

## REPRESENTATION OF OLDER ADULTS IN NUTRITION EDUCATION PUBLISHED LITERATURE

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### ABSTRACT

**C**ooperative Extension's National Framework for Health Equity and Well-Being identifies ageism as an elicited bias contributing to structural inequity. This retrospective study assessed the relative representation of older adults in research articles, research briefs, and reports published in the *Journal of Nutrition Education and Behavior* (JNEB) from 1969 to 2020. The review found that historically, older adults represented 4% of the research articles, 3% of the research briefs, and 4% of the reports published in JNEB. To equitably represent all life stages, an enhanced focus on older adult nutrition education and behavior research, and journal publication are warranted.

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**I**n the Cooperative Extension's National Framework for Health Equity and Well-Being, the root causes of structural inequity are ableism, ageism, xenophobia, racism, homophobia, classism, and sexism (Burton et al., 2021). By addressing these determinants of elicited bias, Cooperative Extension can "improve population health and achieve equity in health status" (Burton et al., 2021). Ageism has been defined as "the stereotyping, prejudice, and discrimination against people on the basis of their age" (Burnes et al., 2019). However, ageism is not commonly thought of as a significant social determinant of health, although at both individual and structural levels, it has detrimental impacts on health outcomes in older persons globally (Chang et al., 2020). Ageism is increasing (Chang et al., 2020) and becoming more evident as demographics reflect an ever-

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increasing older population (Donizzetti, 2019). Given the historical emphasis on youth and families in Cooperative Extension programming (Mincemoyer et al., 2004), an equitable focus on older adults, specifically related to nutrition education programming, needs to be examined.

There is a lack of published literature exploring if ageism affects community nutrition education programming and related research through Cooperative Extension. We can only glean suggestive evidence that some nutrition educators may have received little background and experience regarding older adults during their education and training. A content analysis of nutrition textbooks found a lack of emphasis on gerontology compared to maternal and childhood topics (Wellman et al., 2004). In addition, most of the terminology used to refer to older adults was neutral, 14% negative, and only 5% positive. A similar study revealed that nutrition textbooks failed to give a comprehensive or positive presentation of aging, which the authors suggest may impede students' development of favorable attitudes towards the older adult population (O'Neill et al., 2005). More recent research has shown that few undergraduate students had a course that allowed them to interact with older adults (Obhi et al., 2019).

However, students in a College of Human Sciences, including the majors, of Food Science and Human Nutrition, Diet and Exercise, Family and Consumer Sciences, reported fewer stereotypical attitudes and more aging-related course content (but fewer experiences with older adults) than students in the College of Engineering or the College of Agricultural Sciences (including Agricultural Education Studies). Evidence suggests that when college students have quality experiences with older adults, they tend to have more positive attitudes towards them (Obhi & Woodhead, 2016). The authors point to opportunities in undergraduate programs to enhance aging-related knowledge through curricula and experiential learning to increase positive attitudes towards aging and thus better prepare students for diverse careers (Obhi et al., 2019).

It is not known if interacting with older adults and exposure to aging content translates to professional practice reflective of less ageism. It is possible that a lack of emphasis on older adults and aging in post-secondary curricula, particularly when older adults have been portrayed in a less than favorable light, may contribute to fewer nutrition educators and Extension specialists undertaking aging and older adult nutrition and behavior programming, evaluation, and related research. A first step towards examining this issue may be to quantify nutrition education and behavior journal publications specifically focused on older adults and aging, community programming, evaluating effectiveness, and community impact. Although nutrition education and behavior research results are published in many US-based journals (e.g., *Journal of the National Extension Association of Family and Consumer Sciences*, *Journal of Extension*, *Journal of the Academy of Nutrition and Dietetics*, and *Current Developments in Nutrition*), the *Journal of Nutrition Education and Behavior (JNEB)*, was selected for this study because it is considered a "global resource to advance nutrition education and behavior related research, practice, and policy." Further, the mission of the Society of Nutrition Education and Behavior (SNEB) is to "[advance] food and nutrition education research, practice and policy that promote equity and support public and planetary health" (SNEB, 2021).



