

# The Presence of Ageism Among Slovenian Adolescents Surveyed About Dementia-Related Knowledge

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## ABSTRACT

**Objectives:** Due to the significant increase in the number of people aged over 65, both dementia and ageism are on the rise in Slovenia. Without data on knowledge of dementia and the occurrence of ageism towards old people among adolescents, it is difficult to introduce measures to reduce and prevent them.

**Aim:** To assess dementia-related knowledge with a focus on comparison between female and male adolescents and whether any stereotype about the elderly is expressed among them.

**Methods:** 1128 students (aged 14 -19) from non-health related secondary schools in Slovenia completed the survey. In the questionnaire with twenty claims of dementia, one contained stereotype: »Impaired memory is normal part of getting old«.

**Results:** Responses to claims of dementia ranged from 4 to 20 points, with participants responding to an average of 71.5% of claims correctly ( $M = 14.30$ ;  $SD = 2.56$ ). Girls showed better knowledge of dementia than boys ( $M = 14.63$ ;  $SD = 2.36$  vs.  $M = 13.63$ ;  $SD = 2.82$ ;  $p < 0.05$ ). Surprisingly, with the stereotypical and discriminatory claim: »Impaired memory is normal part of getting old« as many as 86.0 % of girls and 81.9 % of boys ( $p > 0.05$ ) agreed.

**Conclusions:** Dementia-related knowledge is satisfactory, but lower in male than female adolescents. The research results point to the need of introducing gender-specific formal and non-formal education on dementia. Furthermore, the results of our study show that most adolescents of both genders already think stereotypically about the elderly, which can lead to ageism. The area should be researched further.

## Keywords

Dementia-related knowledge, Ageism, Adolescents, Gender differences, Slovenia.

## Introduction

One of the key findings of the 2019 Alzheimer Europe Yearbook, "Estimating the prevalence of dementia in Europe" is that the number of people with dementia is nonetheless set to double by 2050 [1]. Examining the population data of Slovenia, there is a slight increase in Slovenia's population for the period 2018 and 2025, with a minor decrease between 2025 and 2050. Despite the decrease in population, the overall numbers of people with dementia will almost double from 34,137 in 2018 to 65,892 in

2050. Similarly, as a percentage of the overall population, people with dementia will represent 3.40% in 2050 compared to 1.65% in 2018. Slovenia follows the broader European trend of the numbers of people with dementia almost doubling by 2050. A key factor in this change appears to be the significant increase in the numbers of people aged over 65, and in particular, the over 85 age range, which more than doubles between 2018 and 2050 [1].

Dementia is a chronic or progressive syndrome in which there is deterioration in cognitive function (i.e. the ability to process thought) beyond what might be expected from normal ageing. Alzheimer's disease is the most common cause for dementia. One of the earliest symptoms of dementia, especially in the Alzheimer's

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disease is memory impairment [2]. It affects memory, thinking, orientation, comprehension, calculation, learning capacity, language, and judgement [3].

In recent years, research has improved our understanding of dementia, allowing for more nuanced and specific diagnoses of dementia to be made by clinicians, both in relation to the type of dementia and the stage of the condition. Specifically, the recognition of dementia as a spectrum, with the identification of prodromal and pre-clinical stages (where activities of daily life are relatively unimpaired), has come into focus [1,2]. Early diagnosis of dementia often depends on the timely recognition of dementia symptoms in a person by relatives, including adolescents. Lack of dementia-related knowledge can contribute to confusion regarding the differences between dementia and the processes of normal ageing, which can contribute to delays in medical treatment. Therefore, it is important that adolescents of both genders are already informed about dementia as much as possible.

Slovenian research articles on knowledge of dementia rarely focus on young people. In Slovenian study (2021) in cohort of 1128 adolescents (aged 14-19) authors found that girls showed better dementia-related knowledge compared to the boys ( $p < 0.05$ ) [4]. Šadl and Hlebec (2007) found that emotional support within the family is strongly sexually determined: it is offered mainly by women - daughters, mothers and other relatives, friends and neighbors; this suggests that women know more about dementia than men [5]. The assumption that girls are likely to know more about dementia than boys can also be supported by the fact that care work in the family is still predominantly performed by women [6]. The assumption that female adolescents probably know more about dementia than male adolescents is also supported by the fact that in Slovenian 15-year-olds there are important differences between the sexes in reading achievement in favor of 15-year-old girls [7].

