



## Review

## Where are we now in relation to determining the prevalence of ageism in this era of escalating population ageing?

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## ABSTRACT

Population ageing is escalating rapidly now worldwide. This is an important time to determine if ageism or discrimination against older people is of concern, such as it being prevalent and/or increasing in prevalence. Over the years, many ageism measurement tools have been developed, with research findings from their use of prime consideration then for determining the prevalence of ageism and any prevalence trends. All print and open access English-language research articles published in 1953 + that used one or more ageism measurement tools in a study were sought using the Directory of Open Access Journals and EBSCO Discovery Service. A total of 25 ageism measurement tools were identified. However, only six had been used one or more times to measure the prevalence of ageism. The identified prevalence levels varied considerably, but most investigations using small convenience samples, with limited generalizability of findings. This paper highlights the need to continue developing ageism measurement tools to estimate ageism or use other measures, such as census and population-representative polling, to assess the extent and impact of ageism. This foundational measurement is needed, as ageism could be prevalent and growing in effect.

## 1. Introduction

Population ageing is evident in all developed and many developing countries (World Health Organization, 2015). Moreover, population ageing is accelerating now in most countries as a consequence of two prime factors. Not only did the birth rate decline and remain low following the post World War II (1946–1965) baby boom but the vast majority of people who are born live to be “old” (United Nations Department of Economic and Social Affairs Population Division, 2015). By the time the entire large baby boom cohort is 65 years of age in the year 2029, 25% or more of citizens in most countries will be older (World Health Organization, 2015). In Japan, the world’s oldest country, 26.6% of their citizens are already 65 years of age or older (Statistica, 2018). Canada is not far behind, as 8.9 million baby boomers and 2.7 million older people currently constitute 25.9% of the total Canadian population (Statistics Canada, 2019).

Advanced ageing is another common phenomenon worldwide (United Nations Department of Economic and Social Affairs Population Division, 2015). The number of persons worldwide who are aged 80 or over is expected to triple by the year 2050 (United Nations Department

of Economic and Social Affairs Population Division, 2017). In some countries, such as Spain, the growth of this sub-population aged 80 and over has long been known as the “the ageing of ageing” phenomenon (Bazo, 1992; Urrutia Serrano, 2018). Similarly, in Canada, centenarians are the fastest growing sub-population group now, followed by citizens aged 85 through 99 (Statistics Canada, 2017). It would not be surprising then for ageism to be a major and growing concern.

Although age discrimination was originally defined as “prejudice by one age group toward other age groups” (Butler, 1969, p. 243), it is now defined as prejudice or discrimination against older people and also against aging (World Health Organization, 2015). Ageism is a very complex human phenomena, and it is therefore subject to change over time (Ayalon and Tesch-Römer, 2018; Boudiny, 2013). Regardless, ageism is thought to have many negative effects arising from the harboring of negative attitudes toward older people and even toward one’s own ageing (Swift et al., 2017). With established and now increasing population ageing, it is very timely to determine if ageism is prevalent and also if it is growing or declining in prevalence and effect. Nursing has long been concerned about ageism among nursing students and practicing nurses (Kagan and Melendez-Torres, 2013). Many other

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**Table 1**  
Open Access and Print Journal Article Findings.

Ageism Measurement Tool (Country of Origin)	Tool Developer(s), (Year), Description of Tool and Revision (if Relevant)	Studies with Ageism Prevalence Findings by Chronological Year
1. Age Group Evaluation and Description Inventory. (Canada)	Developed by Knox et al. (1995), 28 items to assess age stereotypes and attitudes toward age-specific targets, each with bipolar adjectives.	None.
2. Ageism Attitude Scale. (Turkey)	Developed by Yilmaz and Terioglu (2011), 23 positive and negative attitudinal sentences in 3 subscales to measure student attitudes toward ageism, using 5-point Likert scale.	None.
3. Ageism Survey. (USA and Canada, and also adapted for Turkey)	Developed by Palmore (2001), 20 questions about personal experiences related to 20 common types of ageism, and how often these have been experienced. Adapted for Turkish use by Erol et al. (2016).	Palmore (2001): in an undisclosed year, 77% of 84 Americans aged 61+ in a convenience sample reported experiencing 1+ ageism incidents. Palmore (2004): in 2001, using convenience sampling, 91% of 375 Canadian adult respondents and 84% of 152 adult US respondents reported 1+ incidents of ageism. McGuire et al. (2008): in an undisclosed year, 84% of 247 older Americans in a convenience sample had experienced 1+ ageism type experiences. Erol et al. (2016): in 2013, 82.5% of 236 persons who attended a healthcare clinic in Istanbul, Turkey (64.4 mean age) had experienced 1+ discriminatory behaviors. Kim et al. (2015): 48.1% of 816 Korean older people relatively representative of all older people in Korea who were interviewed in 2013 experienced 1+ ageism incidents; more common reported incidents among urban dwellers, non-married, more educated, and those living with more chronic illnesses.
4. Aging Opinion Survey. (USA)	Developed by Kafer et al. (1980), 30-item scale evaluating attitudes toward older adults and aging, through a 5-point Likert scale.	None.
5. Aging Semantic Differential and Revised Aging Semantic Differential. (USA)	Developed by Rosencranz & McNevin (1969), 32 polar adjectives, measured with a 7-point scale; low total scores indicate more positive view. Revised by Polizzi (2003), with old adjectives removed and new ones inserted for a total of 24 adjectives.	Zambrini et al. (2008): 54% of 472 final year healthcare students at one Spanish university had a positive attitude toward the elderly in 2006–07, with females more positive than males.
6. Ambivalent Ageism Scale. (Canada and USA)	Developed by Cary, Chasteen, & Remedios (2017) 13 items for benevolent and also hostile attitudes toward older people, with 7-point rating scale.	None.
7. Anxiety About Aging Scale. (USA)	Developed by Lasher and Faulkender (1993), with 20 items remaining from the original 84 items after testing it on 312 volunteers, with undisclosed Likert-type scoring.	None.
8. At-O-A or Attitude-Older Adult and Aging-Visual Analog Scales. (USA)	Developed by Ligon et al. (2009), 2 visual analogue scales - 1 measuring attitudes toward older people and 1 measuring attitudes toward aging process. Revised by Ligon et al. (2014).	None.
9. Attitudes to (or Toward) Ageing Questionnaire. (England and 14 other countries)	Developed by Laidlaw et al. (2007), 24-item attitudes to ageing in a 3-factor model of psychological growth, psychosocial loss, and physical change. Revised by Laidlaw et al. (2018) to 12 items.	None.
10. Attitudes Toward Hospitalized Older People Questionnaire or ATHOP.(Scotland)	Developed by McLafferty (2005), 20 questions to be answered, using 5-point Likert scale.	None.
11. Attitudes Toward Old (or Older) People Questionnaire. (USA)	Developed by Tuckman & Lorge (1953), yes/no responses to 137 statements designed to measure misconceptions and stereotypes about older people.	None.
12. Everyday Discrimination Scale. (USA)	Developed by Pearl and Percec (2018), to assess the frequency of 9 possibly experienced “microaggressions.”	None.
13. Expectations Regarding Aging.(English-speaking and Spanish-speaking Americans)	Developed by Sarkisian et al. (2002), 38 expectations among older people about aging. Revised by Sarkisian et al. (2005) to 12 expectations.	None.
14. Facts on Aging Quiz. (USA)	Developed by Palmore, 1977; Palmore (1977), 1980,: an indirect measure of negative and positive ageism (25 true/false questions). Redeveloped by Palmore, 1981; Palmore (1981, 1998).	Faronbi et al. (2017): 70.7% of 280 nursing students selected from all Nigerian nursing schools in 2012 had a positive attitude and 29.3% had a negative attitude about older adults; 66.1% had a positive perception and 33.9% had a negative perception about older adults. See also Kogan's Attitudes Toward Old People, as both tools were used in this study.
15. Fraboni Scale of Ageism. (Canada and USA)	Developed by Fraboni et al. (1990) 4-point Likert scale measuring agreement on 29 ageism statements. Revised by Rupp et al. (2005).	Kabátová et al. (2016): 72% of 100 Slovak nurses (undisclosed year) had a slightly positive view of older people, 28% had medium level of ageist attitudes or slightly negative views of older people.
16. Geriatrics Attitudes Scale or UCLA Geriatrics Attitudes Scale. (USA)	Developed by Reuben et al. (1998), 14 ideas to measure general attitudes about older people among primary care residents and family medicine residents, using 5-point scale responses.	None.
17. Inventory of Attitudes Toward Aging, or Attitudes Toward Aging Inventory. (USA)	Developed by Sheppard (1981), 20 items on a 4-point Likert scale measuring positive and negative attitudes to aging in four general areas.	None.

