

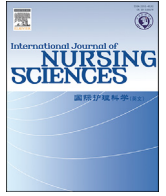
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Unhealthy aging? Featuring older people in television food commercials in China

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ABSTRACT

Objectives: Advertising messages can affect the public as a risk or protective factor for socially disadvantaged groups, and they may reflect how characters reflect perceptions are perceived in a society. This study aimed to investigate how older people are portrayed in televised food commercials from the approach of a healthy aging perspective in contemporary Chinese society.

Methods: All televised advertising in the Ad Topic archive were screened against inclusion and exclusion criteria, and a total of 164 commercials from the years of 2016–2019 that portrayed Chinese older people were sampled. The association between the main older characters with the product categories, healthy vs. unhealthy foods, use of health claims, sex, type of spokesperson, companions, and tones and manners were included in the analysis.

Results: Older people more frequently appeared in unhealthy food products than in healthy food products. Health claims involving older adults were portrayed adequately, whereas nursing professions as companions of older adults were overlooked. Positive advertising that delivered happy, caring, or warm tones was overwhelmingly represented. Thus, the advertising messages circulated in China represent a binary stereotype model of images of older adults' characteristics that reflect ageism and the so-called agelessness, referring to the new application of the look from the approach of social psychology and marketing field.

Conclusions: This study examined aging discrimination reflected in advertisements. Studies exploring the impact of a crisis remain limited. Research is needed to improve the accuracy of advertised healthy older adults and normal aging.

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What is known?

- People in China are aging increasingly and rapidly.
- Senior people are invited to advertise products by examining representation, marginalization, and healthy aging.

What is new?

- This study highlights global trends on nursing issues including advertising information with a particular emphasis on portraying seniors for cultural and social implications.

- This study addresses aspects of communication in the fight against discrimination on aging people by providing a picture of information available to the public for larger social forces for action.

1. Introduction

The population in China is aging increasingly and rapidly. The percentage of Chinese people aged 60 years and above reached 13.3% of the total population in 2011 (117.4 million); the number of older adults is expected to triple from the year of 2000–2050 [1,2]. However, people interpret normal and healthy aging in complex and diverse ways that reflect their personal and cultural experiences, as well as their societies [3,4]. Common meanings of normal and healthy aging include but are broader than the dietary requirements/restrictions and health outcomes considered by nursing professionals and health researchers. Normal and healthy aging takes place in a complex world, with many risks (human and

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natural caused) and with a host of social, cultural, economic, and political concerns. With an increasing number of older people, population aging carries the burdens of high risk of chronic diseases and high mortality rates [5,6].

Watching television (TV) is a favorite pastime among Chinese older adults. With nearly 96.5% of older adults (aged 55 years and above) watching TV on a given day and accounting for more than half of all the viewing time, Chinese older adults' habit of watching TV at home is the choice for leisure and education in this age group (e.g. Refs. [7]). Nonetheless, sparse research has provided evidences indicating that TV advertisements (ads) are one of the primary sources for knowledge circulation in healthy food products among older audiences [8]. To a certain extent, this approach is short-sighted if research on normal and healthy aging has been relying on the role of TV media in delivering aging-related messages without considering environmental factors such as local food culture, lifestyle of older adults, or emerging interpersonal relationship presented in advertising strategy. As such, the analytical concepts generated in ads help practitioners and researchers think beyond their own experiences and be open to audiences' perspectives as they seek to promote healthy ways of food in advertising campaign. In sum, the perceptions reflected in advertising content have the potential to help authorities mount robust responses for efficient intervention of health communication.

Older people are frequently invited to promote products, as a persuasive advertising strategy for targeting similar aged consumers (e.g. Refs. [9,10]), but the portrayal of older adults in ads has scarcely been studied. To fill the gap, the present study aimed to address this research gap by investigating the advertised image of older adults' characteristics, which provides audiences with impressions of age-related signs and associated themes. Content analysis was employed to examine TV ads with older people as main characters, to determine what type of aging was portrayed and whether Chinese society marginalizes older adults in the ads. The potential effects of such representations are discussed using ageist discrimination and stereotype theory.

