



## Developing a Tool for Evaluating Ageism in Nursing Care of Older People in Kashan/Iran

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### Abstract

Ageism implies negative views and attitudes towards older people. These unconscious behaviors could make the elderly feel as if they were no longer useful for the family and community. Ageism is common in healthcare services. The objective of this study was to develop a tool to assess ageism in nursing care in Kashan/Iran 2015. This psychometric study was carried out in four stages: literature review for item generation; content validity testing; exploratory factor analysis (EFA) for evaluation of construct validity; and reliability assessment. The data analyzed with SPSS version 16. The final questionnaire had 24 items. The total CVI and CVR were 0.88 and 0.57. Explanatory factor analysis identified 3 factors of respecting older adult in nursing care (14 items); age discrimination and negative views towards older adults (5 items); attention to older adult and their basic caring needs (5 items). The three factors could explain 49.54% of variance. The test-re-test correlation stood at 0.9. The internal consistency of the questionnaire was Cronbach's alpha = 0.85. A valid and reliable instrument for the evaluation of ageism in nursing care was developed in this study.

**Keywords** Ageism · Nursing care · Validity and reliability · Factor analysis

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## Introduction

Ageism is a generalization made about people who fall into the older age group. Ageism mostly manifests itself through negative views and attitudes towards older people. The views that older people are a burden, dependent, and unattractive constitute ageism (Hoffman 2012). This concept was first introduced by Batler in 1969 as discriminative behaviors based on age that mostly target elderly. These unconscious behaviors may make elderly feel useless for the family and community, thereby causing depression and social isolation (Thorsteinsdottir et al. 2013). There is no standard numerical criterion for the definition of elderly, but the United Nations (UN) defined people above 60+ years as comprising the older population (Snaedal 2011). Ageism has two forms. In direct ageism older people are discriminated against for their age. In the indirect form, the elderly are unfairly compared with more active and younger people without considering the natural and physiological changes that come with age. The result is deprivation of services and isolation (Centre for Policy on Ageing 2009).

Health settings are not immune from ageism (Young 2006). Sometimes discrimination against older people is accepted as a professional attitude in the health system (Kagan 2012). Research shows that older people receive less education about healthy life-style. The rehabilitative services are more limited for them, and only 47% of physicians think that older people should receive the same services as younger people (Hoffman 2012). A study in the United States showed that there were age disparities in cancer screening interventions (Jerant et al. 2004). In a meta-analysis about the rehabilitation of stroke patients, it was found that the mean age of all patients was 64.3, almost a decade younger than those seen by stroke physicians. This clear difference lays bare ageism in rehabilitation programs after stroke (Gaynor et al. 2014). In a study in Japan, patients aged 80 years or above were followed after elective radical surgery for gastric or colorectal cancer. There were no operative deaths, and the morbidity rate was 27.9%. Only 6% of the patients showed a decrease in ADL at the 6th postoperative month (Fukata et al. 2012). This study showed that attitudes held by some medical professionals are not appropriate and that patients should not be deprived of treatments because of their age. Even in Europe age is a key component in decision about caring and people older than 65 are deprived systematically of many services (Bowling 2007). Age is a relative phenomenon, and many elderly person enjoy good health, and variables such as quality of life, the stage of the disease, and the success of treatments should be considered in decision-making (Centre for Policy on Ageing 2009).

In 2001, Britain's National Health System (NHS) reported that older people were deprived of many useful services. NHS designed some policies, protocols, and educational programs to put an end to this discrimination. In 2006, it reported that, following the interventions, the number of older people benefiting from hip and knee replacement therapy increased notably, although the difference was not significant in poor areas (Centre for Policy on Ageing 2009). This program showed that ageism in healthcare can be successfully checked.

