

The prevalence of manifestations of gerontological ageism among university students in five European countries

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Summary Background. The problem of the ageing population has resulted in attitudes towards aging in different age groups becoming a subject of increased academic interest.

Objectives. To provide comparative characteristics of the prevalence of manifestations of gerontological ageism among university students in five European countries.

Material and methods. The sample consisted of university students ($n = 2493$) aged 18–25 from Belarus ($n = 827$), Russia ($n = 528$), Poland ($n = 798$), Lithuania ($n = 223$) and Ukraine ($n = 117$). The prevalence of gerontological ageism among respondents was evaluated according to the Fraboni Ageism Scale.

Results. The prevalence and manifestations of gerontological ageism vary depending on the country. The maximum total indicator, displaying the highest overall level of ageism, was noted among Belarusian students, the minimum – in Lithuania ($p < 0.05$). The final indicators of gerontological ageism were found to be the following: the level of age discrimination and negative emotional attitude towards the elderly was increased in one fifth of the respondents in all five groups. The observation found the level of ageism averaging at 60%, evenly distributed in all groups. The predominant attitudes towards older people were found to be neutral or positive (84.6%).

Conclusions. The manifestations of ageism are international in nature and can explain 20% of the total variety of answers characterising the differences in ranked attributes and degree of ageism. The total indicator showed the highest degree of gerontological ageism among students in Belarus, the lowest – among those in Lithuania, with levels of gerontological ageism among students in Russia, Poland and Ukraine distributed in between.

Key words: students, prevalence, Europe, gerontological ageism.

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Background

Age, along with nationality and gender, is one of the most prominent characteristics of a person [1, 2]. An important element of the demographic stability of any state is the desire to increase the life expectancy of the population [3]. It is no coincidence that public policy considers an aging population to be a serious demographic challenge, a phenomenon associated with socio-economic changes nationally and globally [4]. Cultural preferences, political beliefs, marital status and social

roles are all found to be associated with aging. In modern society's focus on young people, attitudes towards the older population often appear to be unfavourable [5]. The condition for the sustainable and dynamic development of modern states is the continuity of generations, both at the elite (managerial) and mass (social) levels. Therefore, international organisations consider the strategy in the field of social ageing to be a shared responsibility of the main stakeholders, while recommending the establishment of an intergenerational dialogue and more effective cooperation of representatives of different ages. The implications of aging not only impact the elderly, but also young



people, who bear the burden of providing various benefits and allowances to older generations, which makes the work of those in health and social services more difficult [6, 7].

The increase in the number of older people is one of the reasons why the characteristics of older age and the attitudes of other age cohorts towards aging are being actively studied [8]. However, while ethnic or gender stereotypes are the subject of both theoretical scrutiny and empirical research, a scientific view regarding age stereotypes is characterised by ambiguity, narrowness and fragmentation [9]. Age-based compartmentalisation of the population determines a certain degree of expression of ageist views, stereotypes and age discrimination [10]. Members of any stigmatised group may expect members of other age groups to perceive them negatively and apply negative stereotypes to them [11].

The image of an elderly person is subject to change in society and is often viewed as controversial. On the one hand, people over 65 years old are often characterised by the positive notions of wisdom, kindness, caring, intelligence, patience and hard work. On the other hand, aging is also linked to negative connotations that become defined through the categories of slowness (pace of life) and poor health. The phrase “old age” is often used with derogatory expressions, both by young people and often by older people themselves [12]. In fact, aging processes start occurring long before the legislatively established terms of retirement of 65+ years and are characterised by the development of a number of physiological conditions and processes. These include degenerative-dystrophic changes in the brain followed by a decrease in cortical activity, which leads to the development of processes of inhibition of neuropsychic activity. This, subsequently, is manifested in older people as an increase in the duration of the processing and analysis of information, a deterioration of short-term memory and the mechanism of memorisation, development of emotional instability and exhaustion of neuropsychic processes with a subsequent decrease in adaptive capabilities [13].

Society's obsession with the beauty and health typical of a young organism alters the social perception of old age by younger people in ways that often shapes it as negative in nature, associated with illness, disability and dependence on others. Young people refer to old age as a distant and gloomy prospect that is better not to be thought about. Simultaneously, young people are in contact with older relatives and tend to see what is desired instead of what is real over these interactions, which often collides with the egocentric position of the elderly themselves – a characteristic feature of old age [12]. Therefore, the younger generation perceives old age mainly as a period of dependent life, as a period of loneliness and with the lack of a sufficient amount of livelihood [5], which reinforces a negative attitude towards persons of an older age.

Thus, efforts to change attitudes towards older people from negative (and neutral) to positive are relevant. The main obstacle is gerontological ageism. The term was introduced in the second half of the 20th century by the American gerontologist Robert Butler [13], who understood ageism as negative stereotypes, according to which older people differ from other age groups through symptoms such as memory loss, senile dementia and psychological and social dependence. He defined ageism as a combination of three interdependent elements contributing to the transformation of aging from a natural process into a social problem: prejudice towards the elderly, old age and aging (cognitive and emotional components); discriminatory practices against older people (the behavioural component); and institutional practices and policies that perpetuate stereotypical attitudes about older people, reducing their opportunities for life-satisfaction and undermining their personal dignity [14]. This is often captured within related concepts such as “discriminatory behaviour”, “negative stereotyping” or “bias”, indicating the multicomponent nature of the phenomenon of ageism, manifested at the cognitive, affective and behavioural levels [15].