Ageism is the stereotyping, prejudice and discrimination against people based on their age [8]. In 1969, when gerontologist Robert Butler coined the term ageism, he defined it as "prejudice by one age group toward other age groups." [9].

Ageism arises when age is used to categorize and divide people in ways that lead to harm, disadvantage, and injustice. It can take many forms including prejudicial attitudes, discriminatory acts, and institutional policies and practices that perpetuate stereotypical beliefs [8]. Ageism leads to poorer health, social isolation, earlier deaths and cost economies billions: report calls for swift action to implement effective anti-ageism strategies.

Pirtošek (2020) believes that many "isms", such as racism, have some biological basis. Studies show that with someone who is similar to us but not quite like us - who is of a different race, has different eyes, different skin color, different ages - we subconsciously activate the brain processes of fear or aggression [8-10]. The tragedy, however, is that it enters the soul of a young person very early on, often in an innocent way

of patronage, protection, humor, and that we, as individuals and society, internalize him with incredible ease. To understand age, someone has to have a lot of knowledge. However, when human life expectancy had begun to increase rapidly in the 20th century (today it is almost doubled), the number of people over the age of 65 begun to increase rapidly and we are suddenly faced with "new" diseases characteristic of age – thus Alzheimer's dementia was first described in 1906 as an extremely rare disease, and today we are already talking about a real epidemic.

With ageing, however, another, more social phenomenon emerges - discrimination against the elderly, old age [11,12]. Ageism against older people exists worldwide almost among all age groups and adolescents are of no exception. Numerous studies with specific reference to adolescents of different age, gender, educational level, socioeconomic background, knowledge about aging and experiences with older people showed that they had different perceptions of and attitudes toward older people, but such findings are not entirely conclusive. Results of Davidovic, et al. (2007) indicated that majority of children have positive perception and attitude about old age, and they concluded that ageism is adopted later in life [11]. Meshel and McGlynn (2004) demonstrated an improvement in attitudes towards elderly people in a sample of adolescents following a program that combined the generations for positive contact in educational activities [12]. In a sample of students, after a one-hour dementia education session, Griffiths et al. (2020) showed significant positive changes in attitudes towards dementia, whereas no differences were found for attitudes towards older people [13].

In order to examine dementia-related knowledge and attitudes of students about elderly people, we ran a survey in two population groups: female students and male students. First, the study wanted to test what the groups knew about dementia. Second, we wanted to find out if any response to the claims of dementia contained ageism. In addition, we wanted to find out if there is a gender different perception of ageism.

## Method

### Participants

For research purposes, data on knowledge of dementia were collected in a voluntary and anonymous online survey. The research sample included 1128 students from Slovenian secondary schools without medical program. From 25 September 2019 to 2 December 2019, we offered a questionnaire to be completed by students from 50 secondary schools from all 12 Slovenian statistical regions. The survey included students of those secondary schools whose management approved the survey on the basis of fulfilled ethical conditions. Based on the data on the region and type of secondary school, we can conclude that at least 20 secondary schools responded, but we do not have exact data, as the approach to the survey was voluntary and anonymous.

### Data collection method

We used a questionnaire compiled on the basis of questionnaires

used by Hwang et al. (2013) and Glynn et al. (2017) [14,15]. We created a structured online questionnaire: the first part consisted of 20 claims on knowing the basic facts about dementia, in the second part we wanted to find out the ways of already acquired knowledge and the ways in which students want to acquire knowledge in the future, and in the last part we asked about basic demographic data.

### Ethical considerations

Permission for the study was granted by the local education department and head teachers of the school involved in the study. All students were provided with an information sheet for themselves and their parents informing them of the purpose of the study, their right not to participate and to withdraw at any time, and assuring them that all questionnaires returned would be anonymous. In conducting their research, the researchers followed the ethical guidelines on non-experimental research and survey was conducted in accordance with the principles of the Declaration of Helsinki.

