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ORIGINAL RESEARCH

Attitudes Towards the Elderly in Polish Society: Is Knowledge About Old Age and Personal Experiences a Predictor of Ageism?

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Purpose: The aim of the study was to determine the prevalence and characteristics of ageism in Polish society. In addition, the relationships of opinions with demographic data, knowledge about aging and individual contact with the elderly, in the context of knowledge about their exclusion, were examined.

Patients and methods: The study involved 923 individuals in Poland. Their demographic characteristics were recorded, and all subjects were assessed using Kogan's Attitudes toward Old People (KOAP) scale and asked to complete the Facts on Aging Quiz. Subjects were also asked about their knowledge of the definition of ageism and asked to explain it.

Results: The KOAP scale as a function of predictors was modeled using Bayesian robust linear regression with t distribution. The subjects had a mean (SD) KAOP score of 90.88 (17.41), with the central 50% of the observations ranging from 83 to 101 points. Three statistically credible relationships with responses to the questionnaires were observed. Respondents attending school had slightly lower average KAOP scores than respondents with other professional status. In addition, FAQ was negatively and moderately related to KAOP, whereas contacts with elderly people were positively and moderately related to KAOP.

Conclusion: Knowledge of aging and contact with elderly individuals significantly affected attitudes and behaviors regarding ageism. Many study subjects were characterized by having unfavorable attitudes towards the elderly.

Keywords: elderly, ageism, KOAP, FAQ, relationships, Poland

Introduction

Societal aging, a common phenomenon in highly developed countries, is associated with a low birth rate and an increase in life expectancy. Aging of society has been observed in the European Union countries (EU-27), where the number of people aged ≥80 years has been projected to increase 2.5-fold between 2019 and 2100, from 5.9% to 14.6%.[1] Eurostat has reported that Poland is among the top ten countries in which the percentage of the population aged >65 years grew between 2009 and 2019. In Poland age discrimination seems to be higher among the youngest respondents, but is also relatively high among older respondents, similar to findings in Germany, Spain and Ukraine. The levels of perceived age discrimination among the oldest respondents were reported highest in countries like the Czech Republic and Russia. Perceived age discrimination was reported to be constant across age groups in Cyprus and Greece, but was much higher in Cyprus and very

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much higher in Greece among the oldest respondents.[2] The aim of the present study was to determine the scale of ageism in Polish society during the COVID-19 pandemic period.

Increases in the number and percentage of individuals aged >65 years requires re-organization of health care systems, the national economy and social relationships. Ageism, first described as a subjective experience relative to the popular notion of a generation gap, Was initially defined as discrimination by the middle-aged group against younger and older groups in society, because the middle-aged group is responsible for the well-being of younger and older age groups, which are perceived as dependent.[3] The identification of ageism resulted from many years of observation of people's behavior in society and how they automatically categorize others. Although categorization by race and gender was easily identified, the exclusion of people by age was less easily determined.[4] Ageism is a broad concept covering the problems of prejudice and discrimination against people due to old age[5] and is encountered on the macro and micro levels. It has global effects in the labor market, media, health care, architecture and social policy and can include stereotypical attitudes, lack of alternatives and different methods of communication.[6] In addition to affecting the functioning and development of societies, ageism is a barrier to the active aging process. Social marginalization of the elderly increases their health problems and disabilities, adversely affecting the burdens on health and social care systems. Policies that make it easier for the elderly to stay healthy, be employed longer and fully participate in society are therefore of great importance.[7]

At the beginning of 2021, the World Health Organization (WHO) published a report on ageism, thus initiating global talks on the occurrence and consequences of ageism in response to changes resulting from the COVID-19 pandemic.[8] Unfortunately, the WHO report described ageism as a socially acceptable form of discrimination. The role of research and the individual image of each country are also emphasized, as views of age discrimination in each country may differ. Studying the attitudes of society towards the elderly can help in the design of measures that can reduce discriminatory activities.

Contacts between young and old people can be a key to avoiding ageism. The quality of the relationships between grandchildren and grandparents may be the most significant experience affecting young people's attitude towards aging.[9] One study found that the most important factor influencing youths' views of the elderly was the quality of their contacts with their grandparents.[10] Good relations between young and old are beneficial to both. Old people might share their wisdom, while younger people could show, for example, how to use new technologies. Intergenerational interactions support both and provide opportunities to build positive attitudes towards the elderly.

