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Original Article

# Comparison of Knowledge and Attitude of Health Care Providers towards Aging Phenomenon in Yazd and Hamadan, Iran

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**Introduction:** Health care providers play a central role as the main members of the health care service providers team for the elderly and their knowledge and attitudes towards the aging phenomenon can play an important role in the quality of health care services provision for the elderly. Therefore, the present study aims to comparatively investigate knowledge and attitude of health care providers about the aging phenomenon in comprehensive health centers of Yazd and Hamadan, Iran.

**Methods:** The cross-sectional study conducted on 220 health care providers who were enrolled in the study from comprehensive health centers in Yazd and Hamadan by cluster sampling. The data were collected by a questionnaire including demographic information, Kogan's attitude towards old people scale, and Palmore Facts on Aging Quiz. Data were analyzed by SPSS using descriptive statistics, independent t-test, ANOVA, and Pearson correlation coefficient.

**Results:** Mean score of knowledge about aging (range: 0-25) was 12.24 ± 2.43 in Yazd and 12.17 ± 2.51 in Hamadan. Mean score of attitude towards aging (range: 34-204) was 121.49 ± 10.53 in Yazd and 119.40 ± 11.21 in Hamadan. There was no statistically significant difference in knowledge ($p = 0.828$) and its three dimensions (misconceptions about aging, psychosocial status and physical condition), and attitude ($p = 0.152$) and its three levels (negative, neutral and positive attitude) between health care providers in Yazd and Hamadan. There was a significant, positive correlation between knowledge and attitude in both Yazd ($p < 0.01$, $r = 0.656$) and Hamadan ($p < 0.01$, $r = 0.718$).

**Conclusion**: The knowledge of health care providers in both cities was moderate and had positive attitude towards aging. Considering the moderate knowledge of health care providers about the aging, effective steps can be taken to promote knowledge and improve the attitudes of health care providers by providing educational curricula on physical, psychological, social and spiritual health of the elderly people and holding in-service training programs.

**Keywords**: Knowledge, Attitude, Aging, Health Personnel

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## Introduction

Receiving about 70% of hospital services, elderly also account for approximately 80% of home care visits, 90% of sanatoria's residents and 85% of hospitalized patients in the wards of chronic diseases (1), which imposes stupendous costs on health system, because elderly care is costly and increases the burden of diseases in the whole society (2, 3).

Besides, the need for specialized workforces to care for the elderly in hospitals, long-term health care providing institutes, and society is considered one of the main challenges facing the health system (4). The use of low-experienced and untrained caregivers to care for the elderly leads to a decrease in the quality of care for the elderly, and therefore an increase in recovery time and understandable complications (5).

Lack of knowledge about the natural physiological changes in aging causes failure in provision of care proportionate to natural, age-related changes, which can put older people at serious risk. (6)

Besides, caregivers' insufficient knowledge and negative attitudes affect their performance adversely and make them unable to provide necessary care for the elderly (6). The study of Mellor et al. (6) in Australia showed that despite the fact that nurses had a positive attitude towards the elderly, they had comparatively lower levels of knowledge about aging, especially natural physiological changes in aging.

In the study of Rathnayake et al. (7), students' attitudes towards the elderly were positive; however, they showed little interest in working with the elderly. In the study of Asayesh et al. (8), half of the general practitioners had a positive attitude towards the elderly, and it was recommended that plans be designed to improve their attitudes towards the elderly.

In the study of Ravanipour et al. (9), nurses' knowledge about the facts of aging was reported to be moderate. Some studies have shown that the quality of care provided by health care professionals is influenced by their attitudes (10, 11).

More than 9% of Iran population is elderly and is expected to reach over 30% by 2050 (12). Although the elderly population has not yet been manifested as an urgent issue due to the predominantly young demographic structure of the country, in the coming years, the health system will be heavily involved with it, and it is necessary that a comprehensive planning be performed for effective dealing with the aging phenomenon from now. This planning requires an accurate understanding of the status of the elderly people in Iran and the needs of this population (13).

Given the importance of providing first-level, preventive integrated services in the aging period, the key role of health care providers as the first level of contact between the elderly people and the primary health care system, and the effect of knowledge and attitude towards the aging on the professional behavior of health care providers and lack of studies on this subject, this study will comparatively investigate the knowledge and attitude of health care providers towards the aging phenomenon in comprehensive health centers in Yazd and Hamadan cities in Iran.

## Methods

*Study design and participants*

This cross-sectional study was conducted on health care providers in comprehensive health care centers in Yazd and Hamadan cities in Iran. The required sample size was estimated to be 220, and participants were selected by cluster sampling. For this purpose, 10 comprehensive health care centers were randomly selected from each city as clusters, and from each cluster, 11 health care providers were randomly selected, 110 of whom were included in the study.