Overall, the problem of ageism as age-based discrimination of people of different ages in the world is still far from being resolved and, undoubtedly, requires careful attention on the part of doctors, psychologists and sociologists [16]. Some examples of age discrimination include an underdeveloped system of geriatric care, reluctance to take preventive measures, refusal of medical and social services and replacing the diagnosis of the disease with the phrase “all changes in the body come from old age”. Gerontological stereotypes and ageism that are formed on this basis in young people may subsequently manifest themselves in inattentive or inappropriate behaviour towards older people [17]. Ageism can also assume an institutional form, expressed through types of legal discrimination or via unspoken discriminatory requirements for older people [18].

The real influence of attitudes toward old age on the quality of life of older people, combined with the increase in the proportion of older people, makes the relevance of studying attitudes toward old age and aging indisputable. The study of the problem of ageism is particularly important in the educational environments of students, as it allows for an assessment of the degree of the formation of negative stereotypes regarding aging and old age in future specialists [19]. In society, it is necessary to strive to reduce the level of ageism in order to perceive the elderly as people with great potential and to minimise manifestations of age discrimination by involving older people in joint activities with young people [20, 21].

Objectives

The purpose of this work is to provide comparative characteristics of the prevalence of manifestations of gerontological ageism among university students in five European countries.

Material and methods

Study design

The study sample consisted of 2,493 of university students aged 18–25 years ($\bar{X} \pm SD = 20.8 \pm 1.6$ years). These included students from Belarus (Grodno, Vitebsk, Minsk) – 827, Russia (Moscow, Moscow region, Arkhangelsk, Krasnoyarsk) – 528, Poland (Białystok, Suwałki, Białą Podlaską) – 798, Lithuania (Klaipėda, Kaunas) – 223, Ukraine (Ternopol) – 117 people.

The criteria for inclusion in the study consisted of the following: permanent residence in one of the five countries and enrolment in a medical or pedagogical university. The number of students from different countries who participated in the study depended on their willingness to participate in the questionnaire. The groups were formed according to age. Most of the students were female (76.3%). All university groups were formed according to age, and the ratio between men and women was 1:3.5.

The choice of the aforementioned career paths – medicine and pedagogy – is related to the peculiarities of the upcoming professional activity and readiness to work with people, including the elderly [1]. The studies were conducted after informed consent was obtained. The students who did not agree to participate in the survey were excluded.

Data collection

The study was conducted during the academic year 2020–2021 on the Google Forms platform using a questionnaire consisting of questions about attitudes towards older people. Before starting the study, participants were informed about the purpose and the methodology of the study, as well as being notified about the opportunity to withdraw from the study at any time. Respondents were informed that their survey answers and information provided would be anonymous.

Measures

The applied questionnaire was based on the Fraboni Scale of Ageism (FSA), developed by Fraboni [22] at Nipissing University College. It considers ageism as a phenomenon comprised of three dimensions: prejudice, discrimination and avoidance [6]. The Fraboni Scale of Ageism is used to evaluate these three dimensions by considering: (1) an affective such as feelings in relation; to elders are fixed by the component “Alienation, Avoidance” (2) a cognitive component – “Age Stereotypes and Prejudices” about older people; and (3) a behavioural component expressed by “Discrimination and Negative Emotional Attitudes” against older people.

The 2005 version of the questionnaire used in the current study contains 25 questions, with responses being provided on a 4-point Likert scale coded from 1 – “strongly disagree” to 4 – “completely agree”. These are summed, resulting in the total number of points collected upon the completion of the questionnaire, ranging from 25 to 100. Overall, a high score is indicative of pronounced age bias and significant level of ageism.

Bioethics committee approval

The study was conducted in compliance with the ethical standards set out in the Declaration of Helsinki and European Community Directives (8/609 EC). The study did not infringe upon human rights, did not endanger the participants and complied with the general requirements of biomedical ethics. The

study was approved by the Scientific Research Institute of the North Medical Problems, Siberian Branch of the Russian Academy of Sciences, Krasnoyarsk, Russia (03.12.2019, N3).

Statistical methods

Statistical analyses were carried out using the STATISTICA software package ver. 13.0. Differences in categorical variables were assessed using the χ^2 test. For relatively small samples, a two-sided Fisher exact test was applied. Normality of the distribution of continuous variables was assessed using the Shapiro-Wilk W-statistic test, and the distribution of the quantitative data appeared to diverge from the normal pattern. Therefore, methods of nonparametric statistics were used. As a measure of the central tendency, in addition to $\bar{X} \pm SD$ (where \bar{X} is the arithmetic mean, and SD is the standard deviation), the median, minimum and maximum values of the indicator, and the interquartile range of IQR, were indicated. Differences in quantitative characteristics were assessed using the Mann-Whitney test and Kruskal-Wallis test for univariate (intergroup) analysis of variance. Differences were considered significant at $p < 0.05$.

Results

The results of analysis of the questionnaire comparing the total level of gerontological ageism across categories of independent variables are presented in Table 1.

