RESEARCH ARTICLE

# Analysis of factors influencing the attitudes towards the elderly of nursing students based on empathy and end-of-life care: A cross-sectional study

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## Abstract

**Aim:** This study aimed to explore the factors associated with attitudes towards the older adults among nursing students, to clarify the impact of empathy and end-of-life care on the attitude of the older adults, and to provide a basis for the follow-up of education courses related to older adults care and the training of older adults care talents.

**Design:** A cross-sectional study.

**Methods:** A cross-sectional survey on nursing students' knowledge and attitudes towards older adults was conducted from 24 December 2020–24 February 2021. The Chinese versions of the end-of-life Attitudes Scale, Jefferson Empathy Scale-Nursing Version and Kogan Attitudes Scale for the Elderly were used for this cross-sectional study. We used the purposive sampling method to conduct a questionnaire survey on nursing students at Heilongjiang Nursing College ($n = 371$, effective response rate: 64.52%).

**Results:** The average score of FATCOD-B was 99.04 (7.71), and the score of C-JSE-HPS was 100.67 (12.90). The total average score of nursing students' attitudes towards older adults was 139.91 (15.79). The hierarchical regression analysis showed that education ($\beta = -.125$, $p = .025$) and personal experience ($\beta = -.132$, $p = .008$) correlated negatively with attitudes towards the older adults, while the end-of-life care ($\beta = .140$, $p = .013$) and empathy ($\beta = .285$, $p < .001$) correlated positively with attitudes towards the older adults.

**Conclusions:** Religion, end-of-life care and empathy were positively correlated with nursing students' attitudes towards older adults. It is necessary to set up end-of-life care, empathy and education related to the older adults, and combine a variety of training forms, increasing humanistic assessments and reducing the employment pressure on nursing students by relevant departments can improve their attitudes towards the older adults.

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Jinchan Zhang, Yang Fu and Hongli Zhang contributed equally to this work.

## 1 | INTRODUCTION

The world's rapidly ageing population poses challenges in the fields of nursing, public health and economic development (Bao et al., 2018). According to the "Decade Baseline Report on Healthy Ageing" released by the World Health Organization, there will be more than 1 billion people aged 60 and above in the world in 2020, accounting for 13.5% of the world's 7.8 billion people (World Health Organization, 2020). It is estimated that it will reach nearly 2.1 billion by 2050, which means that 1 in 5 people will be 60 years or above. Similar to other countries in the world, China's ageing rate is accelerating. According to the "Research Report on the Prediction of the Development Trend of China's Population Aging", it is predicted that China's ageing level will reach more than 30% by 2050. Because a considerable proportion of older adults have limited mobility, physical weakness, often suffer from long-term illness or mental illnesses, and even lose the ability to live independently, and each older adult's health, economic status and family composition are different, modern society is trending towards the personal care of older adults (Bao et al., 2018). While the number of older adults continues to increase, the medical staff needs to make more contributions to their professional care (Liu et al.,2012), which places a huge burden on countries' health and long-term care systems (Song & Chen, 2015).

Geriatric nursing in foreign countries has developed in the past decades. Many Western countries already have senior practice nurses in geriatric nursing. They are senior nursing talents with a master's degree or above who have passed professional examinations to obtain a professional nursing licence and senior nursing specialists. Nurses have diversified roles in multiple workplaces, and their workplaces have been expanded to include communities, homes and older adults care institutions that maintain a healthy life for older adults (Liu et al., 2014). In China, due to the limited number of older adults care institutions, nursing staff who care for older adults are mainly ordinary nurses and nursing workers. Among them, older adults care workers are generally older and less educated, lacking professional knowledge and skills in older adults care. In addition, although ordinary nurses have received relevant professional training, the number of these nurses is far from meeting China's current needs (Yang et al., 2004). According to data from the National Bureau of Statistics, as of 2019, the number of registered nurses in China was 4.445 millions, and the average number of registered nurses per 10,000 people was only 32. Therefore, it may be difficult for nursing staff to meet the medical, mental and daily care needs of the older adults. With the development and progress of the Chinese society, families tend to be smaller, and family members lack the energy and experience of caring for the older adults. These reasons have led to the cultivation of older adults care personnel, which has become an urgent issue to actively respond to the problem of ageing (Jang et al., 2019).

