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## Original Article

# An investigation of the health value and self-care capabilities of the elderly in urban-rural fringe area nursing homes and the related influencing factors<sup>☆</sup>

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## ABSTRACT

**Objective:** To investigate the health value and self-care capabilities of the elderly living in urban-rural fringe area nursing homes and the factors that influence these variables.

**Methods:** A cluster sampling method was used to select 280 elderly individuals from seven urban-rural fringe communities in Xianning to complete a survey regarding their health value and self-care capabilities.

**Results:** The total health value and self-care capability scores of the elderly were  $7.45 \pm 1.45$  and  $100.25 \pm 22.56$ , respectively. Both of these scores significantly differed by age, education level, marital status, and income ( $P < 0.05$ ,  $P < 0.01$ ). Self-care capability was correlated with health value ( $r = 0.521$ ). A multivariate linear regression analysis showed that health value, marital status, and age predicted self-care capability.

**Conclusions:** Elderly people living in the urban-rural fringe area with higher health values also had higher self-care capabilities. The self-care capabilities of the elderly can be enhanced by improving their health value using the "knowing-trusting-acting" model.

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## 1. Introduction

Aging has increasingly become a serious social problem in China, and the severity of the pension problem has become increasingly obvious.<sup>1</sup> Rapid growth, the "empty nest" tendency, the large population base, and advanced age are the major aging trends in China.<sup>2</sup> The pension problem associated with the elderly living in urban-rural fringe communities differs from that of the elderly living in either urban or rural regions. This problem is generated by and has developed with the process of urbanization in China. These areas are the intermediate link in the evolution from countryside to cities and represent the transition from an

agricultural civilization to an industrial civilization. As this process advances, numerous rural populations are changing into urban populations. Thus, the pension issue associated with the elderly in these particular areas, especially empty nesters, is worthy of concern. With increasingly improved community functions, the pension model that includes nursing homes has emerged and became important. The health value and self-care capabilities of the elderly in these nursing homes are important health-related concepts. To understand the health value and self-care capabilities of the elderly in urban-rural fringe area nursing homes and their related influencing factors, 280 elderly people from this area were selected to complete a survey.

## 2. Participants and methods

## 2.1. Participants

Using cluster sampling, the elderly people in the nursing homes of seven communities located in the urban-rural fringe area of outer Xianning City were selected in July 2014 to participate in this

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survey. The inclusion criteria were the elderly (1) with the ability to express and easily communicate their conscious thinking; (2) with the ability to express independent judgment and cognitive ability; (3) above 60 years old; and (4) with an understanding and willingness to cooperate in the study. Participants were excluded if they (1) showed associated mental or related disorders; (2) were in the end stage of a disease; or (3) were diagnosed with the onset of an acute or chronic disease.

## 2.2. Methods

### 2.2.1. Survey

The survey was divided into three sections that recorded the general information, health value, and self-care capabilities of the elderly. (1) Self-prepared general information questionnaire - This section of the survey addressed demographic characteristics such as age, gender, income level, education level, marital status, and retirement date. (2) Health value questionnaire - This section of the survey was primarily used to investigate the health value of the elderly. This questionnaire consisted of 10 items: passionate life, comfortable life, independence and freedom, happiness, good health, harmonious mood, relaxed and happy life, sense of accomplishment, self-esteem, and social recognition. This questionnaire was sorted based on the importance of the respondents' entries. The highest score was 10, and scores of 1–4, 5–7, and 8–10 represented low, medium, and high levels according to the literature.<sup>3</sup> (3) Self-care capability questionnaire - This section of the survey was used to assess the self-care capabilities of the elderly. It includes 43 items and consists of four dimensions of self-care: responsibility, self-care knowledge, self-care skills, and self-concept. The score for each entry ranges from 0 to 4, and the total score is a maximum of 172. Higher scores denote stronger self-care capabilities. The percentage of the participants' real scores that account for the total score on the questionnaire reflects the self-care capabilities of the respondents. Actual score proportions that represent 66%–100%, 33%–66%, or 0–33% of the total score denote high, medium, or low levels of self-care capability, respectively. This survey has a validity coefficient of 0.88 and a reliability coefficient of 0.724 when it is used in China.<sup>4</sup>

### 2.2.2. Survey methods

The survey personnel received a standardized training that included knowledge about the assessment, communication skills, and relevant standardization for the investigation. After obtaining consent from the participants and their nursing homes, the survey was conducted via face-to-face interviews. The self-report method was used. The investigator applied oral questioning for the elderly participants who were unable to write their answers, and the

questionnaire was completed by the investigator. In sum, 300 questionnaires were distributed, and 280 valid questionnaires were collected, providing an effective recovery rate of 93.33%.