In Iran ageism is not a familiar concept in the healthcare sector. In fact many have not heard of it (Askarizade-Mahani et al. 2008). Studies in this area are limited. This could be due to the lack of proper instruments. There are two scales to measure ageism:

- Most of the available tools generally try to assess ageism. These tools seek to measure positive and negative ageist behaviors and views that people may have. Ageing Semantic Differential (Rosencranz and McNeven 1969), the Fraboni Scale of Ageism (Fraboni et al. 1990), Kogan's Old People Scale (Hilt 1997), and the Relating to Older People Evaluation

- (ROPE) (Cherry and Palmore 2008) are some of the known instruments that try to evaluate ageism.
- There are some specifically designed questionnaires for different areas of ageism. In 2016, Cary developed the Ambivalent Ageism Scale to measure benevolent and hostile ageism (Cary et al. 2017). North et al. also designed a 20-item intergenerational-tension ageism scale in 2013 (North and Fiske 2013). The Workplace Intergenerational Climate Scale is another instrument designed to measure employees' attitudes and perceptions about workers of different ages in the workplace (King and Bryant 2017).

There is a need for an assessment tool to evaluate ageism in specific caring settings. Nurses are the key personnel in health care who provide most of the services to the elderly. The views and attitudes of nurses towards older people can be crucial in healthcare settings.

The objective of the study was to develop a tool to assess ageism in nursing care in Kashan/Iran 2015.

## Subjects and Methods

This psychometric study was carried out in four stages: a literature review for item generation; content validity testing; exploratory factor analysis (EFA) for evaluation of construct validity; and reliability assessment.

**Item Generation** The literature related to ageism and ageism in caring science were reviewed. Google Scholar, Pubmed, and Science Direct data-bases were searched using the key-words 'ageism', 'scale', 'instrument', 'tool' or 'questionnaire'. The questionnaires and tools about ageism were gathered and some of their items were extracted. The 15 nursing personnel working in medical and surgical wards of a general hospital with at least five years of experience were interviewed. They were asked about their experiences and views about ageism in nursing care. They were also asked whether they had personal experiences and encounters with age-related discrimination against older patients in their nursing career and were asked to explain these experiences (The details of the qualitative part will be presented in another article). Some items were developed through interviews. For example, some nurses believed that in clinical settings, younger patients receive better education. The item was designed as, "It is right of an older person to receive enough information and education about his/her disease management." The items were used in the study after discussions among the researchers. Seventy-four initial items were developed in this step. All the items were meant to be rated on a four-point Likert scale (completely agree = 4, agree = 3, not agree = 2, completely disagree = 1).

**Content Validity Testing** The initial items were sent to 20 experts in nursing. The experts were invited to directly participate in the study. All the experts had a master's or PhD degree with years of experience in working with older people. The average age of the experts was 47 years, and 15 of them were female. The experts were invited from Kashan and Isfahan universities of medical sciences. They were asked to read every

item carefully and write their views about the items and whether they had any suggestions.

For quantitative content validity, the Content Validity Index (CVI) and Content Validity Ratio (CVR) were measured. Content validity means the experts' degree of agreement regarding the content relevance of an instrument. The CVI was evaluated using the Walts Baustle method, and the relevancy, clarity and simplicity of the items were recorded (Polit and Beck 2006). Each item had 4 choice-likert rating scale, for example the relevancy was recorded as: 1, not relevant; 2, somewhat relevant; 3, quite relevant; 4, highly relevant. The CVI formula was represented by: [CVI or % agreement = (Number of experts agreeing on items rated as 3 or 4) / (Total number of experts)].

A CVI score of 0.78 and higher was considered to be acceptable (Polit et al. 2007).

Besides the experts were asked how essential a particular item was. So, the necessity of items was also recorded for calculation of the CVR. The CVR was calculated with the following formula:

$$\text{CVR} = (\text{ne} - N/2) / (N/2)$$

ne number of experts indicating a measurement item is essential

N number of experts that answer to that item

Lawshe gives 0.42 as the minimum CVR needed to retain an item on the scale when the number of panellists are 20 (Lawshe 1975). The average of all the CVI and CVR scores of the items was calculated to determine the total scores for the instrument.