(continued on next page)

Table 1 (continued)

Ageism Measurement Tool (Country of Origin)	Tool Developer(s), (Year), Description of Tool and Revision (if Relevant)	Studies with Ageism Prevalence Findings by Chronological Year
18. Kogan's Attitudes Toward Old People, or Old Persons Scale, or Kogan's Old People Scale. (USA)	Developed by Kogan (1961a, Kogan, 1961b), measuring attitudes toward older people using 34 statements, with negative to positive responses in a 6-point Likert scale. Shortened by Hilt & Lipschultz (1999) to 22 statements, and translated into many languages other than English.	Rathnayake et al. (2016): 50% of 98 nursing students at one Sri Lankan nursing school in an undisclosed year prior to 2016 were found to hold slightly positive attitudes toward older people and 45% held slightly negative attitudes toward older people. Faronbi et al. (2017): 70.7% of 280 nursing students selected from among Nigerian nursing schools in 2012 had a positive attitude and 29.3% had a negative attitude about older adults; while 66.1% had a positive perception and 33.9% had a negative perception of older adults. See also Facts on Aging Quiz, as both tools were used in this study.
19. Multifactorial Attitudes Questionnaire. (England)	Developed by Kydd et al. (1999) and revised by Kydd et al. (2013), 20 items on ageism and other topics for health caregivers, with 5-point Likert scale.	None.
20. Nordic Age Discrimination Scale. (Norway)	Developed by Furunes & Mykletun (2010), consisting of 6 items to reflect age discrimination in the workplace; promotion, training, development, appraisals, wage increase, and change processes.	None.
21. Nursing Students' Attitudes Towards the Elderly Questionnaire. (Australia)	Developed by Johnson (1992), 20 items to test attitudes, using a 5-point Likert scale.	None.
22. Perspectives on Caring for Older Patients Scale or Perspectives Toward Care of Older Patients Scale. (USA)	Developed by Burbank et al. (2018), with 9 yes/no items retained from the original 24.	None.
23. Prescriptive, Intergenerational-Tension Scale or the SIC Scale of Ageism. (USA)	Developed by North & Fiske (2013) through 4 reported samples as a measure to test intergenerational prescriptive ageism in relation to consumption, succession, and identity; using a 20-item SIC scale.	None.
24. Relating to Old People Evaluation or ROPE. (USA)	Developed by Cherry & Palmore (2008), examining the frequency of 20 self-reported ageist behaviors (6 positive and 14 negative)	Cherry & Palmore (2008): all 314 Americans aged 18–98 in a convenience sample in an undisclosed year prior to 2008 admitted 1+ ageist behaviors. Frost, Ranse, & Grealish (2016): 97.8% of 185 nursing students at one Australian university in an undisclosed year reported ageist behaviors, with positive ageist behaviors more common, but 87.5% also admitted negative behaviors.
25. Workplace Age Discrimination Scale or WADS. (USA)	Developed by Marchiondo et al. (2016), with yes/no answers to a series of age-based questions.	None.

professional and social groups have similarly been concerned about ageism (Achenbaum, 2016).

In 1969, Butler coined the term “age-ism” to draw attention to negativity, bias, and social stigma about older people. However, the first study of ageism that employed an ageism measurement tool was published 16 years earlier by Tuckman and Lorge (1953). Over the years since then, other ageism measurement tools or scales have been developed. With what is evidently a long-standing concern about ageism and the development of tools to measure it, it should be possible to determine the prevalence of ageism, as well as trends in ageism prevalence, in some if not many countries or perhaps worldwide. To that end, a scoping research literature review was conducted to identify ageism measurement tools and catalogue the ageism prevalence findings that were revealed by their use in research investigations.

## 2. Literature review methods

Like all other types of systematic literature reviews, scoping reviews are comprehensive reviews of research literature on defined topics, although often new or novel ones (Arksey and O'Malley, 2005). Research literature reviews of all kinds are done to assess the total amount and types of research conducted to date on a topic, and determine the state of existing evidence and evidence gaps on that topic (Levac et al., 2010). Scoping reviews are unique however, as all types of research articles are reviewed and research articles are not typically eliminated from review if research methodology issues or research reporting concerns are identified (Armstrong et al., 2011). Instead, the entire body of research literature is identified and assessed to gain an understanding of the research that has been done to date on the topic and to assess the collective findings from this body of research (Whittemore and Knafl,

2005).