### Data analysis

Results were presented in the form of frequencies and percentages, in the bivariate analysis we used only nonparametric tests (Mann-Whitney U test, Kruskal Wallis test, hi-square test, Spearman rank correlation coefficient). When the assumptions for performing the hi-square test were not met, we used the Kullback 2 $\hat{I}$ -test (Likelihood ratio) instead of the hi-square statistic. In the bivariate analysis, only valid answers were considered. For each correct answer, the respondent was assigned one point. The total variable knowledge of dementia that occurs in the analysis was compiled by summing up the individual correct answers out of a total of 20 possible correct ones. The number of points scored could thus vary from 0 to 20.

### Results

The results are presented in three parts. In the first part, we determined knowledge of dementia by different demographic variables. In the second part, we checked the knowledge of dementia according to the gender of the respondents. In the third part, we showed which claim about dementia provoked a response that contains a stereotype of ageism, and if the response differed by gender of respondents.

### Dementia-related knowledge by different demographic variables

Of the 1812 students who responded to survey invitation, the final sample comprised 1128 respondents (62.3%) who completed the survey by answering 20 dementia-related claims. For each correct answer, the respondent was assigned one point, the possible maximum number of points was 20, and on average students scored 14.30 points, (SD=2.56).

Table 1 shows that in the overall sample, 29.7% of individuals reported knowing a family member with dementia. The proportion differed between genders, with 68.9% of girls, the average age of the respondents was 16 years (14-19), almost two thirds of them (65.6%) have a permanent residence on rural area. Furthermore, respondents with a relative with dementia (M = 14.67; SD = 2.44), and girls (M = 14.63; SD = 2.36) showed better knowledge about dementia compared to all respondents (M = 14.30; SD = 2.56  $p < 0.05$ ). The knowledge of respondents from rural areas (M = 14.40; SD = 2.58) is not significantly better than the knowledge of those from urban areas (M = 14.17; SD = 2.49;  $p > 0.05$ ).

### Dementia-related knowledge by gender

Table 2 shows the percentage of respondents who incorrectly answered the claims of dementia. By gender, a statistically significant difference was expressed in as many as half of the claims, to which boys answered incorrectly in a higher percentage than girls ( $p < 0.05$ ). Male students were less familiar with the claims that people with dementia have impaired: memory, orientation, speech, recognition and behavioral pattern, that dementia occurs in large numbers after age 65 and that Alzheimer's disease is the most frequent form of dementia. Additionally, male students were less aware than female students of the increased risk of dementia due to smoking, alcohol consumption and excessive use of digital media.

### The claim of dementia that contains a stereotype of ageism

Inconsistent with our expectations, the vast majority of respondents (84.7%) agreed with the claim "Impaired memory is normal part of getting old" (Table 2). There was no significant gender difference ( $p > 0.05$ ), because as many as 81.9% of boys and even 86.0% of girls agreed with this claim. The claim already contains a stereotype of ageism, which can lead to open, more explicit ageism through prejudice and then discrimination.

**Table 1:** Comparison of differences in knowledge about dementia by demographic variables.

Demographic variables		N	M	SD	MW U / KW	p value
Relative with dementia*	YES	335	14.67	2.44	116482.500	0.002
	NO	789	14.14	2.60		
Gender*	Female	770	14.63	2.36	106979.000	0.000
	Male	348	13.63	2.82		
Residence	City	375	14.17	2.49	129917.000	0.086
	Countryside	739	14.40	2.58		

\* $P < 0,05$  = degree of comparison the difference between groups being statistically significant. N =number of respondents; M = arithmetic mean; SD = standard deviation;