In the following section, media messages on healthy and unhealthy foods, health claims, sex of the older models, types of spokesperson, companions, and commercial tones related to healthy aging are reviewed. Next, the key research questions, methodology, and analyses of data are provided. Finally, the findings' implications for theoretical development and healthy aging practice are discussed. Limitations and future avenues of research are given in the conclusion section.

1.1. Advertised aging

Considering aging is a concept for a process of changes in human body that occur as people get older. A further definition of the term "natural aging" is considered as a continuous and uninterrupted process, which occurs in the human body causing structural and functional changes; and these changes usually begin in early life and culminate in physical death [11,12]. Current knowledge on aging perception that occur naturally in the human body has been arguable, particularly for female old adults [13,14]. For example, music fans criticized an American celebrity, Madonna's ageing body and femininity at her age of 50 in popular online networks with brutal and offensive attitude. While longevity, wisdom, personality, or profession ensure that an older adult continues to be meaningful, these malicious critique for aging body and appearance (e.g., gray hair, wrinkles) reveals the long-standing ideas about aging people in a new ironic and incompetent way [15–17].

In line with this discrimination and stereotype of aging, Prieler, Ivanov, and Hagiwara [13] examined older people's representation of TV ads in Asian regions. They found that older people as major

characters appeared in the ads are highly underrepresented in Hong Kong of China, Japan, and South Korea; the main actors of older people were frequently appeared alongside younger models. Additionally, older men are also outnumbered by older women, according to an ethnographic observation in a total of 432 TV ad. To examine representation, marginalization, and healthy aging, Chen [18] compared older people portrayed in 388 TV ad and highlighted that older people are more frequently featured in the category of food, beverage, health supplements, and medicine in Taiwan of China, compared with the United Kingdom. A similar trend was also found in Mainland of China; 49% of TV ads targeting older consumers are about food, beverage, and health supplements [19].

Advertised food can be categorized as healthy vs. unhealthy products, for the purpose of understanding and measurement. Unhealthy foods receive the lion's share of advertising content compared with healthy food groups, thereby promoting unhealthy and even harmful consumption, as reported by Chang et al. [20], which analyzed 480 Chinese TV commercials. Warren et al. [21] reported that the two most frequently advertised product categories in the United States are fast food and sweets. The consumption of fats, oils, and sweets that had been advertised is approximately four times that of healthy foods recommended by the government. Healthy foods usually advertised are in the category of dairy products and beverages, such as fruits juices, vegetables juice, and water (e.g. Refs. [22,23]). Considering the health risks and consequences closely related to food advertised involving or targeting older people, the phenomenon of food commercials featuring older people needs to be confirmed and explored. Thus, we raised the following research question (RQ):

RQ 1. Are older people frequently portrayed in TV food ads in the segmentation of healthy vs. unhealthy category in China?

A health claim found in food ads is a common practice that involves the suggestion of positive consequence after consumption owing to healthy ingredients and nutrient function [20,23,24]. A health claim is any statement in an ad that explicitly suggests the focal point of consumption of food quantity, healthy elements, or nutritious ingredients [25]. For instance, regular food ads with health claim include those emphasizing the idea of either low cholesterol, low fat, or reduced sodium. The essential function of health claims is to help people reduce and control their risk of lifestyle-related diseases, such as obesity, diabetes, high blood pressure, cardiovascular diseases, and cancer [24,26]. Researchers have assumed that the audience can learn health knowledge and obtain nutritional recommendations from watching food commercials on TV because health claims positively affect the audience's purchase intentions and attitudes toward branded products [27–29]. However, the use of health claims is not commonly found in most TV food ads in the United States [30,31]. A similar trend is also evidenced in Asian countries. For instance, Moon showed that nearly one-third of the 163 Korean food ads contain health claims; the percentage of health claims focusing on good for health appeal is the highest in the ads, followed by the statement of recharging energy and improving fitness [23]. Choi and Kim also reported that health claims are employed in approximately one third of a total amount of 437 ads that frequently emphasized special nutritional functions and general health [32]. In keeping with the research objective of identifying the underlying health claims, we proposed another research question:

RQ 2. When featuring older people, are health claims employed in food ads and in what manner?

