Analysis of the Elders’ Intentions for Care and Its Influencing Factors Based on Andersen’s Behavioral Model

Xuejiao Chen  
Zhengzhou University

Di Lu  
Zhengzhou University

Qingfeng Tian (✉ zzutqf@126.com)  
Zhengzhou University

Songhe Shi  
Zhengzhou University

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Abstract

Background

Aging is a very pressing global situation, and with it comes the issue of care for the elderly. The objectives of this study were: to understand the elders’ intention for care in Henan, China, and to explore the association of intention based on Andersen's Behavioral Model.

Methods

With multi-stage stratified cluster sampling, base on Andersen's Behavioral Model, from the predisposing factors, enabling factor, and demand factor studying the influence factors of the elderly's intention.

Results

Home-based care is the main choice for the elderly, followed by institutional care, and finally community care. Enabling factors to have the greatest influence in this study. Factors influencing aged intention included: living status and total net monthly household income (enabling factors) and disability, life abilities objectively (need factors).

Conclusions

Home-based care for the aged is the main intention in Henan province. Marital status, living style, and income all have a relatively large impact on their old-age willingness. Old people with different physical conditions should provide different services so that they can have a comfortable life in old age.

Background

Aging, says Richard Suzman, director of behavioral and research on Aging, is “reshaping our world”. Like climate change, “it seems inexorable, and is gradual”. With fertility rates falling and life expectancy rising, the population is aging much faster than in the past. Therefore, the aging problem has long been a question of great interest in a wide range of fields. As the largest developing country, the aging trend has become a more pressing issue, coupled with demographic changes caused by late marriage and the one-child policy, which have attracted worldwide attention. Since China is the country with the largest population, the elderly population is also relatively large. By the end of 2018, there were 167 million people aged 65 and above, accounting for 11.9% of the total population. By 2050 it is expected to make up about 34% of its population. From a biological point of view, aging is associated with the accumulation of multiple lesions at the molecular and cellular levels. Over time, these injuries gradually lead to the decrease of the physiological reserve, the increase of the risk of many diseases, and the
reduction of internal capacity, which affects the physical health of the elderly.[6] As a result, a series of problems caused by aging.

Social changes lead to the change of thought, thus the choice of eldercare and eldercare concept is also changing.[7] At present, there are three main ways to provide eldercare for the aged in China, mainly address the non-medical social needs of the elderly,[8] including home-based care, community-based care, and institutional-based care. Home-based care is the primary means of eldercare. In the family, the elderly live at home and receive care from their family members or caregivers.[3] One characteristic of community-based care is the independence of the elderly, which means that they can carry out basic daily activities without the help of others, such as bathing, toileting, dressing, cooking, and light housecleaning. [9, 10] In institutional eldercare, the elderly live in an institution that provides their care, medical treatment, spiritual comfort, and other services.

Willingness to receive care has been defined as the attitudes and inclinations for a type of eldercare among the elderly[11]—may affect the final choice. Many factors are linked to older people's willingness to care, such as age, chronic diseases, depression, education, knowledge about eldercare institutions, and financial status were associated with the elderly's willingness.[12] Previous studies have shown that it is important for governments to consider factors that influence the wishes of older persons when allocating health resources.[13–15] So it is very crucial to find out the influencing factors with different degrees.

In this study, we used the Andersen's Behavioral Model to assess the influence of various factors on the willingness of the elderly both directly and indirectly. This model is a comprehensive and complex framework that has been widely implemented in various types of health outcome measurement and population.[16] The model shows that the willingness of the elderly are affected by three recognized factors: predisposing, enabling, and need factors. We have incorporated different variables, shared decision-making, and conducted an in-depth analysis of the willingness of the elderly. The purposes of this study were as follows: (1) To understand the current willingness of the elderly. (2) To analyze the factors associated with willingness to receive eldercare. Results are very important because the exceptional understanding of the needs of the elderly, which helps to rationally allocate elderly care resources and better meet the needs of the elderly.

Methods

This study was conducted in Henan Province from January-March 2019, supported by World Bank Loan Agreement Fund.