Table 1. Assessment of gerontological ageism according to scales (answers of respondents, by country of residence)

The Fraboni Scale of Ageism	Group	Median	Min-max	IQR	$\bar{X} \pm SD$	Mann-Whitney tests (Z) for two samples* and Kruskal-Wallis tests (H) for five groups (with Bonferroni correction test)
Age stereotypes and prejudices (Stereotypes)	BY (n = 827)	23.0	10–38	21–25	22.7 \pm 3.24	Z = 2.3; $P_{BY-RU} < 0.05$
	RU (n = 528)	22.0	12–33	20–24	22.3 \pm 3.15	Z = -5.6; $P_{BY-PL} < 0.05$
	PL (n = 798)	24.0	10–39	21–26	23.7 \pm 3.81	Z = -7.0; $P_{RU-PL} < 0.01$
	LT (n = 223)	23.0	10–29	21–25	23.0 \pm 3.01	Z = -2.8; $P_{RU-LT} < 0.01$
	UA (n = 117)	23.0	16–30	21–26	23.2 \pm 3.11	Z = -2.7; $P_{RU-UA} < 0.05$
						Z = 2.6; $P_{PL-LT} < 0.05$
	Total (n = 2493)	23.0	10–39	21–25	24.0 \pm 3.42	H = 58.8; $P < 0.001$
Discrimination and negative emotional attitudes (Discrimination)	BY (n = 827)	15.0	7.0–25.0	14–16	15.2 \pm 2.11	Z = 7.2; $P_{BY-PL} < 0.05$
	RU (n = 528)	15.0	9.0–24.0	14–16	15.1 \pm 1.92	Z = 8.6; $P_{BY-LT} < 0.05$
	PL (n = 798)	15.0	7.0–25.0	12–16	14.4 \pm 2.85	Z = 5.6; $P_{RU-PL} < 0.001$
	LT (n = 223)	14.0	7.0–21.0	12–15	13.8 \pm 2.23	Z = 7.8; $P_{RU-LT} < 0.01$
						Z = 3.1; $P_{PL-LT} < 0.01$
	UA (n = 117)	15.0	9.0–20.0	14–16	15.0 \pm 2.07	Z = -2.6; $P_{PL-UA} < 0.01$
						Z = -4.8; $P_{LT-UA} < 0.01$
	Total (n = 2493)	15.0	7.0–25.0	13–16	16.1 \pm 2.28	H = 112.1; $P < 0.001$
Alienation, avoidance (Avoidance)	BY (n = 827)	17.0	8–32	15–18	16.4 \pm 2.93	Z = 2.1; $P_{BY-RU} < 0.05$
	RU (n = 528)	16.0	8–28	15–18	16.2 \pm 2.98	Z = 2.5; $P_{BY-PL} < 0.05$
	PL (n = 798)	16.0	8–28	14–18	16.1 \pm 3.26	Z = 4.5; $P_{BY-LT} < 0.05$
						Z = 2.8; $P_{RU-LT} < 0.01$
	LT (n = 223)	16.0	8–24	14–17	15.4 \pm 3.12	Z = -2.1; $P_{RU-UA} < 0.05$
						Z = 2.6; $P_{PL-LT} < 0.01$
	UA (n = 117)	17.0	8–27	15–18	16.8 \pm 2.62	Z = -2.1; $P_{PL-UA} < 0.01$
						Z = -3.8; $P_{LT-UA} < 0.01$
	Total (n = 2493)	16.0	8–32	14–18	16.2 \pm 3.07	H = 25.4; $P < 0.001$

Hereinafter, the countries in which the survey was conducted are indicated: BY – Belarus, RU – Russia, PL – Poland, LT – Lithuania, UA – Ukraine; * – comparisons of other groups of respondents – differences are not significant. Information about Bonferroni correction test has been transferred to was transferred to the last column of the table 1.

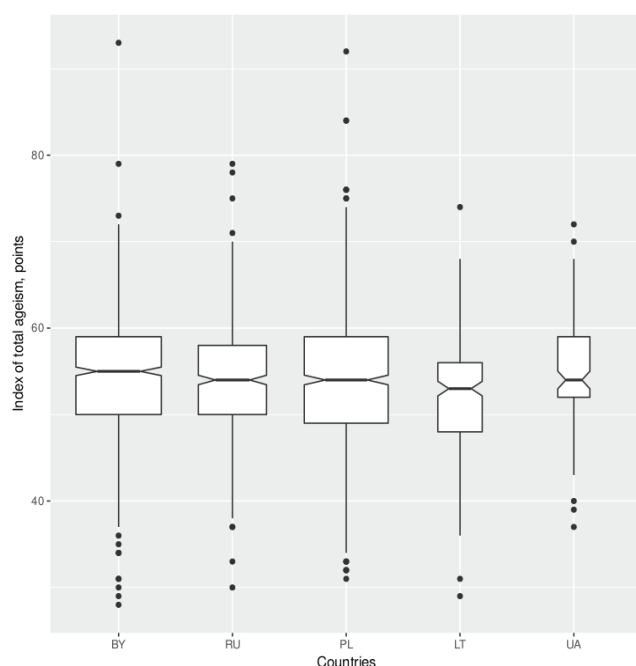


Figure 1. Diagram of the range of the total result of the assessment of gerontological ageism (FSA total) in the responses of respondents from five countries

For each separate Fraboni scale component and for the total indicator of ageism for the ageism scale, significant differences were found between the respondents in different countries. The maximum level on the scale “Age stereotypes and prejudices” was found among students in Poland, the minimum – among Russian students. On the scale of “Discrimination and negative emotional attitudes”, students in all countries scored at approximately the same level, except for those students in Lithuania,

which were characterised by the lowest indicator. Students in Belarus and Ukraine were also found to rank high on the “Alienation, Avoidance” scale.