1.2. Stereotype of aging

The stereotype of aging refers to the positive and negative inferences of the social ability, cognitive ability and physical ability of

older people based on perceived age [6,33]. The perception of normal and healthy aging has two emerging diversified directions that focus on the quantity and quality of food required among older Chinese aged 62–83 years [34]. Older Chinese are perceived to have a desire to eat until full, because their negative experiences of famine in the past. They are also believed to be eating less and consuming less high-fat food for healthy aging.

The other side of healthy aging involves the negative attitudes within the health and social care settings where older adults are at their most vulnerable. Ageism exists as a biased attitude that younger generation might have against the aging group based on age, physical strength, and/or appearance. Ageism has the social and economic purpose of legitimizing and maintaining inequalities between groups, and it also causes such negative consequences as discrimination, contempt, and neglect [14]. Considering ageism is a widely held attitude across societies, older characters in ads aired on three major American networks were profiled by Hiemstra et al., in 1983 [35]. Their study concluded that the number of older men was twice that of older women in TV ads. Specifically, older men often played the role of authority figure for information dissemination, whereas older women were portrayed in more passive and subordinate manner. Chen [18] showed that 55.9% of older adults individuals are portrayed vulnerable that required intergenerational family members aside in TV commercials of Taiwan, China. This type of ageism representation has serious consequences for both older people and society at large.

Ageism limits the questions that are asked and the way problems are conceptualized. Thus, it is a major barrier to developing good policies for nursing. Research has suggested that ageism may now be more pervasive than sexism [6]. Additionally, ageism has harmful effects on longevity; older adults with negative attitudes about aging may live 7.5 years less than those with positive attitudes [36]. One reason is that ageism impacts the health of older adults by causing cardiovascular stress and lowered levels of self-efficacy. As such, negative age-based stereotyping has a much stronger influence on behavioral outcomes among older adults than does positive age-based stereotyping [4,6]. Socially ingrained ageism can become self-fulfilling by promoting in older people stereotypes of sex-based inequality, social isolation, lack of physical activity, and economic burden. Thus, we raised the following research question:

RQ 3. When portraying older adults, how are issues such as sex, type of spokesperson, companion, and tones employed in advertising?

2. Methods

2.1. Sampling

The study focused on portraying aging people in ads for older consumers in Mainland of China. All ads were from the AD Topic database, which provides open and free online access [37]. The AD Topic archive collects more than 20,000 TV ad dating from 2007. All TV ads from the archive have been broadcast in various mainstream Chinese TV channels, such as China Central TV, Zhejiang Satellite TV, and Hunan Satellite TV. All 1201 TV ad in the category of food and beverage from the period of January 2016 to June 2019 were screened against inclusion and exclusion criteria. Eventually, a total of 164 food commercials were sampled by excluding overlapping ads and ads that did not involve older people.

In the present study, older people were identified through the following criteria adapted from earlier studies [38]: (a) gray or white hair; (b) skin wrinkles; (c) sign of retirement; (d) necessary help from a wheelchair or cane; (e) having offspring who are middle-aged or younger; (f) appearing with grandchildren.

2.2. Coding scheme and procedure

A codebook was developed by adapting previous studies to the research aims. The coding scheme included seven categories: product categories, segmentation of healthy vs. unhealthy products, health claims, sex of the main older characters, types of spokesperson, companions, and commercial tones. To be specific, advertised food products were classified as either healthy or unhealthy in accordance with previous studies [20,23] and government nutrition experts for Chinese populations [39]. We defined healthy food as food that the government recommends and contains essential nutritional elements, such as vitamins, minerals, and saturated fat, sodium, and sugar within reasonable limits. In comparison, unhealthy food was defined as food that should be limited in a balanced diet or consumed in moderate proportions because of its association with obesity [20,40]. For resolving questions among researchers on the classification of advertising products, we checked the product label information or food product ingredients on the website of the particular food company. Appendix A displays the definitions of the coding and results of the inter-coder reliability test.