## 2 | BACKGROUND

As the reserve army of future healthcare professionals, nursing students' attitudes towards the older adults affect their willingness to engage in the older adults care industry in the future (Chi et al., 2016). Scholars used attitudes towards the older adults (Ghimire et al.,2019), end-of-life care (Aghdam et al., 2015) and empathy (Elayyan et al., 2018) as research directions to discuss the factors that influence nursing students' willingness to care for the older adults.

Nowadays, the main approach for providing care for end-of-life patients in developed countries is end-of-life care (National Hospice Foundation, 2012). Hospice care is a special kind of care that focuses on the quality of life for people and their caregivers who are experiencing an advanced, life-limiting illness (National Hospice Foundation, 2012). Empathy is defined as a cognitive attribute involving an understanding of patients' experiences, concerns and together with the ability to the intention to help (Fields et al., 2011; Hojat et al., 2017). On this basis, some studies conducted further research by studying the relationship between these two factors. For example, Muntaha Elayyan (Gholamzadeh et al., 2018) proved that empathy has a positive effect on attitudes towards the older adults. Research shows that most nursing students have reservations about engaging in older adults care work, indicating that to a large extent, the willingness of nursing students can be further improved (Meiboom et al., 2015; Shen et al., 2013). A study of frontline nurses' attitudes towards end-of-life care concluded that age, end-of-life care knowledge, empathy level and self-efficacy were the main factors influencing the attitude (Liu et al., 2021).

Geriatric education courses have been shown to reduce age discrimination and increase nursing students' interest in working with the older adults (Boswell, 2012). Numerous nursing educators in the United States, Europe, Japan, etc., have conducted investigations and research on the attitudes of nursing students towards the older adults, and guided the reform of the geriatric education curriculum (Yen et al., 2009). A study from a university in eastern Turkey showed that the 166 nursing students participating in the survey had positive attitudes towards older adults, and the study concluded that further training in elderly related knowledge is needed (Bakan et al., 2018). An older adults drug game trial was conducted at a nursing college in the midwestern United States. It was proposed that adding older adults drug games to the curriculum strategy could help future generations of nurses improve their

attitudes and empathy towards the older adults, thereby improving the quality of care provided (Bakan et al., 2018). Therefore, the key to increasing the proportion of nursing students engaged in older adults care services and the quality of such services is to understand and improve nursing students' attitudes towards the older adults (Jang et al., 2019).

Compared with the previous scholars who studied the influencing factors of older adults, this study adopts different views, and explores the influencing factors of nursing students' attitude towards the older adults based on empathy and hospice care. Moreover, there are few studies on the attitudes of nursing students towards the older adults in higher vocational colleges of China. Therefore, this study aimed to investigate the current situation of attitudes of nursing students towards the older adults in Heilongjiang, to explore the related factors and to provide a basis for the follow-up of education courses related to older adults care and the training of older adults care talents.

## 3 | METHODS

### 3.1 | Study design and setting

A cross-sectional survey on nursing students' knowledge and attitudes towards older adults was conducted from 24 December 2020–24 February 2021. The purposive sampling method was used to investigate nursing students studying at Heilongjiang Nursing College. Due to epidemic prevention and control reasons, I could only conduct online surveys (electronic questionnaires ID: 102280918) and used self-filled questionnaires to collect data. The study adheres to the Strengthening the Reporting of Observational Studies in Epidemiology (STROBE) guideline for cross-sectional studies (Appendix S1).

To ensure that there were no missed answers, all questions had to be answered. Each IP address was limited to one answer set to ensure the quality of the survey. The researchers sent the questionnaire to the participants through WeChat, and the participants filled out the questionnaire on their mobile phones. A total of 575 questionnaires were sent for the survey. After screening, questionnaires with low credibility were eliminated. The final valid number of questionnaires was 371, giving an effective response rate of 64.52%.

The inclusion criteria for participating in this study include (1) nursing students studying at Heilongjiang Nursing College and (2) voluntary participation in the study. The elimination criterion was not completing the questionnaire in the given time.