### 2.1. Literature search

After consultation with a university librarian, two comprehensive information sources were searched to identify ageism measurement tools and then catalogue ageism prevalence findings gained through their use in research investigations worldwide. To that end, the EBSCO Discovery Service was used to identify tools in print journal articles, as it provides access to multiple library databases. The Directory of Open Access Journals was used to identify tools in open access journal articles, as it provides access to 12,500+ online journals.

A three-step search process was employed. In Step 1, the keyword/MeSH terms “ageism or age discrimination or age bias” and “measurement tool or scale or instrument” were employed to identify tools and any research articles reporting their use. In Step 2, a second search for tools and research articles describing their use was undertaken by employing the specific name of each measurement tool identified in Step 1 as a search/keyword heading in the same two mega-library databases, followed by a similar search using the online Google search engine. In Step 3, all additional tools mentioned in the articles identified for review in Steps 1 and 2 were similarly searched for their use in research investigations.

### 2.2. Eligibility criteria

For inclusion in this scoping review, the articles needed to have been published in a peer-review journal. Moreover, they had to be reports of research investigations that were written in English, a regrettable limitation but English is the most common academic language

and it is the language of the review team. All eligible articles had to report the use of one or more ageism measurement tools to collect data. As another criterion, the identified prevalence of ageism needed to be expressed as per usual as a fraction or percentage of all those studied, or as the number of cases in relation to 10,000 or 100,000 people within a defined region or population group.

### 2.3. Data extraction

In Step 1, 15 open access articles and 1044 print articles were initially identified as having potential for review. In this body of literature, a review of titles and abstracts by the lead author revealed 22 measurement tools. The names of these tools were listed alphabetically in a table, along with their developer(s)' names and country of origin (see Table 1).

In Step 2215 articles were found to have reported the results of a research study that used one or more of the identified ageism measurement tools. Among these articles, three additional ageism measurement tools were identified, with the names of these tools and their author(s) and country of origin added to Table 1. A third comprehensive search was then conducted (Step 3) using the names of these three tools, with 11 additional publications outlining their use in research investigations obtained for review. All 226 articles for review were read in full by the lead author to determine if the full review criteria were met, and with ageism prevalence findings noted whenever present. A flowchart of this process is shown in Fig. 1.

While assessing all of the identified articles, four tools and the articles describing their development or their use were rejected from review. The first was an unnamed tool, and the publication describing it did not list the tool's 40 questions or report any prevalence findings (Salter and Salter, 1976). Moreover, no other study reports using this questionnaire were located after the original article described its use in surveying 65 students in one American college's psychology class about their attitudes and behaviours toward older people, and with these

findings correlated with those also gained through the use of Tempter's Death Anxiety Scale (Salter and Salter, 1976). Similarly, Ahmadi et al.'s (2019) article describing the development of an unnamed 24-item tool designed to evaluate ageism in nursing care was rejected, as the items were not provided for view and the tool was not used to establish an ageism prevalence level. The Collett-Lester Fear of Death Scale and all articles describing its use or the revised version of it were also rejected, as it was entirely focused on considerations about one's own death and not living in or to old age (Collett and Lester, 1969). The article describing the development of an Attitudes towards Older Workers Scale (AOWS) by Gringart et al. (2013) was also rejected as this tool focused on working-age people. Moreover, one literature review article was identified and rejected as it did not report any original research; it reviewed 20 study reports on measured attitudinal ageism among social workers (Wang and Chonody, 2013).

All articles that reported the use of one or more of the 25 ageism measurement tools (226 in total) were read in full by the first author to identify ageism prevalence findings when present. All prevalence findings were added to Table 1, in association with the tool that had generated these findings. This information was checked for accuracy by two additional team members working independently of each other. The information in Table 1 was then subjected to content analysis, a categorization process to group findings and identify evidence or evidence gaps (Hsieh and Shannon, 2005). All members of the team reviewed this categorization process and then a draft report of these findings. All team members ultimately approved the findings and this report of them.

### 3. Results

Although 25 ageism measurement tools were identified and many reports of studies using one or more of these tools were found, only 6 of the 25 tools (24.0%) had been used to reveal the prevalence of ageism in a sample or sub-population. Moreover, only 11 articles in total

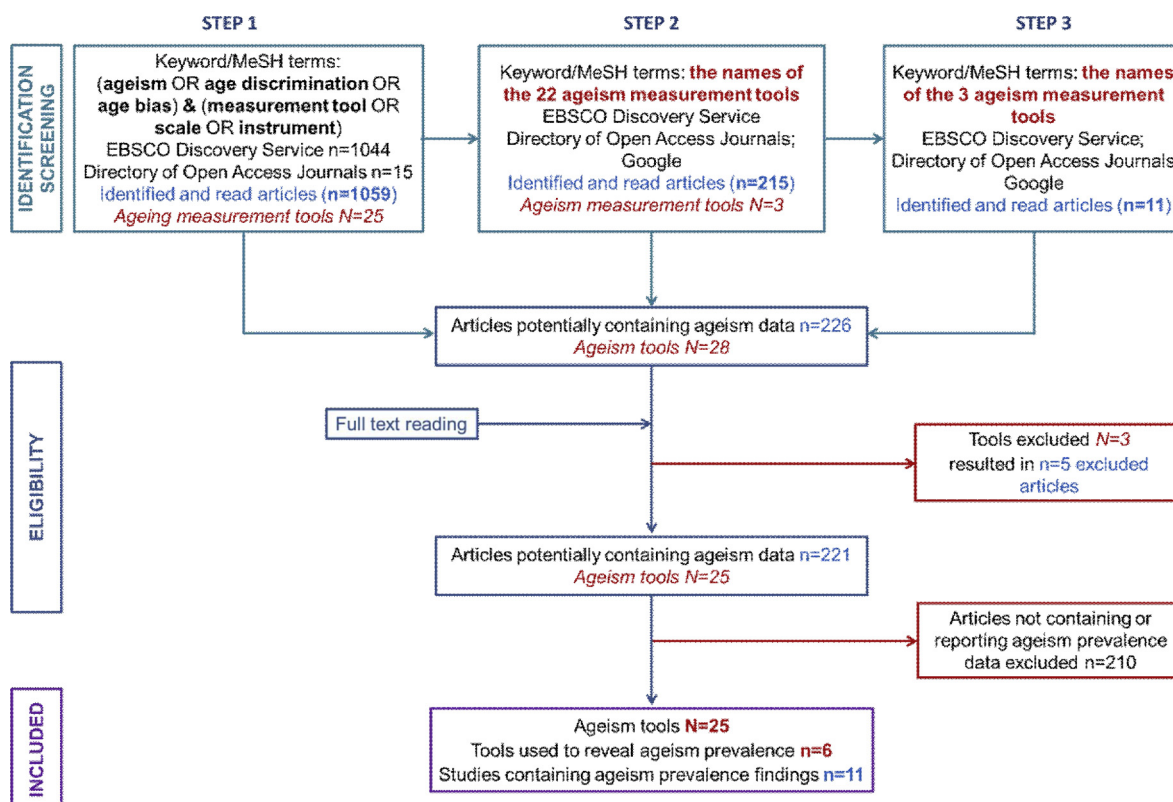


Fig. 1. Ageism measurement tools and studies measuring the prevalence of ageism, search flowchart.



