

Health awareness and behaviours among adults aged 35-44 years in Poland in the years 2010-2017

Świadomość i zachowania prozdrowotne populacji osób dorosłych w wieku 35-44 lat w Polsce w latach 2010-2017

Department of Conservative Dentistry, Medical University of Warsaw, Poland

Head of Department: Agnieszka Mielczarek, MD, PhD

KEYWORDS

health promotion, dental prevention, oral health, life quality, adults

SUMMARY

Introduction. Oral health is an important element of general health. Proper oral hygiene habits are of key importance for improving oral health and maintaining optimal life quality.

Aim. The aim of this study was to assess health awareness and attitudes of towards oral health among respondents in the years 2010 and 2017.

Material and methods. Clinical and questionnaire studies were conducted among 2,158 respondents in 2010 and 1,583 respondents in 2017.

Results. The studies showed that 1/3 of adults do not brush their teeth with the recommended frequency. Less than half of respondents use dental floss on a regular basis. Despite improvement of health behaviours over the past seven years, the obtained results indicate that they are still unsatisfactory. There was a systematic growth in the percentage of adults visiting dental offices. The percentage was more than 70% in 2017, which is 10% higher than in 2010.

Conclusions. People with primary education and declaring low income presented worse behaviour patterns. There is a need to implement oral health promotion and dental prophylaxis among adults in a primary dental setting. Non-medical factors are an important element affecting health behaviours among adults.

SŁOWA KLUCZOWE

promocja zdrowia, profilaktyka stomatologiczna, zdrowie jamy ustnej, jakość życia, osoby dorosłe

STRESZCZENIE

Wstęp. Zdrowie jamy ustnej jest istotnym elementem zdrowia ogólnego. Właściwe nawyki w zakresie higieny jamy ustnej są kluczowe dla poprawy zdrowia jamy ustnej oraz utrzymania optymalnej jakości życia.

Cel pracy. Celem prezentowanej pracy była ocena zmiany stanu świadomości prozdrowotnej oraz prezentowanych postaw osób badanych w odniesieniu do zdrowia jamy ustnej w latach 2010-2017.

Materiał i metody. Badania kliniczne i ankietowe prowadzone w 2010 roku objęły 2158 osób dorosłych, natomiast w 2017 roku – 1583 osoby.

Wyniki. Wyniki badań wykazały, że 1/3 osób dorosłych nie czyści zębów z zalecaną częstotliwością. Niespełna połowa ankietowanych regularnie korzysta z nici dentystycznej. Mimo poprawy zachowań prozdrowotnych na przestrzeni 7 lat, uzyskane wyniki wciąż

wskazują na ich niezadowalający poziom. Systematycznie wzrastał odsetek osób dorosłych odwiedzających gabinet dentystyczny. W 2017 roku wyniósł on ponad 70% i był o 10 punktów procentowych wyższy niż w 2010 roku. Osoby z wykształceniem podstawowym i deklarujące niskie dochody prezentowały gorsze wzorce zachowań.

Wnioski. Istnieje potrzeba realizowania promocji zdrowia jamy ustnej i profilaktyki stomatologicznej dedykowanej pacjentom dorosłym, w oparciu o podstawową opiekę stomatologiczną. Czynniki pozamedyczne są istotnym elementem wpływającym na zachowania prozdrowotne osób dorosłych.

INTRODUCTION

Monitoring of Oral Health in Polish population, a programme systematically implemented since 1997, is one of the basic elements of development and monitoring of the effectiveness of the dental care system in Poland. A wide range of data on oral health in individual index age groups is a source of up-to-date and comparable information across the country. In addition to clinical examinations assessing oral health, sociomedical studies to evaluate health behaviours, as well as awareness and knowledge on the prevention of caries, gingival and periodontal diseases are also conducted.

Oral health is one of the primary factors affecting the well-being of an individual. Assessment of attitudes and behaviours associated with oral hygiene is necessary to plan an appropriate strategy for oral health improvement at an individual and population level.

AIM

The aim of this paper was to assess health awareness and attitudes towards oral health in the studies conducted

between 2010 and 2017, as well as to identify trends that emerged over the seven years.

