



Scales for Measuring Ageism as Experienced by Older Adults: Literature Review and Methodological Critique

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This study identified the existing ageism scales and reviewed the literature on ageism scales with an emphasis on the methodological issues. Most standardized ageism scales have focused on younger people's attitudes and beliefs toward older adults. There are relatively few standardized scales that assess how older adults feel and think about their experiences being stereotyped. Although significant efforts have been made to outline ageism's various dimensions and constructs, these efforts have not led to a common consensus on ageism and its characteristics. Lack of consensus, in turn, makes it harder to develop a standardized scale. The findings suggest that a new scale that applies only to measuring ageism as perceived by older adults and corresponds to the significant dimensions of ageism must be developed. The preliminary results of this mini-review will serve as the basis for further research on the ageism scale among older adults.

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INTRODUCTION

Ageism refers to stereotypes, prejudices, and discriminatory actions or attitudes that are based on one's chronological age (Kang, 2020). Numerous studies have found that many older adults experience ageism (AARP, 2014; Malani et al., 2020). People tend to have negative attitudes and images of older adults more frequently (North and Fiske, 2015). However, the prevalence of ageism may not be accurate because the number of existing ageism scales is not enough, and most scales have not been comprehensively evaluated regarding their scope and psychometric properties (Ayalon et al., 2019). This mini-review began with a search for existing scales to use as the basis for the review. The search for ageism scales included three databases, including the *American Psychological Association (APA) PsycTests*, the *Health and Psychosocial Instruments*, and the *Measurement Instrument Database for the Social Sciences (MIDSS)*. Additional scales were located through a general web search on *Google Scholar*. The set of search terms included "ageism" or "ageist" or "age discrimination" or "age prejudice" or "age stereotype" or "self-perception of aging." The following criteria were considered for inclusion: (a) Scales are only used to assess ageism or age-related discrimination; (b) Scales that have been tested for reliability and validity; (c) Scales that have been used or evaluated in other research; (d) available in English. A total of 15 ageism scales were found. A summary of the ageism scales is provided in the **Supplementary Table 1**.

On the basis of the 15 scales identified, a literature review was conducted with an emphasis on methodological considerations.

SCALES FOR MEASURING AGEISM

Until the concept of ageism was introduced by Butler (1975), there were few instruments to assess age-related attitudes (Rupp et al., 2005). The early measures were largely single-dimensional, measuring ageism primarily on the cognitive side to observe overall negative public attitudes toward older people (Rupp et al., 2005; Lassonde et al., 2012). Tuckman and Lorge (1953) designed a questionnaire to measure respondents' level of agreement. The questionnaire was composed of 137 statements that discussed misconceptions and stereotypes about older adults (respondents were aged 20–48). The questionnaire consists of 13 categories: physical state, financial state, conservatism, family, attitude toward the future, insecurity, mental deterioration, activities and interests, personality traits, the best time of life, sex, cleanliness, and interference. Palmore (1982) pointed out some of the scale's weaknesses, including that it did not establish validity, not test reliability, featured long and tedious questions, and used a mixed tone (i.e., questions were phrased as factual or attitudinal).

Later, Axelrod and Eisdorfer (1961) and Eisdorfer (1966) questioned the validity of Tuckman and Lorge (1953) scale and simplified it by reducing its number of items to increase the response rate. Golde and Kogan (1959) developed a 20-item, qualitative, open questionnaire for which participants were asked to form sentences regarding older adults and people in general. The scale was intended to measure general attitudes about older individuals. Kogan (1961a) developed two sets of 17 statements to assess attitudes toward older adults (OP scale). Both sets of statements contain the same content, but the wording is either positive or negative. The OP scale assessed the extent to which undergraduate college students held positive as well as negative sentiments about older adults.

Later, Kogan (1961b) tested the OP scale with participants aged 49–92. Compared to young participants, older adults showed higher endorsement of positive attitude items. For these older participants, the association between positive and negative OP scales was considerably lower than for the younger participants. The results of older adults also indicated greater inter-individual variability. Overall, this scale features some advantages over previous scales. It is short, capable of evaluating both positive and negative attitudes, and has shown satisfactory reliability ranging from 0.66 to 0.83 (Spearman-Brown reliability coefficients), indicating the items' good internal consistency. Negative ageism scales have higher reliability than positive ones. However, the validity of the OP scale—especially regarding its contents and constructs—has not been firmly established.