MW U /KW = Mann-Whitney U test /Kruskall Wallis test

**Table 2:** Comparison of the incorrect answers in knowledge of dementia according to gender.

Claims of dementia	Females (N=770)	Males (N=348)	Total (N=1128)	p value
1. It is disease of brain.	2.3%	2.9%	2.6%	0.595
2. It appears as memory loss*.	0.1%	1.4%	1.1%	0.020
3. It manifests as a loss of orientation*.	41.9%	54.0%	46.2%	0.000
4. It manifests as hearing loss.	4.2%	5.5%	4.6 %	0.333
5. It appears as a loss of speech*.	74.8%	81.3%	77.0 %	0.017
6. It appears as a loss of planning.	63.4%	64.7%	64.1 %	0.680
7. It appears as a loss of mental ability.	48.1%	51.7%	49.6 %	0.255
8. It appears as a loss of recognition*.	23.9%	39.4%	29.4 %	0.000
9. It appears as an inappropriate behaviour*.	55.8%	62.4%	58.1 %	0.041
10. It is increasing after the age of 65*.	2.3%	8.0%	4.1 %	0.000
11. Impaired memory is normal part of getting old.	86.0%	81.9%	84.7 %	0.079
12. It is contagious.	1.4%	2.9%	1.9 %	0.099
13. Alzheimer's disease is most common cause of dementia*.	26.0%	38.2%	29.9 %	0.000
14. Person with dementia can live at home.	21.0%	23.3%	21.7 %	0.401
15. Dementia risk is reduced through physical activity.	15.1%	14.9%	15.1 %	0.958
16. Dementia risk is reduced by alcohol drinking*.	2.6%	7.8%	4.0%	0.000
17. An appropriate body weight reduces dementia risk.	30.6%	31.6%	30.9%	0.748
18. Smoking reduces the risk of dementia*.	3.4%	6.6%	4.1 %	0.014
19. Dementia risk is reduced by eating healthy food.	11.6%	13.2%	12.1 %	0.430
20. Shortened use of computer games and social networks reduces the risk of dementia*.	23.2%	45.4%	30.1 %	0.000

Note. \* The difference between the groups is statistically significant at the characteristic level  $p < 0.05$ ; N = number of respondents.

## Discussion

Taken together, the current study examined the following research questions: in which areas knowledge of dementia differs significantly between male and female students, and in what percentage according to gender they agreed with the claim emphasizing ageism.

As the topic about gender difference in dementia knowledge is already addressed in a recent article by both authors, the current discussion focuses on comparison of gender difference in dementia-related knowledge among adolescents published in foreign articles [4]. In current study, we found that among Slovenian adolescents dementia-related knowledge score was 71.5 % (SD±17.9) (M = 14.3, SD = 2.56), and is even a little better than the knowledge of peers from other countries. The evidence in this study is consistent with other research findings about dementia-related knowledge among adolescents. However, there are several international studies on the knowledge of dementia among adolescents, although only a minority of research shares dementia-related knowledge of adolescents by gender. Anyway, Isaac et al. (2016) found on sample of 359 adolescents, aged 15-18 years, from schools in Sussex (UK) that they answered correctly (M = 6.65, SD = 2.34) out of 15 possible answers to less than half of the questions about dementia-related knowledge [16]. They concluded that more effort is needed to embed initial dementia understanding in the school curriculum which will improve awareness about dementia at an earlier age and will enhance dementia-friendly communities. Musoke et al. (2021) published the results of a survey of 1,005 undergraduate students, aged 18-35 years from 11 Ugandan universities [17]. The majority of the students were male (56.5%, n=568) and nearly half were pursuing human sciences/medicine-related programs. The mean dementia-related knowledge score was 65.5% (SD ± 18.5), and

there was a weak correlation between score and dementia attitude scores.

In current study, Slovene female students showed a better level of knowledge (M = 14.6; SD = 2.36) than male students (M = 13.63; SD = 2.82;  $p < 0.05$ ), which may be due to the fact that emotional support for the family is given mostly by women, who also predominantly perform caring work [5,6]. Furthermore, this fact suggests that female students recognize the importance of libraries, which can contribute to raising awareness of the wider society about dementia by selecting a variety of materials on dementia [18].

