory on Health Systems and Policies statistics predict that Slovak women at the age of 65 years can expect to live longer than men, but in worse health [5]. The results of the surveys confirmed that women suffer from more chronic diseases (34%) more often than men (14%) and are limited in their daily activities (37%) more often than men (18%). Preventive check-ups are gaining in importance, but discipline varies in the adult population. Employers, health insurance companies, and the state have limited opportunities to motivate people to go for preventive health check-ups. They have soft motivational means. Experts are of the opinion that the motivator of active interest could be the patient's participation. In the event that a person does not show up for a preventive health check-up, they would have to participate in the payment of health care costs in the future. Examining the attitudes of the adult population towards preventive check-ups is gaining importance for several reasons. Experts are of the opinion that an active approach to preventive examinations reduces the risk of civilisation diseases [6].

Aim of the research

The aim of the study was to analyse the attitudes of the adult population to preventive examinations.

Material and methods

The criterion for inclusion in the ensemble was age > 18 years. The ensemble consisted of 174 women and 83 men. We selected them using the Respondent-Driven Sampling (RDS) method. To collect empirical data, we used an anonymous questionnaire of our own design. We distributed 300 questionnaires to primary care clinics. Their return was 85.6% ($n = 257$). We evaluated attitudes on a five-point Likert scale: 1 = strongly disagree, 2 = disagree, 3 = cannot judge, 4 = agree, and 5 = strongly agree. The data were evaluated using the method of statistical description for the whole cohort and bivariate in groups according to age and sex. We used the Mann-Whitney U test for comparison of categorical variables (gender) and the Kruskal-Wallis test for statistical comparison of age categories ($p > 0.05$). The order of attitudes of the adult population to preventive examinations was expressed by the Spearman coefficient of ordinal correlation. We collected data from 30.06.2023 to 15.09.2023.

Results

Outcomes

In the group of 257 individuals of the adult population, 174 (67.7%) were women and 83 (32.3%) were men. 103 (40.1%) respondents were aged 45–64 years (Table 1).

The age category of 45–64 years has the most positive attitude to the importance of preventive check-ups in health promotion ($\bar{x} = 4.19$). The lowest score was found in the 18–30 years category ($\bar{x} = 3.85$). Women's attitudes are more positive ($\bar{x} = 4.12$) than men's attitudes ($\bar{x} = 4.00$). In general, the attitudes of respondents ($n = 257$) to preventive examinations fall within the range of affirmative response. The results of comparative tests ($p > 0.05$) confirmed that age and gender do not affect respondents' attitudes to preventive check-ups (Table 2).

The ordered correlation with respect to gender (Table 3) points to a positive attitude among the adult population ($n = 257$) to preventive check-ups at the dentist ($\bar{x} = 4.33$). Cervical smears for cytological examination and stool examination for hidden bleeding ($\bar{x} = 4.25$) were in second place. Lower correlation scores were found for preventive colonoscopy ($\bar{x} = 4.16$) and

Table 1. Age categories of respondents

Ages	Males		Females		Whole group	
	<i>n</i>	%	<i>n</i>	%	<i>n</i>	%
18–30 years	15	18.1	25	14.4	40	15.6
31–44 years	16	19.3	54	31.0	70	27.2
45–64 years	27	32.5	76	43.7	103	40.1
< 65 years	25	30.1	19	10.9	44	17.1

n – absolute number, % – relative number.

Table 2. Respondents' attitudes to preventive check-ups

Parameter	Ages					Sex	
	Σ	18–30	31–44	45–64	65+	Male	Female
<i>n</i>	257	40	70	103	44	83	174
$\bar{x}$	4.08	3.85	4.13	4.19	3.95	4	4.12
<i>xm</i>	4	4	4	4	4	4	4
Mod.	4	4	4	4	4	4	4
SD	0.80	0.95	0.74	0.79	0.75	0.83	0.79
Min.	2	2	2	2	2	2	2
Max.	5	5	5	5	5	5	5
Comparative test*		χ^2		6.41		With	–1.113
		<i>p</i>	>	0.05		<i>p</i>	> 0.05

n – absolute number, $\bar{x}$ – mean score, *xm* – median, mod. – mode, SD – standard deviation, min. – minimum, max. – maximum, *p* – level of statistical significance, Σ – sum, *Nonparametric tests: Kruskal-Wallis test for 4 independent selections (comparison of age groups); Man-Whitney U test for 2 independent selections (comparison of men and women).

mammography ($\bar{x} = 4.18$). The exception was the age category of 45–64 years ($\bar{x} = 4.34$). We noted the order of differences between men and women. Women give more importance to the test for hidden bleeding in the stool ($\bar{x} = 4.38$), putting the examination at the dentist in the first place of prevention. The re-

sults showed that the adult population we surveyed ($n = 257$) did not consider preventive check-ups to be active care for their health ($\bar{x} = 4.09$) and generally did not attach importance to them (Table 3).