among the 226 (4.9%) reviewed revealed ageism prevalence findings. Five of these articles reported the use of the Ageism Survey to examine the prevalence of ageism, a tool designed by Palmore in 2001. Two articles reported the use of Kogan's Attitudes Toward Old People tool to gain prevalence findings, with this tool developed by Kogan in 1961 and then refined by Hilt and Lipschultz in 1999. Two articles reported the use of ROPE, a tool developed by Cherry and Palmore (2008), to gain prevalence findings. The remaining three tools were each used once to determine the prevalence of ageism.

The identified prevalence rates varied greatly, although these rates were all gained through studies involving few subjects, and typically also gained through a convenience sample such as by asking college students taking a course together to complete a survey tool. It was also notable that information on two distinct types of prevalence were gained through self-reporting: (a) the experiences of ageism as reported by older persons and (b) ageist attitudes or ageist behaviors as reported by younger people. Through these two types, ageism prevalence estimates were obtained, as both require self-awareness and also the self-disclosure of information. The actual prevalence of ageism could therefore be higher or lower than what is reported in the reviewed articles.

Regardless, the prevalence of experienced ageism was identified as ranging from 48.1% among a relatively representative sample of 816 Korean older persons in 2013 (Kim et al., 2015) to 91% among a convenience sample of 375 Canadian older persons in 2001 (Palmore, 2004). The prevalence of holding ageist attitudes and/or enacting ageist behaviours also varied considerably among the sampled people. These prevalence rates ranged from 50% of 98 Sri Lankan nursing students in an undisclosed year (Rathnayake et al., 2016) to 100% of 314 Americans aged 18–98 in a convenience sample in another undisclosed year (Cherry and Palmore, 2008), and nearly all (97.8%) of 185 Australian nursing students who were also studied in an undisclosed year (Frost et al., 2016).

Notably, most of reviewed articles described the use of a measurement tool to obtain ageism scores that were then averaged among the people studied. None of these articles revealed the percentage or ratio of subjects who could be considered fully or partly ageist. For instance, Furlan and Fehlings (2009) used Kogan's Attitudes Toward Old People tool to find female members of the National Neurotrauma Society in the USA had more positive attitudes toward old people than male members did. Another study using Kogan's tool revealed Chinese baby boomers had more positive attitudes than college students toward old people (Xie and Xia, 2005). In addition, nurses working in long-term care facilities were found through using Kogan's assessment tool to have "moderate" attitudes towards older adults (Natan et al., 2013). Kogan's tool was also used to find American nursing students had a slight but significantly improved attitude toward old people after they had completed a nursing home practicum (Hartley et al., 1995). Moreover, practicing American nurses had a slight but significantly higher attitudinal score after taking an eight-hour gerontological nursing continuing education program as measured by a revised version of the Palmore's Facts on Ageing Quiz and also Kogan's Attitudes Towards Old People Scale (Harrison and Novak, 1988).

Other tools similarly were used to measure ageism through scoring the answers provided to questions, with these studies also not revealing any prevalence findings. For instance, Lee et al.'s (2005) use of the Geriatrics Attitudes Scale that had been developed by Reuben et al. (1998) showed primary care residents and geriatrics fellows held generally positive attitudes toward older people. Abreu and Caldevilla's (2015) study of nursing students in Portugal instead revealed generally negative attitudes among them toward older people, as they had a mean score of 2.05 using the Attitudes Toward Aging Inventory, a tool developed by Sheppard (1981).

The Fraboni Scale of Ageism was also used to reveal attitudes among younger adults were generally positive about older people, although not universally positive (Lin and Bryant, 2009). That scale was also

used to reveal ageism was associated with greater rape myth acceptance among American college students (Aosved and Long, 2006). A study in Israel using the Fraboni Scale of Ageism revealed complex relationships exist between age, gender, and ageism (Bodnar and Lazar, 2008). The Fraboni Scale of Ageism was also used in a study which found an activities exercise reduced negative stereotypes about older people among college students (Wurtele and Maruyama, 2013).

#### 4. Discussion

This scoping literature review was helpful as it revealed few studies have used an ageism measurement tool to determine or estimate the prevalence of ageism. Regardless, the findings gained from these few studies are of concern, as they indicate ageism is experienced almost universally by older people and younger adults commonly acknowledge holding ageist views and/or having done ageist actions. However, the differing prevalence rates gained through small non-representative samples indicates a major knowledge gap exists in relation to the actual prevalence of ageism in any region or population group.

Research using populations or population representative samples are needed, and perhaps through the use of the Ageism Survey that was designed by Palmore (2001), as it was the tool most often used to estimate the prevalence of ageism. This utility could be a result of it having been developed specifically to measure the prevalence of ageism (Palmore, 2001). This relatively short and simple tool was designed for older people to choose one of three numbers (0 = never, 1 = once, 2 = more than once) in relation to how often they have experienced each of 20 apparently common kinds of ageism or ageism events. Their answers permit an identification of the most commonly experienced ageism events or kinds of ageism. For instance, among the 84 respondents who were involved in Palmore's (2001) tool development study, the most commonly experienced ageism was "a joke that pokes fun at old people," with 58% of the respondents reporting this. Moreover, the frequency of experienced ageism events per respondent is summed, with this number then averaged across select subjects and this mean number can then be compared across groups. For example, Palmore (2001) found respondents with less education (and perhaps also less income) tended to report more experiences of ageism than did those with more education, and no difference between male and female respondents in the number of reported ageism experiences.

However, two major limitations with Palmore's (2001) Ageism Survey tool need to be considered prior in any future use. The first is based on the 20 items that are used in this tool to gather information about experienced ageism. The most common type of experienced ageism in Palmore's original study was identified as having heard jokes about older people. Although this type of experienced ageism may be discouraging for some older people and it could potentially be illustrative of or correlated with more serious forms of ageism, it is not in itself a strong measure of ageism. Information on serious types of age discrimination, such as financial abuse or physical and psychological abuse, should instead be sought.