Two native Chinese speakers who were college students majoring in communication from the same university were trained for over 10 h to serve as independent coders. Each coder was required to code a pre-test of 16 overlapping ads by providing dichotomous judgments and indicating uncertainty on the coding sheet. An ad that provided a visual presentation or verbal statement suggesting a health benefit of a nutrient or other substance in the product was coded as having a healthy food claim. Coders discussed all disagreements with the first author during the analysis and eventually coded all the samples. The inter-coder reliability for each variable in the present study was greater than or equal to 0.8, which indicated confidence in the reliability of the findings using Cohen's Kappa coefficient (κ) [41].

3. Results

Of the Chinese TV commercials that portrayed older people, ads of unhealthy food products comprised 51.2% ($n = 84$), slightly higher compared with healthy food products ($n = 80$, 48.8%). To be specific, ads for liquor, listed under the unhealthy product category, had the highest frequency of portraying older people ($n = 29$, 17.7%), followed by sweetened soft drinks ($n = 14$, 8.5%) and cookies/desserts ($n = 12$, 7.3%). In the healthy product category, dairy ads had the highest frequency of featuring older people ($n = 29$, 17.7%), followed by ads for fruit juice/vegetable juice/water ($n = 13$, 7.9%) and other soft beverages ($n = 10$, 6.1%). A chi-squared test of independence was performed to examine the relation between food category and older people portrayed. The relation between these variables was significant, $\chi^2 = 164.00$, $P < 0.001$. Older people were more likely portrayed as main characters in unhealthy food ads compared with healthy food ads. Table 1 displays the comparison of older people portrayed in either healthy or unhealthy food ads in China from 2016 to 2019.

Older people were depicted in food ads with claims of health benefits ($n = 56$, 34.1%). A chi-squared test of independence was performed to examine the relation between health claims and older people portrayed in the ads; the relation was significant, $\chi^2 = 79.34$, $P < 0.001$. Older adults appeared in most healthy food ads that employed health claims, and the top three subcategories were dairy ($n = 22$), tonics ($n = 9$), and condiments ($n = 7$). The current findings showed that older people appeared as the main characters in eight unhealthy food ads with health claims (9.5%). Meanwhile, older people were portrayed in ads for four unhealthy food subcategories with health claims: liquor ($n = 4$), processed

Table 1
Comparison of older people portrayed in healthy vs. unhealthy food advertisements in China ($n = 164$).

Product categories	<i>n</i>	%
Healthy food	80	48.8
Dried vegetables/dried fruits	1	0.6
Fruit juice/vegetable juice/water	13	7.9
Other soft beverages	10	6.1
Dairy	29	17.7
Cereals	5	3.0
Condiments	9	5.5
Low-concentration alcoholic beverages	4	2.4
Tonics	9	5.5
Unhealthy food	84	51.2
Fast food/fast food restaurants	8	4.9
Convenient processed food	7	4.3
Cookies/desserts/snacks	12	7.3
Cakes/pastries	2	1.2
Candy/chocolate/gum	12	7.3
Sweetened drinks/soda drinks	14	8.5
Liquor	29	17.7

food ($n = 2$), cookies/dessert/snacks ($n = 1$), and cakes/pastries ($n = 1$). Table 2 shows the assessment of product categories and use of health claims in portraying older people in TV food commercials in Mainland of China.

Older men and women models appearing together as main characters had the highest frequency ($n = 89$, 54.3%), followed by older men only ($n = 55$, 33.5%), and older women only ($n = 20$, 12.2%). A chi-squared test of independence was performed to examine the relation between sex and older people portrayed. The relation between these variables was significant, $\chi^2 = 10.21$, $P = 0.006$.