Participants

Multi-stage stratified cluster random sampling was applied to recruit participants. The representative sample is chosen in three stages: In the first stage, according to the distribution of 18 cities of Henan in Henan province, all provincial cities will be selected as the primary sampling units. In the second stage, the stratified sampling method is adopted to extract urban areas and towns respectively according to the
proportion of 4:6 in cities: the countryside in each provincial municipality according to the economic level. A total of 5,403 valid questionnaires were recovered. Participants were aged over 60 years old who agreed to sign the informed consent form. The inclusion criteria of the subjects: (1) are the registered population of Henan Province and have lived for more than 6 months; (2) age ≥ 60 years old; (3) informed consent, Ability to express oneself clearly and independently. Then we distribute questionnaires face-to-face and help seniors fill out questionnaires through tools such as magnifying glass and loudspeakers. A questionnaire survey of face-to-face interviews conducted by households with uniformly trained investigators. The study protocol was approved by the ethics review committee of the School of Public Health at Zhengzhou University.

**Measures**

A questionnaire was designed based on the literature review and under the framework of Andersen's Behavioral Model. It was developed for this study. Based on the framework of Andersen's Behavioral Model, independent variables are divided into predisposing factors, enabling factors, need factors. Univariate and multivariate logistic regression analysis models were used to explore the correlation factors.

**Predisposing factors**

Predisposing factors are defined as factors that cannot be easily changed by individuals. Understanding the basic situation of individuals through these factors may directly or indirectly affect the attention of the elderly. Predisposing factors include demographic (age and gender, education).

**Enabling factors**

Enabling factors refer to factors that have a positive or hindering effect on behavioral intentions. This study included habitation (rural or urban), marital status (married or unmarried), living style (living alone, live with a spouse, and live with other people), total net monthly household income (CNY), medical expenses payment methods (with health insurance and without health insurance) indicators as Enabling factors.

**Need factors**

Need factors are defined as judgment of personal health status subjectively and objectively. That is to say, people will first perceive an illness or probability of illness and then seek health services. Need factors are evaluated using the standard questionnaire of "Age Assessment of the Aged" issued by the Ministry of Civil Affairs of the People's Republic of China. In this study, Subjective needs and feelings include disability, daily life abilities objectively (oneself can't management, oneself management but can't help housework, oneself management and do housework), depressive symptoms (whether there are depressive symptoms), objective needs include ability level (categorized, ability intact, light degree of disability, middle disability, severe disability) and chronic diseases (whether there is a chronic disease).

**Statistical Methods**
We first used univariate analysis to investigate the association between the variables mentioned above and dependent variables. After controlling for the confounding factors of population and socio-economics, a multiple logistic regression analysis was conducted to analyze the relationship between related factors and old-age willingness. Using the old-age willingness as the dependent variable \((Y_1 = \text{choose home-based care}, Y_2 = \text{choose community-based care}, Y_3 = \text{choose institution-based care})\), construct a multi-factor logistic regression model to analyze the factors that affect the old age's willingness; Predisposing factors, enabling factors and demand factors are all included in the regression model, and then sequentially removed, and four logistic regression models are constructed. By comparing the prediction probability of each model and the goodness of fit, the influence of the three types of factors is obtained. Statistical significance was defined by \(P \text{ value} < 0.05\).

The model is shown below:

Model 1: \(\text{logistic (}Y_i\text{)} = \text{propensity factor} + \text{enable factor} + \text{demand factor}\)

Model 2: \(\text{logistic (}Y_i\text{)} = \text{enabling factor} + \text{demand factor}\)

Model 3: \(\text{logistic (}Y_i\text{)} = \text{propensity factor} + \text{demand factor}\)

Model 4: \(\text{logistic (}Y_i\text{)} = \text{propensity factor} + \text{enabling factor}\)

**Patient and public involvement**

Because this study is a cross-sectional study of the elderly in Henan Province, patient, and public involvement was not considered at the design stage.