In the age categories (Table 4), we identified similarities in attitudes to preventive check-ups at the den-

Table 3. Ordered correlation of attitudes with regard to gender

Preventive check-up	N = 257		Males		Females	
	$\bar{x}$	P	$\bar{x}$	P	$\bar{x}$	P
At the dentist	4.33	1.	4.28	1.	4.36	2.
At the gynaecologist	4.25	2.	4.12	5.	4.30	3.
Stool test for occult bleeding	4.25	2.	3.99	7.	4.38	1.
During pregnancy	4.23	3.	4.17	3.	4.26	5.
At the urologist	4.21	4.	4.22	2.	4.25	7.
Breast (ultrasonography)	4.20	5.	4.00	6.	4.3	3.
At the general practitioner	4.19	6.	4.16	4.	4.21	6.
Breast cancer (mammography)	4.18	7.	3.95	8.	4.29	4.
Rectum and colon(colonoscopy)	4.16	8.	4.16	4.	4.16	7.
As an active care for your health	4.09	9.	3.99	7.	4.14	8.
Are generally important	4.08	10.	4.00	6.	4.12	9.

n – absolute number, *P* – rank, $\bar{x}$ – average score.

Table 4. Ordered correlation of attitudes with regard to age

Preventive examination	18–30 years		31–44 years		45–64 years		65 years and older	
	$\bar{x}$	P	$\bar{x}$	P	$\bar{x}$	P	$\bar{x}$	P
At the dentist	4.40	1.	4.33	1.	4.38	1.	4.18	2.
At the gynaecologist	4.0	9.	4.23	3.	4.38	1.	4.18	2.
Test for occult bleeding in the stool	4.23	3.	4.29	2.	4.38	1.	3.93	8.
Regular examination by a doctor in maternity	4.28	2.	4.23	3.	4.26	5.	4.11	5.
Examination by a urologist	4.10	6.	4.21	4.	4.27	4.	4.14	4.
Breast examination by ultrasound (ultrasonography)	4.05	7.	4.21	4.	4.36	2.	3.95	7.
Preventive examination at the general practitioner	4.15	5.	4.16	8.	4.24	6.	4.16	3.
Do you support your health with a preventive check-up at the general practitioner?	4.18	4.	4.16	8.	4.18	9.	4.23	1.
Radiodiagnostic examination of the breasts (mammography) is of preventive importance to promote health?	4.05	7.	4.19	7.	4.34	3.	3.93	8.
Examination of the rectum and colon (colonoscopy) is of preventive importance to promote health?	3.98	10.	4.16	8.	4.22	7.	4.16	3.
Do you consider undergoing preventive check-ups and public health programs as active care for your health?	3.83	12.	4.09	10.	4.19	8.	4.09	6.
In general, I attach great importance to preventive check-ups	3.85	11.	4.13	9.	4.19	8.	3.95	7.

P – rank by size, $\bar{x}$ – average score.

tist, a test for hidden bleeding in the stool, and a preventive examination by a gynecologist. The exception was the age category 18–30 years, in which the preventive check-up at the gynaecologist was only in ninth place in the order of correlation. In the age category < 65 years, the test for hidden bleeding in the stool was the last in order of importance, along with mammography. Conversely, in this age category, we identified a preventive check-up with a urologist as the fourth in order of importance.

Discussion

The overall health of the population is a global concern. Research highlights the potential risks of new diseases, with experts calling for prompt preventive measures [4]. The goal of the national health policy is to promote the general health of the population by employing early prevention strategies.