### 3.2 | Measurement

This study used the following standardized tools to evaluate attitudes towards end-of-life care, attitudes towards empathy and attitudes towards the older adults.

### 3.3 | Demographic information

Demographic information included gender, grade, ethnicity, only child, family residence, religious beliefs, willingness to engage in the older adults care industry after graduation, relationship with parents, relevant end-of-life care education and experience of getting along with the older adults.

### 3.4 | Frommelt Attitude Towards Care of the Dying Scale-Chinese version (FATCOD-B)

FATCOD-B was revised by Wang Liping to measure attitudes towards end-of-life care (Wang et al., 2016), and has been widely used in China (Hao et al., 2021; (Wang et al., 2018). There are 30 items in the scale, including 14 positive and 16 negative scoring items. Each item is scored on a 5-point scale reflecting respondents' attitudes towards end-of-life care among older adults. The total score of the Chinese version of the FATCOD-B scale ranges from 30–145. The higher the score, the more positive the attitude.

### 3.5 | Chinese version of the Jefferson scale of Empathy-Health profession students (C-JSE-HPS)

The C-JSE-HPS was revised by Hsiao to measure empathy (Hsiao et al., 2013). The scale has 20 items, including three dimensions: Opinion-taking, emotional care and empathy. Ten items are used for positive and negative scoring. Each item is rated on a 7-point Likert scale (1 = strongly disagree to 7 = strongly agree). The total score of the C-JSE-HPS ranges between 20–140 points. The higher the score, the stronger the empathy.

### 3.6 | Kogan's Attitudes toward Older People scale (KAOP)

The KAOP is used to measure the attitudes towards older adults (Erdemir et al., 2011). There are 34 items in the scale, including two dimensions of prejudice and appreciation. The scale contains 17 positive and 17 negative items. A 6-point Likert scale is used to score each item, ranging from strongly disagree to strongly agree. The positive scoring items are counted as 1, 2, 3, 4, 5 and 6 points, respectively, and negative scores are the opposite. The total score of the Chinese version of the KAOP ranges between 34–204 points. The higher the score, the more positive the attitude towards the older adults. The KAOP scale has been widely used by the United States, Australia, Greece, Sweden and Japan and other countries, including a few "non-Western" countries, such as Singapore (Cheong et al., 2009) and Saudi Arabia (Alsenany et al., 2010).

## 3.7 | Validity and reliability

The reliability and validity of these scales are verified by the pre-survey data. The Cronbach's α coefficient of FATCOD-B, C-JSE-HPS and KAOP was 0.892, 0.869 and 0.827, respectively.

## 3.8 | Data analysis

IBM SPSS25.0 and Excel were used for data analysis, and double entry was used to ensure accuracy. P–P diagram and K–S tests were used to verify the normal distribution of the continuous variables. Descriptive statistics, including sample size (N), percentage (%), mean (mean) and variance (SD) were calculated. One-way analysis of variance was used to compare differences in the attitude scores of nursing students with different demographic characteristics. Linear regression analysis was used to analyse the influencing factors of the attitude scores, and a two-sided test indicated statistical significance at $p < .05$.

## 4 | RESULTS

## 4.1 | Demographic characteristics

Among the 371 respondents, female nursing students accounted for 88.95%. More than half were not an only child, accounting for 54.18%. They mostly came from urban areas, accounting for 87.2%. Only a few nursing students were unwilling to engage in the older adults care industry after graduation, at around 9.43%. Most of them had a harmonious relationship with their parents, accounting for 89.22% (Table 1).

## 4.2 | Analysis of scale score

The total average score of FATCOD-B was 99.04 (7.71), and the score of C-JSE-HPS was 100.67 (12.90). The total average score of

nursing students' attitudes towards older adults (KAOP) was 139.91 (15.79), of which the prejudice dimension was 71.14 (11.21) and the appreciation dimension was 68.77 (10.06).

## 4.3 | Linear regression analysis of nursing students' attitudes towards older adults

The results of the hierarchical regression analysis are presented in Table 2. Variables that had a statistically significant correlation with nursing students' attitudes towards the older adults were used as control variables. As shown in the model 2, end-of-life care was positively correlated with attitude towards the older adults ($\beta = .269$, $p < .001$). As shown in the model 3, empathy was positively correlated with attitude towards the older adults ($\beta = .285$, $p < .001$). The education, personal experience, religion, end-of-life care and empathy were included in the regression equation for the regression analysis. This equation was statistically significant (F = 11.293, $p < .001$, $R^2$ value is .134), seen in Table 2.