**Results**

**Sociodemographic Characteristics**

A total of 5,403 valid questionnaires were collected, with a male to female ratio of 1:1.04 and an average age of 70.9. 26.99% of respondents live in urban areas; 64.53% of students with primary school education or below; 76.18% of the elderly have married. 57.91% of the elderly live with their spouses. The average monthly economic income of CNY 1,000 or fewer accounts for 55.89%; 97.72% have health insurance; 61.58% of the elderly with intact abilities, 31.33% of the elderly with mild disability, 4.72% of the elderly with moderate disability, and 2.37% of the elderly with a severe disability. Those with chronic diseases accounted for 65.65%.

**Distribution of old-age willingness of the elderly.**

Among the 5403 research subjects, 89.91%, 3.73%, and 6.37% of home-based care, community-based care, and institutional caregivers accounted for 61.21% of the elderly who choose to care for care in the institution. The differences in 10 characteristic factors such as age, education level, habitation, marital
status, living status, Total net monthly household income, disability, Daily life abilities objectively, depressive symptoms, and ADL Score are statistically significant (P value < 0.05). (see Table 1)
Table 1
Distribution of Willingness to receive eldercare with different characteristics.

| Variables             | home-based care | community-based care | institution-based care | All       | $\chi^2$ | P       |
|-----------------------|-----------------|----------------------|------------------------|-----------|---------|---------|
| **Predisposing factors** |                 |                      |                        |           |         |         |
| Gender                |                 |                      |                        |           |         |         |
| Male                  | 2366(48.70)     | 111(55.22)           | 178(51.74)             | 2655(49.14) | 4.281   | 0.118   |
| Female                | 2492(51.30)     | 90(44.78)            | 166(48.26)             | 2748(50.86) |         |         |
| Age                   |                 |                      |                        |           | 10.407  | 0.034   |
| 60~                   | 2357(48.52)     | 95(47.26)            | 147(42.73)             | 2603(48.18) |         |         |
| 70~                   | 1756(36.15)     | 71(35.32)            | 123(35.76)             | 1950(36.09) |         |         |
| 80~                   | 745(15.34)      | 35(17.41)            | 74(21.52)              | 850(15.73)  |         |         |
| Education level       |                 |                      |                        |           | 14.562  | 0.024   |
| Illiterate            | 1467(30.20)     | 73(36.32)            | 122(35.47)             | 1662(30.76) |         |         |
| Primary               | 1729(35.59)     | 76(37.81)            | 114(33.14)             | 1919(35.52) |         |         |
| Junior                | 998(20.54)      | 37(18.41)            | 73(21.22)              | 1108(20.51) |         |         |
| High school or above  | 664(13.67)      | 15(7.46)             | 35(10.17)              | 714(13.21)  |         |         |
| **Enabling factors**  |                 |                      |                        |           |         |         |
| Habitation            |                 |                      |                        |           | 10.561  | 0.005   |
| Urban                 | 1279(26.33)     | 66(32.84)            | 113(32.85)             | 1458(26.99) |         |         |
| Rural                 | 3579(73.67)     | 135(67.16)           | 231(67.15)             | 3945(73.01) |         |         |
| Marital status        |                 |                      |                        |           | 29.688  | <0.001  |
| Married               | 3751(77.21)     | 129(64.18)           | 236(68.60)             | 4116(76.18) |         |         |