**Exploratory Factor Analysis (EFA) for Evaluation of Construct Validity** The questionnaire was completed by 150 nurses working in the Shahid Beheshti Hospital in Kashan/Iran. The inclusion criteria were: working as staff nurse for at least 1 year having the willingness to participate in the study. Systematic random sampling was used for inviting the nurses. If the subjects were reluctant to participate, other nurses were approached for the same. All the nurses were thoroughly informed about the study objectives and how to complete the questionnaire.

For evaluation of construct validity, an exploratory factor analysis was conducted using Principal Axis Factoring method, and the maximum likelihood technique with oblimin rotation. The Kaiser Mayer Olkin (KMO) measure and Bartlett test of sphericity were conducted for evaluating sampling adequacy. The goals of exploratory factor analysis were to determine the number of fundamental influences underlying a domain of items. The data was compiled and statistically analysed using the software SPSS 16.0.

**Reliability Assessment of the Questionnaire** The remaining items formed a questionnaire. The test re-test method was used for assessment of reliability. The 20 nurses completed the questionnaire in a two week interval, and the correlation of the scores was calculated. Cronbach's alpha for the questionnaire was calculated for assessment of internal consistency.

**Ethical Considerations** The ethical committee of the Kashan University of Medical Sciences approved the study protocol with the code number: IR.KAUMS.REC.1394.38. Participants were informed about the aims of the study before they signed the consent form. In all stages of the study the anonymity of the participants was respected. The study protocol was based on Helsinki Declaration of Ethics in Research.

## Results

In all, 74 items were developed. In the second stage, considering CVR above 0.42 and CVI above 0.79, 31 items remained in the questionnaire. After factor analysis 7 more items were removed, so the final questionnaire had 24 items.

The total CVI and CVR were 0.88 and 0.57 respectively. The details of CVI, CVR, and the items that remained in the questionnaire are presented in Table 1.

**Table 1** Content analysis of the questionnaire including CVI, CVR and factor analysis of the remained items

Factors and Items	Loadings			CVI <sup>α</sup>	CVR <sup>β</sup>
	Factor 1	Factor 2	Factor 3		
<b>Factor 1: Respecting older adult in nursing care (14 items)</b>					
Eigenvalue = 8.66, Variance = 34.19%					
I can understand the pain and suffer of older adults and try to make them comfortable.	<b>.496</b> *	-.186	.097	0.94	0.46
I can communicate well with older adults.	<b>.685</b>	.088	.100	0.96	0.55
I respect older adults and call them by their family name.	<b>.562</b>	.021	-.021	0.92	0.68
I do cardiopulmonary resuscitation in old and young patients without discrimination.	<b>.519</b>	-.225	-.166	0.96	0.64
I instruct older adults and their families about the treatments.	<b>.703</b>	-.127	-.094	0.94	0.75
Before any procedure, I explain it to the older adults clearly.	<b>.668</b>	-.032	-.081	0.81	0.5
I smile to the older adults when I visit them in their room.	<b>.767</b>	-.023	-.123	0.83	0.46
When older adults call me, I rush to their room immediately.	<b>.757</b>	-.109	-.100	0.83	0.52
I answer to the questions of the older adults patiently.	<b>.788</b>	-.078	-.036	0.85	0.46
If older adults report pain, I try to do something to relieve it.	<b>.759</b>	-.059	-.007	0.9	0.47
I evaluate polypharmacy in older adults, and record it in their chart.	<b>.691</b>	.241	.031	0.86	0.46
I evaluate and record the sleeping problems in older adults	<b>.748</b>	.087	-.009	0.81	0.43
I evaluate the risk of falling in older adults and record it in the patients chart.	<b>.806</b>	.001	.032	0.83	0.43
I respect older adults' personal territory during procedures.	<b>.648</b>	-.128	.039	0.90	0.66
<b>Factor 2: Attention to older adult and their basic caring needs (5 items)</b>					
Eigenvalue = 2.55, Variance = 8.59%					
It is the right of older adults to receive information about his/her health.	.048	<b>-.624</b>	-.015	0.84	0.57
I like to attend workshops and seminars about nursing care for older adults.	.112	<b>-.565</b>	.016	0.85	0.48
Older adults should receive information about drug side effects and its exact doses.	-.073	<b>-.811</b>	-.044	0.87	0.57
Controlling the vital signs of the older adults is very crucial.	.033	<b>-.731</b>	-.079	0.93	0.76
The follow up and control of chronic conditions in older adults are crucial.	.295	<b>-.400</b>	.147	0.91	0.88
<b>Factor 3: Age discrimination and negative views towards older adults (5 items),</b>					
Eigenvalue = 2.55, Variance = 6.7%					
I think older adults don't receive enough care and attention.	-.054	-.243	<b>.558</b>	0.97	0.76
I feel sad when I am responsible for caring for older adults.	-.035	.189	<b>.500</b>	0.79	0.5
I think sometimes death is the best solution for older adults.	-.063	.263	<b>.603</b>	0.88	0.46
When I take care of older adults, I feel my work is useless.	-.072	.245	<b>.742</b>	0.91	0.62
I think it is right that young patients have higher priorities in receiving nursing care.	.060	-.155	<b>.615</b>	0.88	0.64