In 2019, SNEB recommitted to representing the growing demographic of older adults (SNEB, 2019). One metric to assess SNEB's historical commitment to aging may be to determine if there has been an equitable representation of life stages, specifically older adults, in articles published in the Society's journal.

## OBJECTIVES

This study determined the relative representation of published articles in the JNEB dedicated to adults over 65 years. The hypothesis was that older adults would be underrepresented given the perceived emphasis on infants, children, and adolescents in special issues of the journal and educational sessions offered at SNEB's annual conferences.

## METHODS

A retrospective, systematic inventory of the published literature in the JNEB was conducted from September to December of 2020. Research articles, research briefs, and reports published from 1969 to December 2020 were examined to determine the relative proportion by life stages: infants, children, and adolescents (< 18 years), young adults (noted as college-aged), adults (18 to 64 years), and older adults (> 65 years). Articles with older adults included as part of a greater adult population were also quantified. An "other" category included articles that did not target or indicate any life stage. All abstracts of articles were reviewed, and if the target life stage was not explicitly described in the abstract, the article's full text was reviewed to confirm the target life stage. The number and classification of articles in each issue were recorded, and the percentages of research articles, research briefs, and reports on each life stage were calculated.

As per the JNEB's current guidance (SNEB, 2022), research articles are "reports of original research on any aspect of nutrition education and behavior." Research briefs are defined as "articles that satisfy all criteria for a Research Article but report results from a small or non-representative sample or report on a topic that is considered low priority but would be of interest to some readers of JNEB." Finally, reports "discuss policy issues relevant to nutrition education and behavior" or "review emerging topics as they relate to nutrition education and behavior," and often "reflect newly proposed models or processes with relevance to policy or research methodology."



## RESULTS

The articles published in the JNEB by life stage from 1969 to 2020 are presented in Table 1. Of the 2,424 articles reviewed, most articles focused on infants, children, and adolescents, representing 32% of the research articles, 42% of the research briefs, and 22% of the reports. Older adults were the least represented of all life stages; only 4% of the research articles, 3% of the research briefs, and 4% of the reports focused on older adults. However, as part of a greater adult population, older adults were included in an additional 8% of research articles, 9% of research briefs, and 5% of reports, but often a small proportion of the total sample studied.

In general, many of the articles on older adults focused on chronic diseases such as “CDE [Certified Diabetes Educators] and Non-CDE Dietitians’ Knowledge of Exercise and Content of Exercise Programs for Older Adults with Type 2 Diabetes” (George et al., 2006). Reports were least likely to be age-related and tended to focus on evaluation techniques, dietary patterns, or skill-related topics such as “Reliability and Validity of a Scale for Evaluating Dietitians’ Interviewing Skills” (Gregory et al., 1995).

Table 1. Articles published in the *Journal of Nutrition Education and Behavior* by life stage from 1969-2020.

Life stage	Research Articles n (%)	Research Briefs n (%)	Reports n (%)
Infants, children, and adolescents <sup>1</sup>	537 (32)	190 (42)	64 (22)
Young adults <sup>2</sup>	121 (7)	43 (9)	21 (7)
Adults <sup>3</sup>	422 (25)	132 (29)	71 (25)
Older adults <sup>4</sup>	58 (4)	12 (3)	11 (4)
Older adults as part of a greater population	139 (8)	39 (9)	13 (5)
Other/did not specify	408 (24)	38 (8)	105 (37)

<sup>1</sup>Infants, children, and adolescents: < 18 years

<sup>2</sup>Young adults: noted as college-aged

<sup>3</sup>Adults: 18 to 64 years

<sup>4</sup>Older adults: ≥ 65 years

## DISCUSSION

The mission of SNEB is to advance food and nutrition education research, practice, and policy and promote equity. However, the results of the present study suggest that the older adult life phase has been underrepresented in published nutrition research and behavior in the Society’s journal compared to younger life stages. This finding may indicate that less nutrition and behavior research, targeting the older adult life stage, has been conducted, and thus, fewer manuscripts have been submitted for publication. Alternatively, the results may suggest a publication bias, i.e., submitted articles with older adult themes may be rejected at a higher rate than those targeting younger populations. It is also possible that nutrition education and behavior articles with older adult themes may be routinely submitted to other nutrition or aging journals. However, a recent meta-analysis concluded that although nutrition education effectively increases healthful food intake in older adults, few randomized trials have been published testing “the efficacy of nutritional interventions in food habits among older people” (Neves et al., 2020).