### 2.2.3. Statistical methods

All the data were input using SPSS 13.0 to establish a database, and descriptive statistics were performed. The self-care capabilities and health value of the elderly were compared across different characteristics using independent-samples *t*-tests and analyses of variance. The correlation between the health value and the self-care capability scores of the elderly was analyzed using Pearson's correlation analysis and a multivariate linear regression.

## 3. Results

### 3.1. General information of the elderly in the urban-rural fringe areas

A total of 280 elderly people from seven nursing homes were selected as the participants, including 118 males (42.14%) and 162 females (57.86%). The participants ranged in age from 60 to 91 years ( $76.45 \pm 11.34$ ); 64 people were over 80 years old (22.86%), 157 people were 70–80 years old (50.07%), and 59 people were 60–70 years old (27.07%). The education levels of the sample were college or above (56 people; 20.00%), junior high and high school (99 people; 35.36%), and elementary school or below (125 people; 44.64%). The marital statuses of the sample were unmarried, divorced, or widowed (129 people; 46.07%) and married (151 people; 53.93%). The average incomes were 2500 yuan or higher (55 people; 19.64%), 1500–2500 yuan (124 people; 44.28%), and 1500 yuan or below (101 people; 36.08%).

### 3.2. Health value and self-care capabilities of the elderly

According to our survey, the average overall health value score of the elderly living in the urban-rural fringe area was  $7.45 \pm 1.45$ . A total of 159 people were in the high level, 87 people were in the medium level, and 34 people were in the low level. The total self-care score was  $100.25 \pm 22.56$ , and the actual score accounted for 58.14% of the total score; thus, the overall self-care capability was medium, although 49 people were in the low level, 164 people were in the medium level, and 67 people were in the high level.

### 3.3. Comparison of the health value and self-care capabilities of the elderly across different categories (Table 1)

**Table 1**  
Comparisons of the health value and self-care capabilities of the elderly across different categories.

Category	Number	Health value			Self-care capability			
		Score	F/t	P	Score	F/t	P	
Gender	Male	118	7.37 ± 1.54	0.852	0.254	101.54 ± 20.54	1.158	0.121
	Female	162	7.55 ± 1.27			99.31 ± 21.57		
Age	60–69	59	6.84 ± 1.11	3.024	0.025	125.21 ± 18.27	3.875	0.017
	70–79	157	8.35 ± 1.94			104.54 ± 22.44		
	80–91	64	7.25 ± 1.25			66.71 ± 20.37		
Education level	Elementary school or lower	125	6.45 ± 2.04	3.254	0.020	88.75 ± 23.58	3.047	0.024
	Middle school and high school	99	7.52 ± 1.44			108.54 ± 20.50		
	College and above	56	9.54 ± 1.57			111.25 ± 18.22		
Marital status	Married	151	6.51 ± 1.84	4.524	0.004	101.78 ± 22.54	3.250	0.011
	Unmarried, widowed, or divorced	129	8.54 ± 1.45			98.45 ± 20.74		
Income	<1500 yuan	101	7.27 ± 1.12	2.524	0.024	98.21 ± 19.54	3.375	0.019
	1500–2499 yuan	124	7.15 ± 1.28			100.45 ± 20.50		
	>2500 yuan	55	8.45 ± 0.99			103.54 ± 16.37		

**Table 2**

A multivariate linear regression analysis of the main factors that influence the self-assessed self-care score of the elderly living in the urban-rural fringe area.