The maximum total score, indicating the highest overall level of ageism, was found among Belarusian students, while the minimum score (the lowest level of ageism) was among students from Lithuania (Fig. 1).

Reliability of differences between countries: $Z = 2.9$; $P_{BY-RU} < 0.05$; $Z = 4.5$; $P_{BY-LT} < 0.05$; $Z = 2.4$; $P_{RU-LT} < 0.01$; $Z = -2.5$; $P_{RU-UA} < 0.05$; $Z = 3.4$; $P_{PL-LT} < 0.01$; $Z = -3.6$; $P_{LT-UA} < 0.01$; $H = 25.1$; $P_{BY,RU,PL,LT,UA} < 0.001$.

The distribution of respondents, accounting for the degree of manifestation of gerontological ageism on the scales, is presented in Table 2.

The final indicators of calculating the level of gerontological ageism of respondents from the five countries are presented in Figure 2. In general, the attitude towards older people was predominantly neutral or positive: 2,111 (84.6%, 95% confidence interval (CI) – 83.3–86.1). A low level of ageism was typical for 582 respondents (23.3%, CI 95% = 21.7–25.0) and was found among representatives of Lithuania – 64 (28.7%, CI 95% = 22.8–34.6) and among respondents in Ukraine – 21 (17.9%, CI 95% = 11.0–24.9). The average level was noted in more than 60% of cases (evenly distribution in all five groups of respondents).

The level of age discrimination and negative emotional attitude towards the elderly is high in all groups (one fifth of the respondents). As for the number of students displaying relatively high levels of ageism, the largest was in Poland – 148 (18.5%, CI 95% = 15.9–21.3), and the lowest in Lithuania – 19 (8.5%, CI 95% = 9.6–22.9).

Reliability of differences between countries: $\chi^2 = 9.1$; $P_{BY-PL} < 0.01$; $\chi^2 = 10.0$; $P_{BY-LT} < 0.01$; $\chi^2 = 14.3$; $P_{RU-PL} < 0.001$; $\chi^2 = 6.3$; $P_{RU-LT} < 0.01$; $\chi^2 = 12.8$; $P_{PL-LT} < 0.001$; $\chi^2 = 7.8$; $P_{LT-UA} < 0.05$; $\chi^2 = 29.3$, $P < 0.001$.

Factor analysis [22] revealed that the entire set of correlations of the respondents’ indicators in the five countries in the

Table 2. Gradation of the severity of the Fraboni scale indicators in the respondents’ answers depending on the country of residence (absolute data,%; 95% confidence interval)