The second consideration is that Palmore's (2001) Ageism Survey tool was developed in the USA and the kinds of ageism listed in this tool may only be relevant for examining ageism prevalence among Americans or among similar people living in another developed country where English is the predominant language and where English-speaking people represent the dominant cultural group. This tool would need to be tested in other countries and considerable tool revision carried out as a result of language differences and other differences, as was attempted by Erol et al. (2016) in their adaptation of the Ageism Survey for Turkish people. Kogan's tool has similarly been translated many times from English into other languages, and concern also remaining over the cultural appropriateness of any and all translated tools. Ageism is highly based on cultural considerations. This point is demonstrated by our finding the reported prevalence of experienced ageism ranged from 48.1% among older Koreans in 2013 (Kim et al., 2015) to 91% among

older Canadians in 2001 (Palmore, 2004). Asian countries have long been credited with holding more positive views of older people (Kim et al., 2015).

For that reason, an alternative to prevalence findings gained through the use of any single ageism measurement tool is census or other large-scale population-representative studies that employ one or more questions to gain evidence for action. These questions could focus on ageism experiences or on holding ageist views and also having committed ageist actions. The latter may be more relevant as people of all ages would then be surveyed, in keeping with Palmore's (2001) view that older people are not exempt from being ageist. The value of large scale population-representative studies and other whole population or census research is illustrated by a population-representative study of Finnish and Swedish people aged 65+ in 2005 and again in 2010 that found 4.2% of the first 3370 respondents and then 2.6% of the next 6838 respondents reported having experienced age discrimination of one form or another (Snellman et al., 2013). However, a population-representative study in Lithuania instead found 37% of older persons there reported experiencing hostile age-based prejudice in 2008 (Rapoliene, 2015). As Rapoliene's (2015) findings are roughly 10 times greater than those of Snellman et al. (2013), this indicates great care must be taken in choosing the ageism questions that will be asked. This point is also illustrated by the reports on Wave 6 of the World Values Survey which focused on ageism, none of which revealed any ageism prevalence findings (Peterson and Ralston, 2017; Zhang et al., 2016).

To that end, a Delphi study is recommended, as it would likely be useful for determining which research questions could best identify the prevalence of ageism, although likely only in similar developed countries. Delphi studies involve a series of questionnaires sent to experts who typically are asked to provide advice to set standards, make decisions, or otherwise share in a development process without meetings having to take place (Iqbal and Pipon-Young, 2009). A Delphi study may be able to develop a minimum set of ageism questions so that the prevalence of ageism can be determined and then measured repeatedly over time in the same region and perhaps across cultural and other groups within that region. Ideally, however, prevalence rates should be compared across national or other borders to highlight where ageism is more of a concern and where concerted action is needed to prevent and mitigate it.

## 5. Conclusions

This scoping research literature review was conducted to identify ageism measurement tools and determine the prevalence of ageism and/or trends in ageism through their use in research investigations. Only 6 tools among the 25 identified had ageism prevalence findings reported. It would seem then that most of the ageism measurement tools were either not designed to measure the prevalence of ageism or they have not been used since their development to measure prevalence. The Ageism Survey which was designed by Palmore (2001) to determine the prevalence of experienced ageism among older people is remarkable, as it was most often used to establish prevalence rates among select subject groups. Unfortunately, this tool does not focus on serious forms of ageism nor the impact of ageism.

Another major concern is that the few studies that reported ageism prevalence through the use of an ageism measurement tool all involved small convenience samples. Regardless, their findings of frequently experienced ageism among older people and frequently admitted ageist views or actions by younger people illustrate the need for more research to establish and track the prevalence of ageism. At this point in time, although it could be said that many people worldwide may hold some or considerable prejudice against older people and also to their own ageing, it cannot be determined how widespread and thus potentially how significant ageism is in any country or even within any occupation or other group (Liu et al., 2013). As such, this scoping review reveals the need to conduct research to determine the prevalence of ageism in

developed and developing populations, and select sub-populations of relevance given population aging, such as nurses and other healthcare professionals. This need requires the continued development of ageism measurement for enhanced reliability and ease of use in population studies or with population-representative samples (Lin et al., 2010). Alternatively, carefully contrived questions in population polls or census undertakings could be used to determine the prevalence of ageism. It is important that this work take place, as ageism could now be or could become an ugly social and political force.