*Instruments*

The data was collected using a questionnaire consisting of three sections:

Demographic information including gender, age, education, marital status, employment status, works experience, and living with the elderly relatives at home.

The Kogan Attitudes towards Old People Scale (KAOP): KAOP was developed by Kogan in 1961 to assess the attitudes of nurses towards the elderly (14). This instrument is a 34-item scale, consisting of 17 items on positive attitudes and 17 items on negative attitudes that investigate the respondent's attitudes towards aging. The items are rated on a 6-point Likert scale ranging from Absolutely Disagree (scored 1) to Absolutely Agree (scored 6). The items on negative attitudes are inversely scored to obtain the respondent's total score on attitudes (15), which ranges from 34 to 204. The score 102 represents neutral attitude towards aging and lower and higher scores than 102 represent negative and positive attitudes, respectively (8). The KAOP has been widely used to assess health care professionals' attitudes towards aging (10, 16). The reliability of the KAOP has been confirmed in some studies (15, 17, 18). Validity and reliability of the Persian version of this instrument was studied by Reje et al. (19) in 2014. The content validity of this instrument was reported 0.95 that indicates its acceptable content validity. Its reliability was also drawn 0.83 using Cranach's alpha coefficient. According to the results, this scale can be used as a valid instrument to investigate attitudes towards aging in Iran.

The Palmore's Facts on aging quiz (FAQI): The FAQI was developed by Pal more in 1966 (20), has 25 items and three dimensions: knowledge about misconceptions about aging (10 items), physical condition (5 items) and psychosocial status (10 items). The minimum and maximum possible scores on the FAQI are 0 and 25, respectively. The items are four-choice questions, and each item is scored 1 if answered correctly and 0 if answered wrongly. The scores are classified as follows: scores 0-8 represent low knowledge, 9-17 moderate knowledge, and above 17 high knowledge (9). Validity and reliability of the Persian version of this instrument was also studied by Reje et al. (21) in 2014, where the Cronbach's alpha coefficient was drawn 0.81 indicating a high internal consistency, and its correlation coefficient was calculated at 0.98 showing an acceptable test-retest reliability.

*Data analysis*

The data were analyzed by the SPSS. Descriptive statistics including frequency, mean and standard deviation were used to describe the data; t-test was used to compare the mean scores on knowledge and attitude as well as binomial variables between the health care providers from the two cities, and analysis of variance to compare the mean scores on knowledge and attitude with respect to multinomial variables. To investigate the correlation between knowledge and attitude as well as their correlation with quantitative demographic variables, Pearson correlation coefficient was used.

*Ethical considerations*

The study protocol was approved by the Ethics Committee of Shahid Sadoughi University of Medical Sciences (Code of Ethics: IR.SSU.SPH.REC.1396.84).

Participation in the study was informed and voluntary, and the participants were ensured that their information would be kept confidential.

## Results

The mean age of health care providers from Yazd was 30.5 ± 4.2 years and from Hamadan was 33.5 ± 5.3 years; and 70.9% of health care providers from Yazd and 76.3% of those from Hamadan were female. There was no significant difference between the two groups in demographic variables ($p > 0.05$). Demographic variables of participants are shown in table 1.

The mean score on knowledge of health care providers in Yazd was 12.24 ± 2.43 (range; 7-19) and in Hamadan was 12.7 ± 2.51 (range; 7-17). There was no statistically significant difference in the mean score on knowledge between the participants from the two cities.

There was also no significant difference in the three dimensions of knowledge (misconceptions about the aging, psychosocial status, and physical condition) between the health care providers of the two cities ($p > 0.05$). (Table 2)

The highest frequency of knowledge level in both cities was obtained for moderate level (90.9% in Yazd and 87.3% in Hamadan). While 1.8% of health care providers from Yazd had a high level of knowledge, and none of the health care providers from Hamadan had a high level of knowledge.