MATERIAL AND METHODS

Oral health monitoring studies conducted in 2010 and 2017 covered an adult population aged 35-44 years. Both studies were conducted in 16 provinces. Population samples were selected based on multistratified sampling. The study was approved by the Bioethics Committee at the Medical University of Warsaw (No. of approval: KB/134/2017).

Sociomedical studies were based on a questionnaire developed in accordance with the criteria recommended by the World Health Organization (Oral Health Surveys. Basic Methods. Geneva, 1997 and 2013). Some of the data were rejected for the purpose of statistical analysis to standardise the results obtained in the subsequent years. However, the essential parts of the study remained unchanged, especially with regard to hygiene behaviour and habits, as well as the use of prophylaxis and dental treatment among the respondents.

Tab. 1. Number of respondents aged 35-44 years by place of residence, sex, education and declared financial status

Number of respondents and general characteristics	Year of study		Comparison (test χ^2)
	2010 (n = 2158)	2017 (n = 1583)	
Place of residence	Urban	1265 (58.6%)	p = 0.1139
	Rural	893 (41.4%)	
Sex	Men	902 (41.8%)	p = 0.0826
	Women	1256 (58.2%)	
Education	Primary	259 (12.0%)*	p < 0.0001*
	Secondary	1023 (47.4%)*	
	Higher	831 (38.5%)*	
	No data	45 (2.1%)*	
Financial status	Below average	292 (13.5%)*	p < 0.0001*
	Average	1590 (73.7%)*	
	Above average	228 (10.6%)*	
	No data	48 (2.2%)*	

*Statistically significant

The study conducted in 2010 included 2,158 adults, and the study in 2017 included 1,583 adults.

Two sociomedical factors, i.e. education and declared level of affluence, changed during the research period. Details are summarised in table 1.

RESULTS

Brushing the teeth at least twice a day should be considered the basic indicator of oral health awareness. In 2010, less than 68% of respondents reported brushing teeth at least twice a day. Unfortunately, the question did not ask about the type of toothpaste used. The data obtained in 2017 were not too optimistic. One third of respondents still failed to meet the basic requirement for proper oral hygiene. As in the previous study, an unfavourable tendency was observed among rural residents and men. Two other studies (tab. 2) indicate a slow improvement in the health awareness of respondents.

Statistical analysis showed a strong correlation between brushing teeth twice daily and education and declared income (tab. 3). The behaviour patterns in both categories improved compared to 2010.

The use of dental floss in Poland remains a special category of oral care, which is an expression of the civilisation and cultural development of society. According to the 2017 study, less than half of respondents use dental floss on a regular basis. Although some improvement was observed over the 7 years, the use of dental floss was still unsatisfactory. At the same time, statistically significant differences were observed between urban and rural residents, as well as differences in terms of sex and socio-economic status of respondents (tab. 4). The most favourable situation was observed among respondents who declared an above-average income, with users of dental floss accounting for 60%.

Tab. 2. Frequency of tooth brushing among adults 35-44 years of age

Frequency of tooth brushing (only individuals with maintained natural dentition)	Year of study		Comparison of groups (test χ^2)		Year-over-year comparison (test χ^2)	
	2010 (n = 2150)	2017 (n = 1580)	2010	2017		
Total group	≥ 2 daily	1453 (67.6%)*	1159 (73.4%)*	-	-	p < 0.0001*
	1 daily	496 (23.1%)*	324 (20.5%)*			
	< 1 daily	175 (8.1%)*	92 (5.8%)*			
	No data	26 (1.2%)*	5 (0.3%)*			
Urban	≥ 2 daily	913 (72.5%)*	701 (79.0%)*	p < 0.0001*	p < 0.0001*	p = 0.0022*
	1 daily	262 (20.8%)*	144 (16.2%)*			
	< 1 daily	70 (5.6%)*	39 (4.4%)*			
	No data	15 (1.2%)*	3 (0.3%)*			
Rural	≥ 2 daily	540 (60.7%)*	458 (66.1%)*	p < 0.0001*	p < 0.0001*	p = 0.0051*
	1 daily	234 (26.3%)*	180 (26.0%)*			
	< 1 daily	105 (11.8%)*	53 (7.6%)*			
	No data	11 (1.2%)*	2 (0.3%)*			
Men	≥ 2 daily	540 (60.3%)	390 (63.3%)	p < 0.0001*	p < 0.0001*	p = 0.0695
	1 daily	253 (28.3%)	176 (28.6%)			
	< 1 daily	89 (9.9%)	48 (7.8%)			
	No data	13 (1.4%)	2 (0.3%)			
Women	≥ 2 daily	913 (72.8%)*	769 (79.8%)*	p < 0.0001*	p < 0.0001*	p = 0.0006*
	1 daily	243 (19.4%)*	148 (15.4%)*			
	< 1 daily	86 (6.8%)*	44 (4.6%)*			
	No data	13 (1.0%)*	3 (0.3%)*			