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## References

- Abreu, M., Caldeveilla, N., 2015. Attitudes toward aging in Portuguese nursing students. *Soc. Behav. Sci.* 171, 961–967. <https://doi.org/10.1016/j.sbspro.2015.01.215>.
- Achenbaum, A., 2016. A history of ageism since 1969. *Generations* 39 (3), 10. (Accessed 26 November 2018). <http://asaging.org/blog/history-ageism-1969>.
- Ahmadi, P., Alavi, N.M., Gilasi, H.R., Safa, A., Aghajani, M., 2019. Developing a tool for evaluating ageism in nursing care of older people in Kashan/Iran. *J. Cross. Gerontol.* 2019 (February (14)). <https://doi.org/10.1007/s10823-019-09364-w>. Electronic Publication.
- Aosved, A.C., Long, P.J., 2006. Co-occurrence of rape myth acceptance, sexism, racism, homophobia, ageism, classism, and religious intolerance. *Sex Roles* 55 (7–8), 481–492. <https://doi.org/10.1007/s11199-006-9101-4>.
- Arksey, H., O'Malley, L., 2005. Scoping studies: towards a methodological framework. *Int. J. Soc. Res. Methodol.* 8 (1), 19–32. <https://doi.org/10.1080/1364557032000119616>.
- Armstrong, R., Hall, B.J., Doyle, J., Waters, E., 2011. 'Scoping the scope' of a Cochrane review. *J. Pub. Health* 33 (1), 147–150. <https://doi.org/10.1093/pubmed/fdr015>.
- Ayalon, L., Tesch-Römer, C., 2018. Contemporary Perspectives on Ageism. Springer <https://doi.org/10.1007/978-3-319-73820-8>. Online ISBN 978-3-319-73820-8 (Accessed 26 November 2018). <https://link.springer.com/content/pdf/10.1007%2F978-3-319-73820-8.pdf>.
- Bazo, M.T., 1992. La nueva sociología de la vejez: de la teoría a los métodos. *Reis* 60, 75–90. <https://www.jstor.org/stable/140005528>.
- Bodnar, E., Lazar, A., 2008. Ageism among Israeli students: structure and demographic influences. *Int. Psychoger.* 20 (5), 1046–1058. <https://doi.org/10.1017/S1041610208007151>.
- Boudiny, K., 2013. 'Active ageing': from empty rhetoric to effective policy tool. *Ageing Soc.* 33 (6), 1077–1098. <https://doi.org/10.1017/S0144686X1200030X>.
- Burbank, P.M., Burkholder, G.J., Dugas, J., 2018. Development of the perspectives on caring for older patients scale: psychometric analyses. *Appl. Nurs. Res.* 43 (2018), 98–104. <https://doi.org/10.1016/j.apnr.2018.07.002>.
- Butler, R.N., 1969. Age-ism: another form of bigotry. *Gerontologist* 9 (4), 243–246. <https://doi.org/10.1093/geront/9.4.Part.1.243>.
- Cary, L.A., Chasteen, A.L., Remedios, J., 2017. The Ambivalent Ageism Scale: developing and validating a scale to measure benevolent and hostile ageism. *Gerontologist* 57 (2), e27–e36. <https://doi.org/10.1093/geront/gnw118>.
- Cherry, K.E., Palmore, E., 2008. Relating To Older People Evaluation (ROPE): a measure of self-reported ageism. *Educ. Gerontol.* 34 (10), 849–861. <https://doi.org/10.1080/03601270802042099>.
- Collett, L.J., Lester, D., 1969. The fear of death and the fear of dying. *J. Psychol.* 72 (2), 179–181. <https://doi.org/10.1080/00223980.1969.10543496>.
- Erol, S., Ergun, A., Kadioglu, H., Gur, K., Albayrak, S., Sisman, F.N., Sezer, A., Kolac, N., 2016. The psychometric features of the Turkish version of the Ageism Survey and the frequency of ageism. *Int. J. Gerontol.* 10 (3), 170–174. <https://doi.org/10.1016/j.ijge.2015.12.002>.
- Faronbi, J.O., Adebowale, O., Faronbi, G.O., Musa, O.O., Ayamolowo, S.J., 2017. Perception knowledge and attitude of nursing students towards the care of older patients. *Int. J. Africa Nurs. Sci.* 7, 37–42. <https://doi.org/10.1016/j.ijans.2017.06.004>.
- Fraboni, M., Saltstone, R., Hughes, S., 1990. The Fraboni Scale of Ageism (FSA): an attempt at a more precise measure of ageism. *Can. J. Aging* 9 (1), 56–66. <https://doi.org/10.1017/S0714980800016093>.
- Frost, J., Ranse, K., Grealish, L., 2016. Assessing ageist behaviors in undergraduate nursing students using the Relating to Older People Evaluation (ROPE) survey. *Australas. J. Ageing* 35 (1), 58–61. <https://doi.org/10.1111/ajag.12260>.
- Furlan, J.C., Fehlings, M.G., 2009. Attitudes toward the elderly with CNS trauma: a cross-sectional study of neuroscientists, clinicians, and allied-health professionals. *J. Neurotrauma* 26 (2), 209–225. <https://doi.org/10.1089/neu.2008.0663>.
- Furunes, T., Mykletun, R.J., 2010. Age discrimination in the workplace: validation of the Nordic Age Discrimination Scale. *Scan J. Psychol.* 51 (1), 23–30. <https://doi.org/10.1111/j.1467-9450.2009.00738.x>.
- Gingart, E., Helmes, E., Speelman, C., 2013. Development of a measure of stereotypical attitudes towards older workers. *Aust. Psychol.* 48 (2), 110–118. <https://doi.org/10.1111/j.1742-9544.2011.00024.x>.
- Harrison, L.L., Novak, D., 1988. Evaluation of a gerontological nursing continuing education programme: effect on nurses' knowledge and attitudes and on patients' perceptions and satisfaction. *J. Adv. Nurs.* 13 (6), 684–692. <https://doi.org/10.1111/j.1365-2648.1988.tb00558.x>.
- Hartley, C.L., Bentz, P.M., Ellis, J.R., 1995. The effect of early nursing home placement on student attitudes toward the elderly. *J. Nurs. Educ.* 34 (3), 128–130. <https://doi.org/10.3928/0148-4834-19950301-08>.
- Hilt, M.L., Lipschultz, J.H., 1999. Revising the Kogan Scale: a test of local television news