Older people were depicted as three types of spokesperson in ads. The “people of the street” spokespersons were more frequently portrayed ($n = 127$, 77.4%), followed by celebrity ($n = 28$, 17.1%) and expert spokesperson ($n = 9$, 5.5%). A chi-squared test of independence was performed to examine the relation between the types of spokesperson and older people portrayed. The relation between these variables was significant, $\chi^2 = 56.04$, $P = 0.001$. Older people were more likely portrayed as ordinary people in the ads.

Moreover, the sex of the older models and types of spokesperson were examined. A chi-squared test of independence was

Table 2
Assessment of product categories and use of health claims in portraying older people in TV food commercials in Mainland of China.

Product categories	Use of health claims	
	Yes ($n = 56$)	No ($n = 108$)
Healthy food	48	32
Dried vegetables/dried fruits	1	0
Fruit juice/vegetable juice/water	5	8
Other soft beverages	2	8
Dairy	22	7
Cereals	2	3
Condiments	7	2
Low-concentration alcoholic beverages	0	4
Tonics	9	0
Unhealthy food	8	76
Fast food/fast food restaurants	0	8
Convenient processed food	2	5
Cookies/desserts/snacks	1	11
Cakes/pastries	1	1
Candy/chocolate/gum	0	12
Sweetened drinks/soda drinks	0	14
Liquor	4	25

performed to examine their relation, which was found to be significant, $\chi^2 = 53.90$, $P < 0.001$. Older models of mixed sex were more likely portrayed as ordinary spokesperson than the other two groups in food ads. Table 3 gives the cross-tabulation of older people’s sex and type of spokesperson in TV food ads in Mainland of China.

Regarding companion in ads, older people appearing as the main characters in ads were more frequently portrayed with family members ($n = 103$, 40.4%), followed by with peers ($n = 97$, 38.0%) and being alone ($n = 39$, 15.3%). Ads with older people appearing as the main characters accompanied by professional nursing people had the lowest frequency ($n = 2$, 0.8%). The chi-squared test of independence on the relation between companions and older people portrayed revealed a significant relation, $\chi^2 = 95.59$, $P = 0.023$. Older people appearing as the main characters were more likely portrayed with family members in food ads. Table 4 shows the assessment of older people’s companions portrayed in ads in Mainland of China.

Older people were depicted in nine types of tones in ads. The tone of happy, fun, or loving was the most frequently employed ($n = 113$, 35.8%), followed by warm/caring ($n = 71$, 22.5%), and conservative/corporate ($n = 43$, 13.6%). A chi-squared test of independence was performed to examine the relation between the advertising tones and older people portrayed. The relation between these variables was significant, $\chi^2 = 184.55$, $P = 0.001$. Older people were more likely portrayed in the tone of happy, fun, or loving when appearing as main characters in ads. Table 5 presents the comparison of older people portrayed in various advertising tones in food ads in Mainland of China.

4. Discussion

4.1. Crisis of unhealthy aging

Ads for high-calorie and high-sugar drinks, sweetened candies, and cookies account for the majority of TV ads in developed and developing countries (e.g. Refs. [20,21,31]). The present findings seem to extend previous reports; we found that older people were more frequently portrayed in ads for unhealthy than healthy food products. Overall, previous studies in developed and developing countries and this present study had more similarities than differences.

Older people were portrayed in food ads that used health claims. They were adequately portrayed together with family members and peers, whereas nursing professionals as companions were overlooked in ads. Positive ads that delivered happy, fun, caring, loving, or warm tones were overrepresented compared with other tones, such as hard sell and tense. The tone of advertising can make a huge difference in the way it is received by older consumers (e.g. Refs. [6,34,42]). Overall, the sampled ads involving older adults tended to use a more friendly tone so that they could be more effective in evoking a sense of wellbeing and hopefulness for the audience [20,22].

Table 3
Assessment of older people’s sex and type of spokesperson in TV food commercials in Mainland of China.