*Statistically significant

Tab. 3. Frequency of tooth brushing by education and income

Brushing ≥ 2 daily (only individuals with main- tained natural dentition)		Year of study		Comparison of groups (test χ^2)		Year-over-year comparison (test χ^2)
		2010 (n = 2150)	2017 (n = 1580)	2010	2017	
By education	Primary	80 (31.2%)	33 (30.6%)	p < 0.0001*	p < 0.0001*	p = 0.9483
	Secondary	650 (63.9%)	394 (63.6%)	Dunn post hoc: p < 0.001 for all pairs*	Dunn post hoc: p < 0.001 for all pairs*	p = 0.7416
	Higher	702 (84.5%)	732 (85.9%)			p = 0.4120
By financial status	Below average	128 (44.1%)*	117 (54.9%)*	p < 0.0001*	p < 0.0001	p = 0.0390*
	Average	1109 (70.0%)	793 (74.2%)	Dunn post hoc: p < 0.05 for all pairs*	Dunn post hoc: p < 0.01 for all pairs*	p = 0.1219
	Above average	188 (82.5%)*	221 (86.0%)*			p = 0.0112*

*Statistically significant

Tab. 4. The use of dental floss by sociodemographic factors

The use of dental floss (only those with at least 2 preserved teeth in any sextant)		Year of study		Comparison of groups (test χ^2)		Year-over-year comparison (test χ^2)
		2010 (n = 2100)	2017 (n = 1577)	2010	2017	
Total study group		889 (42.3%)*	760 (48.2%)*	-	-	p = 0.0004*
By place of residence	Urban	565 (45.7%)*	462 (52.1%)*	p = 0.0002*	p = 0.0005*	p = 0.0004*
	Rural	324 (37.5%)*	298 (43.2%)*			p = 0.0241*
By sex	Men	291 (33.2%)*	236 (38.3%)*	p < 0.0001*	p < 0.0001*	p = 0.0427*
	Women	598 (48.9%)*	524 (54.5%)*			p = 0.0085*
By education	Primary	28 (11.3%)	10 (9.4%)	p < 0.0001*	p < 0.0001*	p = 0.5785
	Secondary	343 (34.0%)	218 (35.3%)	Dunn post hoc: p < 0.001 for all pairs*	Dunn post hoc: p < 0.001 for all pairs*	p = 0.5978
	Higher	510 (62.1%)	532 (62.4%)			p = 0.8920
By financial status	Below average	65 (22.7%)	55 (25.9%)	p < 0.0001*	p < 0.0001*	p = 0.4067
	Average	658 (42.2%)*	535 (50.2%)*	Dunn post hoc: p < 0.001 for all pairs*	Dunn post hoc: p < 0.001 for a situa- tion below average* vs other groups	p < 0.0001*
	Above average	157 (69.2%)*	148 (57.6%)*			p = 0.0085*

*Statistically significant

The use of dental care is an important indicator of health behaviour. The obtained results indicate that a positive trend has formed over the 7 years of observations, with a systematic increase in the percentage of adults visiting dental offices. This percentage was more than 70% in 2017, which is 10% higher than in 2010. However, the obtained results are not satisfactory. It is well known that a dental check-up should be performed at least once a year, whereas 30% of the surveyed population visit

dental offices less often, even once a few years (tab. 5). Dental check-up reporting rates vary depending on the level of education and declared income (tab. 6).