There was no significant difference in knowledge and its levels between health care providers from Yazd and Hamadan ($p > 0.05$). (Table 3)

The mean scores of attitudes in health care providers from Yazd and Hamadan were 121.49 ± 10.51 and 119.40 ± 11.21, respectively. There was no significant difference in attitude and its levels (negative, neutral, and positive) between the participants from the two cities ($p > 0.05$) (Table 4)

**Table 1. Frequency of demographic variables in health care providers of comprehensive health centers in Yazd and Hamadan**

| Demographic variable | | Yazd | | Hamadan | | p -value |
|---|---|---|---|---|---|---|
| | | N | % | N | % | |
| **Gender** | **Male** | 32 | 1.29 | 26 | 6.23 | 0.356 |
| | **Female** | 78 | 9.70 | 84 | 3.76 | |
| **Education** | **Bachelor and less** | 94 | 5.85 | 100 | 9.90 | 0.203 |
| | **Masters and higher** | 16 | 5.14 | 10 | 1.9 | |
| **Marital status** | **Single** | 36 | 32.7 | 28 | 25.5 | 0.085 |
| | **Married** | 74 | 67.2 | 82 | 74.5 | |
| **Employment status** | **Official** | 38 | 5.34 | 43 | 39 | 0.545 |
| | **Pledge** | 15 | 6.13 | 19 | 2.17 | |
| | **Contractual** | 13 | 8.11 | 10 | 9 | |
| | **Company** | 40 | 3.36 | 31 | 1.28 | |
| | **Plan** | 4 | 6.3 | 7 | 3.6 | |
| **Work experience** | **0-10** | 79 | 8.71 | 68 | 8.61 | 0.911 |
| | **11-20** | 31 | 1.28 | 42 | 1.38 | |
| | **>20** | 0 | 0 | 0 | 0 | |
| **Living with older people at home** | **Yes** | 36 | 7.32 | 43 | 1.39 | 0.081 |
| | **No** | 74 | 2.67 | 67 | 9.60 | |

**Table 2. Distribution of knowledge score about aging and its dimensions among health care providers of comprehensive health centers in Yazd and Hamadan**

| Variable | Yazd | | | Hamadan | | | |
|---|---|---|---|---|---|---|---|
| | Mean | SD | Range of scores | Mean | SD | Range of scores | p-value |
| **Knowledge score** | 12.24 | 2.43 | 7-19 | 12.7 | 2.51 | 7-17 | 0.82 |
| **Misconceptions about the aging dimension** | 3.4 | 1.4 | 0-7 | 3.57 | 1.42 | 0-7 | 0.14 |
| **Psychosocial dimension** | 5.12 | 1.41 | 2-9 | 5.11 | 1.58 | 2-9 | 0.29 |
| **Physical dimension** | 3.72 | 0.9 | 1-5 | 3.48 | 0.91 | 1-5 | 0.65 |




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**Table 3. Frequency of knowledge levels about aging in the health care providers from comprehensive health care centers in Yazd and Hamadan**

| Knowledge Level | Yazd | | Hamadan | | p-value |
|---|---|---|---|---|---|
| | N | % | N | % | |
| **Low** | 8 | 7.3 | 14 | 12.7 | 0.45 |
| **Moderate** | 100 | 90.9 | 96 | 87.3 | 0.28 |
| **High** | 2 | 1.8 | 0 | 0 | 0.67 |

**Table 4. Frequency of attitude towards aging in health care providers of comprehensive health care centers in Yazd and Hamadan**

| | | Yazd | | | Hamadan | | | p -value |
|---|---|---|---|---|---|---|---|---|
| | | N | % | Mean ± SD | N | % | Mean ± SD | |
| **Attitude score** | | | | 121.49 ± 10.53 | | | 119.40 ± 11.21 | 0.152 |
| **Levels of attitude** | **Negative** | 9 | 8.2 | 97 ± 2.06 | 13 | 11.8 | 96 ± 3 | 0.488 |
| | **Neutral** | 1 | 0.9 | 102 | 2 | 1.8 | 102 | 297.0 |
| | **Positive** | 100 | 90.9 | 7 ± 123 | 95 | 4.86 | ± 1227 | 654.0 |

The correlation between knowledge and attitude was positive and significant in both cities (Yazd: $r = 0.656$, $p < 0.01$; Hamadan: $r = 0.718$, $p < 0.01$). There was no significant relationship between knowledge about aging and age in health care providers in both cities ($p > 0.05$). However, there was a positive correlation between age and attitude in health care providers in Hamadan ($p < 0.05$, $r = 0.229$).

In health care providers in Yazd, the mean score of knowledge was significantly different by education level, so that the mean of knowledge in health care providers with master's degree and higher education levels (13.81 ± 2.63) was higher than those with bachelor's degree and lower education levels (11.97 ± 2.30) ($p = 0.005$). There was also a significant difference in the mean score of knowledge in terms of living with the elderly relatives at home, so that the health care providers who lived with the elderly relatives at home (12.38 ± 2.95) had higher knowledge than those who did not (11.97 ± 1.83) ($p = 0.035$). There was no significant association between knowledge and other demographic variables of health care providers from Yazd.