Identity	Number of ads for gender		
	Male ($n = 55$)	Female ($n = 20$)	Mixed sex ($n = 89$)
Expert	8	1	0
Celebrity	20	7	1
Ordinary people	27	12	88

Table 4

Comparison of older people's companions portrayed in food advertisements in China ($n = 255$).

Companions	<i>n</i>	%
Single elderly people	39	15.3
Family members	103	40.4
Nursing professionals	2	0.8
Senior people peers	97	38.0
Other young adults	14	5.5

Table 5

Assessment of older people portrayed in food commercials with different tones in Mainland of China ($n = 316$).

Commercial tones	<i>n</i>	%
Humorous	21	6.6
Warm/caring	71	22.5
Happy/fun/loving	113	35.8
Relaxed/comfortable	31	9.8
Modern/contemporary	11	3.5
Conservative/corporate	43	13.6
Hard sell	7	2.2
Tense/irritated	3	0.9
Glamorous	16	5.1

Older adults were adequately portrayed in healthy food ads with health claims, albeit contentious. To illustrate, one of the Chinese traditional tonics, called bird's nest, was advertised as containing proteins, amino acids, and minerals that are essential for a healthy constitution. The health claims for the tonic product "Yan Palace" (*Yan-Zhi-Wu*) emphasized improved digestion, even for older adults' deteriorated digestive system by delivering good nutrients. One of the functions of the tonic product advertised was to bring back health to those older adults who were weak, fragile, or even recovering from surgery. Meanwhile, older adults in the ads were recommended to consume bird's nest in moderation to aid recovery from chronic illnesses or chronic coughs. The advertising message feeds assumptions that can lead to the development of stereotypes of older adults as weak and sickly. Ageism is rooted in both explicit and implicit language that could lead to contempt and derogatory remarks toward aging adults.

Another example is the depiction of older adults in four alcohol ads with intangible benefits. One Chinese spirit, "Dream Blue" (*Meng-Zhi-Lan*), focused on abstract and ideological expressions: go home and return to the place where the dream begins. In the ads, the wine product was promoted as having a unique distilling technique that originated in ancient China and as having been offered as tribute to the emperors in the previous dynasties. While wine has a central position in Chinese culture for all Chinese people, it is of particular pertinence to older people. The message in this advertising carries meaning that feeds judgments on the poor dietary quality among older Chinese people. The problem may extend to question the risk of dietary quality for older Chinese people. In line with the previous studies (e.g. Refs. [30–32]), our findings lent support to the demand to call attention to insufficient health-related information on food products for older adults. Therefore, dieticians and health care professionals need to increase the dissemination and uptake of health literacy and nutrition education, with interventions targeting older adults.

4.2. Ageism and agelessness in Chinese culture

We explored the meaning of food advertised on the lives of older people in China and how it contributes to healthy, and thus, normal and happy aging. Ageism is the stereotyping and discrimination

against individuals or groups on the basis of their age. However, ageism can take many forms, including prejudicial attitudes, discriminatory messages, implicit languages, or institutional practices that perpetuate stereotypical beliefs. One of the purposes of ageism for Chinese society was to legitimize and sustain inequalities between groups. The assigned meaning found in the Chinese ads showed that the main characters' appearance and behavior were influenced by ageism (e.g. Refs. [34,36,43]). In summary, to some extent, ageism is recognized as the common source and driving force behind age discrimination.

The messages in the advertising campaigns circulated represented a binary stereotype model of images of older adult characteristics that reflect ageism and agelessness. Agelessness is an emerging concept in marketing field for older age-subcultural segment in which people perceive themselves as younger in age and outlook; they also feel more self-confident and satisfied of their lives while more involved in seeking novel experiences, personal challenges and adventures with the ultimate goal of enhancing revenue (e.g. Refs. [3,4,9]). To illustrate, older adults depicted in the ads look 20 years younger comparing to their actual age, or to target consumers. The advertised older adults only show a sign of wrinkles around their eyes and the hint of creases on their foreheads. The current representation of ageless models are very different from the stereotypical or traditional elderly who are concerned with the accumulation of possessions and lack involving in seeking novel experiences, personal challenges, and new adventures. To minimize bias, we discussed and established consensus that the images of older people in the ads did not indicate the actual ages given and were implied simply via bodily representation. Hence, the advertising messages employed cues that audiences quickly pick up and interpret as age-related sign messages [14].