- producers' attitudes toward older adults. *Educ. Gerontol.* 25 (2), 143–153. <https://doi.org/10.1080/036012799267927>.
- Hsieh, H.F., Shannon, S.E., 2005. Three approaches to qualitative content analysis. *Qual. Health Res.* 15 (9), 1277–1288. <https://doi.org/10.1177/1049732305276687>.
- Iqbal, S., Pipon-Young, L., 2009. The delphi method. *Psychologist* 22 (7), 598–601. Retrieved from: <https://the-psychologist.bps.org.uk/volume-22/edition-7/delphi-method>.
- Johnson, P., 1992. Attitudes held by beginning tertiary nursing students towards elderly people: positive attitudes. *Australas. J. Ageing* 11 (4), 35–41. <https://doi.org/10.1111/j.1741-6612.1992.tb00567.x>.
- Kabátová, O., Puteková, S., Martinková, J., Záhorecová, H., 2016. Nurses' attitudes and knowledge of the geriatric age issue. *Kontakt* 18 (4), e213–e218. <https://doi.org/10.1016/j.kontakt.2016.10.002>.
- Kafer, R.A., Rakowski, W., Lachman, M., Hickey, T., 1980. Aging opinion survey: a report on instrument development. *Int. J. Aging Hum. Dev.* 11 (4), 319–333. <https://doi.org/10.2190/JQF5-XDCV-HIAH-3E1Y>.
- Kagan, S.H., Melendez-Torres, G.J., 2013. Ageism in nursing. *J. Nurs. Manag.* 23 (5), 644–650. <https://doi.org/10.1111/jonm.12191>.
- Kim, I.H., Noh, S., Chun, H., 2015. Mediating and moderating effects in ageism and depression among the Korean elderly: the roles of emotional reactions and coping responses. *Osong Publ. Health Res. Perspect.* 7 (1), 3–11. <https://doi.org/10.1016/j.phrp.2015.11.012>.
- Knox, V.J., Gekoski, W.I., Kelly, L.E., 1995. The Age Group Evaluation and Description (AGED) Inventory: a new instrument for assessing stereotypes of and attitudes toward age groups. *Int. J. Aging Hum. Dev.* 40 (1), 31–55. <https://doi.org/10.2190/8CUC-4XK8-M33K-07YD>.
- Kogan, N., 1961a. Attitudes toward old people: the development of a scale and an examination of correlates. *J. Abnorm. Soc. Psychol.* 62 (1), 44–54. <https://doi.org/10.1037/h0048053>.
- Kogan, N., 1961b. Attitudes toward old people in an older sample. *J. Abnorm. Soc. Psychol.* 62 (3), 616–622. <https://doi.org/10.1037/h0048356>.
- Kydd, A., Gilhooly, M., Lightbody, P., 1999. Factors affecting the professional esteem of health care professionals working with older people. Part one: a quantitative study. Poster Presentation, British Society of Gerontology Annual Conference (Accessed 26 November 2018).
- Kydd, A., Wild, D., Nelson, S., 2013. Attitudes towards caring for older people: findings and recommendations for practice. *Nurs. Older People* 25 (4), 21–28. <https://doi.org/10.7748/nop2013.05.25.4.21.e769Part2>.
- Laidlaw, K., Power, M.J., Schmidt, S., The WHOQOL-OLD Group, 2007. The attitudes to ageing questionnaire (AAQ): development and psychometric properties. *Int. J. Geriatr. Psych.* 22 (4), 367–379. <https://doi.org/10.1002/gps.1683>.
- Laidlaw, K., Kishita, N., Shenkin, S.D., Power, M.J., 2018. Development of a short form of the Attitudes to Ageing Questionnaire (AAQ). *Int. J. Geriatr. Psych.* 33 (1), 113–121. <https://doi.org/10.1002/gps.4687>.
- Lasher, K.P., Faulkender, P.J., 1993. Measurement of aging anxiety: development of the anxiety about aging scale. *Int. J. Aging Hum. Dev.* 37 (4), 247–259. <https://doi.org/10.2190/U69-9AU2-V6LH-9Y1L>.
- Lee, M., Reuben, D.B., Ferrell, B.A., 2005. Multidimensional attitudes of medical residents and geriatrics fellows toward older people. *J. Am. Geriatr. Soc.* 53 (3), 489–494. <https://doi.org/10.1111/j.1532-5415.2005.53170.x>.
- Levac, D., Colquhoun, H., O'Brien, K.K., 2010. Scoping studies: advancing the methodology. *Implement. Sci.* 5 (69), 1–9. <https://doi.org/10.1186/1748-5908-5-69>.
- Ligon, M., Ehman, K., Moriello, G., Welleford, A., 2009. Oral history in the classroom: fostering positive attitudes toward older adults and the aging process. *J. Aging Hum. Arts* 3 (1), 5–72. <https://doi.org/10.1080/19325610802652051>.
- Ligon, M., Ehman, K., Moriello, G., Russo, C., Miller, K., 2014. Validation of the attitude-older adult and aging-visual analogue scale (At-O-A). *Educ. Gerontol.* 40 (8), 572–583. <https://doi.org/10.1080/03601277.2013.858467>.
- Lin, X., Bryant, C., 2009. Students' attitudes toward older people: a cross-cultural comparison. *J. Inter. Relat.* 7 (4), 411–424. <https://doi.org/10.1080/15350770903285320>.
- Lin, X., Bryant, C., Boldero, J., 2010. Measures for assessing student attitudes toward older people. *Educ. Gerontol.* 37 (1), 12–26. <https://doi.org/10.1080/03601270903534796>.
- Liu, Y.-e., Norman, L.J., While, A.E., 2013. Nurses' attitudes towards older people: a systematic review. *Int. J. Nurs. Stud.* 50 (9), 1271–1282. <https://doi.org/10.1016/j.ijnurstu.2012.11.021>.
- Marchiondo, L.A., Gonzales, E., Ram, S., 2016. Development and validation of the workplace age discrimination scale. *J. Bus. Psychol.* 31 (4), 493–513. <https://doi.org/10.1007/s10869-015-9425-6>.
- McGuire, S.L., Klein, D.A., Chen, S.L., 2008. Ageism revisited: a study measuring ageism in East Tennessee, USA. *Nurs. Health Sci.* 10 (1), 11–16. <https://doi.org/10.1111/j.1442-2018.2007.00336.x>.
- McLafferty, E., 2005. A comparison of nurse teachers' and students nurses' attitudes toward hospitalized older adults. *Nurs. Educ. Today* 25 (6), 472–479. <https://doi.org/10.1016/j.nedt.2005.04.007>.
- Natan, B., Atanelli, M., Admenko, A., Har Noy, R., 2013. Nurse assessment of residents' pain in long-term care facility. *Int. Nurs. Rev.* 60 (2), 251–257. <https://doi.org/10.1111/inr.12006>.
- North, M., Fiske, S., 2013. A prescriptive Interventional-Tension Ageism Scale: succession, identity, and consumption (SIC). *Psychol. Assess.* 25 (3), 706–713. <https://doi.org/10.1037/a0032367>.
- Palmore, E., 1977. Facts on aging: a short quiz. *Gerontologist* 17 (4), 315–320.
- Palmore, E., 1980. The facts on aging quiz: a review of findings and a revision of palmore's factors on aging quiz. *Gerontologist* 20 (6), 669–679.
- Palmore, E., 1981. The facts on aging quiz: part two. *Gerontologist* 21 (4), 431–437.
- Palmore, E.B., 1998. *Facts on Aging Quiz*, 2nd ed. Springer Publishing Co., New York, NY.
- Palmore, E., 2001. The ageism survey: first findings. *Gerontologist* 41 (5), 572–575. <https://doi.org/10.1093/geront/41.5.572>.
- Palmore, E.B., 2004. Research note: ageism in Canada and the United States. *J. Cross. Gerontol.* 19 (1), 41–46. <https://doi.org/10.1023/B:JCCG.0000015098.62691.ab>.