Research to date has shown a relationship between level of knowledge about the aging process and attitudes towards the elderly.[11–13] In the Polish literature, however, there are no current data on social attitudes towards the elderly. Studies are needed due to predicted demographic changes and the need to prevent possible occurrences of ageism. The primary aim of the present study was to determine the scale of ageism in Polish society. Additionally, as part of an in-depth analysis, we asked the following research questions:

- Do attitudes toward the elderly differ by age, sex, level of education, place of residence, marital status, or professional situation?
- Do attitudes toward the elderly differ by represented knowledge about aging?
- Do attitudes toward the elderly differ depend on respondents' contact with the elderly in their private and professional lives?
- Is the concept of ageism familiar to the respondents? If so, how do they define it?

Materials and Methods

Research Design

This was a cross-sectional internet-based survey conducted in Poland during the first two weeks of February 2021.

Subjects

Participation was voluntary and anonymous. Anonymous online questionnaires were distributed to individuals with the help of the Survgo system, with 923 subjects completing these questionnaires. The entire population of Poland is estimated to be 38,265,000 persons. The number of respondents participating in this study was representative, but due to the online nature of the research, they cannot be treated as such.

Instruments

Participants were asked to complete four surveys. The first was on demographic characteristics, including age, sex,

place of residence, marital status, level of education, professional situation, length of service, and gross annual income. The second and third surveys, the Polish versions of the Kogan's Attitudes toward Old People (KOAP) scale and the Facts on Aging Quiz (FAQ), are often used in research on ageism.[14] The KAOP is a 34-item questionnaire, each of which was scored on a six-point Likert scale, where 1 indicates strongly disagree and six indicates strongly agree, with half the questions being negative and the other half positive.[15] Total scores ranged from 34–204 points, where higher scores indicate a more positive attitude towards the elderly.[16] Cronbach's alpha was found to be 0.73 and 0.83 for the positive and negative scales, respectively.[15]

The FAQ is a 25-item questionnaire addressing knowledge about old age, with subjects answering each statement as true or false.[17] The tool FAQ statements that cover knowledge about the physical, psychological and social characteristics associated with old age. Each correct answer was scored as one point, with total scores ranging from 0–25 and higher scores indicating greater knowledge of old age. Cronbach's alpha ranged from 0.45 to 0.66.[18]

The fourth survey consisted of a proprietary questionnaire on personal experiences with the elderly and included the questions in Table 1. Subjects were also asked to define the term ageism.

Table 1 The Original Questionnaire "Contact with the Elderly"

Contact with the Elderly		
1	Do you live or have you ever lived with an elderly person?	a) Yes b) No
2	Do you have contact with an elderly person in your private life?	a) Yes, I live with an elderly person b) Yes, several times a week c) Only at ceremonies d) Occasionally e) Not at all
3	Do you have contact with people over 65 at work?	a) Yes b) No c) I do not have the opportunity
4	Are you in contact with elderly people who are not family members?	a) Yes b) No c) I do not have the opportunity
5	How important are contacts with the elderly to you?	a) Very important b) Important c) It does not matter d) Not important

Ethical Considerations

The study was approved by the Bioethics Committee of the Nicolaus Copernicus University Collegium Medicum in Bydgoszcz, Poland (KB 83/2021). The research was conducted in accordance with the Helsinki Declaration All participants provided informed consent for the research.

Procedure

Surveys were sent to participants via web forms due to the current global pandemic. The survey was developed by the research team via the media and on the Survgo internet platform, on which the survey itself was constructed.

The participants were assured of the confidentiality of information and their participation was voluntary and anonymous. A random sample, taking both sex and age into account, was selected. Only questionnaires fully completed by adult respondents were included in the analysis.

Data Analysis

Data were analyzed using R 4.0.2 software.[19] KAOP score as a function of predictors was modeled using Bayesian robust linear regression with t distribution.[20] In each of the analyses, a "no opinion" response was deemed equivalent to a neutral attitude and was defined as a midpoint of the scale. Ordered categorical predictors were coded with orthogonal linear contrast; unordered categorical predictors were coded with sum-to-zero contrast; and continuous predictors were entered into a model on a standardized scale. In Bayesian statistics the inference was based on analyzing the posterior probability distributions of model parameters (eg, regression weights), obtained by integrating likelihood (data) with prior probability distributions. Regression weights were defined as statistically credible when 95% credible intervals (95% CI) of the posterior distribution excluded zero.[21] The means of the posterior distributions were defined as the point estimates of the effects. Default improper flat priors were used for the regression weights. To investigate the relationship between a dependent variable and a credible predictor, the *predicted marginal means* with the corresponding 95% CIs were presented as figures. These values represented the median posterior distribution of the predicted KOAP values.