Rosencranz and McNevin (1969) created the Aging Semantic Differential (ASD) test to examine age-based stereotype attitudes. This scale is based on Osgood et al. (1957) semantic differentials research, which suggested three dimensions to fully understand

recurring attitudes: evaluation, potency, and activity. ASD also features three latent factors: acceptability as an evaluative factor, competence as a potency factor, and autonomy as an activity factor. This semantic differential scale has seven response levels with 32 bipolar adjective pairs, which participants (aged 17–21) use to rate different age groups. The age groups include 20–30 years old, males aged 40–55, and males aged 70–85. The ASD test was the first scale to include the behavioral component of ageism. However, ASD does possess one methodological limitation. When it was tested for fit adequacy, the scale was not able to guarantee that it would fit the three-factors model. Gonzales et al. (2010) raised a question regarding the scale's validity, and they also argued that the three factors structure is not optimal model structure. Later, Polizzi (2003) refined the ASD by condensing the three latent factors into one latent factor of attitude (originally “acceptability” in the ASD). Polizzi also reduced the number of items to 24.

Salter and Salter (1976) examined the relationship between death anxiety and aptitudes attitudes/behaviors toward older adults. Their sample was 65 college students, and the mean age was 18.7. The scale measuring attitudes and behaviors toward older adults comprises 36 questions with seven-point Likert responses. It is divided into six sections: (1) agreement with the White House Conference on Aging 1971 resolutions, (2) willingness to help older adults, (3) absolute monthly frequency of helping older adults, (4) agreement with stereotypes of older adults, (5) fears of own future aging, and (6) factual questions about older adults. The reliability was confirmed through the test and retest method, and the obtained correlation coefficient between them was 0.83, which indicates high stability of the scores. A psychiatric patient and a college student were involved in evaluating face and constructing validity. Palmore (1977) study presented a new direction in this field by creating a scale featuring 25 true-false items to measure the level of knowledge regarding the aging process. This attempt focused on increasing awareness of ageism by identifying common misconceptions toward aging and older adults.

Measures of ageism have tended to include multiple dimensions since the 1990s. The Fraboni Scale of Ageism (FSA) was developed to assess multiple components of ageism, especially its affective component (Fraboni et al., 1990). To measure this emotional aspect, the scale adopted three conceptual prejudices from Allport (1954): antilocution (attitudinal beliefs), avoidance (discriminatory behavior), and discrimination. The FSA is composed of 29 items with a four-point Likert scale. Featuring a Cronbach's Coefficient alpha of 0.86, the scale's high internal consistency has been demonstrated.

Palmore (2001) Ageism Survey included 20 items to assess the negative features of ageism in people aged 60 and up. The Palmore (2001) scale was designed to measure how older adults feel about their ageism. The 20 items include only negative aspects of ageism, and they feature a three-point scale (Never 0; Once 1; More than once 2). Palmore tested this scale with 84 people aged 60 and over. The scale's reliability has been found

to be satisfactory, with a Cronbach's Coefficient alpha of 0.81. The author confirmed its face validity through an expert panel. While the Image of Aging Scale (Levy et al., 2004) measures both positive and negative aspects of aging, its focus was on explicit stereotypes about aging.

Cherry and Palmore (2008) developed a self-reported ageism questionnaire called Relating to Old People Evaluation (ROPE) that only measures personal discrimination of ageism. The ROPE is made up of 20 items that measure positive and negative ageist behaviors that people may exhibit in day-to-day life. They recruited 147 undergraduate students (Mean age: 22.9), 47 persons from a university community (Mean age: 38.0), and 120 older adults (Mean age: 70.9) to test the ROPE. They conducted a test-retest, and the results showed a moderate correlation ($r = 0.57\text{--}0.72$) between the two tests. To examine internal consistency reliability, Cronbach's alpha was calculated, and its estimate indicated an adequate consistency (0.7). They confirmed the high validity of their items through the face validity test.

North and Fiske (2013) conducted an exploratory factor analysis to identify latent factors underlying 41 potential items derived from the participants' open-ended reports. Through the analysis, they explored the nature of the constructs influencing ageism and identified three main domains: "active Succession of enviable positions and influence," "age-appropriate, symbolic Identity maintenance," and "minimizing passive shared-resource Consumption." They conducted four studies to test predictive and divergent validity as well as identify latent factors. The number of selected items was 20, and they showed solid internal consistency reliability with Cronbach's alpha of 0.90. The total number of participants was 2,010, and they were recruited regardless of age (range 18–81).