| Unmarried             | 1107(22.79)     | 72(35.82)            | 108(31.40)             | 1287(23.82) |         |         |
| Living status         |                 |                      |                        |           | 37.711  | <0.001  |
| Living alone          | 384(7.90)       | 30(14.93)            | 50(14.53)              | 464(8.59)   |         |         |
| Live with spouse      | 2865(58.97)     | 96(47.76)            | 168(48.84)             | 3129(57.91) |         |         |
| Live with other people| 1609(33.12)     | 75(37.31)            | 126(36.63)             | 1810(33.50) |         |         |
| Variables                                      | home-based care | community-based care | institution-based care | All    | \(\chi^2\) | \(P\) |
|------------------------------------------------|-----------------|----------------------|------------------------|--------|-----------|-------|
| Total net monthly household income (CNY)      |                 |                      |                        |        | 13.584    | 0.035 |
| < 1,000                                       | 2743(56.46)     | 100(49.75)           | 177(51.45)             | 3020   | (55.89)   |       |
| 1001–2000                                     | 1138(23.43)     | 54(26.87)            | 76(22.09)              | 1268   | (23.47)   |       |
| 2001–3000                                     | 598(12.31)      | 24(11.94)            | 53(15.41)              | 675    | (12.49)   |       |
| ≥ 3001                                        | 379(7.80)       | 23(11.44)            | 38(11.05)              | 440    | (8.14)    |       |
| Have Health insurance                         |                 |                      |                        |        | 1.428     | 0.49  |
| No                                            | 109(2.24)       | 7(3.48)              | 7(2.03)                | 123    | (2.28)    |       |
| Yes                                           | 4749(97.76)     | 194(96.52)           | 337(97.97)             | 5280   | (97.72)   |       |
| Need factors                                  |                 |                      |                        |        |           |       |
| Disability                                    |                 |                      |                        |        | 21.41     | < 0.001|
| No                                            | 4345(89.44)     | 181(90.05)           | 280(81.4)              | 4806   | (88.95)   |       |
| Yes                                           | 513(10.56)      | 20(9.95)             | 64(18.60)              | 597    | (11.05)   |       |
| Daily life abilities objectively               |                 |                      |                        |        | 28.909    | < 0.001|
| Oneself can't management                      | 137(2.82)       | 8(3.98)              | 17(4.94)               | 162    | (3.00)    |       |
| Oneself management but can't help housework   | 262(5.39)       | 16(7.96)             | 39(11.34)              | 317    | (5.87)    |       |
| Oneself management and do housework           | 4459(91.79)     | 177(88.06)           | 288(83.72)             | 4924   | (91.13)   |       |
| Depressive symptoms                           |                 |                      |                        |        | 10.713    | 0.005 |
| No                                            | 4697(96.7)      | 194(96.52)           | 321(93.31)             | 5212   | (96.46)   |       |
| Yes                                           | 161(3.31)       | 7(3.48)              | 23(6.69)               | 191    | (3.54)    |       |
| ADL Score                                     |                 |                      |                        |        | 20.296    | 0.002 |
| Ability intact                                | 3024(62.25)     | 111(55.22)           | 192(55.81)             | 3327   | (61.58)   |       |
The Association Between Variables Related to Anderson’s Behavioral Model of influencing old-age willingness