In health care providers from Hamadan, the mean score of knowledge was significantly different in terms of living with the elderly relatives, so that the health care providers who lived with the elderly relatives at home (12.86 ± 2.38) had higher knowledge than those who did not (11.73 ± 2.51) ($p = 0.021$).

Knowledge was not significantly associated with other demographic variables, but the mean score of attitude was significantly different in terms of education level ($p = 0.003$), so that the mean score of attitude was significantly higher in health care providers with master's degree and higher education levels (129.40 ± 5.56) than in those with bachelor's degree and lower education levels (118.38 ± 11.16). There was no significant relationship between the mean score of attitude and other demographic variables (Table 5).

## Discussion

The aim of this study was to comparatively investigate the knowledge and attitude of health care providers towards the aging phenomenon in comprehensive health care centers of Yazd and Hamadan. The results of the study showed that the mean score of knowledge about aging in health care providers in both cities was moderate, which suggests that health care providers in both cities answered almost half of the items of the FAQI correctly. Only 1.8% of health care providers in Yazd had a high level of knowledge, while none of the health care providers from Hamadan had a high level of knowledge; finally, the mean levels of knowledge and its three dimensions were not significantly different between the health care providers from the two cities.

Ravanipour et al. (9) reported the mean score of knowledge to be moderate, while none of the participants had a high level of knowledge. Besides that, in the studies of Mellor et al. (6) and Liu et al. (22), knowledge level was reported to be moderate, which is consistent with our study. In the study of Forouzandeh et al. (23) to investigate the relationship of knowledge about the facts of aging and attitude with occupational stress in the registered caregivers of sanatoria in Tehran, the knowledge score was low, which could be due to the non-academic education among most caregivers in the sanatoria. Other studies have also shown lack of knowledge about elderly care in nurses (13, 24).

The highest number of correct answers given by health care providers in both cities was obtained for the physical dimension. The studies of Reje et al. (21) and Ravanipour et al. (9) also suggested that the highest number of correct answers on knowledge was obtained for this dimension.


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**Table 5. Mean and SD of knowledge and attitude towards aging scores by demographic variables in health care providers in Yazd and Hamadan**

| Variable | | Yazd | | | | Hamadan | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | Mean (SD) score of knowledge | p -value | Mean (SD) score of attitude | p -value | Mean (SD) score of knowledge | p -value | Mean (SD) score of attitude | p -value |
| **Gender** | **Male** | 12.62 (2.68) | 0.297 | 120.69(11.02) | 0.611 | 11.78 (2.54) | 0.296 | 118.24 (11.21) | 0.488 |
| | **Female** | 12.08 (2.32) | | 121.82 (10.38) | | 12.33 (2.50) | | 119.87 (11.25) | |
| **Marital status** | **Married** | 12.16 (2.50) | 0.726 | 121.41 (10.84) | 0.943 | 12.10 (2.35) | 0.655 | 119.19 (10.91) | 0.767 |
| | **Single** | 12.32 (2.38) | | 121.56 (10.31) | | 12.35(2.97) | | 119.92 (12.24) | |
| **Education** | **Bachelor and less** | 11.97 (2.30) | 0.005 | 120.80 (10.44) | 0.100 | 12.04 (2.47) | 0.080 | 118.38 (11.15) | 0.003 |
| | **Masters and higher** | 13.81 (2.63) | | 125.50 (10.48) | | 13.50 (2.63) | | 129.40 (5.56) | |
| **Employment status** | **Official** | 12.37 (2.31) | 0.924 | 121.26 (10.45) | 0.253 | 11.83 (2.74) | 0.916 | 118.89 (11.39) | 0.906 |
| | **Pledge** | 12.26 (2.56) | | 123.87 (9.32) | | 12.23 (2.43) | | 119.96 (10.33) | |
| | **Contractual** | 12.13 (2.56) | | 121.87 (9.32) | | 12.52 (2.53) | | 119.08 (12.61) | |
| | **Company** | 11.94 (2.30) | | 117 (12.05) | | 11.93 (2.40) | | 121.37 (11.68) | |
| | **Plan** | 12.21 (2.54) | | 120.56 (11.86) | | 12.08 (2.84) | | 117.16 (11.45) | |
| **Work experience** | **0-10** | 12.12 (2.36) | 0.242 | 121.07 (10.27) | 0.369 | 12.13 (2.49) | 0.763 | 118.47 (10.99) | 0.091 |
| | **11-20** | 12.84 (2.73) | | 123.74 (11.78) | | 12.31 (2.66) | | 123 (11.60) | |
| **Living with elderly relatives at home** | **Yes** | 12.38 (2.95) | 0.035 | 119.54 (11.52) | 0.088 | 12.86 (2.38) | 0.021 | 118.23 (11.19) | 0.392 |
| | **No** | 11.79 (1.83) | | 123 (9.52) | | 11.73 (2.51) | | 120.11 (11.24) | |