Fraboni Scale of Ageism	Group	Scale indicator			χ^2 test; P^*
		Minimum	Medium	Maximum	
Stereotypes	BY	193 (23.3) (20.5–26.2)	484 (58.5) (55.2–61.9)	150 (18.2) (15.5–20.8)	$\chi^2 = 26.4$; $P_{BY-PL} < 0.001$
	RU	136 (25.8) (22.0–29.5)	318 (60.2) (56.1–64.4)	74 (14.0) (11.1–17.0)	$\chi^2 = 41.1$; $P_{RU-PL} < 0.001$
	PL	147 (18.4) (15.7–21.1)	422 (52.9) (49.4–56.3)	229 (28.7) (25.6–31.8)	$\chi^2 = 6.5$; $P_{RU-LT} < 0.05$
	LT	43 (19.3) (14.1–24.5)	135 (60.5) (54.1–67.0)	45 (20.2) (14.9–25.5)	$\chi^2 = 10.7$; $P_{RU-UA} < 0.01$
	UA	22 (18.8) (11.7–25.9)	65 (55.6) (46.6–64.6)	30 (25.6) (17.7–33.6)	$\chi^2 = 6.7$; $P_{PL-LT} < 0.05$
	Total	541 (21.7) (20.1–23.3)	1424 (57.1) (55.2–59.1)	528 (21.2) (19.6–22.8)	$\chi^2 = 53.1$; $P < 0.001$
Discrimination	BY	83 (10.0) (8.0–12.1)	557 (67.4) (64.2–70.6)	187 (22.6) (19.8–25.5)	$\chi^2 = 67.5$; $P_{BY-PL} < 0.001$; $\chi^2 = 57.3$; $P_{BY-LT} < 0.001$
	RU	45 (8.5) (6.1–10.9)	373 (70.6) (66.8–74.5)	110 (20.8) (17.4–24.3)	$\chi^2 = 59.8$; $P_{RU-PL} < 0.001$
	PL	203 (25.4) (22.4–28.5)	461 (57.8) (54.3–61.2)	134 (16.8) (14.2–19.4)	$\chi^2 = 54.9$; $P_{RU-UA} < 0.001$; $\chi^2 = 6.5$; $P_{PL-LT} < 0.05$
	LT	63 (28.3) (22.3–34.3)	138 (61.9) (55.5–68.3)	22 (9.9) (6.0–13.8)	$\chi^2 = 9.4$; $P_{PL-UA} < 0.01$
	UA	15 (12.8) (6.8–18.9)	82 (70.1) (61.8–78.4)	20 (17.1) (10.3–23.9)	$\chi^2 = 12.0$; $P_{LT-UA} < 0.05$
	Total	409 (16.4) (15.0–17.9)	1611 (64.6) (62.7–66.5)	473 (19.0) (17.4–20.5)	$\chi^2 = 129.3$; $P < 0.001$
Avoidance	BY	128 (15.5) (13.0–17.9)	505 (61.1) (57.7–64.4)	194 (23.5) (20.6–26.4)	$\chi^2 = 6.1$; $P_{BY-PL} < 0.05$
	RU	88 (16.7) (13.5–19.9)	337 (63.8) (59.7–67.9)	103 (19.5) (16.1–22.9)	$\chi^2 = 16.2$; $P_{BY-LT} < 0.001$
	PL	161 (20.2) (17.4–23.0)	462 (57.9) (54.5–61.3)	175 (21.9) (19.1–24.8)	$\chi^2 = 8.0$; $P_{RU-LT} < 0.05$
	LT	53 (23.8) (18.2–29.4)	141 (63.2) (58.9–69.6)	29 (13.0) (8.6–17.4)	$\chi^2 = 10.7$; $P_{RU-UA} < 0.01$; $\chi^2 = 8.2$; $P_{PL-UA} < 0.05$
	UA	11 (9.4) (4.1–14.9)	80 (68.4) (60.0–76.8)	26 (22.2) (14.7–29.8)	$\chi^2 = 12.8$; $P_{LT-UA} < 0.05$
	Total	441 (17.7) (16.2–19.2)	1525 (61.2) (59.3–63.1)	527 (21.1) (19.5–22.7)	$\chi^2 = 27.8$; $P < 0.001$

* – comparisons of other groups of respondents – differences are not significant.

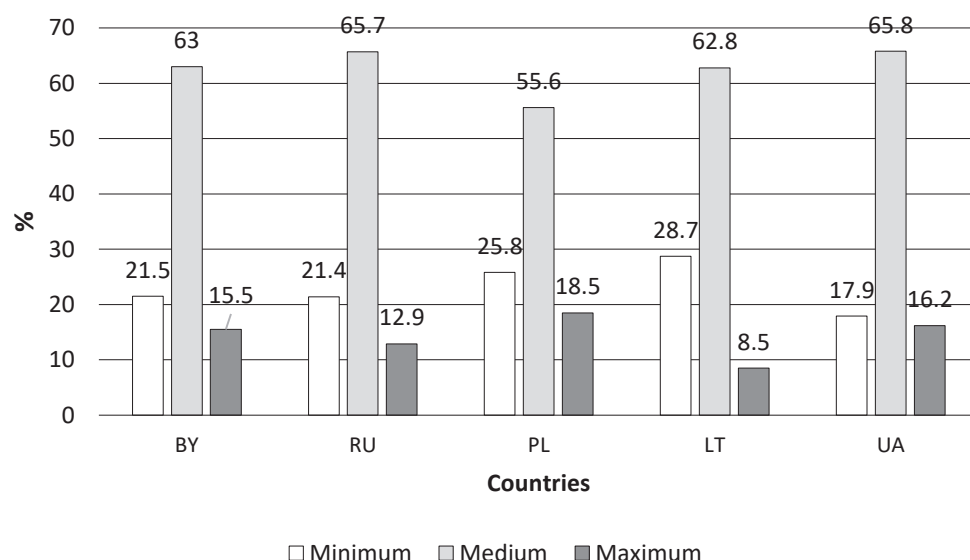


Figure 2. The severity of gerontological ageism (FSA total) in the responses of respondents from five countries

data set of the Fraboni questionnaire scales can be reduced to a single factor. This factor contains 20% of the total initial variation of the analysed multivariate distribution. Thus, it is impossible to observe significant systematic effects in the initial indicators, since they are masked by random variations in the data (80% of the entire multivariate variation in the sample). Screening out random variations allowed us to establish that the components of 11 statements of the Fraboni questionnaire, according to the ranking by the absolute value of the contribution (Table 3), demonstrate the greatest contribution to the systematic nature of observations (the coefficients are standardised by normalisation: bringing the standard deviation to 1).

All scales and the total ageism score did not correlate with the age of the study participants. A weak correlation was not-

ed by gender on all scales and the general indicator of ageism [Spearman's rank correlation coefficient, ($r = 0.06$, $r = 0.13$, $r = 0.16$, $r = 0.14$, respectively, $p < 0.05$)], with young girls exhibiting a more pronounced tolerance for older people. It should be noted that the anti-aging orientation of the students' behaviour in the context of interaction with older people is not determined by their gerontological stereotypes. The experience of personal contacts with older people plays a significant role in shaping the direction of behaviour, particularly within the framework of intrafamily interaction, which facilitates a reduction in the level of stereotyped perceptions of older people and encourages one to treat representatives of the old age group with more differentiation.