Taking the old-age willingness as the dependent variable (home-based old-age care as reference) and the characteristic factors with $P \leq 0.05$ in Table 1 as the independent variables, a multi-class logistic regression model was constructed under the Andersen’s Behavioral Model. The results show that the willingness to choose community care is related to the predisposing factors and enabling factors. The educational level of the predisposing factors is statistically significant. Compared with High school or above, the lower the education level, the greater the OR value. Illiteracy is 1.985; marital status and average monthly income among the enabling factors are statistically significant. Compared with singles, the OR value in marriage is lower at 0.615; the willingness to choose an institution for care is related to enabling factors and demand factors. The living status and average monthly household income of the enabling factors are statistically significant, and the disability and the daily life abilities objectively of the demanding factors are statistically significant. Compared with those with disabilities, the OR value without disabilities is lower at 0.003. (See Table 2 for details)
Table 2
Logistic regression analysis of influencing factors of old-age willingness to care

| Variables                        | community-based care | institution-based care |
|----------------------------------|----------------------|------------------------|
|                                  | $P$ | $OR$ (95%CI)       | $P$ | $OR$ (95%CI)       |
| Predisposing factors             | 0.146 | 1.573(0.854,2.898) | 0.734 | 0.943(0.672,1.323) |
| Age                              |      |                    | 0.721 | 0.942(0.676,1.311) |
| 60~                              | 0.275 | 1.288(0.818,2.028) | 0.721 | 0.942(0.676,1.311) |
| 70~                              | 0.488 | 1.172(0.748,1.837) | 0.721 | 0.942(0.676,1.311) |
| 80~                              | -    | 1                  | -    | 1                  |
| Education level                  |      |                    |      |                    |
| Illiterate                       | 0.019 | 1.985(1.119,3.52)  | 0.084 | 1.418(0.954,2.107) |
| Primary                          | 0.034 | 1.84(1.046,3.237)  | 0.343 | 1.21(0.816,1.792)  |
| Junior                           | 0.146 | 1.573(0.854,2.898) | 0.136 | 1.374(0.905,2.088) |
| High school or above             | -    | 1                  | -    | 1                  |
| Enabling factors                 |      |                    |      |                    |
| Habitation                       |      |                    |      |                    |
| Urban                            | 0.215 | 1.241(0.882,1.747) | 0.123 | 1.235(0.945,1.614) |
| Rural                            | -    | 1                  | -    | 1                  |
| Marital status                   |      |                    |      |                    |
| Married                          | 0.017 | 0.615(0.413,0.916) | 0.658 | 0.932(0.681,1.274) |
| Unmarried                        | -    | 1                  | -    | 1                  |
| Living status                    |      |                    |      |                    |
| Living alone                     | 0.06  | 1.55(0.982,2.447)  | 0.006 | 1.674(1.163,2.409) |
| Live with spouse                 | 0.571 | 0.898(0.618,1.304) | 0.174 | 0.821(0.619,1.091) |
| Live with other people           | -    | 1                  | -    | 1                  |
| Total net monthly household income (RMB) |      |                    |      |                    |
| <1,000                           | 0.042 | 0.583(0.347,0.981) | 0.022 | 0.619(0.411,0.934) |
| 1001–2000                        | 0.377 | 0.789(0.467,1.335) | 0.099 | 0.699(0.456,1.07)  |
| 2001–3000                        | 0.189 | 0.672(0.371,1.216) | 0.746 | 0.929(0.596,1.448) |
| Variables                       | community-based care | institution-based care |
|--------------------------------|----------------------|------------------------|
|                                | $P$ | OR (95%CI)    | $P$ | OR (95%CI)    |
| ≥ 3001                         | -   | 1            | -   | 1            |
| Need factors                   |      |              |      |              |
| Disability                     |      |              |      |              |
| No                             | 0.326 | 1.294(0.773,2.167) | 0.003 | 0.607(0.437,0.844) |
| Yes                            | -   | 1            | -   | 1            |
| Daily life abilities objectively|      |              |      |              |
| Oneself can't management       | 0.57 | 1.326(0.501,3.511) | 0.443 | 1.306(0.66,2.584) |
| Oneself management but can't help housework | 0.267 | 1.408(0.769,2.58) | 0.006 | 1.829(1.192,2.807) |
| Oneself management and do housework | - | 1            | -   | 1            |
| Depressive symptoms            |      |              |      |              |
| No                             | 0.626 | 1.222(0.547,2.73) | 0.151 | 0.699(0.428,1.14) |
| Yes                            | -   | 1            | -   | 1            |
| ADL Score                      |      |              |      |              |
| Ability intact                 | 0.396 | 0.632(0.218,1.826) | 0.875 | 1.064(0.491,2.302) |
| Light degree of disability    | 0.66 | 0.793(0.282,2.229) | 0.972 | 1.013(0.48,2.138) |
| Moderate disability           | 0.541 | 0.718(0.248,2.076) | 0.663 | 1.177(0.565,2.451) |
| Severe disability             | -   | 1            | -   | 1            |

Taking the old-age willingness as the dependent variable, and the characteristic factors with $P \leq 0.05$ in Table 1 as independent variables, four logistic regression models were constructed. The results show that, compared with Model 1, the change values $-2LL$, Cox&SnellR2 and NagelkerkeR2 in Model 3 are the largest, indicating that the enabling factor has the largest influence on Model 1 among the three types of influencing factors. (For comparison of prediction probabilities and goodness of fit of each model, see Table 3)
Table 3
Comparison of prediction probability and goodness of fit of each model

| Model | -2LL       | the change of -2LL | Cox&SnellR² | the change of Cox&Snell R²* | NagelkerkeR² | the change of NagelkerkeR²²* |
|-------|------------|--------------------|-------------|----------------------------|--------------|----------------------------|
| Model 1 | 2237.803   | -                  | 0.021       | -                          | 0.038        | -                          |
| Model 2 | 1068.63    | -1169.173          | 0.018       | -0.003                     | 0.034        | -0.004                     |
| Model 3 | 760.92     | -1476.883          | 0.01        | -0.011                     | 0.018        | -0.02                      |
| Model 4 | 1273.524   | -964.279           | 0.015       | -0.006                     | 0.027        | -0.011                     |