To approximate posterior distributions of the models, a Markov Chain Monte Carlo (MCMC), sampling procedure was performed using the brms package in R software.[21] Six parallel chains were used, each consisting of 8000 samples, with 4000 samples used as a warm up period and every tenth sample recorded, resulting in a total of 2400 recorded samples. The sampling procedure was efficient and resulted in well mixed, not autocorrelated, chains and unimodal posteriors. Model accuracy was assessed with posterior predictive checks. There were no missing values in the data.

Results

The characteristics of the study participants are presented in Table 2.

The mean (SD) KAOP score of the sample was 90.88 (17.41), with the central 50% of the observations ranging from 83 to 101 points. Model coefficients of linear regression with KAOP as a dependent variable are summarized in Table 3, whereas model predictions for the credible predictors are presented in Figure 1. Three statistically credible relationships with responses to the questionnaires were observed. Respondents reporting a professional status as "at school" had slightly lower average KAOP scores than respondents with other professional status. In addition, FAQ was negatively and moderately related to KAOP, whereas contacts with elderly people were positively and moderately related to KAOP.

Discussion

Ageism has been defined as negative or positive stereotypes, prejudices and/or discrimination (or benefit) associated with older people based on their actual or perceived chronological age. Ageism may be latent or explicit and may be expressed at the micro, meso or macro level.[22] Therefore, studies assessing ageism in a society require a large number of respondents, as in the present study. Ageism, however, is very complex and involves social relationships on many levels. The KAOP scale and the FAQ seemed excellent tools for these measurements, as they allowed multi-dimensional assessment of the attitudes of the respondents towards elderly individuals, and their results can be compared with previous. Only one study to date has assessed ageism throughout Poland. That study used the KOAP and the Morris Rosenberg Self-Assessment Questionnaire to measure self-acceptance and social perception of seniors, along with several other

Table 2 Characteristics of Study Participants (N=923)

Sex	**Number**	**Percentage**
Female	475	51.46
Male	448	48.54
Age, yr		
18–29	251	27.19
30–39	233	25.24
40–49	234	25.35
50 ≥	205	22.21
Place of residence		
Village	163	17.66
<50 K	207	22.43
<100 K	159	17.23
<250 K	138	14.95
>250 K	256	27.74
Marital status		
Single	158	17.12
Informal relationship	225	24.38
Married	482	52.22
S/D/W	58	6.28
Education		
Elementary	28	3.03
Vocational	98	10.62
Secondary	407	44.1
Higher	390	42.25
Professional situation		
At school	73	7.91
Unemployed	81	8.78
Employed	686	74.32
Pensioner	83	8.99
Annual income		
0–20.999	153	16.58
21.000–40.999	220	23.84
41.000–60.999	215	23.29
61.000–80.999	151	16.36

(*Continued*)

Table 2 (Continued).

Sex	Number	Percentage
81.000 and more	117	12.68
Refuse to answer	67	7.26

questionnaires. These participants had an average 126.48 points on the KAOP, with the highest scores attained by women aged <60 years, who were in a relationship, had completed higher education and were in a good financial situation.[23] In contrast, the participants in the present study had an average 90.88 points on the KAOP.

More research in Poland on attitudes towards the elderly has focused on students, as young people who are just starting to actively participate in society. The present study found that respondents who were "at school" had slightly lower average KAOP scores than respondents with other professional status. Similar results were observed in a study of medical and nursing students living in eastern Poland, with only 48% of future medics being willing to work with elderly people in the future.[24] In contrast, most people supplementing secondary education at the Complex of Schools for Adults in Brzesko (Poland) had positive attitudes towards elderly people and sufficient knowledge about aging and diseases of old age.[25] Young graduates of

Table 3 Results of Bayesian Robust Linear Regression with KAOP Score as a Dependent Variable