Table 3. Peculiarities of statements: criteria of gerontological ageism in the answers of students from five countries

Location of items (N) in the hierarchy (I–XI)	Items of the questionnaire	Countries ($\bar{X} \pm SD$; median; IQR)					Kruskal-Wallis criterion, H; P^*
		BY	RU	PL	LT	UA	
Avoidance							
N6 (I)	I sometimes avoid eye contact with old people when I see them	1.81 ± 0.63; 2.0; 1.0–2.0	1.82 ± 0.70; 2.0; 1.0–2.0	1.81 ± 0.74; 2.0; 1.0–2.0	1.75 ± 0.67; 2.0; 1.0–2.0	1.95 ± 0.79; 2.0; 1.0–2.0	No differences identified
N11 (II)	I personally would not want to spend much time with an old person	2.12 ± 0.64; 2.0; 2.0–2.0	2.02 ± 0.65; 2.0; 2.0–2.0	2.03 ± 0.78; 2.0; 2.0–2.0	1.85 ± 0.68; 2.0; 1.0–2.0	2.21 ± 0.71; 2.0; 2.0–2.0	H = 37.0; $P < 0.001$
N13 (VII)	I would prefer not to go to an open house at a senior's club if invited	2.20 ± 0.65; 2.0; 2.0–3.0	2.17 ± 0.65; 2.0; 2.0–3.0	1.91 ± 0.64; 2.0; 2.0–2.0	2.13 ± 0.72; 2.0; 2.0–3.0	2.21 ± 0.57; 2.0; 2.0–3.0	H = 74.6; $P < 0.001$
N22 (IX)	I would prefer not to live with an old person	2.41 ± 0.70; 2.0; 2.0–3.0	2.40 ± 0.60; 2.0; 2.0–3.0	2.22 ± 0.79; 2.0; 2.0–3.0	2.28 ± 0.75; 2.0; 2.0–3.0	2.45 ± 0.71; 2.0; 2.0–3.0	H = 39.2; $P < 0.001$
Stereotypes							
N23 (III)	Most old people can be intimidating because they tell the same stories over and over	1.89 ± 0.59; 2.0; 2.0–2.0	1.86 ± 0.57; 2.0; 2.0–2.0	1.98 ± 0.70; 2.0; 2.0–2.0	1.91 ± 0.59; 2.0; 2.0–2.0	1.97 ± 0.56; 2.0; 2.0–2.0	No differences identified
N7 (VI)	I don't like it when old people try to make conversation with me	1.60 ± 0.59; 2.0; 1.0–2.0	1.53 ± 0.65; 1.0; 1.0–2.0	1.70 ± 0.81; 2.0; 1.0–2.0	1.61 ± 0.59; 2.0; 1.0–2.0	1.71 ± 0.67; 2.0; 1.0–2.0	H = 16.3; $P < 0.001$
N21 (XI)	Most old people would be considered to have poor personal hygiene	2.13 ± 0.60; 2.0; 2.0–2.0	2.03 ± 0.63; 2.0; 2.0–2.0	2.36 ± 0.72; 2.0; 2.0–3.0	2.07 ± 0.61; 2.0; 2.0–2.0	2.21 ± 0.64; 2.0; 2.0–3.0	H = 90.9; $P < 0.001$

Table 3. Peculiarities of statements: criteria of gerontological ageism in the answers of students from five countries

Location of items (N) in the hierarchy (I–XI)	Items of the question-naire	Countries ($\bar{X} \pm SD$; median; IQR)					Kruskal-Wallis criterion, H; P^*
		BY	RU	PL	LT	UA	
Discrimination							
N17 (IV)	It is best that old people live where they won't bother anyone	1.93 \pm 0.66 2.0; 2.0–2.0	1.89 \pm 0.67 2.0; 1.0–2.0	1.78 \pm 0.73 2.0; 1.0–2.0	1.51 \pm 0.59 1.0; 1.0–2.0	1.91 \pm 0.71 2.0; 1.0–2.0	H = 87.3; P < 0.001
N18 (V)	The company of most old people is quite enjoyable	2.10 \pm 0.56; 2.0; 2.0–2.0	2.10 \pm 0.57; 2.0; 2.0–2.0	2.15 \pm 0.66; 2.0; 2.0–2.0	1.93 \pm 0.54; 2.0; 2.0–2.0	2.02 \pm 0.54; 2.0; 2.0–2.0	H = 23.0; P < 0.001
N20 (VIII)	Most old people are interesting, individualistic people	2.10 \pm 0.56; 2.0; 2.0–2.0	2.16 \pm 0.58; 2.0; 2.0–2.0	2.03 \pm 0.54; 2.0; 2.0–2.0	1.61 \pm 0.61; 2.0; 1.0–2.0	2.09 \pm 0.62; 2.0; 2.0–2.0	H = 145.2; P < 0.001
N16 (X)	Most old people should not be trusted to take care of infants	1.81 \pm 0.62; 2.0; 1.0–2.0	1.80 \pm 0.59; 2.0; 1.0–2.0	2.09 \pm 0.71; 2.0; 2.0–2.0	1.79 \pm 0.57; 2.0; 1.0–2.0	1.89 \pm 0.58; 2.0; 2.0–2.0	H = 92.1; P < 0.001

* – adjusted for multiple Bonferroni comparisons, I–XI – gradation according to the importance of distribution (place).