Most recently, Cary et al. (2017) developed the Ambivalent Ageism Scale (AAS), which includes 13 items that measure both hostile and benevolent ageism. They started with 41 items using existing measures of Palmore (2001) ageism scale, benevolent sexism scale (Glick and Fiske, 1996), and the stereotype content model (Fiske et al., 2002). Through the factor analysis and face validity test, they eliminated redundant items. In addition to the face validity, AAS was compared with FSA to examine its criterion validity. AAS was moderately correlated with FSA ($r = 0.51\text{--}0.71$). Reliability was examined through test and retest reliability, and the result indicated a good consistency ($r = 0.80$).

AGEISM SCALES LITERATURE REVIEW

This section reviews the research using standardized ageism scales. Measurement properties such as validity and reliability are critically appraised and compared to identify measurement instruments that require further validation. Harris and Fiedler (1988) used Tuckman and Lorge (1953) Old People Scale to examine preadolescents' attitudes toward older adults. The study adopted the original 137 items without any revision and did not examine the scale's reliability or validity. Additionally, the authors did not mention their study's

response rate. They did point out some of the scale's limitations, focusing on its self-reported measures. Considering the participants' average age (12.8 years), a self-reported measure might not have been the most appropriate option because it is susceptible to response bias, particularly at younger ages. Kogan (1961a) OP scale has demonstrated adequate content validity, and so it has been adopted by numerous studies (Söderhamn et al., 2001; Rupp et al., 2005; Iwasaki and Jones, 2008; Erdemir et al., 2011). Its simplicity and clarity have allowed it to be translated into several languages, including Swedish (Söderhamn et al., 2001), Turkish (Erdemir et al., 2011), Greek (Lambrinou et al., 2005), and Chinese (Yen et al., 2009). The OP scale was mostly used to measure the attitudes of young adults—including undergraduate nursing students (Söderhamn et al., 2001), and young or middle-aged adults (Gallagher et al., 2006)—toward older adult populations. Convincing evidence of the scale's construct validity was shown, and its reliability has been continuously tested over time. There is a general consensus among researchers regarding the OP scale's reasonably strong reliability (Gallagher et al., 2006).

Intrieri et al. (1995) used the ASD scale to measure undergraduate students' attitudes or perceptual proclivities toward older adults. They proposed a revised four-factor structure through confirmatory factor analysis, disputing the original three-factor model. Gonzales et al. (2010) tested the validity of Polizzi (2003) refined-ASD measures. They tested the scale to assess medical students' attitudes toward older adults; their results indicated that the refined-ASD does not measure attitudes toward older adults in a satisfactory way. In addition, the single-factor structure of ASD did not contain sufficient information on ageism. Therefore, the authors suggested that adding the two original factors would be beneficial to deepen our understanding of various aspects of ageism. The reliability of the three-factor model has been highly estimated by multiple studies (Gluth et al., 2010).

The FSA has been widely used for measuring young adults' attitudes toward older adults (Kalavar, 2001; Allan and Johnson, 2008). FSA has been used to assess the attitudes of college students toward older adults (Kalavar, 2001; Allan and Johnson, 2008), health professionals (Kabátová et al., 2015), and older adults aged 65 and over (Bodner et al., 2011). Most research using the FSA indicated high inter-rater reliability as well as high internal consistency reliability.

McGuire et al. (2008) used Palmore's ageism survey to measure the extent of ageism experience of older adults aged 60 and over in the East Tennessee region of the United States. 247 community-dwelling older adults were used for this study. Balko (2013) used Palmore's scale to measure the degree of perceived ageism among nursing students. 80 participants were included in the study, and their age range was from 25 to 60 years old. The study showed a very high internal reliability (Cronbach's alpha score: 0.845). Ferraro (2014) compared the frequency of occurrence of ageism between the United States and Canada using Palmore's scale. The sample included 202 adults aged 40–70, 182 from America, and 20 from Canada. This study

did not conduct any additional tests for the reliability and validity of the scale.

Shiovitz-Ezra et al. (2016) attempted to develop a national scale for measuring ageism in Israel. They used the FSA to measure explicit attitudes toward older adults and the ROPE to measure ageist behaviors. The study included 94 people aged 21 years and over. The validity test was not conducted for both measures. The reliability of the FSA was evaluated, and its result indicated an acceptable level of internal consistency, with a Cronbach's alpha score above 0.7. Rupp et al. (2005) used three ageism scales—the FSA, the ASD, and the OP—to examine how the interaction between an employee's age and the employer's ageism leads to age bias. A total of 554 undergraduate students participated in this study. All measures showed an acceptable level of internal consistency reliability, with a Cronbach's alpha score above 0.7. While these three scales are used to measure different dimensional features of ageism, their scores were moderately correlated. By using a range of different measures, the study was able to examine the relationship between each dimensional construct of the ageism scales and age bias in the workplace.