## 5 | DISCUSSION

This study evaluated the current status of nursing students' attitudes towards older adults and their influencing factors, their attitudes towards end-of-life care and their empathy. The results showed that specialist nursing students in Heilongjiang had a positive attitude towards older adults; however, it was slightly lower than the average level in China, and they had reservations about working with older adults.

The average score of end-of-life care for nursing students was 99.04 (7.71), which is lower than the study by Hoand others in Spain 116.80 (11.40), and also lower than the survey results of Liu on Wuhan nurses (Ho et al., 2010; Liu et al., 2021). This may be because COVID-19 has had a greater adverse effect on nursing students. On the one hand, this is related to an increase in psychological pressure. This pressure comes from nurses' concerns about their chance of being infected and their feelings of inadequacy

**TABLE 1** Distribution of students' Kogan's attitudes towards old people scale scores according to their personal characteristics (N = 371)

| Variables | | n | % | Mean (SD) | F | p |
|---|---|---|---|---|---|---|
| Gender | Male | 41 | 11.05 | 139.85 (15.89) | −0.023 | .981 |
| | Female | 330 | 88.95 | 139.92 (15.80) | | |
| The only child | Yes | 170 | 45.82 | 140.04 (17.09) | 0.142 | .887 |
| | No | 201 | 54.18 | 139.80 (14.65) | | |
| Location | City | 153 | 41.24 | 139.25(16.66) | −0.674 | .501 |
| | Village | 218 | 58.76 | 140.37 (15.18) | | |
| Willing to work in the elderly care industry after graduation | Yes | 77 | 20.76 | 141.55 (16.77) | 1.675 | .189 |
| | No | 35 | 9.43 | 135.69 (15.02) | | |
| | Depends on the situation | 259 | 69.81 | 139.99 (15.55) | | |
| Relationship with parents | Harmony | 331 | 89.22 | 139.91 (15.79) | 5.096 | <.001 |
| | General | 40 | 10.78 | 128.88 (12.54) | | |

| Model | β | p | $R^2$ | $\Delta R^2$ | F | p |
|---|---|---|---|---|---|---|
| Model 1 | | | | | | |
| Education | −.098 | .053 | .004 | .004 | 0.458 | .712 |
| Personal experience | −.094 | .047 | | | | |
| Religion | −.052 | .319 | | | | |
| Model 2 | | | | | | |
| Education | −.101 | .042 | .073 | .069 | 7.173 | <.001 |
| Personal experience | −.113 | .035 | | | | |
| Religion | −.009 | .860 | | | | |
| End-of-life care | .269 | <.001 | | | | |
| Model 3 | | | | | | |
| Education | −.125 | .025 | .134 | .061 | 11.293 | <.001 |
| Personal experience | −.132 | .008 | | | | |
| Religion | .034 | .497 | | | | |
| End-of-life care | .140 | .013 | | | | |
| Empathy | .285 | <.001 | | | | |

when the patient's condition deteriorates rapidly. On the other hand, providing care for dying patients has extremely high emotional and physical requirements for nursing students, which may cause them to have a negative attitude towards caring for terminally ill patients. Moreover, because we conducted only a survey of a nursing university, and sampling bias may have a certain impact on the conclusion. In addition, the difference of older adults recalled by each nursing student may also have an impact on the results. From the perspective of China's national conditions, in addition to the pandemic, the cause may also be related to the late development of the country's humanistic care education and end-of-life education. At present, few schools offer end-of-life care courses, and the popularity of end-of-life care education is not high. Almost all nurses are transferred from other hospitals to take care of patients with COVID-19, resulting in a lack of knowledge about end-of-life care. Compared with nurses, nursing students are less clear about how to effectively communicate and convey emotions when caring for patients. They are afraid to inform family members of the patient's death and do not know how to comfort them. In addition, the avoidance of discussing death in Chinese traditional culture also limits the popularization of death education and end-of-life education.