Influencing factor	Regression coefficient	Standard error	Standardized regression coefficient	t	P
Constant term	44.342	5.520		15.454	0.000
Health value	8.244	3.587	0.492	6.245	0.000
Marital status	7.251	3.050	0.401	3.114	0.002
Age	6.514	3.240	0.341	2.051	0.030

### 3.4. Correlation of the health value and self-care capabilities of the elderly living in the urban-rural fringe area

The Pearson's correlation coefficient between the health value score and the self-care capability score of the elderly was  $r = 0.521$ . Using the self-care capability score of the elderly as the dependent variable and the health value and related sociodemographic factors of the elderly as the independent variables, a multivariate linear regression analysis was performed. The results showed that the health value score, education level, and age predicted self-care capability (see Table 2).

## 4. Discussion

### 4.1. Analysis of the health value of the elderly living in the urban-rural fringe area across different categories

The results of this study show that the health value score of the elderly was  $7.45 \pm 1.45$ , and the high and medium level groups accounted for 56.78% and 31.07% of the total, respectively. The health value of the elderly in this study can be considered as relatively high. With regard to the different categories, the health value level of the elderly with a high level of education was greater than that with a low level of education. The health value level of the elderly in the high income group was greater than that of the elderly in the low income group. Finally, the health value level of the elderly differed the most by marital status: i.e., the elderly who were unmarried, widowed, or divorced had a significantly higher health value than those who were married. Regarding the effect of the demographic factors on the health value of the elderly, the results of previous studies are consistent with the findings of the current study. Muhlenkamp et al.<sup>5</sup> showed that education level affected the health value such that higher education levels predicted higher health value levels. Gao et al.<sup>1</sup> also came to the same conclusion. It is generally believed that a higher education level leads to a correspondingly better family financial condition, and this population also pays more attention to their health. Moreover, the elderly with high education levels are more concerned about their health management and more easily accept community health education and advertising. In addition, widowed and unmarried statuses are considered as significant and negative life events among the elderly; however, such life events might generate certain positive effects. For example, losing a spouse might increase their concern regarding their own health and therefore improve their health value level. This supposition might explain the different health values based on marital status.<sup>6</sup>

### 4.2. Analysis of the self-care capabilities of the elderly living in the urban-rural fringe areas across different categories

The overall self-care capability level of the elderly in this region was at a medium level, and this result is similar to the finding of the on-site cross-sectional study conducted by the researchers in the urban pension agency.<sup>7</sup> The self-care capabilities of elderly people with low education levels were worse than those of the elderly with high education levels; furthermore, the

self-care capabilities of the older elderly were worse than those of the younger elderly. Importantly, the self-care capabilities of the participants also differed by financial situation. In addition, the elderly differed by type of family. The self-care capabilities of the elderly who were widowed or divorced were worse than those of who were married. Men did not significantly differ from women. Regarding the research on self-care capability, the self-care theory of Orem is an important theoretical model, and many researchers have performed a significant amount of research using this theoretical model. Some researchers have suggested that income, education level, and marital status are the important factors that affect self-care capabilities.<sup>4,8</sup> Foreign researchers investigated 235 community-dwelling elderly people and found that social support, marital status, age, education level, and income affect their self-care capabilities.<sup>9</sup> Orem's self-care theory indicates that self-care is composed of self-care behaviors, and these behaviors play important roles in individual maintenance, health promotion, and living a comfortable life, all of which are affected by multiple individual and social factors. The results of this study support this theory.

### 4.3. Analysis of the relationship between health value and self-care capability

According to our results, Pearson's correlation coefficient describing the relationship between the health value and self-care capabilities of the elderly was  $r = 0.521$ . An additional regression analysis showed that health value, marital status, and age predicted self-care capability. Health value positively predicted self-care capability. This result suggests that the elderly living in the urban-rural fringe area with higher health values generally had better self-care capabilities. Furthermore, increasing the health value of the elderly positively improves the self-care capabilities of these patients. The "knowing-trusting-acting" model, a core of health education theory, is one possible explanation. This model addresses health-related behaviors, and the self-care capabilities of the elderly can be improved by strengthening their self-health behaviors. This process of change can be divided into three continuous processes: health knowledge access, the generation of the health beliefs, and the formation of health behaviors (i.e., knowing-trusting-acting).<sup>10</sup> Therefore, we conclude that improving health value of the elderly will positively enhance their self-care capabilities, representing the process from "trusting" to "acting" in the "knowing-trusting-acting" model.

## Conflicts of interest

All contributing authors declare no conflicts of interest.

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