Numerous studies across the globe have used and adopted the Aging Perceptions Questionnaire (APQ) (Sexton et al., 2014; Chen et al., 2016). The APQ was well developed based on theory and piloted with older adults aged 65 and older. The APQ demonstrated good construct and criterion validity, as well as good internal consistency (Ayalon et al., 2019). Specifically, the Brief version of APQ developed by Sexton et al. (2014) eliminated unnecessary items in order to enhance its psychometric properties. Nevertheless, it only focuses on the psychological component of ageism, that is, internalized ageism.

DISCUSSION

Most ageism scales have focused primarily on younger people's attitudes and beliefs regarding older adults. While Palmore (2001) scale assesses how older adults feel and think about being stereotyped, his scale was not comprehensive because it does not measure ageism fully, and it contains ambiguous language, making it difficult to be certain what the items actually mean when they were originally intended. Although the APQ showed relatively strong psychometric properties, it only focuses on measuring self-perceptions of aging. Numerous studies have adopted and revised ageism scales that were developed specifically to measure younger people's attitudes toward older adults. Therefore, the validity of the scales has been questioned when they are administered to older persons. The study by Gluth et al. (2010) showed that there is also considerable variability in the reliability of scales when the same scale is applied to young and older adults. In their study, the reliability of the Aging Semantic Differential scales varied significantly based on whether they were administered to young or older participants.

Although studies indicated high reliability, most did not examine sufficiently the validity of their scales. Reliability, however, is necessary for validity, while validity cannot be

concluded from reliability. In some studies, face validity was only tested, which is the weakest form of validity (Palmore, 2001; Cherry and Palmore, 2008). Some recent scales developed by North and Fiske (2013) and Cary et al. (2017) were evaluated in a systematic manner through criterion validity tests. However, the authors did not take into account the theoretical aspects of their scales. In addition, studies on ageism scale development have not created convincing evidence that their samples are sufficient for establishing their validity and reliability. That is, they failed to provide sufficient rationale for setting a criterion for determining the sample size in order to determine the validity and reliability of ageism scales.

Studies examining older adults' experiences of ageism often employed unidimensional or simplistic measures (de Guzman et al., 2014; Kim, 2015; Bai et al., 2016). However, it was evident that a more comprehensive measure would be required to consider the multifaceted aspects of ageism. The majority of measures of age discrimination are focused on measuring only work-related discrimination of older workers (Furunes and Mykletun, 2010; de Guzman et al., 2014). Additionally, the existing ageism scales have been adapted to fit the needs of Western societies (Kang, 2020). The perception of old age is often influenced by the historical background and the cultural roots in particular societies. The occurrence of ageism, as described by Palmore (2015), can be considered a social disease. Ageism is linked to deeply embedded contexts of society and culture. Despite this, when developing scales, socio-cultural uniqueness has not been considered, nor have the scales' cross-cultural validity and reliability been examined. "Gendered Ageism," a term encompassing the intersectionality of age and gender, which is an issue of growing concern (Ahn and Costigan, 2019). Ageism and gender are discussed in relation to one another, with particular focus on gender roles and gender unequal distribution. The development of an ageism scale requires consideration of race, cultural background, ethnicity, and gender.

CONCLUSION

Study findings suggest that a new scale must be developed which applies only to assessing ageism on the basis of how older adults perceive it. In the midst of an aging population around the world, a scale that is capable of accurately estimating ageism prevalence is crucial. To adequately assess ageism, a comprehensive set of constructs, including cognitive, behavioral, and informative components, that rely on reliable and valid indicators is required. For an accurate representation of the complex nature of age-based prejudices, it is important to measure both hostile and benevolent ageism as well as their explicit and implicit manifestations. Finally, ageism scales must always evolve and be further refined. Ideally, ageism scales should consider cultural differences and accurately reflect attitudes, opinions, and perceptions of older adults about aging in our current environment, amid fast-paced cultural change with new values, norms, and styles.

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HK wrote and edited all components of the manuscript and approved the submitted version.

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SUPPLEMENTARY MATERIAL

The Supplementary Material for this article can be found online at: <https://www.frontiersin.org/articles/10.3389/feduc.2022.739436/full#supplementary-material>

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