	B	SE	LI	UI
Intercept	−0.1	0.07	−0.25	0.05
Sex	−0.03	0.03	−0.09	0.03
Age	0.06	0.07	−0.08	0.21
Place of residence	−0.01	0.06	−0.12	0.1
Marital status - Single	−0.11	0.08	−0.27	0.05
Marital status - Informal relationship	−0.11	0.08	−0.27	0.04
Marital status - Married	−0.15	0.12	−0.37	0.09
Education	−0.08	0.08	−0.24	0.08
Professional status (at school)	**−0.23**	**0.09**	**−0.4**	**−0.06**
Professional status (unemployed)	0.19	0.07	0.05	0.33
Professional status (employed)	−0.06	0.05	−0.17	0.04
FAQ	**−0.34**	**0.03**	**−0.39**	**−0.29**
Living with an elderly person	0.03	0.03	−0.03	0.09
Personal contacts with elderly people	−0.02	0.09	−0.2	0.15
Professional contacts with elderly people (yes)	−0.04	0.04	−0.12	0.04
Professional contacts with elderly people (no)	0.07	0.04	−0.01	0.14
Contacts with elderly people outside the family (yes)	−0.05	0.04	−0.13	0.03
Contacts with elderly people outside the family (no)	−0.07	0.04	−0.15	0.01
Relevance of contacts with elderly people	**1.03**	**0.1**	**0.83**	**1.22**
Σ	0.65	0.03	0.6	0.71
N	5.02	0.89	3.63	7.06
Bayesian R^2	0.26	0.02	0.22	0.3

Notes: β and SE are posterior mean and standard error of the mean, respectively. LI and UI are lower and upper boundaries of the 95% credibility interval. The [n] symbol indicates the nth coefficient of a sum-to-zero contrast for a categorical predictor. Bolded rows indicate statistically credible regression weights. σ and ν are scale and normality parameters of the t distribution, respectively.

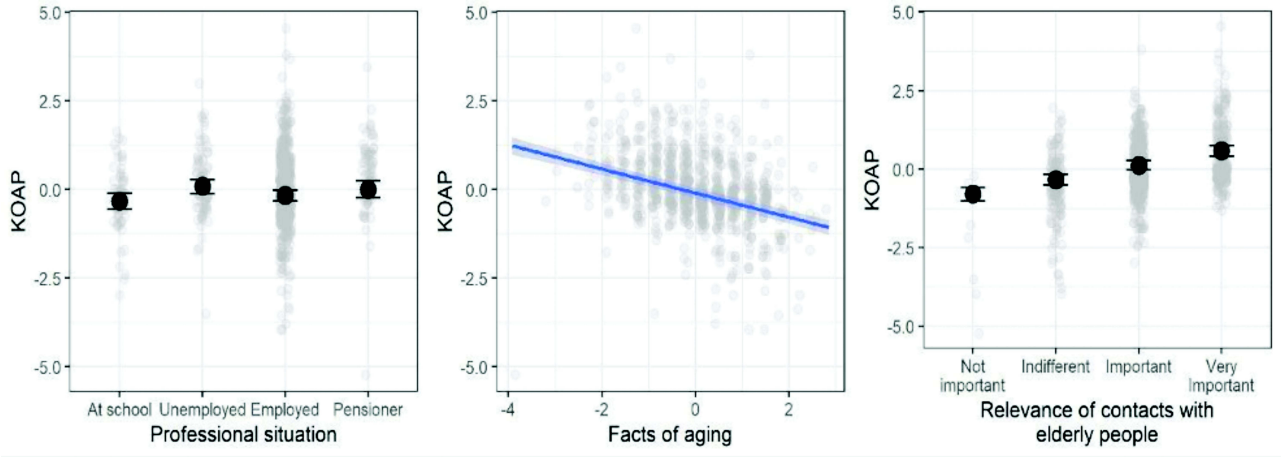

Figure 1 Posterior medians (points and blue line) of the predicted mean KAOP scores as a function of credible predictors. Vertical lines and shaded area are 95% credible intervals.
Note: KAOP and Facts of aging are shown on standardized scales. Grey transparent points show data.

the Kazimierz Wielki University in Bydgoszcz (Poland) also had a positive attitude toward elderly people, while also expressive negative attitudes towards seniors of increasing age.[26] The young adults participating in this study were not involved in the medical professions, suggesting that people with non-medical professions have a more positive attitude towards seniors than future health care workers in Poland.