The average score of empathy among nursing students was 100.666 ± 12.895, which was lower than the score in Baltimore et al.'s study and slightly higher than the results of Liu's study on isolation ward nurses in Wuhan (Liu et al., 2021; Yuguero et a., 2017). This may be because Wuhan was severely affected by COVID-19, and an isolation ward is a multidisciplinary and stressful place. In addition, with the changes in the work environment and work style, the complexity of the patient's situation, and the uncertainty of the results, nurses will be subject to higher psychological pressure, which may lead to reduced empathy.

The total score of nursing students' attitudes towards older adults ranged from 86–187 (139.908 ± 15.792). In comparison, most

of the nursing students in surveys and research in Western countries held negative attitudes towards the older adults; for example, Dilek conducted a survey of 145 nursing students and showed that the score of the Attitudes to the Elderly Scale was 83.51 ± 9.46 (Dilek & Derya, 2011), which was significantly lower than the median score of 136. Söderhamn conducted a survey of 151 nursing students and 41 registered nurses in Sweden (Söderhamn et al., 2001). The results showed that nursing students and nurses had negative attitudes towards older adults. The KOAP score of domestic respondents was significantly higher than that of Western countries. This prejudice is considered to be influenced by traditional culture and is related to social development and change. In Asia, the influence of Eastern culture and Confucianism may reduce people's prejudice against the older adults. In China, this is lower than the score of attitudes towards the older adults in the survey by Zhao Mengya and others in 2020 (157.75 ± 19.42), which may be because the prejudiced attitudes of nursing students towards the older adults may be affected by the specific retirement and employment policies in China at this stage (Zhao & Kong, 2020). For example, due to China's large population, young people are under great employment pressure (Shen et al., 2013). Although nursing students' attitudes towards the older adults tend to be positive, most nursing students (69.811%) still have reservations about engaging in older adults care work, indicating that to a large extent, the willingness of nursing students can be further improved. Interestingly, nursing students who had a harmonious relationship with their parents scored higher on attitude towards the older adults, which shows that family relationships affect nursing students' views on caring for the older adults to a certain extent.

Education was negatively correlated with attitudes towards older adults, which is the same as survey results from South Korea, although an American student survey showed the opposite result (Jang et al., 2019). The possible reasons for this phenomenon are that better education means better meeting the needs of the

older adults, and it is easier to get positive feedback from the older adults, so as to improve the attitude of nursing students towards them. China and South Korea have more experience in volunteer activities in nursing education, while the United States is more inclined towards clinical practice. Although Eastern people mainly have large families and a higher chance of coming in contact with the older adults, incorrect or irregular care will not significantly improve the quality of care due to the increase in the frequency of care. However, nursing students in the United States show a better quality of clinical contact, which is related to the characteristics of clinical tasks, because nursing students in the United States need longer clinical practice time per day (up to 12 h) and nursing staff need to be in the clinical area for the entire time (Jang et al., 2019). Thus, nursing students can effectively learn patient care with the help of nurses, thereby deepening the relationship between nursing students and patients, which can explain why the quality of care in the United States is higher.

End-of-life care was positively correlated with attitudes towards the older adults. However, due to differences in the education of students and the experiences of older adults they face, we controlled for the influencing factors of education and personal experience, the explanation of end-of-life care for attitudes towards the older adults in nursing students increased by 6.9%, indicating that the enhancement of the level of end-of-life care in nursing students can affect their attitude towards the older adults and make it more positive. Sufficient knowledge is also a factor that affects nurses' attitudes towards end-of-life care, which is consistent with the study by Kim et al (Kim et al., 2020). They showed that nurses' knowledge of end-of-life care is significantly related to their attitudes and training in end-of-life care, palliative care and death care. Nurses who have sufficient knowledge of end-of-life care may be better able to understand death from scientific and humanitarian perspectives and establish a healthy outlook on life. This will enable them to actively treat terminally ill patients, help patients accept the natural laws of life, and provide patients and their families with adequate end-of-life care and psychological support. However, as of 2014, there are only around 120 end-of-life care institutions in China, and the staff of these institutions add up to only a few 1,000 people, which is far from adequate. Affected by China's traditional views on death, students' understanding of end-of-life care is limited. In addition, they lack practical clinical experience and insights. Most students are unwilling to learn about this subject; therefore, the task of improving end-of-life care is a heavy one.