Discussion

Key results

The current study demonstrates the existence of differences in the prevalence of gerontological ageism among university youth from five different European countries. Significant differences were obtained based on quantitative counts and on the assessment of all three Fraboni scales, as well as when comparing indicators for the total level of gerontological ageism. In particular, the highest overall score on the gerontological ageism index was recorded among Belarusian students, while the lowest was among students from Lithuania. The range from max vs min values by FSA was dependent on the respondents' country of residence: "Age stereotypes and prejudices" (I place – PL; II equally UA, LT, BY; III – RU); "Discrimination and negative emotional attitude" (I place equally – BY, RU, UA, PL; II – LT); "Exclusion, avoidance" (I place equally BY, UA; II equally – RU, PL, LT). Whereas the median level, observed in more than 60% of responses, was approximately evenly distributed in all groups studied. Generally, we found the predominant attitudes of university youth toward the elderly to be neutral and positive (84.6%).

Interpretation

Our study shows the distinctive features of gerontological ageism among university students according to the Fraboni Ageism Scale as reported by country of residence.

Quantifying gerontological ageism among university students

A quantitative assessment of gerontological ageism was carried out based on the evaluation of the responses to survey questions aimed at assessing three scales of the Fraboni Scale of ageism (FSA). As a result, significant differences were found among students who were citizens of the five countries. The revealed features are consistent with the results presented in literature [23–26].

To assess the differences describing the characteristics of the groups, an additional analysis was carried out, which makes it possible to group individuals accounting for the level of the indicators – both according to individual scales and the total level of ageism. As a result, the obtained data is characteristic only for each of the five groups (according to the FSA scales).

Gradation of the severity of gerontological ageism indicators among university students

In our research, the maximum level of gerontological ageism on the scale "Age stereotypes and prejudices" was identified among Polish students; the highest score of ageism on the scale of "Alienation, avoidance" was among students from Belarus and Ukraine. All groups, except for students from Lithuania, scored the highest in regards to the "Discrimination and negative emotional attitude" scale, indicating the significance of the behavioural component for the phenomenon of ageism. We found that the level of age discrimination and negative emotional attitudes towards the elderly was high in all groups (one fifth of the respondents).

Correlation links

All three scales and the total ageism score did not correlate with the age of the study participants. A weak correlation by gender was noted on all scales as well as the general indicator of ageism (Spearman's rank correlation coefficient, $r = 0.06$, $r = 0.13$, $r = 0.16$, $r = 0.14$, $p < 0.05$, respectively). Young girls showed a more pronounced tolerance for older people.

Generalisability

This study examined the prevalence of gerontological ageism among university students from five European countries. We found that the gradation of the severity of the Fraboni scale indicators in the answers of the respondents depends on the country of residence. The indicators for calculating the severity of the overall result of assessing gerontological ageism in the answers of respondents in five countries were neutral or positive. Students who demonstrated the maximum level of ageism attracted special attention. The maximum level on the scale "Age stereotypes and prejudices" was found among students in Poland. Students from Belarus and Ukraine showed a high level on the scale "Alienation, avoidance". The maximum overall score, indicating a high level of ageism, was found among Belarusian students. The data obtained indicates that the situation requires changes in the programme of educational work among young people.

Limitations of the study

This study was limited by different degrees of expression of gerontological ageism among students from five countries. We assume that the differences in the manifestations of geron-

tological ageism in the studied groups are associated with cultural characteristics. For example, a high degree of migration of a young and financially independent population is important for decreasing ageism. Young people who stay to live with the older generation have a high degree of tolerance for them.

Conclusions

The manifestations of ageism are international in nature and can explain 20% of the total variety of answers characterising the differences in ranked attributes and degree of ageism.

The total indicator showed the highest degree of gerontological ageism among students in Belarus, the lowest – among those in Lithuania, with levels of gerontological ageism among students in Russia, Poland and Ukraine distributed in between.

The identified specific indicators of the prevalence of gerontological ageism and their levels should be considered for effective management of the educational work among students at universities in each of the five countries.

Based on the results obtained, research in individual regions and universities to determine the views of students and society on ageism and to identify possible regional differences to this problem should be planned.