The present study also found that contacts with elderly people were positively and moderately related to increased KAOP scores. Similar findings were observed in a study in Poznań (Poland), where a positive correlation was observed between spending more time with elderly people and KAOP scores. Additionally, self-esteem, as measured using the Rosenberg Self-Esteem Scale (SES) was positive correlated with the perception of older age. In contrast, assessment of the elderly by the respondents was unrelated to marital status, place of residence or level of education,[16] although a previous study found that KAOP score decreased with the age of the respondents.[26] Additional studies are therefore needed to assess the relationship between age and acceptance of elderly people.

The present study also found that knowledge of and contact with elderly people significantly affected respond behavior concerning ageism. In contrast, the frequency of intergenerational contact did not positively correlate with young people's attitudes and behavioral intentions towards the elderly, whereas the latter was associated with quality of life.[27] Cooperative contact with individual members of an out-group has been hypothesized to lead to more positive attitude towards the out-group as a whole, within the context of interage interactions. That study confirmed that self-reported favorable quality, but not frequency, of contact was significantly related to more positive attitudes toward the elderly in college-aged participants.[28,29] Moreover, another study found that, over the course of a semester, students' knowledge about and attitudes toward the elderly improved significantly.[30]

Research on the relationship between the level of knowledge about aging and ageism has yielded conflicting results. For example, a study of nursing students in Greece showed that attitudes towards older people were more positive among students in their last years than in those starting their education.[31] The present study showed a negative correlation between the level of knowledge about aging (FAQ score) and ageism (KAOP score). However, it should be emphasized that the KAOP scores in this study were high, indicating positive attitudes of the studied group towards the elderly. Unfortunately, the present analysis did not include an assessment of aging anxiety. A study conducted among students of nursing in Zanzibar showed that most of the respondents had a positive attitude about elderly persons, but a low level of knowledge about caring for them,[32] further indicating a negative relationship between the level of knowledge and positive attitudes towards the elderly. In contrast, another study found that greater knowledge about the aging process was associated with fewer negative attitudes towards the elderly.[33] The main predictors of ageism have been reported to be a high level of anxiety related to aging, a low level of knowledge about aging and a limited number of contacts with the elderly.[12] Misconceptions about the aging process were found to

play a significant role in creating negative attitudes towards the elderly, thus increasing the fear of aging[13] and playing an important role in creating negative attitudes towards the elderly. The present results were therefore extremely surprising, especially because similar correlations were not observed earlier. Additional studies are needed to verify this relationship.

Ethnic and cultural affiliation with particular groups and their influence on self-esteem and perception of the elderly require further analysis, especially in societies living in developed countries, which are characterized by increasing cultural diversity. Interviews of 17 Somali elders, nine women and eight men, living in Canada showed that most of respondents rated the conditions provided to seniors as positive, although men were more critical than women in regard to the challenges of aging in Canada.[34] Despite our study not including a cultural factor, the increasing cultural diversity in Polish society[35] suggests that culture should be considered in future analyses. Attitudes towards the elderly are not determined by cultural affiliation, inasmuch as the approach of individual respondents is a more statistically significant factor than belonging to a specific cultural group.[36]

Limitations of the Study

The present study had several limitations. The main limitation was data collection via the internet, thus excluding people who were not active online and preventing the generalization of our the results to the entire Polish population. The COVID-19 pandemic, however, limited access to respondents, making online data collection the only feasible option. Therefore, there is a need for similar research after the end of the COVID-19 pandemic.

Conclusion

As part of the presented research, we can conclude that:

1. Greater knowledge about aging influences negative attitudes towards older people.
2. Younger people who are still in school have more unfavorable attitudes towards older people.
3. People who are in greater contact with the elderly have fewer negative attitudes towards this age group.

Better attitudes toward elderly people can be promoted by educational processes, programs or projects that include meetings with the elderly and presenting basic knowledge about the aging process. However, this issue requires more detailed research involving large groups of participants. Future studies should consider different age and educational levels and comparisons of the present results with those collected after the pandemic period. Application of the findings, that knowledge of and contact with the elderly significantly affects behavior that can be considered ageism, should convince people involved in education to integrate young people with the elderly.

Disclosure

The authors report no conflicts of interest related to this work.

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