DISCUSSION

The epidemiological data describing the oral health in Polish adults are not optimistic. The percentage of respondents with full dentition increased to 43% in 2017, which is a positive trend compared to previous studies

Tab. 5. Time of last dental visit among 35-44-year-olds

Last dental visit	Year of study		Comparison of groups (test χ^2)		Year-over-year comparison (test χ^2)	
	2010 (n = 2128)	2017 (n = 1583)	2010	2017		
Total study group	Last year	1261 (59.3%)*	1122 (70.9%)*	-	-	p < 0.0001*
	1-2 years ago	535 (25.1%)*	315 (19.9%)*			
	3-4 years ago	232 (10.9%)*	95 (6.0%)*			
	≥ 5 years ago	100 (4.7%)*	51 (3.2%)*			
Urban	Last year	764 (61.1%)*	654 (73.7%)*	p = 0.0574	p = 0.0010*	p < 0.0001*
	1-2 years ago	295 (23.6%)*	173 (19.5%)*			
	3-4 years ago	141 (11.3%)*	37 (4.2%)*			
	≥ 5 years ago	51 (4.1%)*	23 (2.6%)*			
Rural	Last year	497 (56.7%)*	468 (67.2%)*	p < 0.0001*	p < 0.0001*	p = 0.0004*
	1-2 years ago	240 (27.4%)*	142 (20.4%)*			
	3-4 years ago	91 (10.4%)*	58 (8.3%)*			
	≥ 5 years ago	49 (5.6%)*	28 (4.0%)*			
Men	Last year	468 (52.5%)*	397 (64.3%)*	p < 0.0001*	p < 0.0001*	p < 0.0001*
	1-2 years ago	252 (28.3%)*	141 (22.8%)*			
	3-4 years ago	116 (13.0%)*	53 (8.6%)*			
	≥ 5 years ago	55 (6.2%)*	26 (4.2%)*			
Women	Last year	793 (64.1%)*	725 (75.0%)*	p < 0.0001*	p < 0.0001*	p < 0.0001*
	1-2 years ago	283 (22.9%)*	174 (18.0%)*			
	3-4 years ago	116 (9.4%)*	42 (4.4%)*			
	≥ 5 years ago	45 (3.6%)*	25 (2.6%)*			

*Statistically significant

Tab. 6. Dental visit during the last year

Dental visit during the last year	Year of study		Comparison of groups (test χ^2)		Year-over-year comparison (test χ^2)	
	2010 (n = 2128)	2017 (n = 1583)	2010	2017		
By education	Primary	80 (31.4%)	42 (38.5%)	p < 0.0001*	p < 0.0001*	p = 0.2666
	Secondary	561 (55.3%)*	406 (65.5%)*	Dunn post hoc: p < 0.001 for all pairs*	Dunn post hoc: p < 0.001 for all pairs*	p = 0.0004*
	Higher	599 (72.5%)*	674 (78.9%)*			p = 0.0114*
By financial status	Below average	116 (40.3%)	107 (50.0%)	p < 0.0001*	p < 0.0001*	p = 0.1190
	Average	962 (61.0%)*	771 (72.1%)*	Dunn post hoc: p < 0.05 for all pairs*	Dunn post hoc: p < 0.01 for all pairs*	p < 0.0001*
	Above average	162 (71.7%)*	216 (84.0%)*			p = 0.0014*

*Statistically significant

conducted in 2010. However, caries was detected in almost 100% of respondents, and gingivitis and periodontitis were found in 3/4 of respondents. The percentage of patients with advanced periodontal disease requiring professional treatment has increased (1, 2).

In the context of the presented research results, concerns are raised by insufficient care about oral hygiene and systematic dental treatment in adults. Only half of respondents exhibited proper health behaviours. Currently, there are no preventive programmes dedicated for professionally active adults. The knowledge of individuals aged 35-44 years on maintaining oral health is probably the outcome of their early school education 30 to 40 years back. There is a gap in education and adequate motivation of patients, which should be an integral part of a dental visit. According to the published studies on the determinants of oral health, the poor instructive and informative role played by medical personnel may be the reason for the observed epidemiological situation (3). Rational health behaviours including proper oral hygiene, diet or additional professional fluoride prevention are not properly promoted and are not a permanent element of a dental visit, both in private and public institutions. In the public sector, prevention in adults is not included in the scope of procedures reimbursed by the National Health Fund. Also, the shortage of medical personnel results in the lack of effective preventive and therapeutic measures in Poland.