The current survey also shows that as many as 84.7% of respondents agreed with the claim "Impaired memory is normal part of getting old". However, one must be careful with such a claim because it is professionally wrong in the first place, and it also contains elements of ageism. Not only older people, but also younger people often forget things, especially when they are pensive, tired or very busy. It is not uncommon for a younger person to stock up on keys, for example, and not find them immediately. Such forgetting is uncomfortable, but it does not hinder an individual's daily life. However, if forgetfulness escalates, it may be a sign of disease changes in dementia [2,3]. Patients with dementia not only forget where the keys are, but also why the keys are used at all. They don't remember what they did an hour ago, they put things in weird places, like, they put the money in the fridge. However, if we accept forgetfulness as something that is normal and usually expected in old age, then we will deny the elderly appropriate treatment and therefore, of course, the necessary treatment [2,3].

The very high percentage (84.7%) of respondents (86.0% of girls vs 81.9% of boys;  $p > 0,05$ ) who agreed with the aforementioned



claim is even more worrying in terms of ageism. According to Pirtošek (2020), this may already be the concept of ageism, which entered the soul of a young person very early on, which he will internalize with incredible ease [10]. Ageism is fueled by stereotypes and negative attitudes about aging and older adults, which can lead to individual-level prejudice and discrimination [10-20].

Results of Davidovic, et al (2007) on 56 school children, 48 nurses and 58 elderly patients indicated that majority of children have positive perception and attitude about old age, and they concluded that ageism is adopted later in life [11]. This is also confirmed by Teater and Chonody (2017) who explored stereotypes and ageist beliefs of youth transitioning from middle childhood into adolescence (age 11-13 years) (N = 63) in the southwest of England [21]. The results indicate that positive more than negative stereotypes were acknowledged, and more positive stereotyping was positively correlated with more positive attitudes toward older adults. Contact with older adults and age that one considers "old" were significant in predicting attitudes toward older people. The results suggest that time matters, in terms of contact with an older adult and time to reach "old age" in shaping youths' attitudes and stereotypes. Intergenerational and educational programs that seek to address aging myths and increase contact between youth and older adults are discussed as ways to improve attitudes amongst youth transitioning from middle childhood into adolescence. Meshel and McGlynn (2004) demonstrated an improvement in attitudes towards elderly people in a sample of adolescents following a program that combined the generations for positive contact in educational activities [12]. After a one-hour dementia education session in 97 students at a Malaysian university, Griffiths et al (2020) showed significant positive changes in attitudes towards dementia, whereas no differences were found for attitudes towards older people [13].

A systematic search of the literature by Bodner (2009) was carried out on the social and psychological origins of ageism in younger and older adults [22]. He found that studies on the reasons for ageism among older adults point to attitudes that older adults have toward their own age group, while studies on ageism in young adults explain it as an unconscious defensive strategy which younger adults use against death anxiety. He concluded that a dissociation of the linkage between death and old age in younger adults can be achieved by changing the concepts of death and old age. For older adults, it is recommended to improve self-worth by encouraging social contacts in which older adults contribute to younger adults, weaken the effects of age stereotypes in TV programs, and prepare middle-aged adults for living healthy lives as older adults. However, he noted that these conclusions need to be considered with caution, as several key areas need to be explored (age signs, activated cognitive processes, the impact of death awareness on age) to confirm this understanding of the origins of aging in young and older adults.

We also recognised certain shortcomings of the research. The research should be extended to all secondary schools in Slovenia,

including schools with a health program. We were unable to capture a representative sample of the study population, as the response of male adolescents was low. We must also take into account the limitations of collecting data with the questionnaire. Our study let us drawing conclusions for adolescents due sampling from secondary schools without health program and limited our results to generalize to other groups of adolescents.

## Conclusion

Formal and non-formal education on dementia should be provided for all adolescents and include people with dementia as lecturers. Intergenerational and educational programs that address the myths of aging and increase contact between children and the elderly could improve adolescents' attitudes toward the elderly and thus reduce their ageism toward the elderly.

All procedures performing in study were in accordance with Helsinki declaration and approved by the head teachers of participating secondary schools which were provided an information sheet. All potential participants were provided information sheets, and had the opportunity to leave the survey and research study.

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