- Pearl, R.L., Percec, I., 2018. Ageism and health in patients undergoing cosmetic procedures. *Aesthetic Surg. J.* (2018), 1–5. <https://doi.org/10.1093/asj/sjy283>.
- Peterson, L., Ralston, M., 2017. Valued elders or societal burden: cross-national attitudes toward older adults. *Int. Sociol.* 32 (6), 731–754. <https://doi.org/10.1177/0268580917726943>.
- Polizzi, K.G., 2003. Assessing attitudes toward the elderly: Polizzi's refined version of the aging semantic differential. *Educ. Gerontol.* 29 (3), 197–216. <https://doi.org/10.1080/713844306>.
- Rapoliene, G., 2015. Old age stigmatization. *EQPAM* 4 (1), 63–81. <https://nbn-resolving.org/urn:nbn:de:0168-ssor-416068>.
- Rathnayake, S., Athukorala, Y., Siop, S., 2016. Attitudes toward and willingness to work with older people among undergraduate nursing students in a public university in Sri Lanka: a cross sectional study. *Nurse Educ. Today* 36, 439–444. <https://doi.org/10.1016/j.nedt.2015.10.007>.
- Reuben, D.B., Lee, M., Davis, J.W., Eslami, M.S., Osterweil, D.G., Melchior, S., Weintraub, N.T., 1998. Development and validation of a geriatrics attitudes Scale for primary care residents. *J. Am. Geriatr. Soc.* 46, 1425–1430. <https://doi.org/10.1111/j.1532-5415.1998.tb06012.x>.
- Rosencranz, H.A., McNeven, T.E., 1969. A factor analysis of attitudes toward the aged. *Gerontologist* 9 (1), 55–59. <https://doi.org/10.1093/geront/9.1.55>.
- Rupp, D.E., Vodanovich, S.J., Crede, M., 2005. The multidimensional nature of ageism: construct validity and group differences. *J. Soc. Psych.* 145 (3), 335–362. <https://doi.org/10.3200/SOCP.145.3.335-362>.
- Salter, C.A., Salter, C.D., 1976. Attitudes toward aging and behaviors toward the elderly among young people as a function of death anxiety. *Gerontologist* 16 (3), 232–236. <https://doi.org/10.1093/geront/16.3.232>.
- Sarkisian, C.A., Hays, R.D., Berry, S., Mangione, C.M., 2002. Development, reliability, and validity of the expectations regarding aging (ERA-38) survey. *Gerontologist* 42 (4), 534–542. <https://doi.org/10.1093/geront/42.4.534>.
- Sarkisian, C.A., Steers, N.W., Hays, R.D., Mangione, C.M., 2005. Development of the 12-Item expectations regarding aging survey. *Gerontologist* 45 (2), 240–248. <https://doi.org/10.1093/geront/45.2.240>.
- Sheppard, A., 1981. Response to cartoons and attitudes toward aging. *J. Gerontol.* 36 (1), 122–126. <https://doi.org/10.1093/geronj/36.1.122>.
- Snellman, F., Nygård, M., Susanne, J., 2013. Conceptions and tendencies of age discrimination and attitudes towards older people in selected regions in Finland and Sweden. *Nordic J. Soc. Res.* 4, 115–138. <http://urn.kb.se/resolve?urn=urn:nbn:se:umu:diva-82951>.
- Statista, 2018. Japan: Age Distribution from 2006 to 2016. (Accessed 26 November 2018). <https://www.statista.com/statistics/270087/age-distribution-in-japan/>.
- Statistics Canada, 2017. Census in Brief: A Portrait of the Population Aged 85 and Older in 2016 in Canada. (Accessed 26 November 2018). <http://www12.statcan.gc.ca/census-recensement/2016/as-as/98-200-x/2016004/98-200-x2016004-eng.cfm>.
- Statistics Canada, 2019. Population Estimates on July 1st, by Age and Sex. <https://www150.statcan.gc.ca/t1/tbl1/en/tv.action?pid=1710000501>.
- Swift, H.J., Abrams, D., Lamont, R.A., Drury, L., 2017. The risks of ageism model: how ageism and negative attitudes toward age can be a barrier to active aging. *Soc. Issues Policy Rev.* 11 (1), 195–231. <https://doi.org/10.1111/sipr.12031>.
- Tuckman, J., Lorge, I., 1953. Attitudes toward old people. *J. Social Psychol.* 37 (2), 249–260. <https://search.proquest.com/docview/1290549915/fulltextPDF/B50EF37ACCCF46F0PQ/1?accountid=14474>.
- United Nations Department of Economic and Social Affairs Population Division, 2015. World Population Ageing Report. (Accessed 26 November 2018). [http://www.un.org/en/development/desa/population/publications/pdf/ageing/WPA2015\\_Report.pdf](http://www.un.org/en/development/desa/population/publications/pdf/ageing/WPA2015_Report.pdf).
- United Nations Department of Economic and Social Affairs Population Division, 2017. World Population Prospects: The 2017 Revision, Key Findings and Advance Tables. Working Paper No. ESA/P/WP/248. (Accessed 26 November 2018). [https://esa.un.org/unpd/wpp/publications/files/wpp2017\\_keyfindings.pdf](https://esa.un.org/unpd/wpp/publications/files/wpp2017_keyfindings.pdf).
- Urrutia Serrano, A., 2018. Envejecimiento activo: Un paradigma para comprender y gobernar. *Aula Abierta* 47 (1), 29–36. <https://doi.org/10.17811/rifie.47.1.2018.29-36>.
- Wang, D., Chonody, J., 2013. Social worker' attitudes toward older adults: a review of the literature. *J. Soc. Work Educ.* 49 (1), 150–172. <https://doi.org/10.1080/10437797.2013.755104>.
- Whittemore, R., Knafl, K., 2005. The integrative review: updated methodology. *J. Adv. Nurs.* 52 (5), 546–553. <https://doi.org/10.1111/j.1365-2648.2005.03621.x>.
- World Health Organization, 2015. World Report on Ageing and Health. (Accessed 26 November 2018). [http://apps.who.int/iris/bitstream/handle/10665/186463/9789240694811\\_eng.pdf;jsessionid=DB6A50DA26793B8EEB2FB4EECE005D49?sequence=1](http://apps.who.int/iris/bitstream/handle/10665/186463/9789240694811_eng.pdf;jsessionid=DB6A50DA26793B8EEB2FB4EECE005D49?sequence=1).
- Wurtele, S.K., Maruyama, L., 2013. Changing students' stereotypes of older adults. *Teach. Psychol.* 40 (1), 59–61. <https://doi.org/10.1177/0098628312465867>.
- Xie, X., Xia, Y., 2005. Attitudes toward the elderly in China: comparison of college students and baby boomers. *Int. J. Soc. Fam.* 31 (2), 145–158. <http://www.jstor.org/stable/23070653>.
- Yilmaz, D.V., Terioglu, F., 2011. Development and psychometric evaluation of ageism attitude scale among the university students. *Turkish J. Geriatr.* 14 (3), 259–268.
- Zambrini, D.A., Moraru, M., Hanna, M., Kalache, A., Nuñez, J.F., 2008. Attitudes toward the elderly among students of health care related studies at the University of Salamanca, Spain. *J. Contin. Educ. Health Prof.* 28 (2), 86–90. <https://doi.org/10.1002/chp.162>.
- Zhang, X., Xing, C., Guan, Y., Song, X., Mello, R., Wang, F., Jin, X., 2016. Attitudes toward older adults: a matter of cultural values or personal values? *Psychology. Aging* 31 (1), 89–100. <https://doi.org/10.1037/pag0000068>.