The analysis of the obtained results showed an unfavourable polarisation between urban and rural inhabitants. Less affluent and less educated individuals are at greater risk of health problems and earlier mortality, which is also true for highly developed countries (4). In our study, individuals with primary education as well as those

declaring low income showed worse behaviour patterns in all categories studied. Improving the availability and leveling the differences in access to medical services was one of the main WHO demands for 2020 (5). The obtained research results indicate inadequate implementation of the above-mentioned objective in Poland.

The influence of demographic factors, including gender and nationality, on differences in health awareness has been documented in literature (6). The results of both studies indicate better behaviour patterns among women, who brushed their teeth more often, as well as were much more likely to use dental floss and to visit the dentist's. Due to their social roles, they are more likely to be a role model for their children. Observing the behaviour of their parents, a child identifies their mother as the one who cares much more about oral health (7, 8).

CONCLUSIONS

Systematic promotion of oral health, dedicated to adult patients, should be implemented in a primary dental care setting. Updating knowledge on proper oral hygiene, including regular tooth brushing and the use of dental floss, as well as regular dental visits, is an essential element of dental prophylaxis. Dental care, both public and private, should implement tasks to increase health awareness among adult patients and focus on their needs. Non-medical factors are an important element influencing health behaviours. The level of education and the declared income significantly determine the possibilities of the respondents and their preferences.

The programme was financed by the Ministry of Health within the framework of the Monitoring of Oral Health in Polish Population in 2016-2020.

CONFLICT OF INTEREST KONFLIKT INTERESÓW

None
Brak konfliktu interesów

CORRESPONDENCE ADRES DO KORESPONDENCJI

*Ewa Rusyan
Zakład Stomatologii Zachowawczej
Warszawski Uniwersytet Medyczny
ul. Binieckiego 6, 02-097 Warszawa
tel.: +48 (22) 116-64-46
rusyan@poczta.onet.pl

REFERENCES/PIŚMIENNICTWO

1. Małkiewicz E, Wierzbińska M, Szatko F et al.: Stan zdrowia jamy ustnej i jego uwarunkowania oraz potrzeby profilaktyczno-lecznicze dzieci w wieku 6 i 12 lat oraz osób dorosłych w wieku 35-44 lat. Dział Redakcji i Wydawnictw Warszawskiego Uniwersytetu Medycznego, Warszawa 2010.
2. Olczak-Kowalczyk D, Mielczarek A, Kaczmarek U et al.: Ocena stanu zdrowia jamy ustnej i jego uwarunkowań w populacji polskiej w wieku 3, 18 oraz 35-44 lata w 2017 roku. Dział Redakcji i Wydawnictw Warszawskiego Uniwersytetu Medycznego, Warszawa 2018.
3. Michalak E, Łoboda J, Chomyszyn-Gajewska M: Przyczyny zgłaszania się pacjentów do krakowskich gabinetów stomatologicznych w latach 2005-2006 i 2013-2014. *Przegląd Epidemiologiczny* 2015; 69(4): 913-918.
4. Andermann A: Taking action on the social determinants of health in clinical practice: a framework for health professionals. *CMAJ* 2016; 6(188): 17-18.
5. Health 21 – health for all in the 21st century – An introduction to the health for all policy framework for the WHO European Region 1999.
6. Zhu L, Petersen PE, Wang H-Y et al.: Oral health knowledge, attitudes and behaviour of adults in China. *Inter Dental J* 2005; 55(4): 231-241.

submitted/nadesłano:

7.07.2020

accepted/zaakceptowano do druku:

28.07.2020

7. Elrashid AH, Al-Kadi R, Baseer MA et al.: Correlation of sociodemographic factors and oral health knowledge among residents in Riyadh city, Kingdom of Saudi Arabia. *J Oral Health Community Dent* 2018; 12(1): 8-13.
8. Dye BA, Vargas CM, Lee JJ et al.: Assessing the relationship between children's oral health status and that of their mothers. *JADA* 2011; 142(2): 173-183.