<sup>α</sup> Content Validity Index

<sup>β</sup> Content Validity Ratio

\* Bold numbers show the items loading of underlying factor

The KMO was 0.843, and Bartlett test was 0.0001, which showed the adequacy of the sample for exploratory factor analysis. According to the Guttman Kaiser criterion, eight factors had eigenvalues of more than 1 and showed 67.24% of cumulative variance. According to the Scree-plot method, the number of factors was three. The three factors could explain 49.54% of variance. For determining the exact number of factors the items with primary factor loadings less than 0.40 and the items with factor loading more than 0.40 with a secondary factor loadings more than 0.30 were removed one by one at a time and the factor models were tested with 1–5 factors to verify the factor structures. This method approved the 3 model factors. The minimum loading for the items to remain in the questionnaires was set to be 0.4. None of the correlations among the factors was greater than 0.60.

After detail assessment of the items the three factors extracted from the questionnaire were named as follows:

- **Respecting older adult in nursing care** (14 items).
- **Age discrimination and negative views towards older adults** (5 items).
- **Attention to older adult and their basic caring needs** (5 items).

Seven items were removed because of low loading in the factor analysis. Table 1 shows the details of items primary and secondary loadings and the factors.

The test, re-test correlation was 0.9, which is acceptable, and no items were deleted in this phase. The 150 nurses completed the questionnaire. The internal consistency of the questionnaire was Cronbach's  $\alpha = 0.85$ . The Cronbach's  $\alpha$  of the sub-scales can be seen in Table 2. Removing no item could increase the Cronbach's  $\alpha$  index considerably, so no item was deleted.

## Discussion

In this study, an instrument with 24 items was developed for assessment of ageism in nursing care in order to evaluate this concept in three dimensions of respecting older adult, age discrimination and attention to older adult. The designed instrument had acceptable content and construct validity, and reliability. There are limited instruments for assessment of ageism in nursing care. Xiao and colleagues in 2013 compared the views of Chinese and Australian nursing students in caring for older people. Their designed instrument had 17 items categories of views towards the elderly, culture, and tendency to engagement in caring older people (Xiao et al. 2013). The designed questionnaire in this study had some similarities with Xiao's questionnaire. The dimensions of respect and security, attention and discrimination had common items with views towards the elderly and the tendency to engagement in caring for older people. Xiao found that 72.1% of Chinese and 45.3% of Australian students had positive

**Table 2** The Cronbach's  $\alpha$  of the instrument and its subscales

The sub scale	Number of items	Cronbach's $\alpha$
Respecting older adult in nursing care	14	0.933
Attention to older adult and their basic caring needs	5	0.785
Age discrimination and negative views towards older adults	5	0.746
Total Cronbach's $\alpha$ of the instrument	24	0.85

views about the elderly, and she concluded that culture has an important role in forming views towards ageing (Xiao et al. 2013). Culture can have a special part in making the views related to the elderly. In current research, all the experts and panelists were from the same cultural background so the influential role of cultural differences might not be noted.