Evidence is also presented to show that de-individualization consideration through the manipulation relating to the expression of social identities from social psychology perspective [10]. In short, the group members give full voice to their collective identities. To illustrate, a particular Chinese brand, "Yanghe Daqu", a spirit product advertised to contain 52% alcohol, has been widely available and popular among older drinkers in Mainland of China. In their advertising, Yanghe Daqu liquor is narrated as a kind of pure and transparent liquid, with a fragrant and strong scent and refreshing flavor. This particular liquor is touted as refreshing but not tasteless, yet with no excessive acid, sweet, bitter, spicy, and fragrant flavor added. The advertising slogan in Chinese, "the older, the softer," explicitly states the brand's long history and growth as well as the consumers' lives. In the ads, the older model perceives themselves as younger in age and outlook. The older model is more involved in seeking personal challenges and new adventures, both physically and mentally. The implicit messages can be interpreted as portraying aging differently, in which an individual's age is about revealing itself more in a state of mind than a physical state. The older model feels more self-confident and in control of their lives without considering youthful appearance or disguise. Therefore, the stereotype of advertising information focusing on the age-less subculture instead of youth-value orientation is reflected. Advertising professionals are now designing and delivering food advertising messages in response to a different type of older consumers who are of a new age, characterized by agelessness in successful aging.

5. Conclusions

This study aimed to elucidate the contribution of ads to healthy, and thus, normal and happy aging. We examined how older people were portrayed in TV ads broadcast in China by exploring the meaning of successful and healthy aging in food ads. The

advertising messages also reflected food culture, and the lives and lifestyles of older Chinese people. To urge a balanced view of aging in the media, the current findings proposed that the majority of TV food ads portraying older people should be more frequently associated with healthy Chinese foods. In particular, older adults as ordinary spokespeople should avoid to be depicted in alcohol product ads with mixed tones of happy, conservative, or corporate. This tone extended to the images broadcast on TV which links successfully to the marketing goal of enhancing revenue.

Literature on the impact of the drinking crisis involving older adults is very limited, to our best knowledge. The practice of portraying older adults in commercials reflects the most recent and rapid progress of China, regarding which the unique socio-cultural and political-economic circumstances must be examined. However, this study had several limitations that should be noted. First, the lack of providing ads aired during regularly scheduled, weekday prime time network programming that were heavily viewed by older adults and other stakeholders. The descriptions of older adults in ads for various cable and network programming from different geographic regions need to be considered as well because a sizable proportion of Chinese older adults may have access to nationwide networks but have very different viewing behavior with respect to regional cable TV programs.

Second, bias existed among researchers in examining samples of aging adults or older people depicted in the advertising campaigns for food products. The smiling aging models in the ads for anti-aging food products often looked remarkably youthful for their supposed age of 70-plus years. Actual age differences exist in the older adult population, including young older adult (60–74 years old) and old older adult (older than 74 years) referenced for Chinese [1,2].

Third, adding other variables (i.e., visual ads, setting arrangement, language used, race) for investigation would minimize the limitations and may also lead to conclusive findings for the development of a theoretical model related to nursing concepts. In particular, the use of an ethnolinguistic approach [13] would account for Chinese cultural practices and existence in time as parts of a collective entity with a distinctive emotional attachment, identity, and language.

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CRediT authorship contribution statement

Wen Jiao: Methodology, Investigation, Formal analysis, Writing - original draft, Project administration. **Angela Wen-Yu Chang:** Conceptualization, Supervision, Writing - review & editing, Validation, Data curation, Funding acquisition.

Appendix A. Supplementary data

Supplementary data to this article can be found online at <https://doi.org/10.1016/j.ijnss.2020.07.007>.

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