Despite knowing about preventive health check-ups, only a smaller number of individuals utilise them [7]. This view is also confirmed by the results of our study. We have shown that in the sample ($n = 257$) preventive health check-ups are not considered as active health care and are generally not given importance. Preventive check-ups are an opportunity to detect chronic diseases such as hypertension, depression, and oncological diseases [8]. Therefore, there should be recommendations for certain risk groups. In this study, the age category of 18–30 years can be considered as a risk group.

Early education about the importance of public health programs can reduce mortality from future oncological diseases. Patton *et al.* [9] are of the opinion that healthy development during adolescence and in young adults determines the quality of lifetime health. The authors consider it important to enforce comprehensive measures. The results of our study also demonstrated the need for a comprehensive approach. This is evidenced by the score ($x = 4.08$) on the importance of preventive check-ups in health promotion. We identified a high score of attitude to preventive examination at the dentist ($x = 4.33$). The benefit of the examination is the early detection of the risk of tooth decay and periodontal diseases. It creates the conditions for practicing good oral health habits. This identified attitude in our cohort ($n = 257$) is supported by the opinion that preventive check-ups at the dentist have an effect on reducing the prevalence of oral diseases [10].

Mochnacká [11] and Biščiaková [12] stated that the interest of individuals in preventive examinations decreased by 20.45% year-on-year. In our cohort, this is evidenced by a low score of attitudes ($\bar{x} = 4.08$) towards preventive check-ups as a form of active health care. Blaško draws attention to the importance of preventive examination by a urologist [13]. He states that

with early detection of a prostate tumour, enough time is gained for effective treatment, and the patient can be cured of prostate cancer. Approximately 80,000 men participate in urological prevention in Slovakia every year, which is approximately 8% of the adult male population in Slovakia. This number indicates that Slovakia is in the lower rankings of the European Union statistics.

In our cohort, attitudes to preventive check-ups at urology had an attitude score of ($\bar{x} = 4.21$). We appeal to men, who should follow the example of women. Women go for preventive examinations to a greater extent and regularly and take much more care of their health. We note that women are more proactive in health promotion (75.80%). Their attitude score to a preventive urologist examination is higher ($\bar{x} = 4.25$) than that of men ($\bar{x} = 4.22$). Colorectal cancer is a significant cause of morbidity and mortality worldwide [14]. National screening guidelines have been put in place to identify and remove precancerous polyps before they become cancer. A routine screening is a visual endoscopic examination – colonoscopy. It allows biomarkers to be detected and plays an important role in the assessment of recurrence of colorectal cancer [15]. In our group ($n = 257$), preventive colonoscopy is in eighth place ($\bar{x} = 4.16$) in the order of importance of preventive check-ups. This examination has a high priority in juveniles [16]. High priority in our file has not been demonstrated. The age category of young adults (18–30 years) shifts the importance of this examination to 10th place in the ordered correlation ($\bar{x} = 3.98$). In the entire cohort ($n = 257$) the attitude score was lower ($\bar{x} = 4.16$) despite the existence of clinical evidence on the importance of this preventive examination.

Conclusions

Maintaining health is a multidisciplinary process. Preventive check-ups are considered sanogenic activities to protect, promote health, and improve quality of life. Their goal is to motivate people to change attitudes. Preventive health check-ups have a protective focus. The results of our analytical study showed that the attitudes of the adult population ($n = 257$) towards preventive check-ups fall within the range of affirmative response. The results of comparative tests ($p > 0.05$) confirmed that age and gender do not affect the attitudes of respondents. This is also pointed out by the study by Nutbeam and Loyd [17]. With regard to age, young adults aged 18–30 years can be considered a potentially at-risk age category. There appear to be gaps in the perception of the importance of cancer prevention. We recommend integrating re-education processes in the adult community to promote global health.

Funding

No external funding.

Ethical approval

2023/An/06027.

Conflict of interest

The authors declare no conflict of interest.