The first step towards solving any problem is assessment. Effective assessment needs reliable and valid instruments, so the different aspects of the problem and the results of interventions can be evaluated. Ageism seems to be a real problem in the health system that needs assessment and interventions. Potter and colleagues designed a study to investigate the effect of educational programs on the knowledge and attitudes of nursing students to elderly issues in Canada. They found that education had positive effects on the views of students towards elderly people (Potter et al. 2013). This study showed that, if we have proper instruments to show the importance of ageism, some interventions can decrease the severity of the problem.

Older people with dementia are a group of patients that nurses are deal with frequently in hospitals. The experience of working with older people with dementia can have negative effects on nurses' views. McKenzie and Brown evaluated the views of nursing students about the caring of older people with dementia. Interestingly, the negative views and discrimination were very low and much less than what was predicted (McKenzie and Brown 2014). This study showed that ageism in health care might be a complex concept that needs effective assessment, and the presumptions might not be correct in many situations.

The knowledge of nurses in caring for older people is an important issue that has been considered in the current questionnaire, mostly in terms of physical caring and competency for caring. Usta in Turkey studied the knowledge and attitudes of nursing students to ageism in 2010. She used the Ageism Attitude Scale which is a general questionnaire. Designed by Vefikuluc in 2008, this questionnaire has 23 items. The scoring system is between 23 and 115, and that higher scores show better situation and less ageism. The students' average score was 84, which showed a moderate level of ageism. Students in their first educational semesters, male students, and those with no education about older people had more negative views about older people (Usta et al. 2012). The caring-related questionnaires might give us better understanding of ageism in nursing. We think this issue has been left unnoticed in the health-care system. Askarizadeh in Iran found that in chronic conditions, older people are at the risk of negligence in hospital wards. She concluded that nurses' views towards older people might add to their poor performance in elderly care (Askarizade-Mahani et al. 2008). Views make the attitudes, so it seems that every instrument in ageism should pay special attention to the views of the nurses.

In nursing care, the determination of the priorities has a special role. Pritchard found that older women systematically received less modality in breast cancer treatments. They had less freedom in choosing their treatments and received less information (Pritchard 2007). Bowling also found the same results among older people with end-stage renal disease who were awaiting renal transplant. Older people had less chance in receiving renal transplant. People older than 65 had fewer screening tests for cancer. Even they were given less education about healthy life-style (Bowling 2007). Many of these mistreatments seem to be related to ageism in the healthcare system. The designed instrument tries to address this important issue.

This study has many limitations. First it has to be viewed in its cultural background. Some items might not be proper for other cultures although there might be commonalities in some aspects. This needs further investigation in other countries. Second, this instrument evaluates

the views and attitudes of nurses. This questionnaire could be designed from the viewpoints of the patients and focus on the experiences of older adults about their experiences and interactions with nurses. This might give a better view of the situation. This instrument is geared towards examining ageism via subjective self-report about nursing practices and perspectives on the elderly. It runs the risk of social desirability bias, as some questions might lead the person answering them to misreport their true thoughts because of the wording of a question (e.g. I think that sometimes death is a best solution for old patients). Despite these limitations, this is one of the few studies that have tried to develop an instrument about ageism in nursing care with proper psychometric steps.

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## Compliance with Ethical Standards

**Conflict of Interest** The authors declare that they have no conflict of interest.

**Ethical Approval** The ethical committee of the Kashan University of Medical Sciences approved the study protocol with the code number: IR.KAUMS.REC.1394.38.

**Informed Consent** Participants were informed about the aims of the study before they signed the consent form. In all stages of the study the anonymity of the participants was respected. The study protocol was based on Helsinki Declaration of Ethics in Research.

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