There was no significant relationship between knowledge and age, gender, marital status and work experience in the health care providers in both cities. In the studies of Mellor et al. (6), Askarzadeh et al. (13) Tabiei and et al. (24), there was no significant relationship between knowledge and any of the demographic characteristics, as well. However, in the study of Ravanipour et al. (9), there was a significant relationship between knowledge and age, which could be due to the high similarity of our participants to that study's participants. Besides that, in the study of Reje et al. (21), nurses with more work experience attained a higher score on all dimensions and the total questionnaire. The reason for this could be comparatively higher work experience of nurses in hospitals than that of health care providers in comprehensive health care centers.

Mean score of knowledge in health care providers in both Yazd and Hamadan was significantly different in terms of living with the elderly, so that in both cities knowledge was higher in health care providers who lived with the elderly at home than in those who did not. In the study of Reje et al. (21), nurses who had an elderly person in the family and had an elderly care experience in the family attained higher scores on all dimensions and the total questionnaire. In the study of Lambrinou et al. (16), there was a significant relationship between taking care of the elderly in the past and the level of knowledge about aging, which is consistent with the results of our study.

Therefore, it can be argued that family members' knowledge about the aging increases due to the presence of the elderly at home.

Despite the cultural and ethnic differences between Yazd and Hamadan, there was no significant difference in the attitude toward the aging between the health care providers of the two cities, and the mean scores of attitude toward the aging in the health care providers of the two cities were positive. Asayesh et al. (8) also investigated the attitudes of general practitioners toward aging, where half of the general practitioners had a positive attitude toward aging and no significant difference in attitude toward aging was observed among the general practitioners from different ethnicities. In the studies of Erdemir et al. (15) and Rathnayake et al. (7), the mean attitude score was also reported to be positive, but in the study of Celik et al. (25) on a group of nursing students in Turkey, most students had a negative attitude toward aging, and 83% of students said they were having difficulty working with the elderly patients. In addition, the study of Boduroglu et al. (26) to compare attitudes toward aging in Chinese and American communities showed that the attitudes of the two communities were similar, and both groups had a low-level attitude. Differences in attitudes toward aging between Iran and other societies can be due to the transcendent cultural values and traditional and religious beliefs about respect for the elderly in Iranian society.

There was no significant relationship between attitude toward aging and gender, marital status, work experience, employment status and the presence of older people at home in health care providers from Yazd and Hamadan.

In health care providers in Hamadan, the average attitude of health care providers with master's degree and higher education levels was higher than that of those with bachelor's degree or lower education levels. In the study of Rathnayake et al. (7), there was no significant relationship between attitude and education, which is not consistent with our study. This inconsistency could be due to the fact that our participants were employed, but the participants in the study of Rathnayake et al. (7) were freshman to senior nursing students.

There was a positive and significant correlation between knowledge and attitude of health care providers in both cities. In the study of Forouzandeh et al. (23), there was a positive and significant correlation between knowledge and attitude towards aging, i.e., if knowledge about aging increased, the attitudes towards the elderly were also improved. In the study of Askarzadeh et al. (13), there was no correlation between knowledge and attitude, which is not consistent with our study. This is probably due to different types of questionnaires used in two studies.

There was no significant difference in the mean levels of knowledge and attitudes between the health care providers of comprehensive health care centers in Yazd and Hamadan, which is due to the same education curriculum that are developed for health care providers in schools of public health and the same training courses in the health departments of medical universities across Iran.

## Conclusion

The knowledge levels of health care providers regarding aging in both cities were moderate, and both groups of health care providers had positive attitudes towards the elderly. There was a significant correlation between knowledge and attitude, so that with the increase in knowledge, the attitude would become more positive.

It is recommended that an effective step be taken to promote knowledge and improve the attitudes of health care providers by providing educational curricula on physical, psychological, social and spiritual health of the elderly people in studies programs and holding in-service training programs.

## Study limitations

The majority of health care providers participating in this study were women, according to the gender proportion of health care providers working in comprehensive health care centers. This is one of the points that should be taken into consideration in using the results.

## Conflicts of interest

The authors declare no conflicts of interest.

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**Authors ' contribution**

All the authors contributed in designing the study, analyzing and interpreting the data and preparing the manuscript. Data collection carried out by AHB. All the authors have read and approved the final manuscript.

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