*: Change value refers to the increase or decrease compared with model 1

Discussion

This study's findings can serve as a practical reference for policymaking related to the elderly and for eldercare resource allocation between the family, community, and institutional eldercare. Moreover, this research can support guide investors to provide suitable services for different types of elderly people, meet real needs, and enrich their later life.

It can be concluded from this survey that home-based care is the main old-age willingness of elderly people, accounting for 89.91%, far exceeding the ratio of choosing community-based care and institutional care. As the operation mode of the elderly care community and institutions has not been improved, the elderly do not know much about them, leading to a decrease in the willingness to choose the new old-care model. A 2017 study found that 81% of elderly preferred family eldercare.[17] Influenced by Confucius' thought, Chinese elders place a high value on family and have the traditional concept of raising children for preventing old, therefore, most of them prefer to stay in their own homes and be cared for by their family members.[18] And it is believed that staying in a community or institution is neither decent for a family nor able to enjoy the family warmth of the children and grandchildren, and their children might be considered unfilial.[19] Meanwhile, traditional institutional eldercare has trouble meeting the high levels of elderly needs. However, When family provided care is inadequate, the elderly require more professional care.[20]

A study of willingness to use a nursing home among Korean American elderly showed that 45% were willing to use a nursing home.[21] In a study of the elderly in Taiwan, however, it was much lower, at around 16.7%.[22] In my study, only 6.37% of the old-age willingness to care in institutions, causing this phenomenon maybe 73.01% of the rural population. This population has its own characteristics. Rural elderly people, most of whom have lower incomes and are more dependent on their children, may feel abandoned by their own children.[12] At the same time, with the increase in Chinese urbanization in
recent years, more young adults are increasingly moving to economically developed cities and leaving their older parents, thus, their elderly parents must live in a nursing home if they cannot take care of themselves.\[18\] Previous studies have shown that because a decline in physical function, limited self-care ability, and lack of family caregivers are the main reasons for elders to move into nursing homes.\[23\] This might be the reason that Chinese institutional elders’ physical health status tends to be poorer than that of community-dwelling elders.\[24\] But some surveys show, When there is lower life satisfaction, the elderly tend to prefer institutional eldercare.\[25, 26\] With the continuous development of society and the advancement of the government’s policy on integrated medical and nursing services, the elderly recognize that stayed in medical and nursing institutions can be treated in time when they are sick eventually. They also found that they can make some friends and chat with each other. In this study, Among the elderly who choose nursing care institutions, 61.21% choose the combination of medical and nursing care institutions. It is very convenient for the care of chronic diseases and healthy eating. The demand for the institution care will continue to increase in the future, and the government should improve the relevant supporting policies for the integration of medical and nursing care, and strengthen the supervision of institutions for combining medical and nursing care. Also, care institutions should innovate service models, improve service quality, and increase public satisfaction and acceptance.

Based on the Anderson behavior model, this study compares the influence of propensity factors, enabling factors, and demand factors, and concludes that enabling factors have the greatest influence on the choice of old-age care willingness of the elderly, followed by propensity factors. It can be seen that personal family resources and demographic characteristics are the main factors that affect the choice of old-age care for the elderly.

Same as Zhan HJ\[28\], Agüero-Torres H\[29\] Martikainen P’s\[30\] study, socioeconomic and demographic factors are linked with the willingness to receive eldercare. The elderly with a marital status more inclined to live at home. The might reason is that married couples can take care of each other, and they are more familiar with each other. In contrast, single elders refer to those widowed, divorced, or unmarried elderly who are unlikely to rely on spouses for support in their daily life activities,\[31\] and they are more vulnerable. Some studies found that those elders living without a spouse preferred institutional care setting.\[32\] An average monthly income of 1,000 (CNY) or less due to the economy, are more inclined to live at home. The conventional way of supporting the elderly at home has the characteristics of being straightforward, duty-bound, cost-saving, and resource sharing. Some study showed that the rural elderly who had children and lived with family preferred family eldercare.\[3\] Other studies have obtained similar results.\[33–36\] The reason may be they choose to care for the elderly at home; both community-based and institutional pensions need to pay a certain fee. Expensive medical bills would undoubtedly increase the financial burden of elders and their families. Since a lot of resources can be used to the maximum, more waste of remaining resources is saved.