Nursing students' empathy was positively correlated with their attitudes towards the older adults. After controlling for education, personal experience and end-of-life care, the explanation of empathy for nursing students' attitudes towards the older adults increased by 6.1%. This shows that enhancement of the empathy level of nursing students can affect their attitudes towards the older adults and make them more positive. Studies have shown that empathy can be improved through training, such as experiential teaching, role-playing and the construction of a "caring narrative" teaching model,

which reminds nursing educators to cultivate empathy among undergraduate nursing students in many ways, making full use of empathy to influence their attitudes towards the older adults, thereby further affecting the students' willingness to engage in care-related occupations, enrich the talent pool of aged-care services, and improve the quality of said services. Beauvais used service learning to improve the older adults' medication compliance and fall prevention projects. It was found that students, as health education assistants, will reflect on their experiences after each social service, summarize positive contact experiences, and share the views and feelings of the older adults with each other and record them (Beauvais et al., 2015). Koskinen and others grouped five nursing students and two older adults people into a group to study and live together for 1 week, and let the nursing students observe and experience the daily lives of the older adults (Koskinen et al., 2016). The results showed that the nursing students who participated in the project had a more positive attitude towards the older adults. Understanding of the various nursing needs of the older adults and willingness to engage in older adults nursing were also higher. Relevant people in charge should also reduce their work pressure and carry out a series of training courses, such as role-playing, scenario simulation, standardized patients, and drawing therapy to improve nurses' positive emotions and reduce empathy fatigue. Cheng et al.'s (2009) study concluded that it is necessary to popularize the basic knowledge of empathy, increase sensitivity towards patients, strengthen nurses' susceptibility training and strengthen training in nurses' practical ability to use empathy (role-playing, teaching experience, listening training). In addition, having psychology experts teach empathy skills and provide psychological counselling can help cultivate empathy among nurses. The cultivation of basic theoretical knowledge and basic skills among Chinese nursing undergraduates involves less infiltration education in the humanities, and it is difficult to arouse and maintain the empathy of students. In their research, Chen[21] and others found that by simulating the normal ageing and disability of the older adults, nursing students could better understand the changes in the older adults' vision, hearing, touch, and motor skeletal system, and this strengthened their compassion for the older adults, improving their attitude towards them.

## 5.1 | Limitations

As for the study's limitations, a causal relationship could not be determined because of the cross-sectional study design. We only conducted this study in one Heilongjiang Nursing College through online questionnaire collection, with a limited number of participants, sampling and recall bias may have a certain impact on the conclusion, which can only shed light to a certain extent. The religious beliefs of the Chinese people are complex, including Islam, Buddhism and Taoism. End-of-life care has a great influence on religious beliefs, and we should focus on more detailed research on nursing groups with different religious beliefs during follow-up.

# 6 | CONCLUSION

Studies have shown that personal experience and education are negatively correlated with nursing students' attitudes towards the older adults, while religion, end-of-life care and empathy are positively correlated with nursing students' attitudes towards the older adults.

## 6.1 | Relevance to clinical practice

Nursing students are the new force of senior care talents, and improving their attitudes towards the older adults can increase their willingness to provide care for these patients. The training of senior care talents not only supplements the needs of senior citizens, but also actively promotes the development of China's senior care service industry. Vocational training and specialization of senior care professionals will have a vital impact on China's future senior care service industry. Setting up end-of-life care training, empathy training, education related to the older adults, a variety of combined training forms, increased humanistic assessments and reduced employment pressure placed on nursing students by the relevant departments can improve the attitudes of nursing students towards the older adults, thereby improving the quality of national older adults care.

## CONFLICT OF INTEREST

No conflict of interest has been declared by the authors.

## DATA AVAILABILITY STATEMENT

The data that support the findings of this study are available from the corresponding author upon reasonable request.

## ETHICAL APPROVAL

This study was approved by the Ethics Committee of Harbin Medical University. I gave a detailed explanation on the purpose of the research and the procedures to be followed to the participants, obtained their informed consent, and ensured that their participation was voluntary.

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