Databases of journals searched by Neves et al. (MEDLINE, LILACS, Scopus, Cochrane Library, Web of Science, and Google Scholar) support a general lack of published nutrition education research in the older adult population.

The root cause of the publication inequity revealed by the present study may be that fewer nutrition programs targeting older adults are developed, delivered, and evaluated compared to younger cohorts. In a recent needs assessment of Extension professionals in the North Central Region of the U.S., only 43% of respondents reported having adequate resources to address the identified nutrition and food safety needs of older adults (Yelland et al., 2019). Further, few older adult and aging programs are listed in the National Registry of Cooperative Extension Programs and Assets repository of the United States Department of Agriculture (USDA) National Institute of Food and Agriculture (USDA, 2022). Using 'older adult' as the search term, four programs were identified, and 'senior' resulted in one program being identified. "Dining with Diabetes" was the only program identified in the search that targeted nutrition and older adults. Research is needed to confirm if there is a relative lack of nutrition programming targeting older adults and if the existing programming encompasses a wide range of relevant food and nutrition topics. Specifically, does food and nutrition programming targeting older adults include prevention such as the promotion of brain health, or does it focus on disease management only, such as Alzheimer's disease? Beyond nutrition programming, there may be a need to assess whether Cooperative Extension programming with aging and older adult themes contributes to negative stereotypes of aging, such as "Grey for a Day" (Yelland & Piper, 2020), versus promoting positive messaging such as "Keys to Embracing Aging: Curriculum to Promote Healthful Living Across the Life Span" (Kostelic et al., 2020) and "Positive Minds-Strong Bodies" program (Alegría et al., 2019).

Knowledge, attitudes, and perceptions of nutrition educators regarding older adults and aging, and the extent to which ageism may be permeating nutrition education programming have been underexplored in Cooperative Extension. There may be a need for nutrition educators to increase their awareness related to potential systematic bias due to ageism. As the published literature may not adequately represent older adults, caution must be taken when generalizing findings from studies of the younger populations to the older adult. Additionally, when undertaking nutrition education and behavior research, conscious steps towards the equitable representation of older adults may be needed. Nutrition educators have an opportunity to promote positive attitudes and perceptions of older adults through program delivery as well as participation in relevant practice-based research to strengthen the nutrition education and behavior evidence base. Collaborating with older adult volunteers may further support these efforts (Kaplan et al., 2019).

This analysis has limitations. Only articles published in the JNEB were evaluated; thus, the results cannot be generalized to other nutrition or education journals. A more comprehensive evaluation could be undertaken to determine if this bias exists in the larger body of nutrition education and behavior research literature. Such a study would provide more generalizable results and generate further thought on ageism in the nutrition education landscape.

## CONCLUSION

The primary focus of the published articles in JNEB has been on the infant, children, and adolescent life stage, and less on the older adult life stage – representing only 4% of the research articles, 3% of the research briefs, and 4% of the reports. There may be a deficit in such research, or there may be barriers to publication. Going forward, the editorial board of JNEB may need to develop a strategy to increase the publication of articles targeting older adults, helping to close the existing gap. Given the Cooperative Extension’s National Framework for Health Equity and Well-Being directive to address structural inequities originating from determinants of elicited bias such as ageism, it may be appropriate and prudent to assess the extent to which Cooperative Extension might contribute to publication inequity. Research exploring nutrition educators’ perceptions and attitudes towards aging and older adults and the relative extent of aging-related Extension program delivery is needed. There is also the opportunity to design educational programs that foster positive attitudes towards older adults across the socioeconomic and cultural spectrum.



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