We also found that in both urban and rural areas, willingness to receive family-based care was higher than the other two eldercare types. This suggests that family eldercare is still the primary choice among China’s family. Another study, from 2009, showed that in urban and rural areas, only 20% and 17%,
respectively, of older adults were willing to live in eldercare institutions.[37] In China, there are differences between urban and rural areas in terms of income and living condition.[38] Compared with urban areas, the aging population in rural areas and the situation of “empty nest” elderly people are more pressing.

Besides, elderly people living alone are more inclined to care for the elderly in institutions. Because of a lack of communication with relatives and friends, they are more prone to loneliness and anxiety, and there is no one to look after at home. In an emergency, there may be no one to rescue, so they are more willing to choose institutions. Just as an old Chinese saying goes, a far-off relative is not as helpful as a nearby neighbor. Previous studies also found that the company of peers and nurses is beneficial for residents’ mental health.[39] Following WHO’s the definition that health is a state of complete physical, mental and social well-being, and not merely the absence of disease or infirmity,[40] psychological problems of the elderly are equally important.

Elderly people without disabilities are more likely to choose home care. elders that daily activities can take care of themselves, but can not do housework are more likely to choose institutional care. Because of physical reasons, elderly people with disabilities may have difficulties in movement or language communication, so they cannot live a good life. Furthermore, poor physical health status could weaken the elders’ ability to participate in activities.[41] They are more likely to choose institutions for the elderly to receive professional care. Elderly people who can take care of themselves in daily life but cannot take care of housework need the assistance of service institutions to provide catering, housekeeping, and other services so that they can not only reduce the burden of housework but also have more time for entertainment.

Conclusions

This study investigated the differences in the willingness of the elderly to receive care services and its influencing factors. To sum up, Home-based care is still the most popular choice for the elderly in Henan province. and the willingness to care for old people depends on education level, marriage status, monthly household income, living status, daily life abilities objectively, etc. Various factors. The old-age willingness is not necessarily the ultimate way of old-age care for the elderly, but to a certain extent, it shows the elderly’s demand for elderly care services. Under the situation of the aging population and diversified old-age care models, the government and old-age care institutions should act according to the old-age care needs of the elderly. Recruit professional nursing staff for the care, and add leisure and entertainment projects, so that the elderly can live in their old age.

Strengths And Limitations Of This Study

1 In this study, the multi-stage stratified cluster sampling method was used to collect the data of the elderly completely, the information obtained is true and credible.
In this investigation, we conducted special training for investigators and strictly controlled the data quality.

Constructing and using Andersen's Behavioral Model to analyze the influencing factors of old-age willingness.

This is a cross-sectional sample survey on the elderly in Henan Province, more conclusions require more comprehensive data support.

**Abbreviations**

CNY
Chinese yuan
SPSS
Statistical Product and Service Solutions
ADL
Activity of Daily Living Scale

**Declarations**

**Ethics approval and consent to participate**

The study protocol was approved by The Ethical Committee of Zhengzhou University School. Written consent is obtained with the informed consent of all participants and an investigation is then conducted.

**Consent to publish**

Not Applicable.

**Availability of data and materials**

Data are available upon reasonable request.

**Competing interests**

The authors declared no potential conflicts of interest with respect to the research, authorship, and/or publication of this article.

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**Authors' Contributions**
All authors made a substantial contribution to this work. XC contributed to the study design, data analysis, and writing the draft; DL edited versions of the manuscript and provided input into analysis. SS and QT provided feedback. All authors agreed to the submitted version of the paper.

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- questionnaire.docx
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