References

1. World Health Organization (2022). A short guide to cancer screening: increase effectiveness, maximize benefits and minimize harm.
2. Tong N. Half of US adults skip common health screening, including tests for certain diseases, survey finds. Fierce healthcare [online] 2023. Available at: <https://www.fiercehealthcare.com/payers/cms-commits-100m-support-acca-navigators>.
3. Farský Š. Systematic monitoring of cardiovascular risk in the primary sphere in order to reduce the incidence of preventable cardiovascular diseases. Preventive procedures. [online]. Bratislava: Ministry of Health of the Slovak Republic, 2022. [cited: 2023-03-22]. Available at: https://www.fpharm.uniba.sk/fileadmin/faf/Pracoviska-subory/KFT/LS_2022_2023/Standardny_postup_MZ_SR_prevenencie_KVO_v_lekarnach.pdf.
4. Marcinek M. Preventive check-ups as a factor in disease prevention and health promotion from the point of view of nursing. (Diploma thesis). Bratislava: University of Health and Social Work of St. Elisabeth Bratislava, Institute of Social Sciences and Health Care of Bl. P.P.Gojdič and V. Hopka Spišská Nová Ves, Prešov. 107p.
5. OECD/European Observatory on Health Systems and Policies (2023), Slovensko: Zdravotný profil krajiny 2023, State of Health in the EU. OECD Publishing, Paris/European Observatory on Health Systems and Policies, Brussels.
6. Fathi A, Trnková L, Fábryová M, et al. Avoidable risks of diseases of the circulatory system. Education by a nurse. Care for an adult patient with overweight/obesity, education by a nurse. [online]. Poprad: Infodoktor, o. z., 2020 [cited: 2023-07-08]. pp. 151-154. Available on the Internet: <http://www.infodoktor.sk/wp-content/uploads/2020/12/eduObezita.pdf>.
7. Huang HT, Kuo YM, Wang SR, Wang CF, Tsai CH. Structural factors affecting health examination behavioral intention. *Int J Environ Res Public Health*. 2016; 13: 395.
8. Liss DT, Uchida T, Wilkes CL, Radakrishnan A, Linder JA. General health checks in adult primary care: a review. *JAMA*. 2021; 325(22): 2294-230.
9. Patton GC, Sawyer SM, Ross DA, Viner RM, Santelli JS. From advocacy to action in global adolescent health. *J Adolesc Health*. 2016; 59(4): 375-377.
10. de Abreu MHNG, Cruz AJS, Borges-Oliveira AC, Martins RC, Mattos FF. Perspectives on social and environmental determinants of oral health. *Int J Environ Res Public Health*. 2021; 18(24): 13429.
11. Mochnacká I. Preventive check-ups in the context of health promotion during the COVID-19 pandemic. In: Nursing and midwifery. [online]. No. 02/2003. [Cited: 2023-10-10]. pp. 50-56. Available on the Internet: https://is.vszdrav.cz/do/vsz/elektronicka_knihovna/2_Elektronicke_casopisy/Osetrovatelstvo_a_porodna_asistencia/1803-osetrovatelstvo-a-porodna-asistencia.pdf. ISSN 1339-5920.
12. Biščiaková M. 2020. Preventive check-ups in health promotion : (diploma thesis). [online]. Bratislava: Slovak Medical University, 2020. 64 p. [cited: 2022-09-10]. Available on the Internet: <https://opac.crzp.sk/?fn=detailBiblioForm-Child1J20K&sid=AFFB5693EB24A8FD7DC31E8ED7B2&seo=CRZP-detail-kniha>.
13. Blaško M. Preventive examination takes a few minutes, there is nothing to worry about. <https://standard.sk/504340/urolog-milan-blasko-nepamatam-si-muzaktory-by-z-nasej-ambulancie-odisiel-so-zlou-skusenostou>.
14. Saraiva MR, Rosa I, Claro I. Early-onset colorectal cancer: a review of current knowledge. *World J Gastroenterol*. 2023; 29(8): 1289-1303.
15. Jayasinghe M, Prathiraja O, Caldera D, Jena R, Coffie-Pierre JA, Silva MS, Siddiqui OS. Colon cancer screening methods: 2023 update. *Cureus*. 2023; 15(4): e37509.
16. Siegel RL, Jakubowski CD, Fedewa SA, Davis A, Azad NS. Colorectal cancer in the young: epidemiology, prevention, management. *Am Soc Clin Oncol Educ Book*. 2020; 40: 1-14.
17. Nutbeam D, Lloyd JE. Understanding and responding to health literacy as a social determinant of health. *Annu Rev Public Health*. 2021; 42: 159-173.

Address for correspondence

Mária Kilíková
St. Elizabeth University
of Health and Social Work
Bratislava, Slovakia

Received: 28.09.2024

Accepted: 28.04.2025

Online publication: 15.12.2025