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References

1. Dobrowolska B, Jędrzejewicz B, Pilewska-Kozak A, et al. Age discrimination in healthcare institutions perceived by seniors and students. *Nurs Ethics* 2019; 26(2): 443–459, doi: 10.1177/0969733017718392.
2. Flatt T, Partridge L. Horizons in the evolution of aging. *BMC Biol* 2018; 16(1): 93, doi: 10.1186/s12915-018-0562-z.
3. Kontis V, Bennett JE, Mathers CD, et al. Future life expectancy in 35 industrialised countries: projections with a Bayesian model ensemble. *Lancet* 2017; 389(10076): 1323–1335, doi: 10.1016/S0140-6736(16)32381-9.
4. Shatilov AB. [«Generational Gaps» as a Factor of Increasing Conflicts in Modern Russian Society]. *Vlast'* 2019; 27(4): 26–32, doi: 10.31171/vlast.v27i4.6581 (In Russian).
5. Huzeeva GR. [Inter-generational interaction of elderly and young people: specifics of communication and image of old age]. *Psikhologicheskie Issledovaniya* 2017; 10(51): 10–14 (In Russian).
6. Ayalon L, Dolberg P, Mikulionienė S, et al. A systematic review of existing ageism scales. *Ageing Res Rev* 2019; 54: 100919, doi: 10.1016/j.arr.2019.100919.
7. Shpakou A, Klimatckaia L, Kuzniatsou A, et al. Medical care and manifestations of ageism in healthcare institutions: opinion of elderly people. The example of four countries. *Fam Med Prim Care Rev* 2021; 23(1): 69–74, doi:10.5114/fmpcr.2021.103159.
8. Antipova SI, Antipov VV, Savina II. [Problems of elderly people of Belarus in the light of medical statistics]. *Mezhdunarodnye obzory: klinicheskaya praktika i zdorov'e* 2017; 5–6: 75–92 (in Russian).
9. Belmin J. [Ageing and the elderly, stereotypes and their implications]. *Soins Gerontol* 2020; 25(144): 34–37, doi: 10.1016/j.sger.2020.06.008 (in French).
10. Donizzetti AR. Ageism in an Aging Society: The Role of Knowledge, Anxiety about Aging, and Stereotypes in Young People and Adults. *Int J Environ Res Public Health* 2019; 16(8): 1329, doi: 10.3390/ijerph16081329.
11. Vauclair CM, Lima ML, Abrams D, et al. What do older people think that others think of them, and does it matter? The role of meta-perceptions and social norms in the prediction of perceived age discrimination. *Psychol Aging* 2016; 31(7): 699–710, doi: 10.1037/pag0000125.
12. D'Amen B, Socci M, Santini S. Intergenerational caring: a systematic literature review on young and young adult caregivers of older people. *BMC Geriatr* 2021; 21(1): 105, doi: 10.1186/s12877-020-01976-z.
13. Butler RN. Ageism: another form of bigotry. *The Gerontologist* 1996; 9(4): 243–246.
14. Zhou J. Improving older people's life satisfaction via social networking site use: Evidence from China. *Australas J Ageing* 2018; 37(1): E23–E28, doi: 10.1111/ajag.12499.
15. Usova NV. [Content characteristics of discrimination equipment by age]. *The Emissia Offline Letters* 2018; 7: 1–4 (in Russian).
16. Rudnicka E, Napierała P, Podfigurna A, et al. The World Health Organization (WHO) approach to healthy ageing. *Maturitas* 2020; 139: 6–11, doi: 10.1016/j.maturitas.2020.05.018.
17. Startseva ON, Lymareva IA, Ilitski AN, et al. Gerontological ageism and its overcoming among medical students. *Perspektivy nauki i obrazovania* 2019; 39: 133–141, doi: 10.32744/pse.2019.3.10 (in Russian).
18. Calasanti T, King N. Beyond Successful Aging 2.0: Inequalities, Ageism, and the Case for Normalizing Old Ages. *J Gerontol B Psychol Sci Soc Sci* 2020; doi: 10.1093/geronb/gbaa037.
19. Levy BR, Slade MD, Kunkel SR, et al. Longevity increased by positive self-perceptions of aging. *J Pers Soc Psychol* 2002; 83(2): 261–270, doi: 10.1037/0022-3514.83.2.261.
20. Martin F. Age and Ageing: moving on(line). *Age Ageing* 2020; 49(5): 690–691, doi: 10.1093/ageing/afaa154.
21. Rychtaříková J. Perception of population ageing and age discrimination across EU countries. *Population and Economics* 2019; 3(4): 1–29, doi: 10.3897/popecon.3.e49760.
22. Fraboni M, Saltstone S, Hughes S. The Fraboni Scale of Ageism (FSA): An attempt at a more precise measure of ageism. *Can J Aging* 1990; 9(1): 56–66.
23. Zhong X, Lu Y, Gao Q, et al. Estimating Biological Age in the Singapore Longitudinal Aging Study. *J Gerontol A Biol Sci Med Sci* 2020; 75(10): 1913–1920, doi: 10.1093/gerona/glz146.
24. Uğurlu Z, Kav S, Karahan A, et al. Correlates of Ageism Among Health Care Professionals Working With Older Adults. *J Transcult Nurs* 2019; 30(3): 303–312, doi: 10.1177/1043659618810128.
25. Fernández E, Monardes H, Díaz C, et al. [«Ageism» as social problem in geriatrics: Regarding the measurement of ageism in dentistry students]. *Rev Esp Geriatr Gerontol* 2017; 52(2): 109, doi: 10.1016/j.regg.2016.08.003 (in Spanish).
26. Kuhlmann BG, Kornadt AE, Bayen UJ, et al. Multidimensionality of Younger and Older Adults' Age Stereotypes: The Interaction of Life Domain and Adjective Dimension. *J Gerontol B Psychol Sci Soc Sci* 2017; 72(3): 436–440, doi: 10.1093/geronb/gbv049 25.

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